CITY OF GREEN COVE SPRINGS
CITY COUNCIL REGULAR SESSION - AMENDED AGENDA

321 WALNUT STREET, GREEN COVE SPRINGS, FLORIDA
TUESDAY, MAY 16, 2023 – 7:00 PM

Anyone wishing to address the city council regarding any topic on this agenda is requested to complete a card available at the city clerk's desk. Speakers are respectfully requested to limit their comments to three (3) minutes.

The city council prohibits the use of cell phones and other electronic devices which emit an audible sound during all meetings with the exception of law enforcement, fire and rescue or health care providers on call. Persons in violation may be requested to leave the meeting

---

AGENDA

Invocation & Pledge of Allegiance to the Flag - **Chaplain Joseph Williams, CCSO**

Roll Call

Mayor to call on members of the audience wishing to address the Council on matters not on the Agenda.

AWARDS & RECOGNITION

1. Proclamation - National Safe Boating Week
2. Proclamation - Mental Health Awareness Month

AWARDS & RECOGNITION

3. Swearing-In Ceremony for three (3) year terms of office for Edward R. Gaw for Seat 1, and Daniel M. Johnson for Seat 2. ***County Judge Raymond Forbess Jr.***
4. City Council election of a Mayor and Vice Mayor to serve from May 16, 2023 to May 21, 2024. ***Erin West***

PRESENTATIONS

5. CAC Presentation: Proposed Revision of the Tree and Landscape Ordinance by Chris Gay

PUBLIC HEARINGS

6. Resolution R-06-2023, the CRA Redevelopment Plan. ***Michael Daniels***
7. First Reading of Ordinance O-11-2023, Transportation Mobility Fee Ordinance. ***Michael Daniels***

8. Second Reading of Ordinance O-14-2023 property transfer from the City to DR Horton, Inc. / Rookery Investors, LLC related to the Rookery Development. ***Michael Daniels***

CONSENT AGENDA

All matters under the consent agenda are considered to be routine by the city council and will be enacted by one motion in the form listed below. There will be no separate discussion on these items. If discussion is desired, that item will be removed from the consent agenda and will be considered separately. Backup documentation and staff recommendations have been previously submitted to the city council on these items.

9. City Council ratification of the purchase of overhead transformers for inventory and storm preparation from Gresco in the amount of $57,730.00 and Sunbelt - Solomon in the amount of $92,060.00 for a total amount of $149,790.00. ***Scott Schultz***

10. City Council approval of Amendment Number 2 to Contract # LC 2020-04 with Danella Construction for Directional Boring Services through January 20, 2024. ***Mike Null***

11. City Council approval of funding in the amount of $93,480.00 to Grimes Utilities Inc. for repairs to the 18" trunk sewer line on Clay Street. ***Scott Schultz***

12. City Council approval to surplus the Information Technology items listed in Attachment "A" ***Scott Schultz***

13. City Council approval purchase a John Deere Skid Steer from Dobbs Equipment / Beard Equipment, in the amount of $77,503.00, through the Florida Sherriff's Association Contract Number FSA20-VEH 18.0. ***Scott Schultz***

14. City Council approval of Change Order #4 to EltonAlan, Inc. for construction of the Palmetto Trail Project in the additive amount of $3,949.87 and two (2) days contract time. ***Mike Null***

15. City Council approval of Pay Application #8 from EltonAlan, Inc. for construction of the Palmetto Trail Project in the amount of $145,355.76 from the amended contract amount of $1,546,336.05, leaving a balance of $516,614.21. ***Mike Null***

16. City Council approval of the 2024 ACL Docking Schedule. ***Kimberly Thomas***

17. City Council approval of a Preliminary Plat and Improvement Plan for phase 1 of the Rookery Development for a portion of parcel #: 016515-008-00. ***Michael Daniels***

18. City Council approval of the 3/7/2023 Regular Session Minutes. ***Erin West***

19. City Council approval to issue a purchase order to Southern Switch and Contacts in the amount of $28,654 to provide maintenance of Chapman Substation Transformers #1 and #2. ***Andy Yeager***

20. City Council approval of the 2022 water quality Consumer Confidence Report and authorization to include in all customer bills for a single cycle in June / July, or use the new electronic distribution process (still under review). ***Scott Schultz***

21. City Council approval of Contractor's Pay Request #19 for Williams Industrial Services, LLC, in the amount of $419,615.61, for the Florida Department of Environmental Protection (FDEP), State Revolving Fund (SRF), Harbor Road Water Reclamation Facility (WRF) Expansion, Phase 2, SRF Agreement No. WW1000420. In addition, upon completion by Mittauer staff, authorization for the mayor to sign the subsequent Disbursement Request which returns funds to the Wastewater CIP Budget.

22. City Council approval of the purchase of 500 MCM electric cable for inventory from Irby in the amount of $31,299.00 (Line 2 on Irby Quote) for electric system inventory. ***Scott Schultz***

23. City Council Approval of the West St project, Bid 2023-06, to EltonAlan, Inc. in the amount of $2,176,936.00. ***Steve Thomas***

24. City Council approval of Pay Application #1, Thomas May Construction Company for Public Works Compound Phase ll. ***Steve Thomas***

COUNCIL BUSINESS

25. First Reading of Ordinance O-15-2023, the CRA Trust Fund. ***Michael Daniels***

26. City Council approval of Nominees for Planning & Zoning Board Seats 1 and 2. ***Michael Daniels***

27. Approval of Resolution R-08-2023 as authorized by City Ordinance No. O-14-2023 authorizing conveyance of City owned real property. ***L.J. Arnold III***

28. City Manager & City Attorney Reports / Correspondence

29. City Council Reports / Correspondence

Adjournment

The City Council meets the first and third Tuesday of each month beginning at 7:00 p.m., unless otherwise scheduled. Meetings are held in City Hall at 321 Walnut Street. Video and audio recordings of the meetings are available in the City Clerk's Office upon request.

City may take action on any matter during this meeting, including items that are not set forth within this agenda.

Minutes of the City Council meetings can be obtained from the City Clerk's office. The Meetings are usually recorded, but are not transcribed verbatim for the minutes. Persons requiring a verbatim transcript may make arrangements with the City Clerk to duplicate the recordings, if available, or arrange to have a court reporter present at the meeting. The cost of duplication and/or court reporter will be at the expense of the requesting party.

Persons who wish to appeal any decision made by the City Council with respect to any matter considered at this meeting will need a record of the proceedings, and for such purpose may need to ensure that a verbatim record of the proceedings is made, which record includes the testimony and

evidence upon which the appeal is based. The City is not responsible if the in-house recording is incomplete for any reason.

ADA NOTICE

In accordance with Section 286.26, Florida Statutes, persons with disabilities needing special accommodations to participate in this meeting should contact the City Clerk's office no later than 5:00 p.m. on the day prior to the meeting.

PUBLIC PARTICIPATION:

Pursuant to Section 286.0114, Florida Statutes, effective October 1, 2013, the public is invited to speak on any "proposition" before a board, commission, council, or appointed committee takes official action regardless of whether the issue is on the Agenda. Certain exemptions for emergencies, ministerial acts, etc. apply. This public participation does not affect the right of a person to be heard as otherwise provided by law.

EXPARTE COMMUNICATIONS

Oral or written exchanges (sometimes referred to as lobbying or information gathering) between a Council Member and others, including staff, where there is a substantive discussion regarding a quasi-judicial decision by the City Council. The exchanges must be disclosed by the City Council so the public may respond to such exchanges before a vote is taken.

Proclamation

WHEREAS, for nearly 100 million Americans, boating continues to be a popular recreational activity. From coast to coast, and everywhere in between, people are taking to the water and enjoying time together boating, sailing, paddling and fishing. During National Safe Boating Week, the U.S. Coast Guard and its federal, state, and local safe boating partners encourage all boaters to explore and enjoy America's beautiful waters responsibly; and

WHEREAS, safe boating begins with preparation. The Coast Guard estimates that human error accounts for most boating accidents and that life jackets could prevent nearly 83 percent of boating fatalities. Through basic boating safety procedures - carrying lifesaving emergency distress and communications equipment, wearing life jackets, attending safe boating courses, participating in free boat safety checks, and staying sober when navigating - we can help ensure boaters on America's coastal, inland, and offshore waters stay safe throughout the season; and

WHEREAS, National Safe Boating Week is observed to bring attention to important life-saving tips for recreational boaters so that they can have a safer, more fun experience out on the water throughout the year; and

WHEREAS, on average, 650 people die each year in boating-related accidents in the U.S.; 75 percent of these are fatalities caused by drowning; and

WHEREAS, the vast majority of these accidents are caused by human error or poor judgment and not by the boat, equipment or environmental factors; and

WHEREAS, a significant number of boaters who lose their lives by drowning each year would be alive today had they worn their life jackets.

NOW, THEREFORE, BE IT PROCLAIMED BY THE CITY COUNCIL OF THE CITY OF GREEN COVE SPRINGS, FLORIDA, AS FOLLOWS:

SECTION 1. The City of Green Cove Springs, Florida hereby support the goals of the Safe Boating Campaign and proclaim May 20– 26, 2023 as National Safe Boating Week and the start of the year-round effort to promote safe boating and urges those who boat to practice safe boating habits and wear a life jacket at all times while boating.

SECTION 2. A true copy of this Proclamation shall be spread upon the Official Minutes of the City Council of the City of Green Cove Springs.

DONE AND PROCLAIMED BY THE CITY COUNCIL OF GREEN COVE SPRINGS, FLORIDA, IN REGULAR SESSION THIS 16TH DAY OF MAY, 2023.

CITY OF GREEN COVE SPRINGS, FLORIDA

Daniel M. Johnson, Mayor

ATTEST:

Erin West, City Clerk

Proclamation

WHEREAS, mental health is essential to everyone's overall health and well-being; and

WHEREAS, everyone experiences times of stress and struggles in their lives; and

WHEREAS, 1 in 5 adults experience mental illness and 1 in 20 adults experience serious mental illness each year; and

WHEREAS, 1 in 6 youth agreed 6-17 experience a mental health disorder each year, 50% of all lifetime mental illness begins by age 14 and suicide is the 2nd leading cause of death among people aged 10-14; and

WHEREAS, 60 percent of adults and 50 percent of youth do not receive the treatment necessary for their mental health needs due to limited or no knowledge of the need, barriers to care, or fear and shame, and;

WHEREAS, community understanding and available supports and services can greatly impact a person's ability to handle their stress and struggle and move forward; and

WHEREAS, promoting mental health and wellness leads to higher overall productivity, better educational outcomes, lower crime rates, stronger economies, lower health care costs, improved family life, improved quality of life and increased lifespan; and

WHEREAS, each business, school, government agency, healthcare provider, faith-based organization, non-profit agency and citizen shares accountability for the community's mental health needs and has a responsibility to promote mental wellness and support prevention efforts; and

WHEREAS, the City Council of the City of Green Cove Springs recognizes the impact of awareness and education, access to services and acceptance of the importance of mental health and well-being to a person's overall success.

NOW, THEREFORE, BE IT PROCLAIMED BY THE CITY COUNCIL OF THE CITY OF GREEN COVE SPRINGS, FLORIDA, AS FOLLOWS:

Section 1. The month of May is proclaimed as ***"MENTAL HEALTH AWARENESS MONTH".***

Section 2. A true copy of this Proclamation shall be spread upon the Official Minutes of the City Council of the City of Green Cove Springs.

DONE AND PROCLAIMED BY THE CITY COUNCIL OF THE CITY OF GREEN COVE SPRINGS, FLORIDA, IN REGULAR SESSION THIS 16TH DAY OF MAY, 2023.

CITY OF GREEN COVE SPRINGS, FLORIDA

Daniel M. Johnson, Mayor

ATTEST:

Erin West, City Clerk

MAYOR AND VICE MAYOR HISTORICAL TERMS
REORGANIZATION AT 2ND MEETING IN MAY

YEAR	MAYOR	VICE MAYOR
Mid 1870's	THADDEUS DAVIDS (PER CLAY TODAY ARTICLE – 10/16/14)	
1981 – 82	JOHN K. BRADLEY (5)	GEORGE W. KILLIAN (4)
1982 – 83	GEORGE W. KILLIAN (4)	DONALD A. FULLERTON (2)
1983 – 84	GEORGE W. KILLIAN (4)	DONALD A. FULLERTON (2)
1984 – 85	DONALD A. FULLERTON (2)	M. CALVIN WILCOX (1)
1985 – 86	M. CALVIN WILCOX (1)	PAUL R. BESELER (3)
1986 – 87	PAUL R. BESELER (3)	DONALD A. FULLERTON (2)
1987 – 88	DONALD A. FULLERTON (2)	JERRY K. WILLIAMS (5)
1988 – 89	JERRY K. WILLIAMS (5)	SANDRA DUNNAVANT (4)
1989 – 90	SANDRA DUNNAVANT (4)	M. CALVIN WILCOX (1)
1990 – 91	M. CALVIN WILCOX (1)	PAUL R. BESELER (3)
1991 – 92	DONALD A. FULLERTON (2)	JERRY K. WILLIAMS (5)
1992 – 93	JERRY K. WILLIAMS (5)	SANDRA DUNNAVANT (4)
1993 – 94	SANDRA DUNNAVANT (4)	JAMES W. LONER (3)
1994 – 95	JAMES W. LONER (3)	M. CALVIN WILCOX (1)
1995 – 96	M. CALVIN WILCOX (1)	DIANE HUTCHINGS (2)
1996 – 97	DIANE HUTCHINGS (2)	JERRY K. WILLIAMS (5)
1997 – 98	JERRY K. WILLIAMS (5)	GREG WILL (4)
1998 – 99	M. CALVIN WILCOX (1)	JAMES W. LONER (4)
1999 – 2000	JAMES W. LONER (4)	JERRY K. WILLIAMS (5)
2000 – 2001	JERRY K. WILLIAMS (5)	MATTHEW TINNEY, JR. (3)
2001 – 2002	MATTHEW TINNEY, JR. (3)	VIRGINIA HALL (2)
2002 – 2003	VIRGINIA HALL (2)	RICHARD K. HOBBS (1)
2003 – 2004	RICHARD K. HOBBS (1)	JERRY K. WILLIAMS (5)
2004 – 2005	MATTHEW TINNEY, JR. (3)	ROBERT C. PAGE (4)
2005 – 2006	ROBERT C. PAGE (4)	DEBORAH L. RICKS (5)
2006 – 2007	DEBORAH L. RICKS (5)	JOHN E. BUCHANAN (2)
2007 – 2008	JOHN E. BUCHANAN (2)	MICHAEL E. KELTER (1)
2008 – 2009	MICHAEL E. KELTER (1)	C. FELECIA HAMPSHIRE (3)
2009 – 2010	C. FELECIA HAMPSHIRE (3)	RONALD L. SNOW (5)
2010 – 2011	ROBERT C. PAGE (4)	DEBORAH L. RICKS (5)
2011 – 2012	DEBORAH L. RICKS (5)	PAMELA J. LEWIS (1)
2012 – 2013	PAMELA J. LEWIS (1)	ROY M. TIMBERLAKE, JR. (2)
2013 – 2014	ROY M. TIMBERLAKE, JR. (2)	C. FELECIA HAMPSHIRE (3)
2014 – 2015	C. FELECIA HAMPSHIRE (3)	B. VAN ROYAL (4)
2015 – 2016	B. VAN ROYAL (4)	D. RAY BRALY (5)
2015 – 2016	B. VAN ROYAL (4)	PAMELA J. LEWIS (1)
2016 – 2017	PAMELA J. LEWIS (1)	ROY M. TIMBERLAKE, JR. (2)
2017 – 2018	ROY M. TIMBERLAKE, JR. (2)	CONSTANCE W. BUTLER (3)
2018 – 2019	CONSTANCE W. BUTLER (3)	STEVEN KELLEY (5)
2019 – 2020	STEVEN KELLEY (5)	B. VAN ROYAL (4)
2020 – 2021	B. VAN ROYAL (4)	ED GAW (1)
2021 – 2022	ED GAW (1)	MATT JOHNSON (2)
2022 – 2023	MATT JOHNSON (2)	CONSTANCE W. BUTLER (3)

STAFF REPORT

CITY OF GREEN COVE SPRINGS, FLORIDA

TO: City Council **MEETING DATE:** May 16, 2023

FROM: Michael Daniels, AICP, Planning & Zoning Director

SUBJECT: Resolution R-06-2023, the CRA Redevelopment Plan. ***Michael Daniels***

BACKGROUND

In February of 2022, the City Manager presented the City's proposal to develop a Community Redevelopment Area (CRA) within the City of Green Cove Springs to the Board of County Commissioners. As a result, of the discussion at the Board meeting, City staff has put together a statutorily required Finding of Necessity determination regarding the existence of slum and blight within the downtown and US 17 Corridor sections of the city.

The objective of the creation of a CRA is to revitalize slum and blighted areas through fostering new development, providing necessary infrastructure, creating job opportunities, and focusing public investment within the Community Redevelopment Area (CRA) to stimulate additional private investment. The creation of a CRA creates an additional funding source for infrastructure through the use of Tax Increment Financing.

Tax increment financing is a unique tool available to cities and counties for redevelopment activities. It is used to leverage public funds to promote private sector activity in the targeted area. The dollar value of all real property in the CRA is determined as of a fixed date, also known as the "frozen value." Taxing authorities, which contribute to the tax increment, continue to receive property tax revenues based on the frozen value. These frozen value revenues are available for general government purposes. However, any tax revenues from increases in real property value, referred to as "increment," are deposited into the Community Redevelopment Agency Trust Fund and dedicated to the redevelopment area. It is important to note that taxes collected through special districts such as the School Board or Water Management District are not affected by the creation of a CRA.

In April of 2022, the first task in the creation of a CRA is the preparation of a Finding of Necessity (FON) Report for the City and identification of the proposed CRA boundaries area to determine eligibility as a Community Redevelopment Area under Chapter 163 Part III, Florida Statutes was approved by the City Council. Subsequently, the Finding of Necessity and corresponding items were submitted to the Board of County Commissioners (BOCC) for their permission to create a CRA. The County approved a Resolution subject to the following conditions:

- The composition of the CRA shall consist of two member appointed by the City, two by the BOCC and one at large member chosen by the other four members, and
- The sole power initially delegated to the CRA is to adopt a plan of redevelopment to be submitted for approval by the City and the County
- Additional delegation shall be considered upon completion of the redevelopment plan upon subsequent resolution of the BOCC.

As a result, staff has put together a draft Redevelopment Plan for review by the Planning and Zoning Commission. The Plan will also be reviewed by the CRA Board and the City Council and County Commission.

All projects to be funded with CRA monies must be identified within the approved CRA Redevelopment Plan. Staff has identified the following 10 Redevelopment Objectives for improvements to the CRA. They include:

- ***Objective 1:*** Create a multimodal, pedestrian friendly transportation system.
- ***Objective 2:*** Create a vibrant Downtown area with a mixed-use, development pattern.
- ***Objective 3:*** Increase the Downtown Parking Supply
- ***Objective 4:*** Incorporate housing revitalization through housing maintenance programs and rehabilitation services.
- ***Objective 5:*** Establish a creative, equitable, efficient and practical funding and financing mechanism to properly implement this Plan.
- ***Objective 6:*** Ensure the Redevelopment Area is safe and clean over the life of the CRA.
- ***Objective 7:*** The City may plan, design, and deliver additional infrastructure improvements or services within the Redevelopment Area, if deemed those improvements enhance the quality or attractiveness of the Redevelopment Area especially with regard to public amenities.
- ***Objective 8:*** Preserve the Historic Facilities within the CRA
- ***Objective 9:*** Provide support, including funding for construction and operation of facilities for Parks and public spaces that will draw visitors to the CRA district while simultaneously building a sense of "Place" in the Downtown Area.
- ***Objective 10:*** Redevelopment Administration

After approval of the CRA Redevelopment Plan and Interlocal Agreement by City Council on April 4, 2023, City staff provide the approved documents to the County. The County staff made changes predominantly to the Interlocal Agreement. The major changes that were revised include:

- The County has agreed to pay 90% of the increment of their ad valorem taxes (not including the fire MSTU fee) to the CRA for the first 20 years and then 80% of the ad valorem for the final 10 years.
- The powers of the CRA were specifically enumerated in the agreement.
- Clarification of the ad valorem taxes that would be contributed to the CRA.
- Language specifying the "sunsetting" of the CRA.

The following timeline outlines the steps completed and remaining steps regarding the creation of the CRA as set forth in the table below:

4/14/2022	City Council	Finding of Necessity and request delegation of authority from the Clay County BOCC

8/9/2022	Clay County BOCC	Approved limited Resolution for the City to create a CRA to: approve CRA appointments and create CRA Redevelopment Plan
9/20/2022	City Council	Appointed Mitch Timberlake and Van Royal to the CRA Board
9/27/2022	Clay County BOCC	Appointed Heather Boucher and Kristin Burke to the CRA Board
10/27/2022	Initial CRA Meeting	1. Appointed Andrea Vallencourt as the 5th CRA Member 2. Identified term limits for each member 3. Elected a Chair / Co-Chair
11/15/2022	City Council	1. Approved CRA Creation Ordinance at 1st Reading
11/17/2022	CRA Meeting	Schedule Review Redevelopment Plan Review
11/29/2022	Planning and Zoning Commission	Review and Approve CRA Redevelopment Plan
12/13/2022	City Council	Adopt Ordinance creating CRA Final Reading,
1/10/2023	CRA	1. Approved Redevelopment Plan and 2. Interlocal Agreement
4/4/2023	City Council Meeting	1. Review and Approve Redevelopment Plan 2. Interlocal Agreement
4/25/2023	BOCC	Resolution delegating the authority to create a CRA to the City of Green Cove Springs through approval of the Redevelopment Plan and Interlocal Agreement
5/16/2023	City Council	Approve revised resolution regarding the CRA Redevelopment Plan and Interlocal Agreement
5/16 & 6/6/2023	City Council	1. Approve First and Second Readings of the CRA Trust Fund Ordinance

FISCAL IMPACT

An estimated $18.9 to $36.1 Million could be generated within the proposed Community Redevelopment Area if said area comes to fruition.

RECOMMENDATION

Staff recommends approval of Resolution R-06-2023, CRA Redevelopment Plan

RECOMMENDED MOTION:

Motion to approve Resolution R-06-2023, CRA Redevelopment Plan

RESOLUTION NO. R-06-2023

A RESOLUTION OF THE CITY OF GREEN COVE SPRINGS, FLORIDA, RELATING TO COMMUNITY REDEVELOPMENT; MAKING FINDINGS; RE-ADOPTING A COMMUNITY REDEVELOPMENT PLAN;; REPEALING RESOLUTIONS IN CONFLICT HEREWITH; PROVIDING FOR SEVERABILITY AND AN EFFECTIVE DATE.

WHEREAS, the Florida Legislature duly enacted Chapter 163, Part III, Florida Statutes (the "Community Redevelopment Act") establishing the conditions and procedures for the establishment of community redevelopment areas and agencies; and

WHEREAS, a community redevelopment plan as contemplated by Part III, Chapter 163, Florida Statutes, has been prepared which addresses the redevelopment needs in a certain area of the City; and

WHEREAS, on April 19, 2022, the City adopted Resolution No. R-03-2022 by which the City (1) ascertained, determined and declared a Finding of Necessity as required by law and determined that the Redevelopment Area (as defined therein) constituted a "blighted area" as defined in Section 163.340(8), Florida Statutes; (2) expressed the need for the creation of a community redevelopment agency to carry out the community redevelopment activities contemplated by Chapter 163, Part III, Florida Statutes; and (3) sought approval from Clay County that the Redevelopment Area meets the criteria described in Section 163.340(8) and 163.355, Florida Statutes and requested delegation of authority to create a community redevelopment agency, adopt a community redevelopment plan and establish a redevelopment trust fund; and

WHEREAS, on May 26, 2022, the City submitted the Finding of Necessity to Create a Redevelopment Agency to the County for review and approval and requested delegation of authority as stated therein; and

WHEREAS, on August 9, 2022, the County found and determined that the establishment of a community redevelopment agency and the establishment of the Redevelopment Area would serve a public purpose and would be consistent with the goals, objectives and policies of the Clay County Comprehensive Plan, and would otherwise be consistent with the controlling provisions of State law. Pursuant to Section 163.410, Florida

Statutes, the County adopted Resolution No. 2021-2022-56 which delegated to the City the limited power to the create a community redevelopment agency and to prepare and adopt a redevelopment plan to be reviewed and approved by the City and the County; and

WHEREAS, on November 29, 2022, the City Planning and Zoning Commission, as the Local Planning Agency, unanimously approved a redevelopment plan; and

WHEREAS, on December 13, 2022, the City established the Green Cove Springs Community Redevelopment Agency ("Agency") pursuant to Ordinance O-24-2022; and

WHEREAS, on January 12, 2023, the Agency approved a revised redevelopment plan dated January 11, 2023, as described in Exhibit A attached hereto (the "Redevelopment Plan") and recommended the Redevelopment Plan be approved by the City Council; and

WHEREAS, on April 4, 2023, the City adopted Resolution No. R-03-2023, approving the Redevelopment Plan which inadvertently deleted certain findings of conformance as required by Section 163.360(7), Florida Statutes; and

WHEREAS, on April 4, 2023, the City Council voted to approve an interlocal agreement with Clay County which was subsequently revised substantially; and

WHEREAS, Clay County approved the Redevelopment Plan on April 25, 2023, and an Interlocal Agreement dated January 11, 2023, as described in Exhibit B attached hereto (the "Interlocal Agreement") by and among the City, County and Agency, pursuant to Resolution 2022/2023-39; and

WHEREAS, the City finds that the rehabilitation, conservation, or redevelopment, or a combination thereof, within the Redevelopment Area as described in the Redevelopment Plan is necessary and in the interest of the public health, safety, morals, or welfare of the residents of the City; and

WHEREAS, the City further finds that the Interlocal Agreement by and among the County, City and Agency furthers the goals and objectives of and is consistent with the Community Redevelopment Act and the Redevelopment Plan; and

WHEREAS, a duly noticed public hearing on this Resolution was held by the Council on May 16, 2023.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF GREEN COVE SPRINGS, FLORIDA:

Section 1. The foregoing recitals are incorporated as part of this Resolution by reference.

Section 2. Finding of Conformance with Comprehensive Plan.

Based upon the evidence, data, analysis and facts presented to it, the City Commission hereby determines and declares that the Community Redevelopment Plan conforms to the City's Comprehensive Plan and complies with the provisions of the Act, including without limitation, Section 163.360, Florida Statutes.

Section 3. Finding of Conformance with Section 163.360(7), Florida Statutes.

The City Council hereby finds the following:

(a) A feasible method exists for the location of families who will be displaced, if any, from the Community Redevelopment Area in decent, safe, and sanitary dwelling accommodations within their means and without undue hardship to such families;

(b) The Community Redevelopment Plan conforms to the general plan of the City as a whole;

(c) The Community Redevelopment Plan gives due consideration to the utilization of community policing innovations, and to the provision of adequate park and recreational areas and facilities that may be desirable for neighborhood improvement, with special consideration for the health, safety, and welfare of children residing in the general vicinity of the site covered by the Community Redevelopment Plan; and

(d) The Community Redevelopment Plan will afford maximum opportunity, consistent with the sound needs of the City as a whole, for the rehabilitation or redevelopment of the Community Redevelopment Area by private enterprise.

Section 4. Adoption of Community Redevelopment Plan.

The City Council hereby re-adopts the Community Redevelopment Plan as the community redevelopment plan for the City of Green Cove Springs Community Redevelopment Area, and hereby authorizes and directs the Green Cove Springs Community Redevelopment Agency to proceed with the implementation of the Plan.

Section 5. The City Council hereby retracts its vote on April 4, 2023 approving a prior version of an interlocal agreement with Clay County and the Interlocal Agreement as set forth in Exhibit B attached hereto is hereby approved and the Mayor is hereby authorized to execute said Agreement.

Section 6. Severability.

If any provision of this Resolution or the application thereof to any person or circumstance is held invalid, the invalidity shall not affect other provisions or applications of the Resolution, which can be given effect without the invalid provision or application, and to this end the provisions of this Resolution, are declared severable.

Section 7. Repeal of Conflicting Resolutions.

All resolutions or parts of resolutions in conflict herewith are hereby repealed.

Section 8. Effective Date.

This Resolution shall take effect upon approval by the City Council.

PASSED AND ADOPTED BY THE CITY COUNCIL OF THE CITY OF GREEN COVE SPRINGS, FLORIDA, THIS _____DAY OF_____, 2023.

_____
Daniel M Johnson., Mayor

ATTEST:

_____
Erin West, City Clerk

Approved as to form:

_____
L.J. Arnold, City Attorney

EXHIBIT A

GREEN COVE Springs

CRA REDEVELOPMENT PLAN

January 11, 2023

Contents

I. EXECUTIVE SUMMARY / FINDING OF NECESSITY I-1

A. EXECUTIVE SUMMARY I-1

1. Plan Funding I-2

B. FINDING OF NECESSITY OBSERVED CONDITIONS I-3

1. Recommendations I-5

C. FINDING OF NECESSITY STUDY I-5

1. Background I-5

2. Study Purpose I-6

3. Community Redevelopment Act Overview I-7

4. Definitions of Slum Area I-8

5. Definitions of Blighted Area I-8

6. Assessment Process I-9

7. Study Area I-9

D. SLUM AND BLIGHTED AREA ANALYSIS I-12

1. Slum I-12

2. Defective or inadequate public transportation facilities I-13

3. Aggregate assessed values do not show appreciable increase over past 5 years I-21

4. Faulty lot layout in relation to size, adequacy, accessibility, or usefulness I-22

5. Unsanitary or unsafe conditions I-23

6. Deterioration of site or other improvements I-29

7. Inadequate and outdated building density patterns I-31

8. Vacancy rates I-34

E. RECOMMENDATIONS I-38

II. AUTHORITY TO UNDERTAKE COMMUNITY REDEVELOPMENT II-1

A. AUTHORITY TO UNDERTAKE COMMUNITY REDEVLOPMENT, CREATION, POWERS II-1

1. Creation of the Community Redevelopment Agency II-1

2. Powers of the Community Redevelopment Agency II-1

3. Community Redevelopment Area II-1

4. The Community Redevelopment Plan II-2

III. INTERLOCAL AGREEMENT WITH CLAY COUNTY III-1

IV. REDEVELOPMENT VISION, OBJECTIVES AND STRATEGIES IV-1

A. APPROACH IV-1
B. VISION FOR THE COMMUNITY REDEVELOPMENT AREA IV-1
C. REDEVELOPMENT OBJECTIVES AND STRATEGIES IV-3
1. Objectives and Strategies IV-3

V. FINANCIAL INFORMATION V-1

A. BASE-YEAR PROPERTY VALUES V-1

VI. LEGAL DESCRIPTION VI-1

VII. CHAPTER 163.370 POWERS VII-1

A. 163.370 POWERS; COUNTIES AND MUNICIPALITIES; COMMUNITY REDEVELOPMENT AGENCIES. VII-1

VIII. APPENDICES VIII-1

List of Figures

Figure I-1. Sidewalk Cracking, Palmer St, near 14 N Magnolia Ave I-14
Figure I-2. Sidewalk Cracking & Loss, Martin Luther King Jr. Blvd I-14
Figure I-3. Deteriorating accessibility feature, Corner of Orange Ave & Center St I-14
Figure I-4. Deteriorating accessibility feature, Southwest Corner of Orange Ave & Palmer St I-15
Figure I-5. Road Disrepair, Walnut St I-15
Figure I-6. Intersection of Green St & Walnut St I-16
Figure I-7. Non-Fixed Obstruction, Martin Luther King Jr. Blvd I-17
Figure I-8. Non-Fixed Obstruction, Martin Luther King Jr. Blvd I-17
Figure I-9. Sidewalk Spalling, Martin Luther King Jr. Blvd I-18
Figure I-10. Sidewalk – Standing Water, Martin Luther King Jr. Blvd. I-18
Figure I-11. Sidewalk Uplift & Spalling, Martin Luther King Jr. Blvd I-19
Figure I-12. Sidewalk Loss, Martin Luther King Jr. Blvd I-19
Figure I-13. Unsafe, Deteriorating Roof, 116 N Magnolia Ave I-24
Figure I-14. Unsafe, Condemned Building, 428 N Orange Ave I-24
Figure I-15. Unsafe, Boarded Openings, 115 N Magnolia Ave I-24
Figure I-16. Unsafe and unsanitary, Openings / Junk Storage, 115 N Magnolia I-25
Figure I-17. Unsafe, No Sidewalk, ROW used for RV Parking, 327 N Orange Ave I-25
Figure I-18. Unsafe, No Sidewalk, across from Figure 5, 425 N Orange Ave I-25
Figure I-19. Unsanitary, Discontinued Gas Pumps, 201 N Orange Ave I-25
Figure I-20. Unsafe, Collapsed Canopy, Petroleum Contamination Site, 100 N Orange Ave I-26
Figure I-21. Unsafe, Low hanging power lines, concrete drive in disrepair, south of 25 N Orange Ave I-26
Figure I-22. Unsafe, ROW in disrepair, business parks in ROW, 3 S Palmetto Ave I-27
Figure I-23. Unsafe, Lack of signage, marked parking spaces, pedestrian safety, 24 Green St I-27
Figure I-24. Unsafe area in front of active commercial building, 1100 Martin Luther King I-28
Figure I-25. Unsafe Structure / Abandoned, 1007 Martin Luther King Jr Blvd I-28
Figure I-26. Unsafe Structure / Abandoned Structure, 1001 Martin Luther King Jr Blvd I-28
Figure I-27. Unsafe Structure / Abandoned Structure, 713 Martin Luther King Jr Blvd I-29

Figure I-28. Unsafe Structure / Abandoned Structure, 613 Martin Luther King Jr. Blvd I-29
Figure I-29. Unsafe Structure / Abandoned Structure, 612 Martin Luther King Jr. Blvd I-29
Figure I-30. Deteriorating Drive / Sidewalk, 220 Palmer I-30
Figure I-31. Deteriorating Drive, 327 N Orange Ave I-30
Figure I-32. Parking lot disrepair, between 604 & 500 Walnut St I-31
Figure I-33. Sidewalk disrepair, between 604 & 500 Walnut St I-31
Figure I-34. Outdated building pattern, 208 N Orange Ave, Food Store I-32
Figure I-35. Outdated building pattern, 425 N Orange Ave, Wells Fargo I-32
Figure I-36. Outdated building pattern, 327 N Orange Ave, Rick Baker's RV I-33
Figure I-37. Low Density Development, 606 Spring St I-33
Figure I-38. Low Density Development, 627 Spring St I-34
Figure I-39. Low Density Development, Not Fronting Street, 702 Ferris St / 709 Spring St I-34
Figure I-40. Undeveloped, Gustafson Property, Pine St (behind house on Walnut St) I-34
Figure I-41. Vacant Lot, Previously 208 N Orange Ave I-35
Figure I-42. Vacant Lot, East of 604 Walnut St I-35
Figure I-43. Vacant Lot, BROWNFIELD, south of 535 N Orange Ave I-36
Figure I-44. Vacant Lot at the northeast corner of Orange Ave &Walburg St I-36
Figure I-45. Vacant Lot at the northwest corner of Orange Ave & Governor St I-37

List of Maps

Map I-1. Green Cove Springs I-1
Map I-2. Study Area I-11
Map I-3. Study Area in Reference to the City I-12
Map I-4. Bus Route – Blue Line I-20
Map I-5. Bus Route – Green Line I-21
Map I-6. Faulty Lots I-23
Map I-7. Vacancy Rates I-38
Map II-1 ..... II-2
Map IV-1. Study Area IV-2

List of Tables

Table I-1. Slum Factors I-4
Table V-1. Project Green Cove Springs CRA TIF Revenues (3% Growth Rate) V-1

01 EXECUTIVE SUMMARY / FINDING OF NECESSITY

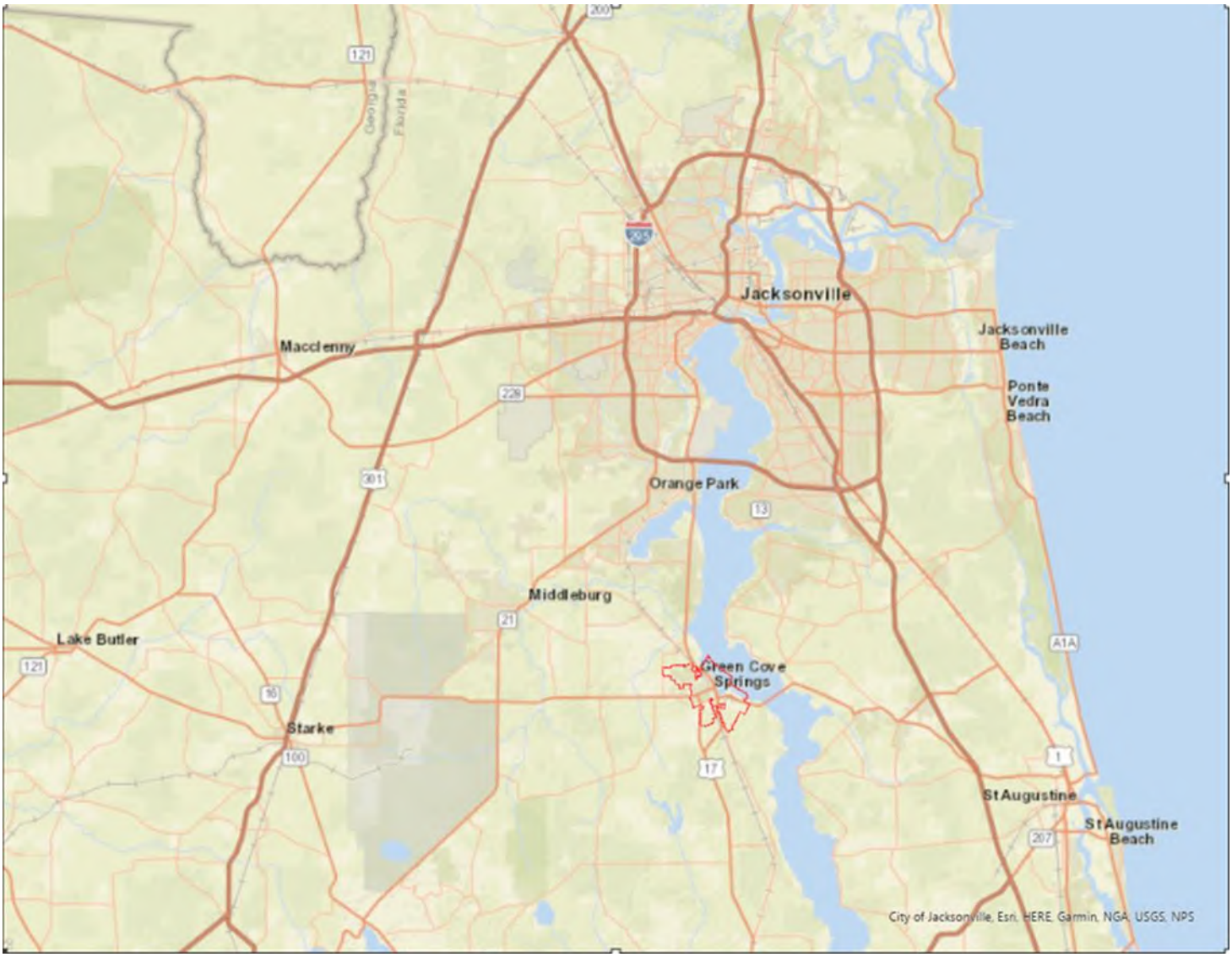
GREEN COVE Springs

I. EXECUTIVE SUMMARY / FINDING OF NECESSITY

A. EXECUTIVE SUMMARY

The Green Cove Springs CRA is located within the city limits of Clay County's most populous city, and it encompasses the City's historic downtown. Green Cove Springs is a welcoming city with a "small-town" atmosphere and urban amenities that make it an increasingly desirable place to live and raise a family, as evidenced by sustained population growth. Green Cove Springs is in the southeastern quadrant of Clay County.

Map I-1. Green Cove Springs



Just 27 miles south of downtown Jacksonville, Florida, and 27 miles northwest of St. Augustine, Green Cove Springs lines the middle bend of the St. Johns River. Originally inhabited by native aboriginals thousands of years ago, the City first began to take shape in 1816 when George I.F. Clarke established the area's first large-scale lumbering operation.

In the 1850s, the area was often referred to as White Sulfur Springs before being renamed to Green Cove Springs in 1866. 'Green' refers to the lush, green vegetation in the area and the natural spring in the City, while 'Cove' refers to the bend of the St. Johns River on which the City was established. Continuing the timber legacy of George Clarke, Green Cove Springs' economy was sustained and amplified by the live oak harvesting industry. Moreover, livestock and hunting activities were increasingly prevalent within the area during the in mid-1800s. However, the area's main attractor of early settlers and tourists was the area's warm springs, which quickly grew in popularity with both Florida residents and traveling northerners in late 19th century. As a testament to the area's early tourism industry, several historic full-service hotels from this era continue to line the St. Johns River.

Shortly after this period, a third industry grew into significance: dairy farming. Gustafson's Farm opened in 1908, eventually becoming one of the largest privately-owned dairies in the southeast region of the United States. In 2004, the operation was purchased by Southeast Milk and changes in consumer taste forced the company to close its centurion Green Cove Springs doors in 2013, which caused a significant loss of local jobs and revenue. Dairy farming was not the only economic stronghold to suffer. The great winter freeze of 1894-1895 inspired railroad owner Henry Flagler to extend his tracks further south towards what is now known as the City of Miami. After Henry Flagler's Florida East Coast (FEC) Railway offered northern Americans access to south Florida locations, such as Palm Beach and Miami, tourism activity greatly declined within Green Cove Springs.

Even with the success of the Gustafson Farm, Green Cover Springs suffered greatly from the American Great Depression of the early 1930s. Fortunately, the military installations, Benjamin Lee Field (renamed Naval Air Station Green Cove Springs) and Camp Blanding, encouraged economic recovery towards the end of the 1930s. The Naval Air Station was purchased by the City after its 1961 decommission but was eventually sold to Louis Reynolds for the construction of the Reynolds Industrial Park with hopes for substantial job creation. The Park remains an important part of the City's future growth.

Green Cove Springs has served as the County Seat of Government for Clay County, Florida since1871, preceding its incorporation as a town on November 2, 1874. Green Cove's last Comprehensive Plan update was in 2011. In 2020, the Census-recorded population was just under 10,000 residents and has grown nearly 16% through 2020. Activity and population increases are anticipated with the completion of the First Coast Expressway (Florida 23) - estimated to begin its final construction phase in 2023. Phase 2, which runs through Clay County, is currently under construction.

As with many small towns across the country, Green Cove Springs's downtown area has witnessed a decline over the years as new developments began to spring up outside of the urban core. This slow decline is true for both commercial and residential areas. As a result, the increase over time of taxable values has not kept up with "newer" areas of town. As shown in table 1 below, the CRA area has shown some redevelopment in the past five years but overall has failed to appreciably increase its aggregate assessed value (AAV) as compared to the City as a whole.

1. Plan Funding

The redevelopment of the Green Cove Springs Community Redevelopment Area will require a substantial financial investment on the part of the CRA. As provided for by Florida's Community Redevelopment

Act, Florida Statutes Chapter 163, Part III, the principal source of funding for the CRA will be through Tax Increment Revenue from the City of Green Cove Springs and Clay County. Additionally, the CRA and the City may utilize other City, County, State, and Federal funding sources, as appropriate and available, to carry out the provisions of the Redevelopment Plan.

As required by F.S. 163.362(10), the Green Cove Springs Redevelopment Plan provides a time certain for completing all redevelopment financed by increment revenues. F.S. 163.362(10)(a) allows the Green Cove Springs CRA to use increment revenue for up to 40 total years after the year the initial Redevelopment Plan was adopted. The initial Green Cove Springs CRA Redevelopment Plan shall be adopted in 2022, therefore the maximum life permitted by statute would be until December 13, 2062.

This Redevelopment Plan contains Goals and Initiatives designed to address slum/blight conditions in the CRA district and attract private sector investment back into the urban core of the City. The projected total increment over the 30-year time horizon of the CRA is between $18,995,996 to $36,171,916.

a. Organization of the Plan

This Redevelopment Plan Amendment is organized into several sections, briefly described as follows:

Section 1 – Executive Summary / Finding of Necessity (Need for a Community Redevelopment Agency) - a Finding of Necessity (FON) in accordance with the Community Redevelopment Act of 1969, Chapter 163, Part III, Florida Statutes is required to determine if slum and / or blight exist within the Study Area

Section 2 – Authority to Undertake Community Redevelopment - provides a summary of certain statutory requirements of the Community Redevelopment Act, as provided for in Florida Statutes 163, Part III

Section 3 – Interlocal Agreement with Clay County - provides the framework for creation of the Green Cove Springs CRA.

Section 4 – Redevelopment Vision, Objectives & Strategies - introduces ten (10) Objectives for Redevelopment with Corresponding strategies for each Objective

Section 5 – Financial Information - contains financial projections, plan cost and timeline

Section 6 – Legal Description - outlines the boundaries of the Green Cove Springs CRA

Section 7 – Powers of a CRA - identifies the powers of the CRA in regards of utilization of funding

Section 8 – Appendices

B. FINDING OF NECESSITY OBSERVED CONDITIONS

This study has been prepared to fulfill the requirements for a Finding of Necessity (FON) in accordance with the Community Redevelopment Act of 1969, Chapter 163, Part III, Florida Statutes. This report has reviewed data from multiple sources including the Clay County Property Appraiser and field observations, which lead to analysis to determine if conditions of slum and / or blight exist within the study area. This report represents the first step in creating a Community Redevelopment Area (CRA) which will use Tax Increment Financing to invest in the area and improve its conditions. There are three statutory conditions that may be evaluated to

determinate a slum condition and fourteen statutory conditions that may be evaluated to determine a blight condition. For a slum condition, only one of the three is required to be met to make a finding of slum. For a blight condition, only two of the fourteen are required to be met to make a finding of blight.

One of three factors of slum was identified as being met, and seven of fourteen factors of blight were determined as being met, satisfying the statutory requirements to determine the Study Area is a slum area as well as a blighted area. With the adoption of this FON, the City Council of Green Cove Springs may designate a Community Redevelopment Area.

Table I-1. Slum Factors

Factor	Met?
(a) Inadequate provision for ventilation, light, air, sanitation, or open spaces;	No
(b) High density of population, compared to the population density of adjacent areas within the county or municipality; and overcrowding, as indicated by government-maintained statistics or other studies and the requirements of the Florida Building Code;	No
(c) The existence of conditions that endanger life or property by fire or other causes.	Yes

Table I-2. Blight Factors

Factor	Met?
(a) Predominance of defective or inadequate street layout, parking facilities, roadways, bridges, or public transportation facilities.	Yes
(b) Aggregate assessed values of real property in the area for ad valorem tax purposes have failed to show any appreciable increase over the 5 years prior to the finding of such conditions.	Yes
(c) Faulty lot layout in relation to size, adequacy, accessibility, or usefulness.	Yes
(d) Unsanitary or unsafe conditions.	Yes
(e) Deterioration of site or other improvements.	Yes
(f) Inadequate and outdated building density patterns.	Yes
(g) Falling lease rates per square foot of office, commercial, or industrial space compared to the remainder of the county or municipality.	Data unavailable

(h) Tax or special assessment delinquency exceeding the fair value of the land.	Not analyzed
(i) Residential and commercial vacancy rates higher in the area than in the remainder of the county or municipality.	Yes
(j) Incidence of crime in the area higher than in the remainder of the county or municipality.	Not analyzed
(k) Fire and emergency medical service calls to the area proportionately higher than in the remainder of the county or municipality.	Not analyzed
(l) A greater number of violations of the Florida Building Code in the area than the number of violations recorded in the remainder of the county or municipality.	Not analyzed
(m) Diversity of ownership or defective or unusual conditions of title which prevent the free alienability of land within the deteriorated or hazardous area.	Not analyzed
(n) Governmentally owned property with adverse environmental conditions caused by a public or private entity.	N/A
(o) A substantial number or percentage of properties damaged by sinkhole activity which have not been adequately repaired or stabilized.	N/A

1. Recommendations

The Study Area meets the criteria established in Section 163.340, Florida Statutes. It is staff recommendation that the City of Green Cove Springs adopt this Finding of Necessity by resolution per F.S. 163.355 and create a Community Redevelopment Agency for the Study Area as defined herein.

C. FINDING OF NECESSITY STUDY

The City of Green Cove Springs seeks to determine the feasibility of designating the Downtown and US 17 Corridor as a Community Redevelopment Area through the development of a Finding of Necessity and would also like to implement redevelopment in this area through the adoption of a Redevelopment Area Plan.

1. Background

Green Cove Springs is a city located along the west bank of the historic St. Johns River and since 1971 has served as the County Seat of Government for Clay County. The 2020 Census identified the population count to be 9,786, a 41.66% increase from the 2010 Census.

The city's name originates from the three physical characteristics. "Green" refers to the perennially green vegetation characterized by its tree scape and foliage. "Cove" refers to a bend in the St. Johns River creating a safe area for mooring of boats during inclement weather periods. "Springs" refers to the natural spring (one of 600 in Florida), originating from the Floridan Aquifer with an estimated flow rate of approximately 2,200 gallons per minute. The spring water flows into the west side of the municipal

swimming pool and then flows out the east side forming a stream eventually emptying into the St. Johns River.

The first inhabitants of the area were attracted to it because of the warm mineral spring, known as "The Boil." The medicinal qualities of the spring and its location along the St. Johns River served as major contributors to the community's development as a prominent attraction and destination for tourists during the 19th Century.

Green Cove Springs has a storied history. It was home to Gustafson's Farm, a family dairy operation owned by Frank and Agnes Gustafson that began in 1908. In the 1930s, the federal government located Benjamin Lee Field within the City. The United States Department of the Navy opened a flight training facility. In the 1950s, major American automakers had dealerships in Green Cove Springs along US 17, which led to the City being known as "the Little Detroit."

The City grew economically and geographically, annexing land to include Magnolia Point Golf and Country Club and Magnolia West to the northwestern end, Cove Plaza on the southern end, and to the southeastern edge, FCT-granted land proposed to be the Ed Gustafson Regional Park as well as 560 acres intended to develop as a 2,100 unit residential subdivision.

In 2005, the City of Green Cove Springs adopted "Tomorrow's Vision" as the guiding vision document for the future of the city. This document established goals for the City such as: maintain the small-town character; provide affordable housing; promote redevelopment in the corridors (US 17 / SR 16); improve traffic circulation; expand recreational opportunities; promote a business-friendly environment; strengthen Code Enforcement. One implementation mechanism included in the visioning document was the potential for a Community Redevelopment Agency. In 2014, the City adopted a Finding of Necessity, but the Community Redevelopment Agency was unable to come to fruition at that time.

Since then, the City has experienced additional growth and undergone further planning activities. In February 2021, the City began the process of updating the comprehensive plan, which was adopted a year later in February 2022. The 2045 Comprehensive Plan is designed to prepare the City for upcoming growth. The Future Land Use Map was amended from 13 categories to 6 categories: Neighborhood (NBD), Downtown (DT), Mixed Use (MU), Mixed-Use Reynolds Park (MURP), Industrial (IND), and Public (PUB). Further, the Future Land Use element established an objective to continue to redevelop and invest in blighted areas of the City, with Policy 1.6.1 directing the City to explore the creation of a Community Redevelopment Agency / Area.

Additionally, the Future Land Use elements directs the City in Policy 1.6.2 to develop a Downtown Master Plan and assess Walnut Street to determine how to increase safety and attractiveness of the streetscape. The Walnut Street assessment was completed in late 2021 and the Downtown Master Plan is underway, with a goal of adopting the plan by mid-April 2022.

2. Study Purpose

This Finding of Necessity will determine if the Study Area meetings the statutory criteria to be designated as a Community Redevelopment Area. With this, the City aims to establish said area in an attempt to halt and reverse the decline within it in order to encourage new development and redevelopment to

improve the overall quality of the area, leading to improved economic conditions, increased vibrancy, and a more established sense of place in the area.

If the Study Area meets the statutory criteria, the City will adopt this Finding of Necessity and seek to move forward with adopting a Redevelopment Plan.

3. Community Redevelopment Act Overview[1]

The Florida Legislature enacted the Community Redevelopment Act (Act) in 1969. The legislature created the law to allow local governments to improve declining areas, as defined in the Act and detailed in subsections below. Such areas are detrimental to the health, safety, and welfare of residents as well as being a nuisance to growth and the provision of adequate infrastructure and housing; the Act provides a way for the local governments to create a Redevelopment Area and fund redevelopment within it.

The Statute defines community redevelopment as local government or community redevelopment agency lead projects in an established community redevelopment area "for the elimination and prevention of the development or spread of slums and blight, or for the reduction or prevention of crime, or for the provision of affordable housing." This may include slum clearance, redevelopment, rehabilitation, or conservation in a community redevelopment area, or any combination or part thereof, pursuant to the community redevelopment plan.

The Act establishes that powers granted by the Act are "for public uses and purposes" which involve the spending of public money and the potential exercise of police power, for which reason public interest, meaning a legitimate concern for general health, safety, and welfare within the area, is a requirement to implement the Act.

The Act further establishes the legitimacy of tax increment financing (TIF) as a method of successfully preserving and enhancing the tax base of an area, which will then serve to increase tax revenues for all taxing authorities for the area, enabling them to carry out their respective objectives more effectively. A redevelopment trust fund may be established by ordinance after the approval of a Community Redevelopment Plan to allow for the deposit of funds to be used by the agency to finance or refinance redevelopment. This fund must be established prior to receipt of any increment revenues. The statutes further state:

> "The annual funding of the redevelopment trust fund shall be in an amount not less than the increment in the income, proceeds, revenues, and funds of each taxing authority derived from or held in connection with the undertaking and carrying out of community redevelopment under this part. Such increment shall be determined annually and shall be that amount equal to 95% of the difference between:
>
> 1. The amount of ad valorem taxes levied each year by each taxing authority, exclusive of any amount from any debt service millage, on taxable real property contained within the geographic boundaries of a community redevelopment area; and
>
> 2. The amount of ad valorem taxes which would have been produced by the rate upon which the tax is levied each year by or for each taxing authority, exclusive of any debt service millage, upon the

[1] The 2022 Florida Statutes, Title XI Chapter 163, Part III

total of the assessed value of the taxable real property in the community redevelopment area as shown upon the most recent assessment roll used in connection with the taxation of such property by each taxing authority prior to the effective date of the ordinance providing for the funding of the trust fund."

Florida Statutes additionally require counties or municipalities seeking to exercise the power granted by the Act to adopt by a resolution "supported by data and analysis, which makes a legislative finding that the conditions in the area meet the criteria" of a slum or blighted area, detailed in 163.340(7) and 163.340(8) and defined below in subsections 2.3.1 and 2.3.2. To make this legislative finding, governing bodies draft a Finding of Necessity (FON), which supports this legislative finding through in-depth analysis of the study area. The analysis contained in this report evaluates the existing conditions and identifies the existence, if any, of a slum or blighted area. This FON will be used by the City in designating and creating the Community Redevelopment Area, if it is determined the area meets the statutory requirements to be classified as a slum or blighted area.

4. Definitions of Slum Area

According to the Florida Statute Section 163.340(7), "slum area" is an area having physical or economic conditions conducive to disease, infant mortality, juvenile delinquency, poverty, or crime because there is a predominance of buildings or improvements, whether residential or nonresidential, which are impaired by reason of dilapidation, deterioration, age, or obsolescence, and exhibiting one or more of the following factors:

(a) "Inadequate provision for ventilation, light, air, sanitation, or open spaces;

(b) High density of population, compared to the population density of adjacent areas within the county or municipality; and overcrowding, as indicated by government-maintained statistics or other studies and the requirements of the Florida Building Code;

or

(c) The existence of conditions that endanger life or property by fire or other causes."

5. Definitions of Blighted Area

According to the Florida Statute Section 163.340(8), "blighted area" means:

an "area in which there are a substantial number of deteriorated or deteriorating structures; in which conditions, as indicated by government-maintained statistics or other studies, endanger life or property or are leading to economic distress; and in which two or more of the following factors are present:

(a) Predominance of defective or inadequate street layout, parking facilities, roadways, bridges, or public transportation facilities.

(b) Aggregate assessed values of real property in the area for ad valorem tax purposes have failed to show any appreciable increase over the 5 years prior to the finding of such conditions.

(c) Faulty lot layout in relation to size, adequacy, accessibility, or usefulness.

(d) Unsanitary or unsafe conditions.

(e) Deterioration of site or other improvements.

(f) Inadequate and outdated building density patterns.

(g) Falling lease rates per square foot of office, commercial, or industrial space compared to the remainder of the county or municipality.

(h) Tax or special assessment delinquency exceeding the fair value of the land.

(i) Residential and commercial vacancy rates higher in the area than in the remainder of the county or municipality.

(j) Incidence of crime in the area higher than in the remainder of the county or municipality.

(k) Fire and emergency medical service calls to the area proportionately higher than in the remainder of the county or municipality.

(l) A greater number of violations of the Florida Building Code in the area than the number of violations recorded in the remainder of the county or municipality.

(m) Diversity of ownership or defective or unusual conditions of title which prevent the free alienability of land within the deteriorated or hazardous area.

(n) Governmentally owned property with adverse environmental conditions caused by a public or private entity.

(o) A substantial number or percentage of properties damaged by sinkhole activity which have not been adequately repaired or stabilized."

The term "blighted area" may also be used for any area in which at least one of the factors identified in paragraphs (a) through (o) is present and all taxing authorities subject to 163.387(2)(a) agree, by interlocal agreement or by resolution, that the area is blighted.

6. Assessment Process

City Staff assessed the Study Area through a multitude of resources, including but not limited to existing data, especially that included in the Green Cove Springs GeoHub; data collected from other departments, especially Public Works and Police; desktop reviews of the area; in person / walking review of the area. Staff assessed the area for many aspects of blight as defined in the Florida Statutes, and this report describes the existing conditions as they relate to these factors.

7. Study Area

The specified Study Area encompasses ±172.8 acres and is known as the Downtown and US 17 Corridor. The corridor spans Orange Avenue from Governor Street on the north end to Oak Street on the south end. The Corridor lies between St. Johns Avenue and Magnolia Avenue on its eastern edge and Pine Avenue on its western edge. The Downtown portion reaches slightly farther to the west and east. On the western side, it is bound by Palmer Street, Green Street, and Bay Street. On the eastern side, it expands diagonally eastward from Magnolia starting at Center Street, culminating at the river's edge with Spring Park property. The area is shown in Map 1.

The Study Area contains primarily commercial and institutional uses. Well known locations within the Study Area include: churches such as Springs Baptist Church, First Presbyterian Church, Doxa Church, and United Methodist Church; County government buildings including the Courthouse, Jail, Supervisor

of Elections, and Administration Building; food / beverage service businesses such as Spring Park Coffee, Dunkin' Donuts, Burger King, La Casita, and Sweet Sensations; financial institutions, including Wells Fargo and VyStar Credit Union; automobile sales lots such as Green Cove Auto and Good Guys Motors as well as service businesses like Jesse's Auto Services and Darren's Custom & Restorations; retail uses like CVS, The Treasure Box, Walgreens, SS Something Special, and Green Cove Liquors; office uses including Exit Magnolia Realty, Vallencourt Construction, and Action Medical Staffing; and an event venue, Clay Theatre. Additionally, there are numerous vacant properties, including the recently demolished 1050 N Orange Ave, which previously housed an abandoned automobile sales lot, as well as the corner of North Street and Orange Avenue, which once housed two buildings and businesses. The Study Area also contains Spring Park, a well-known and loved park featuring the natural spring, a public spring-fed pool, walking trails, swinging benches, play structures, and great views of the St. Johns River. The foregoing list is not meant to be exhaustive but instead meant to provide a feel of the activity within the Study Area.

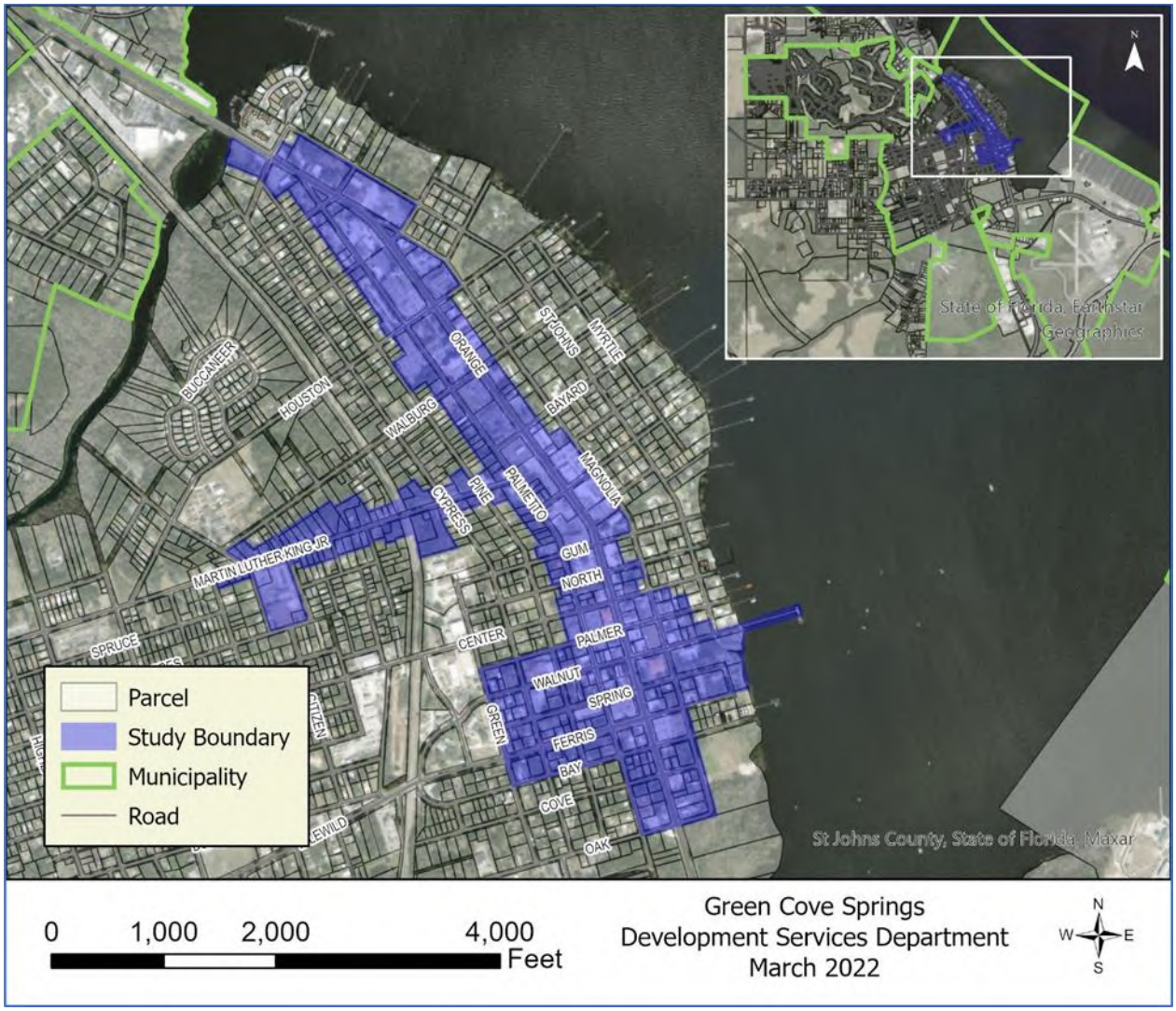
The expanse around the Study Area is primarily residential in nature, with some exception specifically along Martin Luther King Jr Blvd, which features some commercial spaces, as well as east of Green Street, which features County School Board property and related uses.

Within the Study Area, there are some planned or potential improvements. These include a proposed freestanding emergency medical facility operated by St. Vincent's as well as the Palmetto Trail project which will see an eight-foot multi-use path constructed along Palmetto Avenue from its southern end up to the Governors Creek Bridge. As part of the Walnut Street assessment, the City is also planning improvements to Walnut Street, particularly the block between Palmetto Avenue and Orange Avenue.

Map I-2. Study Area

The Study Area is located somewhat centrally within the City, particularly for commercial development. Its location within the boundaries of the City can be viewed in Map 2. The northwest portion of the City consists of two subdivisions and the southeastern portion of the City consists of Reynolds Park / Clay Port – a future mixed-use development operating as an industrial site at present. The Study Area is contained within what is referred to as the Core City. The western portion of the Core City is dominated by residential development with a smattering of institutional development, namely School Board related properties. US 17 / Orange Avenue, Martin Luther King Blvd, and Palmetto Avenue, all within the Study Are, feature commercial development with some residential development as well.

Map I-3. Study Area in Reference to the City



D. SLUM AND BLIGHTED AREA ANALYSIS

City Staff reviewed the Study Area in relation to the statutory requirements for an area to be determined a slum area or a blighted area.

1. Slum

The condition of slum in the Study Area is met under the following criteria:

(c) The existence of conditions that endanger life or property by fire or other causes.

Documentation of existing conditions provided in subsequent sections in this analysis indicates life and / or properties are endangered, specifically by dilapidation; unsecured inhabitable properties; deteriorating roadways, sidewalks, and accessibility features; abandoned homes; and overall deterioration of the Study Area.

2. Defective or inadequate public transportation facilities

The City of Green Cove Springs does not have locally operated public transportation facilities. Public transportation within Clay County, called Clay Community Transportation, is operated by the Jacksonville Transportation Authority.[2] Of 4 available lines, 2 lines travel through Green Cove Springs. These lines operate from 6am to 7pm Monday through Friday, excluding holidays. The lines do include a flex service option wherein customers can call a reservation line to schedule a pick-up from their location that will be accommodated when time allows. The deviation will go as far as a ¾ mile off the route.

The Blue Line (Map 3) has one stop within the Study Area, the Clay County Courthouse (825 N Orange Ave), and one other stop within City Limits, at the Clay County Health Department. There are two stops moderately close to City Limits – the Pier Station stop west of town on State Road 16 and the Challenge Enterprises stop on Enterprise Way just north of town. There is two to three hours between pickups at the local stops, excluding Challenge Enterprises which only has one pickup time and one drop-off time.

The Green Line (Map 4) has one stop within the Study Area (and the City at large), the Clayton and Mildred Revels Senior Center (604 Walnut St). There are three hours between pickups at this stop, and similarly three hours between drop-offs to the location.

There are no options for local transit from residential to commercial or recreational areas of town. Additionally, the sidewalk and roadway conditions through the Study Area are in a poor state. Many streets show deterioration, especially with top layers breaking down, revealing the older brick streets beneath, which creates uneven surfaces. Sidewalks show significant deterioration as well with the following conditions being regularly observed throughout the Study Area:

- Cracking: Locations where the paved surface of the sidewalk has cracked or crumbled

- Uplift: A vertical change in height along a sidewalk (generally where "panels" of the sidewalk meet or where cracking has occurred)

- Fixed Obstructions: Anchored objects (such as utility poles) that reduce sidewalk width

- Non-Fixed Obstruction: Vegetation, non-anchored objects, or uncleanliness that reduces sidewalk width or walkability

- Spalling: Surface deterioration that appears as small indentations in the surface

- Standing Water: Locations where there is or there is evidence of standing water on the sidewalk

- Loss: Locations where a piece or pieces of the sidewalk were removed, whether purposefully for work or through erosion.

Examples of the above defined items are provided in the figures below.

Further, there are many places in the Study Area completely lacking sidewalks, primarily on local streets or only on one side of the street and often without excellent road crossing conditions to get from sidewalk to sidewalk as needed.

[2] Jacksonville Transit Authority, https://www.jtafla.com/ride-jta/regional-services/clay-community-transportation/ accessed 3/14/2022

Such road and sidewalk conditions reduce the ability of the community to safely traverse the Study Area on foot, by micromobility[3] device (bicycle, scooter, skateboard, et cetera) or by motorized vehicle.

Figure I-1. Sidewalk Cracking, Palmer St, near 14 N Magnolia Ave

Figure I-2. Sidewalk Cracking & Loss, Martin Luther King Jr. Blvd

Figure I-3. Deteriorating accessibility feature, Corner of Orange Ave & Center St

[3] Institute for Transportation & Development Policy, https://www.itdp.org/multimedia/defining-micromobility/ accessed 4/7/2022

Figure I-4. Deteriorating accessibility feature, Southwest Corner of Orange Ave & Palmer St

Figure I-5. Road Disrepair, Walnut St

Figure I-6. Intersection of Green St & Walnut St

Figure I-7. Non-Fixed Obstruction, Martin Luther King Jr. Blvd

Figure I-8. Non-Fixed Obstruction, Martin Luther King Jr. Blvd

Figure I-9. Sidewalk Spalling, Martin Luther King Jr. Blvd

Figure I-10. Sidewalk – Standing Water, Martin Luther King Jr. Blvd.

Figure I-11. Sidewalk Uplift & Spalling, Martin Luther King Jr. Blvd

Figure I-12. Sidewalk Loss, Martin Luther King Jr. Blvd

Map I-4. Bus Route – Blue Line[4]

[4] Jacksonville Transportation Authority, https://www.jtafla.com/ride-jta/regional-services/clay-community-transportation/clay-blue-line/

Map I-5. Bus Route – Green Line[5]

3. Aggregate assessed values do not show appreciable increase over past 5 years

The Study Area has experienced some redevelopment in the past five years, but the deterioration present, as shown in later sections, has prevented the Study Area from seeing an appreciable increase in its aggregate assessed value (AAV) as compared to the City as a whole. In Table 1, it is demonstrated that the City as a whole has experienced an increased AAV of 50.71% while the Study Area has only seen an increase of 20.53%.

Table I-3. Aggregate Assessed Value Comparison

Year	Study Area	City
2017	$ 85,088,819.00	$590,524,531.00
2018	$88,913,992.00	$642,232,893.00
2019	$95,646,152.00	$802,652,764.00
2020	$95,809,061.00	$802,652,764.00
2021	$102,557,978.00	$890,001,640.00
% Increase	20.53%	50.71%

[5] Jacksonville Transportation Authority, https://www.jtafla.com/ride-jta/regional-services/clay-community-transportation/clay-green-line/

4. Faulty lot layout in relation to size, adequacy, accessibility, or usefulness

Within the Study Area, approximately 25.6% of the lots could be considered faulty (Map 4). The criteria for this determination were as follows:

- Size: Commercially zoned lots with less than approximately 75 feet of frontage and approximately 100 feet of depth – despite the zoning code identifying no minimum lot requirements in commercial districts, the size of these lots is not suited for adequate commercial development, assuming they are developed individually given the diversity of ownership.

- Adequacy: Lots deemed inadequate are shaped in a manner which decreases their developability.

- Usefulness: Lots deemed less than useful are shaped in a manner which will likely completely prevent or deter their development or redevelopment.

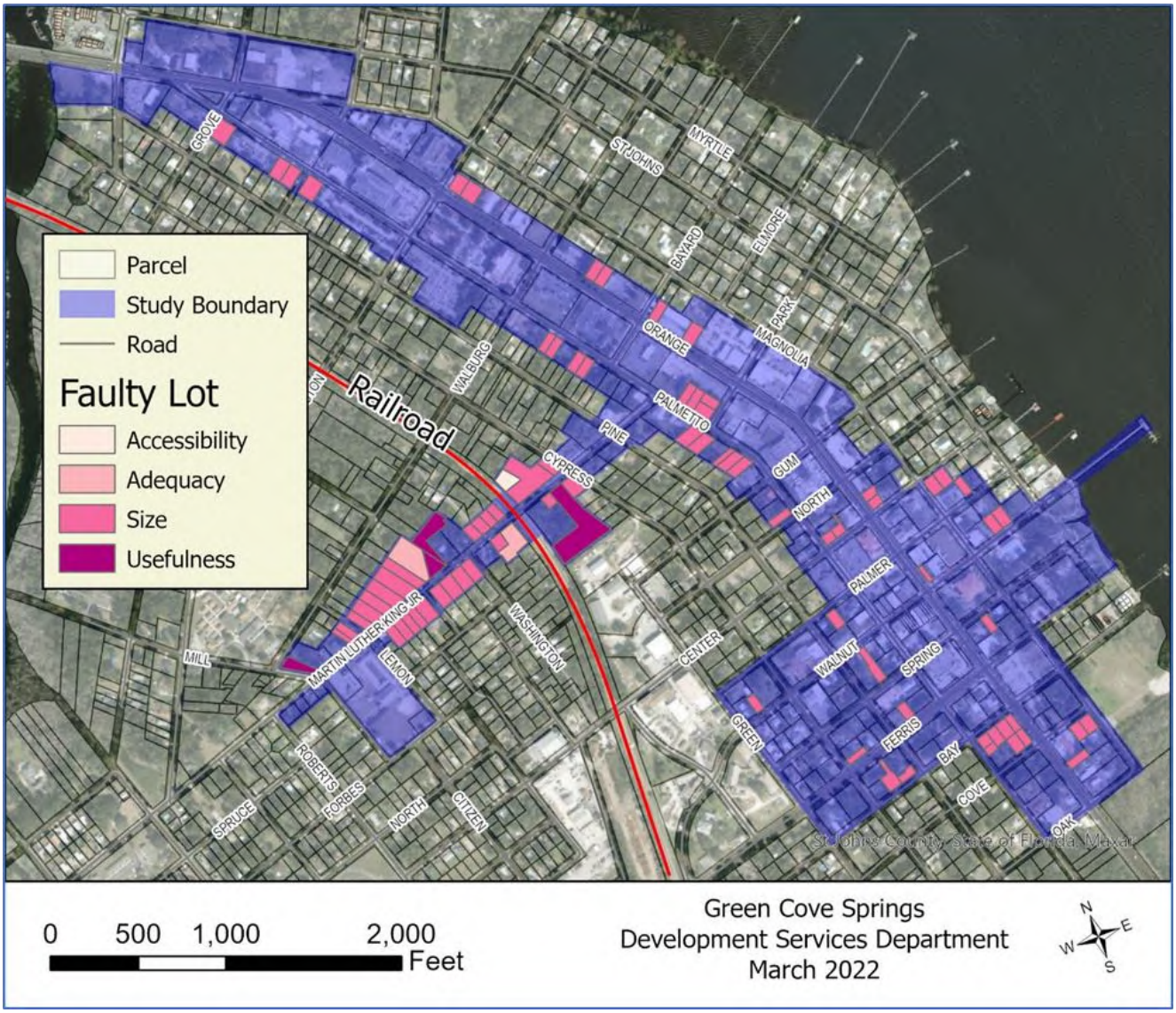
- Accessibility: Lots deemed inaccessible are landlocked.

The City does permit residential development within many commercially zoned areas, and some of the identified lots have historically or recently been developed residentially as a consequence. Ideally, as identified in the Future Land Use Map, these lots would develop commercially or with a mix of uses to better support the neighborhood.

Recent development exemplifies the difficulties with developing commercially on narrow or otherwise small lots. Between 2019 and 2020, Dunkin Donuts constructed a new location within the Study Area – 610 N Orange Ave. The site is approximately 250ft along Orange Avenue (the primary roadway) by 125ft deep. The development received a variance from the City's Zoning Code requirements, which require parking to be to the side or back of a building in the Gateway Commercial Corridor. Due to the depth of the property and the type of development (drive-thru fast food), the lot layout was inadequate to permit development without a variance.

On the basis of the plight of Dunkin Donuts and the criteria identified above, additional lots are truly eligible to be considered faulty within the Study Area, but being that they are already commercially developed, at this time, they are not being considered faulty.

Map I-6. Faulty Lots



5. Unsanitary or unsafe conditions

There are several sites with unsafe or unsanitary conditions located within the Study Area. Figures 13-29 (following) demonstrate the conditions for a portion of these properties.

Field inspection and Google StreetView inspection of the Study Area identified sites with deteriorating or damaged structures which pose a threat to building occupants, condemned or abandoned buildings, incomplete construction projects, lack of sidewalks or blocked rights-of-way (ROW[s]), as well as brownfield sites. There are unsafe commercial spaces where there is either a lack of defined pedestrian versus vehicular space or a lack of maintenance that would keep the area safe for traversing to and from a business.

These figures represent some of the many deteriorating, unsafe, and at times abandoned structures in the area.

Figure I-13. Unsafe, Deteriorating Roof, 116 N Magnolia Ave

Figure I-14. Unsafe, Condemned Building, 428 N Orange Ave

Figure I-15. Unsafe, Boarded Openings, 115 N Magnolia Ave

Figure I-16. Unsafe and unsanitary, Openings / Junk Storage, 115 N Magnolia

Figure I-17. Unsafe, No Sidewalk, ROW used for RV Parking, 327 N Orange Ave

Figure I-18. Unsafe, No Sidewalk, across from Figure 5, 425 N Orange Ave

Figure I-19. Unsanitary, Discontinued Gas Pumps, 201 N Orange Ave

Figure I-20. Unsafe, Collapsed Canopy, Petroleum Contamination Site[6], 100 N Orange Ave

Figure I-21. Unsafe, Low hanging power lines, concrete drive in disrepair, south of 25 N Orange Ave

[6] FL Department of Environmental Protection's Contamination Locator Map, https://prodenv.dep.state.fl.us/DepClnup

Figure I-22. Unsafe, ROW in disrepair, business parks in ROW, 3 S Palmetto Ave

Figure I-23. Unsafe, Lack of signage, marked parking spaces, pedestrian safety, 24 Green St

Figure I-24. Unsafe area in front of active commercial building, 1100 Martin Luther King

Figure I-25. Unsafe Structure / Abandoned, 1007 Martin Luther King Jr Blvd

Figure I-26. Unsafe Structure / Abandoned Structure, 1001 Martin Luther King Jr Blvd

Figure I-27. Unsafe Structure / Abandoned Structure, 713 Martin Luther King Jr Blvd

Figure I-28. Unsafe Structure / Abandoned Structure, 613 Martin Luther King Jr. Blvd

Figure I-29. Unsafe Structure / Abandoned Structure, 612 Martin Luther King Jr. Blvd

6. Deterioration of site or other improvements

In addition to the deterioration of site improvements shown in section 3.5, within the Study Area, there are multiple occurrences of deteriorating improvements, especially access points or paved areas in surrounding buildings. Paving is wearing away or cracking creating hazardous conditions for drivers using the lots to park

or maneuver the site and pedestrians crossing the access points. Figures below provide examples of this type of wear and tear in the corridor.

Figure I-30. Deteriorating Drive / Sidewalk, 220 Palmer

Figure I-31. Deteriorating Drive, 327 N Orange Ave

Figure I-32. Parking lot disrepair, between 604 & 500 Walnut St

Figure I-33. Sidewalk disrepair, between 604 & 500 Walnut St

7. Inadequate and outdated building density patterns

The applicable zoning districts for the Study Area generally include: Central Business District, Gateway Corridor Commercial, Gateway Corridor Neighborhood, and C-1 Neighborhood Commercial. The heart of the Study Area is where the Central Business District is located – also known as the Downtown area. The Gateway districts are located along the "corridor" area, notably US 17 or Orange Ave. The Martin Luther King Blvd corridor is zoned as neighborhood commercial but features primarily low density residential development including active and abandoned residential structures, churches, vacant lots, concrete block commercial buildings lacking transparency and activation.

Figure I-34. Outdated building pattern, 208 N Orange Ave, Food Store

Figure I-35. Outdated building pattern, 425 N Orange Ave, Wells Fargo

Figure I-36. Outdated building pattern, 327 N Orange Ave, Rick Baker's RV

Figure I-37. Low Density Development, 606 Spring St

Figure I-38. Low Density Development, 627 Spring St

Figure I-39. Low Density Development, Not Fronting Street, 702 Ferris St / 709 Spring St

Figure I-40. Undeveloped, Gustafson Property, Pine St (behind house on Walnut St)

8. Vacancy rates

17.1% of properties within the Study Area are classified as vacant by the Clay County Property Appraiser. This level of vacancy within the Study Area is 44.9% higher than that of the rest of the municipality, which has an 11.8% rate of vacancy.

Many of these lots, shown in the figures below, are prime locations that once housed a local business which has since been removed. The lots have yet to have been redeveloped despite their prime locations in the commercial areas of the City.

Figure I-41. Vacant Lot, Previously 208 N Orange Ave

Figure I-42. Vacant Lot, East of 604 Walnut St

Figure I-43. Vacant Lot, BROWNFIELD[7], south of 535 N Orange Ave

Figure I-44. Vacant Lot at the northeast corner of Orange Ave &Walburg St

[7] FL Department of Environmental Protection's Contamination Locator Map, https://prodenv.dep.state.fl.us/DepClnup

Figure I-45. Vacant Lot at the northwest corner of Orange Ave & Governor St

Map I-7. Vacancy Rates

E. RECOMMENDATIONS

The Study Area meets the criteria established in Section 163.340, Florida Statutes (F.S.). It is staff recommendation that the City of Green Cove Springs adopt this Finding of Necessity by resolution per Section 163.355, F.S., and create a Community Redevelopment Agency for the Study Area as defined herein. This will enable redevelopment of the area which is necessary for the safety and economic welfare of the community

.

02

AUTHORITY TO UNDERTAKE COMMUNITY REDEVELOPMENT

GREEN COVE Springs

II. AUTHORITY TO UNDERTAKE COMMUNITY REDEVELOPMENT

A. AUTHORITY TO UNDERTAKE COMMUNITY REDEVLOPMENT, CREATION, POWERS

This document has been prepared under the direction of the Green Cove Springs Community Redevelopment Agency in accordance with the Community Redevelopment Act of 1969, F.S. 163, Part III. In recognition of the need to prevent and eliminate slum and blighted conditions within the community, the Act confers upon counties and municipalities the authority and powers to carry out "Community Redevelopment". For the purposes of this Community Redevelopment Plan, the following definition, taken from the Florida State Statutes, Section 163.340, shall apply:

"Community redevelopment" or "redevelopment" means undertakings, activities, or projects of a county, municipality, or community redevelopment agency in a community redevelopment area for the elimination and prevention of the development or spread of slums and blight, or for the reduction or prevention of crime, or for the provision of affordable housing, whether for rent or for sale, to residents

of low or moderate income, including the elderly, and may include slum clearance and redevelopment in a community redevelopment area or rehabilitation and revitalization of coastal resort and tourist areas that are deteriorating and economically distressed, or rehabilitation or conservation in a community redevelopment area, or any combination or part thereof, in accordance with a community redevelopment plan and may include the preparation of such a plan.

The ability of a county or municipality to utilize the authority granted under the Act is predicated upon the adoption of a "Finding of Necessity" by the governing body which was approved by Resolution R-03-2022 on April 14, 2022.

1. Creation of the Community Redevelopment Agency

Upon the adoption of a "Finding of Necessity" by the governing body and upon further finding that there is a need for a Community Redevelopment Agency to function in the county or municipality to carry out community redevelopment purposes, any county or municipality may create a public body corporate and politic to be known as a "Community Redevelopment Agency". The Agency shall be constituted as a public instrumentality, and the exercise by the Agency of the powers conferred by Chapter 163, Part III, Florida Statutes shall be deemed and held to be the performance of an essential public function (Section 163.356(1) Florida Statutes).

2. Powers of the Community Redevelopment Agency

The Community Redevelopment Act confers a wide array of redevelopment powers to counties and municipalities with home rule charters, as specified in Florida Statute 163.410. As a charter county, Clay County has retained those powers, except as delegated (the "conveyed powers") to the City of Green Cove Springs through incorporation in an Interlocal Agreement to carry out redevelopment activities. The City then, has delegated the conveyed powers to the Community Redevelopment Agency (CRA).

3. Community Redevelopment Area

Pursuant to Statutes, a community redevelopment area must be a slum area, a blighted area, or an area in which there is a shortage of housing that is affordable to residents of low or moderate income, including the elderly.

The Green Cove Springs Community Redevelopment Area generally consists of the older central core of the City and surrounding neighborhoods, which have become deteriorated due to age, obsolescence, and the lack of investment. Unfortunately, a deteriorating area is self- propagating, and as conditions worsen, residents and private businesses become less willing to put their financial resources into the area. This cycle severely limits the ability of private enterprise to stop the spread of slum and blight without public assistance.

Map II-1.

4. The Community Redevelopment Plan

All redevelopment activities expressly authorized by the Community Redevelopment Act and funded by tax increment revenue must be in accordance with a Redevelopment Plan, which shall be approved by the CRA Board, the City of Green Cove Springs and the Clay County Commission. Like the City's Comprehensive Plan, the Community Redevelopment Plan is an evolving document, which may be evaluated and amended on a regular basis to accurately reflect changing conditions and community objectives.

The CRA Plan provides for effective implementation of redevelopment Goals and Initiatives to remove slum and blighted conditions within the CRA district as provided by Florida Statutes.

03

INTERLOCAL AGREEMENT WITH CLAY COUNTY

GREEN COVE Springs

III. INTERLOCAL AGREEMENT WITH CLAY COUNTY

The Green Cove Springs CRA, Green Cove Springs City Council and the Clay County Commission entered into a negotiated Interlocal Agreement that established the terms under which the City of Green Cove Springs could establish a Community Redevelopment Agency. A summary of the terms of the agreement are as follows (see full copy of the Agreement in Section 9, Appendix):

1) The initial term of the Green Cove Springs CRA shall begin on January 1, 2023 and continue for 30 years from that date;

2) The City may extend the CRA Plan based on an affirmative vote of the City of Green Cove Springs and County Commission;

3) The "base year taxable property assessment roll, used to calculate the tax increment to be deposited into the CRA trust fund, shall be 2023;

4) The CRA Redevelopment Plan must be approved by affirmative vote of the County Commission and City Council;

a. The Redevelopment Plan and any amendments shall meet all requirements of state statutes, and contain a detailed statement of the projected costs of redevelopment;

b. Funds shall be used to fund all CRA projects included in the Redevelopment Plan;

c. Redevelopment activities and projects in the Plan must be designed to mitigate slum/blight conditions which were the basis of the Finding of Necessity;

5) The City shall deposit 95% of an amount based on the calculation of increment using the City's millage in that year into the CRA trust fund, unless otherwise provided by the Agreement. The remaining 5% is an administration fee for the City.

6) The CRA may sell bonds and execute notes, and enter other forms of debt or leveraging, as well as collateral documents, to finance capital improvements deemed necessary by the CRA for redevelopment purposes. However, no debts my extend beyond the expiration date of the CRA Plan;

7) The CRA shall abide by all provisions of the Community Redevelopment Act;

8) The County shall, by resolution, delegate to the City all the powers for redevelopment in the Community Redevelopment Act;

9) If the City chooses to establish a CRA and complies with all of the provisions of statute and this agreement to establish the CRA trust fund, the County shall deposit 95% of an amount based on the calculation of increment using the City's millage in that year into the CRA trust fund;

10) The County shall abide by all provisions of the Community Redevelopment Act.

Once the Redevelopment Plan is approved by the CRA, it will be required to be ratified by the City of Green Cove Springs and the Clay County Commission. In addition to the approval of the Redevelopment Plan, the City and County shall also be required to ratify an interlocal agreement pursuant to Section 163.410, Florida Statutes, the Clay County Commission delegated the authority to exercised community redevelopment powers to the City of Green Cove Springs via Resolution 2021/22-56, subject to the conditions in the interlocal agreement- see copy of Resolution 2021/22-56 in Sections 5,6,7 and 8, in Appendix.

04

REDEVLOPMENT VISION, OBJECTIVES & STRATEGIES

GREEN COVE Springs

IV. REDEVELOPMENT VISION, OBJECTIVES AND STRATEGIES

A. APPROACH

This Chapter presents the vision for the Redevelopment Area. In addition, this Chapter identifies potential objectives and strategies, and lays a foundation for the programs and projects to be considered by the City of Green Cove Springs, Clay County, the CRA, and private enterprise in implementing this vision.

Projects, costs, or budgets provided in the Redevelopment Plan are estimated, and will be refined as additional research, plans, and documents are prepared to implement the particular objectives, strategies, resulting programs, and projects. The costs given for budgeting purposes establish the framework for the financial planning analysis.

Costs or budgets should not be construed as exclusively the burden of the public sector. Costs or budgets are intended to be total costs with potential allocations to the public and private sectors assigned on the basis of the encouragement of private enterprise as a tool to carry out a significant portion of this Plan and apparent benefit, value, revenues, or other relevant factors.

B. VISION FOR THE COMMUNITY REDEVELOPMENT AREA

The vision for the Redevelopment Area focuses on creating a vibrant multimodal mixed-use corridor that offer residents and visitors a high-quality destination featuring active uses, pedestrian connections, a safe transportation network, and inviting public spaces in a manner that promotes and accommodates growth while continuing to honor the City's rich small-town charm and history. At the same time, redevelopment efforts shall be complimented with maintaining affordable housing options for residents of low or moderate income, including the elderly. The CRA will support infrastructure and not impact the City's ability to provide an adequate level of service within the Redevelopment Area.

The development of certain segments of the subject corridors will lead to the conversion of the existing, non-sustainable, haphazard development pattern that has occurred along the corridors. The CRA will be treated with improved infrastructure intended to promote area rehabilitation and ultimately the highest and best use of structures. Gateways and wayfinding signage will be developed at key locations as identified in the Downtown Master Plan to identify entry to serve as focal points for the Community Redevelopment Area. Linear features will be beautified with landscape improvements and hardscapes.

The intent of this Plan is to serve as a framework for guiding development and redevelopment in the Redevelopment Area. This Plan identifies redevelopment objectives and lays the foundation for programs and capital projects to be undertaken, which will reverse and remove blight documented in the Findings of Necessity. This Plan addresses implementation strategies that were adopted as part of the Downtown Master Plan. These programs, projects, funding, and administrative opportunities will continue to be refined as they are implemented. It is clearly understood that grants and other revenues (impact fees, general revenue, grants etc.) need to be used in conjunction with available increment revenues to achieve these stated goals. While based on the most accurate data available, the various strategies and costs identified in this Plan will require additional study as specific programs and projects are initiated, refined, and implemented.

The focus of the Plan is the mitigation or correction of the various blighted area conditions documented in the adopted Finding of Necessity Report and the implementation strategies identified in the 2022 Downtown Master Plan. Changing social, physical, and economic conditions could warrant the modification of this Plan. If the Plan is modified, the CRA must comply with Section 163.361, Florida Statutes and applicable County Resolutions.

As the redevelopment process unfolds, a Conceptual Diagram will be generated to illustrate specific improvements planned. The elements shown in the Conceptual Diagram may be relocated or realigned as part of future planning initiatives, so long as modifications are generally consistent with the vision articulated in this Plan. The City Land Development Code (LDC) shall address the redevelopment area's urban design framework.

Map IV-1. Study Area

C. REDEVELOPMENT OBJECTIVES AND STRATEGIES

In partnership with private enterprise and the County, the redevelopment initiative embodied in this Plan will reverse and remove the observed blighted conditions within the Redevelopment Area by leveraging public assets to improve the overall economic condition and the physical condition of the Redevelopment Area. Creating safe, vibrant and pedestrian friendly corridors along US 17 and downtown roadways / featuring more attractive mixed use and commercial opportunity will greatly enhance the quality of life not only for the residents but the population of the City and County at large.

Strategic initiatives are to be identified and placed into action to address, reverse, and remove the blighted area conditions, which have substantially impaired reinvestment activity within the Redevelopment Area; and ultimately will be substantially redeveloped and revitalized as a community focal point to the benefit of City and County residents, businesses, property owners, and visitors through the implementation of this Redevelopment Plan.

Objectives have been identified and placed into action to address, reverse, and remove the blighted area conditions, which have substantially impaired reinvestment activity within the Redevelopment Area; and ultimately will be redeveloped and revitalized as a community focal point for the benefit of City and County residents, businesses, property owners and visitors through the implementation of the plan.

1. Objectives and Strategies

Objective 1: Improve transportation facilities within the Redevelopment Area including sidewalks, crosswalks, bike paths, and other multi-modal options to enhance regional connection. These strategies will correct the blighted conditions of defective or inadequate public transportation facilities (Figures 1-12 and Map 3 & 4 of the Finding of Necessity Report).

1. Sidewalk Repair and obstruction relocation as set forth along Magnolia Avenue, Martin Luther King Jr. Blvd, Orange, Palmer and Center Streets as shown in figures 1-4 , and 7-8,

2. Repair the deterioration of Walnut Street between Green Street and Pine Avenue as shown in figures 5-6 of the Finding of Necessity Report. This will improve safety, traffic flow and access.

3. Provide for updated surveys of downtown roadways to determine right of way widths and obstructions to determine where additional multimodal improvements are viable such as:

a. roadway, sidewalk, and lighting improvements on appropriate streets, and provide safe pedestrian routes.

b. roadway and streetscape improvements based on a phasing plan which emphasizes visual impact in addition to improved access and circulation.

c. Provide the ability for vehicles, pedestrians, and bicyclists to access an enhanced internal transportation network which connects, if applicable, the neighborhoods to services and commercial corridors.

d. Develop and incorporate landscape and lighting design standards to create a safe and inviting environment.

e. Integrate traffic calming techniques throughout the internal roadway system to enhance safety and facilitate a pedestrian/bicycle friendly environment. Traffic calming techniques may include the use of pavers or decorative concrete, raised pavement, roundabouts, change of landscape treatment, and the creation of pedestrian nodes at major intersection, mid-block crossings and other locations where potential conflicts exist between vehicles, pedestrians and bicyclists.

f. Traffic lights, crosswalks, and regulatory/wayfinding signage will be used to enhance the safety of vehicles, pedestrians, and bicyclists in key locations throughout the Redevelopment Area

4. Add curb extensions, and narrow travel lanes and add decorative pedestrian crossings to reduce the pedestrian crossing distance across Orange Avenue at the intersection with Walnut Street. This will improve pedestrian safety and provide a clear sense of arrival into the Downtown and serve to effectively bridge the eastern and western portions of the downtown.

5. Coordinate with the Florida Department of Transportation to reduce travel lane widths, provide and expand landscape buffers, install street trees, and widen sidewalks along the US 17 Corridor to enhance pedestrian comfort, safety and a greater sense of arrival to Green Cove Springs as set forth as implementation phase 1, #11 in the GCS Downtown Master Plan.

6. Promote the Redevelopment Area through designing and implementing a signage and wayfinding system directing traffic to and from the major connectors, and destinations in the region, as set forth in implementation phase 1, #3 of the GCS Downtown Master Plan.

Objective 2: Create a vibrant Downtown area with a mixed-use, multimodal development pattern. These strategies will correct the blighted conditions of faulty lot layout (Figures of the Finding of Necessity Report); unsafe conditions (Pgs. 19 and 21 - 25 of the Finding of Necessity Report); and deterioration of site or other improvements (Pgs. 16, 17, 20 and 24 of the Finding of Necessity Report). In addition, this objective addresses the implementation strategies set forth in the Downtown Master Plan.

1. Implement a Form Based Code with mixed use urban design/development standards for the Downtown Core as set forth in implementation step phase 1, # 4 in the GCS Downtown Master Plan.

The standards will address the incorporation of parking lot layout, building design, landscaping, signage, pedestrian connections, and linkages between land uses through a functional cross access system.

2. Implement the branding and wayfinding plan set forth in the GCS Downtown Master Plan Implementation Phase 1, Step #3. The wayfinding plan will help to establish he unique place the downtown area has within the City and region.

3. Reposition the Green Cove Springs downtown through marketing initiatives to attract targeted uses/industries retain existing businesses and improve the quality of life within the CRA.

4. Provide public art along Walnut Street and Spring Park in coordination with the Clay County Tourism Strategic Plan.

5. Provide the following incentive programs to encourage and support private sector investment and encourage targeted retail development:

a. Anchor Tenant Incentive Program

The Anchor Tenant Incentive Program provides loan-to-grant funding to commercial property owners and/or commercial tenants to assist with interior building improvements and business start-up costs. The goal of the program is primarily to incentivize anchor restaurants and breweries (food and drink establishments), and hotels to establish in Downtown, which in turn will help stimulate the local economy and improve the quality of life for Green Cove Springs residents and visitors. Eligible participants may receive loan-to-grant funding for 35% of the total interior building improvement and business start-up costs, up to a maximum of $75,000. Loan-to-grant funding may exceed $75,000 and be made available to businesses outside the food and drink category if the City is presented with a unique 'catalyst' project. A catalyst project is generally defined as a business that is first-to-market and anticipated to have a catalytic impact that will promote the City of Green Cove Springs Downtown Master Plan vision for a thriving Downtown where people can live, work and play. The term of the loan will be five years from the issuance of a Certificate of Occupancy. For each year the business is open and operating, 20% of the loan will be forgiven. If after five years the business is open and operating, the loan will be forgiven entirely and converted into a grant. Properties that pay no Ad-valorem taxes or are otherwise tax exempt are not eligible. In cases where a portion of a property is tax-exempt, funding may be made only to the taxable portion/percentage of the property. Loan-to-grant funds maybe disbursed to a program participant on a reimbursement basis. The City and program

participant would create a payment schedule based on project milestones. The Incentive Program can also be used for payment of mobility and impact fees.

b. Rental Subsidy Program

The proposed Rental Subsidy Program would provide an 18-month partial rental subsidy (up to $25,000) to qualifying targeted businesses. The funding award would be administered over an 18 consecutive month period. The award recipient would be paid the rent subsidy as agreed upon in an executed performance agreement between the applicant and the City. The applicant must have an executed multi-year lease (two-year minimum) with the owner. A copy of the lease, or binding or proposed multi-year commercial lease agreement must be provided to the city.

c. Business Façade Grant

The Business Façade Grant Program provides a matching grant to commercial property owners and/or commercial tenants, located in the targeted area, to assist with eligible exterior building and site improvements. Eligible applicants include both commercial property owners and business lessees with written authorization of the property owner. Eligible businesses must be from a small business industry sector targeted by the City and may be an individually owned franchise as long as it meets all other criteria. The façade grant award would be a 50% reimbursement of total projects costs with a maximum award of $15,000. Up to $4,000 of the total available may be spent on outdoor furniture and dining fixtures. The grant award amount will decline over time rewarding projects completed in a timely manner. If an awarded project is not started within one year of award, the award will be withdrawn.

d. Tax Increment Fund Rebate

Refunding a portion of City tax revenue generated by on-site/building improvements or new construction (increment) could be another potential incentive to encourage targeted retail development in Downtown Green Cove Springs. The refunded amount would be paid out over a five (5) year period with a declining scale of refunds to be determined by the City. The applicant would enter into a Performance Agreement with the City detailing the proposed capital investment and improvements to be made and the proposed increment rebate amounts and periods. The grant is a reimbursement of a portion of City Ad-Valorem taxes paid by the applicant. The CRA shall utilize the Tax Increment Fund of the Community Redevelopment Agency to provide the tax increment rebate proposed in addition to other

incentives and CRA programming and redevelopment powers as authorized by F.S. 163.360, Part III.

6. When feasible, the City should encourage acquisition and subsequent redevelopment by the private market. Other related activities that may be undertaken by the City include:

a. Map and index all commercial properties in the Redevelopment Area to provide detailed information on parcel boundaries, sizes, and ownership.

b. Identify and inventory all relevant substandard properties.

c. Document and analyze parking demands and infrastructure constraints throughout the Redevelopment Area.

d. Document site criteria for modern mixed-use developments by business type to facilitate the understanding of contemporary developer site and parking requirements.

e. The City may facilitate aggregation and redevelopment of "problem" or constrained parcels or groups of parcels.

f. The City may assist in the purchase, sale, negotiation, and coordination of land assembly. However, the City shall not use eminent domain to acquire land that will be ultimately used or transferred for private development.

g. Identify catalyst sites such as the City property at Walnut and St Johns Avenue to serve as important strategic assets to cause an early and precedent-setting change in the community redevelopment area and to spur other growth.

Objective 3: Increase the Downtown Parking Supply

1. Provide additional parking spaces within City owned property at the Palmetto Avenue and Spring Street intersection, GCS Downtown Master Plan Implementation Phase 1, #7C.

2. Provide Festival Street Parking along Magnolia Avenue between Walnut and Spring Street, GCS Downtown Master Plan Implementation Phase 1, #7D.

3. Provide on-street parking on Magnolia Avenue between Spring and Ferris Street, GCS Downtown Master Plan Implementation Phase 1, #7E.

4. Provide on-street parking along Magnolia Avenue between Oak Street and Ferris Street. (GCS Parking Study Recommendation).

Objective 4: Incorporate housing revitalization through housing maintenance programs and rehabilitation services. These strategies funded through the SHIP and CDBG programs will help correct the blighted conditions of unsanitary or unsafe conditions Unsanitary or unsafe conditions (Figures 13-29 of the Finding of Necessity Report), associated with residential uses; and deterioration of site or other improvements (Figures 30-33 of the Finding of Necessity Report.

1. By addressing the problems associated with substandard and dilapidated housing, the City/CRA will mitigate contributing blight conditions within the Redevelopment Area.

2. In the same manner, redevelopment efforts shall be complimented with efforts to provide affordable/workforce housing to residents of low to moderate income, including the elderly.

3. Promote programs for homeowners to rehabilitate their homes. Such programs include zero interest loans or information on other funding sources for the repair of single and multi-family homes depending on the applicant's income.

4. Assist low-income households through the SHIP program with down payment and closing costs assistance. The assistance may be for the purchase of an existing structure.

5. Infrastructure improvements such as roadway improvements, stormwater, wastewater, and potable water make properties more conducive for development. The City may undertake infrastructure improvements in partnership with private entities. If determined improving the infrastructure of certain properties is beneficial to the City for housing revitalization and blight mitigation within the Redevelopment Area, the CRA may undertake capital improvements on these individual properties.

6. Work with the private sector and Non-Government Organizations to create programs that improve the availability of affordable workforce housing for low to moderate income residents

7. Work with the City of Green Cove Springs and Clay County to encourage development and renovation of Mixed-Use, Affordable, Workforce, and Mixed-Income Housing.

Objective 5: Establish a creative, equitable, efficient and practical funding and financing mechanism to properly implement this Plan. These strategies will correct the blighted conditions of identified in the Finding of Necessity Report and the Implementation steps identified in the Downtown Master Plan.

1. It is important the City/CRA identify and secure all effective sources of funding including, but not necessarily limited to, increment revenues, non-ad valorem assessments, and grant funding revenue.

2. The City/CRA shall be willing to contemplate the issuance of bonds, secure other financial instruments, seek and utilize grants, and seek out other sources and alternatives to aid in implementing this Plan.

Objective 6: Ensure the Redevelopment Area is safe and clean over a period of time. These strategies will correct the blighted conditions of unsanitary or unsafe conditions Unsanitary or unsafe conditions (Figures 13-29 of the Finding of Necessity Report), associated with residential uses; and deterioration of site or other improvements (Figures 30-33 of the Finding of Necessity Report.

1. The City will identify, execute, and coordinate special maintenance standards and programs for public facilities, roadways, open space areas, entries, and commercial uses along the three corridors.

2. The Community Redevelopment Act encourages "community policing innovations." This concept is defined as policing techniques or strategies designed to decrease crime by reducing opportunities for, and increasing the perceived risks of engaging in, criminal activity through visible presence of law enforcement in the community, including, but not limited to, community mobilization, neighborhood watch programs, citizen patrol, foot patrol, or intensified motorized patrol. The City will review these programs to improve the actual and perceived security, building safety, and appearance of the Redevelopment Area.

Objective 7: The City may plan, design, and deliver additional infrastructure improvements or services within the Redevelopment Area, if deemed those improvements enhance the quality or attractiveness of the Redevelopment Area especially with regard to public amenities. These strategies will correct the blighted conditions of unsanitary or unsafe conditions (Pgs. 18, 23 and 24 of the Finding of Necessity Report); and deterioration of site or other improvements (Pgs. 18, 23 and 24 of the Finding of Necessity Report).

1. Such additional infrastructure may include undergrounding utilities in certain areas to achieve a desired visual impact, upgrading technology, and telecommunications availability to attract businesses or the enhancement of landscape areas. Such additional improvements will complement the redevelopment plans for the Redevelopment Area.

2. Additional services may include extraordinary right-of-way or other public area maintenance, planning, and implementing cultural, charitable or place-making activities, events and related services which showcase the Redevelopment Area.

3. The CRA shall acquire land and create / expand regional stormwater retention areas and conveyance systems as needed to accommodate proposed growth

Objective 8: Historic Preservation

1. Support programs that contribute to the renovation and preservation of historic structures and the downtown historic district.

2. Restoration of the Rivers House located at Spring Street and Magnolia Avenue. Provide additional funding to upgrade the Rivers House to address site and building code violations and to approve the visual appeal of a vital community landmark.

Objective 9: Parks/Public Spaces

1. Provide support, including funding, for construction of facilities for Spring Park that will draw visitors to the CRA commercial district while simultaneously building a sense of, "Place," in the downtown area.

2. Work to improve pedestrian access from in the downtown area to Spring Park.

3. Design and construct City Hall Park between City Hall and US 17 (Implementation step #12, Downtown Master Plan).

Objective 10: Redevelopment Administration

As provided for in Florida Statute 163, Part III, the Green Cove Springs Community Redevelopment Agency will utilize Incremental Tax Revenues to fund administration, overhead or any other expenses encumbered to achieve the Redevelopment Goals identified within this CRA Plan, including:

1. Redevelopment planning, surveys, and financial analysis.

2. Acquisition of real property in the CRA District.

3. Clearance and preparation of areas for redevelopment.

4. Repayment of borrowed funds.

5. All expenses related to bonds and other indebtedness.

6. Development of affordable and workforce housing.

7. Provide funding for legal and professional services as needed.

05

FINANCIAL INFORMATION

GREEN COVE Springs

V. FINANCIAL INFORMATION

A. BASE-YEAR PROPERTY VALUES

The base-year for the Green Cove Springs CRA is 2023, as defined in the interlocal agreement between the Green Cove Springs CRA, the City of Green Cove Springs and the Clay County Commission, and the first contributions to the Green Cove Springs CRA Trust Fund will begin after January 1, 2024. Implementation of the CRA Plan is projected to generate approximately $9.7 million in net new property taxes between FY 2023 and 2053. The distribution of these net new taxes is provided in the following estimates. This estimate assumes an annual average growth of TIF of 1.5%.

Table V-1. Project Green Cove Springs CRA TIF Revenues (3% Growth Rate)

	City TIF	County TIF	Total TIF
2024	5,798	9,508	15,306
2025	11,770	19,302	31,072
2026	17,921	29,389	47,310
2027	24,256	39,779	64,036
2028	30,782	50,481	81,263
2029	37,503	61,504	99,007
2030	44,427	72,857	117,284
2031	51,557	84,551	136,109
2032	58,902	96,596	155,498
2033	66,467	109,002	175,469
2034	74,259	121,781	196,040
2035	82,285	134,942	217,227
2036	90,551	148,499	239,050
2037	99,066	162,462	261,528
2038	107,835	176,845	284,680
2039	116,869	191,658	308,527
2040	126,173	206,916	333,089
2041	135,756	222,632	358,388
2042	145,626	238,819	384,446
2043	155,793	255,492	411,285
2044	166,265	272,665	438,930
2045	177,051	290,354	467,404
2046	188,160	308,573	496,733
2047	199,603	327,338	526,941
2048	211,389	346,667	558,055
2049	223,528	366,575	590,103
2050	236,032	387,080	623,113
2051	248,911	408,201	657,112
2052	262,176	429,956	692,132
2053	275,840	452,363	728,202
Total	**$ 3,672,550**	**$ 6,022,789**	**$ 9,695,338**

06

LEGAL DESCRIPTION

GREEN COVE Springs

VI. LEGAL DESCRIPTION

GREEN COVE SPRINGS CRA DESCRIPTION

A PORTION OF SECTION 38, TOWNSHIP 6 SOUTH, RANGE 26 EAST, CLAY COUNTY, FLORIDA TOGETHER WITH PORTIONS OF THE NORTH SUBURBS OF GREEN COVE SPRINGS, AS SHOWN ON MAP RECORDED IN PLAT BOOK 2, PAGE 1 OF THE PUBLIC RECORDS OF SAID COUNTY AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

FOR A POINT OF REFERENCE, COMMENCE AT THE INTERSECTION OF THE SOUTHEASTERLY RIGHT-OF-WAY LINE OF GOVERNOR STREET (A 60 FOOT RIGHT-OF-WAY) WITH THE SOUTHWESTERLY RIGHT-OF-WAY LINE OF ST. JOHNS AVENUE (A 60 FOOT RIGHT-OF-WAY) AND THENCE RUN SOUTHEASTERLY ALONG SAID SOUTHWESTERLY RIGHT-OF-WAY LINE OF ST. JOHNS AVENUE TO AN INTERSECTION WITH THE SOUTHEASTERLY LINE OF LOT 15, BLOCK 3, AFORESAID NORTH SUBURBS OF GREEN COVE SPRINGS AND THE POINT OF BEGINNING; THENCE CONTINUE SOUTHEASTERLY ALONG SAID SOUTHWESTERLY RIGHT-OF-WAY LINE TO AN INTERSECTION WITH THE NORTHWESTERLY RIGHT-OF-WAY LINE OF LAMONT STREET; THENCE SOUTHWESTERLY ALONG SAID NORTHWESTERLY RIGHT-OF-WAY LINE TO AN INTERSECTION WITH THE SOUTHWESTERLY RIGHT-OF-WAY LINE OF NORTH MAGNOLIA AVENUE; THENCE SOUTHEASTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE NORTHWESTERLY RIGHT-OF-WAY LINE OF HOUSTON STREET; THENCE SOUTHWESTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE NORTHWESTERLY PROLONGATION OF THE NORTHEASTERLY LINE OF LOT 22, BLOCK 13, SAID NORTH SUBURBS OF GREEN COVE SPRINGS; THENCE SOUTHEASTERLY ALONG SAID PROLONGATION AND ALONG SAID NORTHEASTERLY LINE OF SAID LOT 22 BLOCK 13 AND THE SOUTHEASTERLY PROLONGATION THEREOF TO AN INTERSECTION WITH THE SOUTHEASTERLY LINE OF THE NORTHWESTERLY 30 FEET OF LOT 6, BLOCK 11, BORDEN PLACE, AS RECORDED IN PLAT BOOK 2, PAGE 57 OF AFORESAID PUBLIC RECORDS. ALSO BEING THE MOST SOUTHERLY CORNER OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 1576, PAGE 2016 OF SAID PUBLIC RECORDS; THENCE NORTHEASTERLY ALONG THE SOUTHEASTERLY LINE OF LAST SAID LANDS TO THE SOUTHWESTERLY RIGHT-OF-WAY LINE OF NORTH MAGNOLIA AVENUE; THENCE SOUTHEASTERLY ALONG LAST SAID LINE TO AN ANGLE POINT; THENCE SOUTHERLY ALONG THE WESTERLY RIGHT-OF-WAY LINE OF SAID NORTH MAGNOLIA AVENUE TO AN INTERSECTION WITH THE NORTHERLY RIGHT-OF-WAY LINE OF GUM STREET; THENCE WESTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE NORTHERLY PROLONGATION OF THE EASTERLY LINE OF LOT 2, BLOCK 35, GREEN COVE SPRINGS, AS RECORDED IN PLAT BOOK 1, PAGES 9 AND 10 AND ALSO IN SAID PLAT BOOK 2, PAGE 1; THENCE SOUTHERLY ALONG LAST SAID LINE AND ALONG THE EASTERLY LINE OF LOTS 2 AND 3, SAID BLOCK 35 TO AN INTERSECTION WITH THE NORTHERLY RIGHT-OF-WAY LINE OF NORTH STREET; THENCE EASTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH SAID WESTERLY RIGHT-OF-WAY LINE OF NORTH MAGNOLIA AVENUE; THENCE SOUTHERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE SOUTHERLY LINE OF LOT 1, BLOCK 32, SAID NORTH SUBURBS OF GREEN COVE SPRINGS; THENCE WESTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE WESTERLY LINE OF THE EASTERLY 80 FEET OF LOT 4, SAID BLOCK 32; THENCE SOUTHERLY ALONG LAST SAID LINE AND THE SOUTHERLY PROLONGATION THEREOF TO AN INTERSECTION WITH THE SOUTHERLY RIGHT-OF-WAY LINE OF CENTER STREET; THENCE EASTERLY ALONG SAID SOUTHERLY RIGHT-OF-WAY LINE OF CENTER STREET TO AN INTERSECTION WITH THE EASTERLY LINE OF LOT 3, BLOCK 8, SAID NORTH SUBURBS OF GREEN COVE SPRINGS; THE SOUTHERLY ALONG LAST SAID LINE TO THE SOUTHEASTERLY CORNER OF SAID LOT 3; THENCE EASTERLY ALONG THE NORTHERLY LINE OF LOT 5, SAID BLOCK 8 TO THE NORTHEASTERLY CORNER

OF SAID LOT 5; THENCE SOUTHERLY ALONG THE EASTERLY LINE OF SAID LOT 5, BLOCK 8 AND THE SOUTHERLY PROLONGATION THEREOF TO THE SOUTHWESTERLY CORNER OF LOT 1, BLOCK 7, SAID NORTH SUBURBS OF GREEN COVE SPRINGS; THENCE EASTERLY ALONG THE SOUTHERLY LINE OF SAID LOT 1, BLOCK 7 TO AN INTERSECTION WITH THE WESTERLY RIGHT-OF-WAY LINE OF ST. JOHNS AVENUE; THENCE SOUTHERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE NORTHERLY RIGHT-OF-WAY LINE OF WALNUT STREET; THENCE EASTERLY ALONG SAID NORTHERLY RIGHT-OF-WAY LINE OF WALNUT STREET TO THE WATERS OF THE ST. JOHNS RIVER; THENCE SOUTHERLY ALONG THE MEAN HIGH WATER LINE OF THE ST. JOHNS RIVER TO THE SUBMERGED LANDS OF THE STATE OF FLORIDA SURROUNDING THE CITY OF GREEN COVE SPRINGS PIER; THENCE EASTERLY, NORTHERLY, EASTERLY, SOUTHERLY, WESTERLY, NORTHERLY AND WESTERLY ALONG SAID SUBMERGED LANDS FOR GREEN COVE SPRINGS PIER TO SAID MEAN HIGH WATER LINE; THENCE SOUTHERLY ALONG SAID WATERS OF THE ST. JOHNS RIVER TO AN INTERSECTION WITH THE SOUTHERLY LINE OF WATER LOT "A", AS PER PLAT RECORDED IN PLAT BOOK 1, PAGE 40 OF THE PUBLIC RECORDS OF SAID COUNTY; THENCE WESTERLY ALONG SAID SOUTHERLY LINE OF LOT "A" AND ALONG THE NORTHERLY RIGHT-OF-WAY LINE OF FERRIS STREET TO AN INTERSECTION WITH THE EASTERLY RIGHT-OF-WAY LINE OF SOUTH MAGNOLIA AVENUE; THENCE SOUTHERLY ALONG SAID EASTERLY RIGHT-OF-WAY LINE OF SOUTH MAGNOLIA AVENUE TO AN INTERSECTION WITH THE SOUTHERLY RIGHT-OF-WAY LINE OF OAK STREET; THENCE WESTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE WESTERLY RIGHT-OF-WAY LINE OF SOUTH PALMETTO AVENUE; THENCE NORTHERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE SOUTHERLY RIGHT-OF-WAY LINE OF BAY STREET; THENCE WESTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE WESTERLY RIGHT-OF-WAY LINE OF GREEN STREET; THENCE NORTHERLY ALONG SAID WESTERLY RIGHT-OF-WAY LINE OF GREEN STREET TO AN INTERSECTION WITH THE NORTHERLY RIGHT-OF-WAY LINE OF PALMER STREET; THENCE EASTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE EASTERLY LINE OF LOT 3, BLOCK 11, SAID NORTH SUBURBS OF GREEN COVE SPRINGS; THENCE NORTHERLY ALONG SAID EASTERLY LINE OF LOT 3, BLOCK 11 AND THE NORTHERLY PROLONGATION THEREOF TO AN INTERSECTION WITH THE NORTHERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 2540, PAGE 267 OF SAID PUBLIC RECORDS; THENCE EASTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE EASTERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 2465, PAGE 1852 OF SAID PUBLIC RECORDS; THENCE NORTHERLY ALONG LAST SAID LINE AND THE NORTHERLY PROLONGATION THEREOF TO AN INTERSECTION WITH THE NORTHERLY RIGHT-OF-WAY LINE OF NORTH STREET; THENCE WESTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE WESTERLY LINE OF LOT 4, BLOCK 37, SAID NORTH SUBURBS OF GREEN COVE SPRINGS; THENCE NORTHERLY ALONG LAST SAID LINE AND THE NORTHERLY PROLONGATION THEREOF TO AN INTERSECTION WITH THE NORTHERLY RIGHT-OF-WAY LINE OF GUM STREET; THENCE WESTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE EASTERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 3291, PAGE 1137 OF SAID PUBLIC RECORDS; THENCE NORTHERLY ALONG SAID EASTERLY LINE OF OFFICIAL RECORDS BOOK 3291, PAGE 1137 TO THE NORTHEASTERLY CORNER THEREOF; THENCE EASTERLY ALONG THE SOUTHERLY LINE OF LOT 1, BLOCK 20, SAID NORTH SUBURBS OF GREEN COVE SPRINGS, TO AN INTERSECTION WITH THE EASTERLY LINE OF THE WEST ONE-HALF OF SAID BLOCK 20; THENCE NORTHWESTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE NORTHERLY LINE OF LOT 4, BLOCK 20, SAID NORTH SUBURBS OF GREEN COVE SPRINGS; THENCE WESTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE NORTHEASTERLY RIGHT-OF-WAY LINE OF PINE AVENUE; THENCE NORTHWESTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE EASTERLY PROLONGATION OF THE SOUTHERLY LINE OF LOT 4, ANNIE JONES SUBDIVISION, AS RECORDED IN PLAT BOOK 1, PAGE 25 OF SAID PUBLIC RECORDS; THENCE WESTERLY ALONG SAID PROLONGATION AND ALONG THE SOUTHERLY LINE OF LOTS 4 AND 5, ANNIE JONES SUBDIVISION TO AN INTERSECTION WITH THE NORTHEASTERLY RIGHT-OF-WAY LINE OF NORTH CYPRESS AVENUE; THENCE NORTHWESTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE EASTERLY PROLONGATION OF THE SOUTHERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 3330, PAGE 916 OF SAID PUBLIC RECORDS; THENCE WESTERLY ALONG SAID PROLONGATION AND ALONG SAID SOUTHERLY LINE OF OFFICIAL RECORDS

BOOK 3330, PAGE 916 TO THE SOUTHWEST CORNER THEREOF; THENCE SOUTHEASTERLY ALONG THE NORTHEASTERLY LINE OF THOSE LANDS RECORDED IN OFFICIAL RECORDS BOOK 337, PAGE 131 OF SAID PUBLIC RECORDS TO AN INTERSECTION WITH THE NORTHERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 1247, PAGE 283 OF SAID PUBLIC RECORDS; THENCE WESTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE NORTHEASTERLY RIGHT-OF-WAY LINE OF A.C.L. RAILROAD; THENCE NORTHWESTERLY ALONG LAST SAID LINE BEING THE ARC OF A CURVE CONCAVE SOUTHWESTERLY TO AN INTERSECTION WITH THE EASTERLY PROLONGATION OF THE SOUTHERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 3243, PAGE 1356 OF SAID PUBLIC RECORDS; THENCE WESTERLY ALONG SAID PROLONGATION AND ALONG SAID SOUTHERLY LINE OF OFFICIAL RECORDS BOOK 3243, PAGE 1356 TO THE SOUTHWESTERLY CORNER THEREOF; THENCE NORTHWESTERLY ALONG THE SOUTHWESTERLY LINE OF LAST SAID LANDS TO AN INTERSECTION WITH THE NORTHERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 3243, PAGE 1356 OF SAID PUBLIC RECORDS; THENCE WESTERLY ALONG LAST SAID LINE AND THE WESTERLY PROLONGATION THEREOF TO AN INTERSECTION WITH THE WESTERLY RIGHT-OF-WAY LINE OF WASHINGTON LANE; THENCE SOUTHERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE SOUTHERLY LINE OF LOT 1, BLOCK 3, OF S.G. BERRIAN'S SUBDIVISION OF LOT 2, BLOCK 28, SAID NORTH SUBURBS OF GREEN COVE SPRINGS; THENCE WESTERLY ALONG THE SOUTHERLY LINE OF LOTS 1, 3, 5 AND 7, SAID BLOCK 3 OF S.G. BERRIAN'S SUBDIVISION TO AN INTERSECTION WITH THE EASTERLY RIGHT-OF-WAY LINE OF FRANKLIN STREET; THENCE SOUTHERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE EASTERLY PROLONGATION OF THE NORTHERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 717, PAGE 19 OF SAID PUBLIC RECORDS; THENCE WESTERLY ALONG LAST SAID LINE AND THE WESTERLY PROLONGATION THEREOF TO AN INTERSECTION WITH THE WESTERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 1383, PAGE 908 OF SAID PUBLIC RECORDS; THENCE NORTHERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE SOUTHERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 3687, PAGE 622 OF SAID PUBLIC RECORDS; THENCE WESTERLY ALONG LAST SAID LINE AND THE WESTERLY PROLONGATION THEREOF TO AN INTERSECTION WITH THE WESTERLY RIGHT-OF-WAY LINE OF LEMON STREET; THENCE SOUTHERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE NORTHERLY RIGHT-OF-WAY LINE OF FORBES STREET; THENCE WESTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE EASTERLY RIGHT-OF-WAY LINE OF BELLE AVENUE; THENCE NORTHERLY ALONG SAID EASTERLY RIGHT-OF-WAY LINE OF BELLE AVENUE TO AN INTERSECTION WITH THE EASTERLY PROLONGATION OF THE SOUTHERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL BOOK 4242, PAGE 2055 OF SAID PUBLIC RECORDS; THENCE WESTERLY ALONG SAID PROLONGATION AND ALONG SAID SOUTHERLY LINE OF OFFICIAL RECORDS BOOK 4242, PAGE 2055 AND THE WESTERLY PROLONGATION THEREOF TO AN INTERSECTION WITH THE EASTERLY RIGHT-OF-WAY LINE OF NORTH ROBERTS STREET; THENCE NORTHERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE SOUTHERLY RIGHT-OF-WAY LINE OF MARTIN LUTHER KING JR BOULEVARD; THENCE EASTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE SOUTHEASTERLY PROLONGATION OF THE NORTHEASTERLY RIGHT-OF-WAY LINE OF MILL STREET; THENCE NORTHWESTERLY ALONG SAID PROLONGATION AND ALONG SAID NORTHEASTERLY RIGHT-OF-WAY LINE OF MILL STREET TO AN INTERSECTION WITH THE SOUTHEASTERLY RIGHT-OF-WAY LINE OF WALBURG STREET; THENCE NORTHEASTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE EASTERLY LINE OF LOT 4 OF L.E. CARTER SUBDIVISION OF LOT 12, BLOCK 29, GREEN COVE SPRINGS, AS RECORDED IN PLAT BOOK 1, PAGE 41 OF SAID PUBLIC RECORDS; THENCE SOUTHEASTERLY ALONG SAID EASTERLY LINE OF LOT 4 TO AN INTERSECTION WITH THE SOUTHERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 1415, PAGE 1724 OF SAID PUBLIC RECORDS; THENCE NORTHEASTERLY ALONG LAST SAID LINE TO THE NORTHEASTERLY CORNER THEREOF, SAID POINT LYING ON THE WESTERLY LINE OF LOT 2 OF SAID L.E. CARTER SUBDIVISION OF LOT 12, BLOCK 29; THENCE NORTHERLY ALONG SAID WESTERLY LINE OF LOT 2 TO THE NORTHWEST CORNER THEREOF; THENCE NORTHEASTERLY ALONG THE NORTHWESTERLY LINE OF SAID LOT 2 AND THE NORTHEASTERLY PROLONGATION THEREOF TO AN INTERSECTION WITH THE NORTHEASTERLY

RIGHT-OF-WAY LINE OF LEMON STREET; THENCE SOUTHEASTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE SOUTHEASTERLY LINE OF LOT D OF LOT 11, BLOCK 29 OF SAID NORTH SUBURBS OF GREEN COVE SPRINGS; THENCE NORTHEASTERLY ALONG THE SOUTHEASTERLY LINE OF LOTS A, B, C AND D OF SAID LOT 11, BLOCK 29 TO THE SOUTHEASTERLY CORNER OF SAID LOT A; THENCE NORTHEASTERLY ALONG THE SOUTHEASTERLY LINE OF LOT 9, SAID BLOCK 29 AND THE NORTHEASTERLY PROLONGATION THEREOF TO AN INTERSECTION WITH THE NORTHEASTERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 1077, PAGE 22 OF SAID PUBLIC RECORDS; THENCE SOUTHEASTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE SOUTHEASTERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 1374, PAGE 366 OF SAID PUBLIC RECORDS; THENCE NORTHEASTERLY ALONG LAST SAID LINE AND ALONG THE SOUTHEASTERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 4690, PAGE 1488 OF SAID PUBLIC RECORDS TO THE SOUTHEASTERLY CORNER THEREOF; THENCE SOUTHEASTERLY ALONG THE SOUTHWESTERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL BOOK 4459, PAGE 356 OF SAID PUBLIC RECORDS TO THE SOUTHWESTERLY CORNER THEREOF; THENCE SOUTHEASTERLY ALONG THE SOUTHWESTERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL BOOK 1213, PAGE 320 OF SAID PUBLIC RECORDS TO THE SOUTHWESTERLY CORNER THEREOF; THENCE EASTERLY ALONG THE SOUTHERLY LINE OF SAID LANDS RECORDED IN OFFICIAL RECORDS BOOK 1213, PAGE 320 TO THE SOUTHEASTERLY CORNER THEREOF; THENCE CONTINUE EASTERLY ALONG THE SOUTHERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 186, PAGE 273 OF SAID PUBLIC RECORDS AND THE EASTERLY PROLONGATION THEREOF TO AN INTERSECTION WITH SAID NORTHEASTERLY RIGHT-OF-WAY LINE OF A.C.L. RAILROAD; THENCE NORTHWESTERLY ALONG LAST SAID LINE BEING THE ARC OF A CURVE CONCAVE SOUTHWESTERLY TO AN INTERSECTION WITH THE NORTHWESTERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 475, PAGE 665 OF SAID PUBLIC RECORDS; THENCE NORTHEASTERLY ALONG LAST SAID LINE AND ALSO ALONG THE NORTHWESTERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 1712, PAGE 188 TO THE MOST NORTHERLY CORNER THEREOF; THENCE SOUTHEASTERLY ALONG THE NORTHEASTERLY LINE OF LAST SAID LANDS TO THE SOUTHWESTERLY CORNER OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 4571, PAGE 1586 OF SAID PUBLIC RECORDS; THENCE EASTERLY ALONG THE SOUTHERLY LINE OF LAST SAID LANDS AND THE EASTERLY PROLONGATION THEREOF TO AN INTERSECTION WITH THE NORTHEASTERLY RIGHT-OF-WAY LINE OF NORTH CYPRESS AVENUE; THENCE SOUTHEASTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE SOUTHERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 1767, PAGE 740 OF SAID PUBLIC RECORDS; THENCE EASTERLY ALONG LAST SAID LINE TO THE SOUTHEASTERLY CORNER THEREOF; THENCE NORTHWESTERLY ALONG THE SOUTHWESTERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 3770, PAGE 1809 OF SAID PUBLIC RECORDS TO THE NORTHWESTERLY CORNER THEREOF; THENCE NORTHEASTERLY ALONG THE NORTHWESTERLY LINE OF LAST SAID LANDS TO AN INTERSECTION WITH THE SOUTHWESTERLY RIGHT-OF-WAY LINE OF NORTH PINE AVENUE; THENCE SOUTHEASTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE WESTERLY PROLONGATION OF THE SOUTHERLY LINE OF LOT 6, BLOCK 21, SAID NORTH SUBURBS OF GREEN COVE SPRINGS; THENCE EASTERLY ALONG SAID PROLONGATION AND ALONG SAID SOUTHERLY LINE OF LOT 6, BLOCK 21 TO THE SOUTHEAST CORNER THEREOF; THENCE NORTHWESTERLY ALONG THE NORTHEASTERLY LINE OF SAID LOT 6, BLOCK 21 AND THE NORTHWESTERLY PROLONGATION THEREOF TO AN INTERSECTION WITH THE NORTHWESTERLY LINE OF THE SOUTHEASTERLY ONE-HALF OF LOT 4, BLOCK 22, SAID NORTH SUBURBS OF GREEN COVE SPRINGS; THENCE SOUTHWESTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE NORTHEASTERLY RIGHT-OF-WAY LINE OF NORTH PINE AVENUE; THENCE NORTHWESTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE SOUTHEASTERLY LINE OF THE NORTHWESTERLY ONE-HALF OF LOT 10, BLOCK 22, SAID NORTH SUBURBS OF GREEN COVE SPRINGS; THENCE NORTHEASTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE NORTHEASTERLY LINE OF SAID LOT 10, BLOCK 22; THENCE NORTHWESTERLY ALONG LAST SAID LINE AND THE NORTHWESTERLY PROLONGATION THEREOF TO AN INTERSECTION WITH THE NORTHWESTERLY RIGHT-OF-WAY LINE OF HOUSTON STREET; THENCE SOUTHWESTERLY ALONG LAST SAID LINE

TO AN INTERSECTION WITH THE NORTHEASTERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 4280, PAGE 977 OF SAID PUBLIC RECORDS; THENCE NORTHWESTERLY ALONG SAID LINE A DISTANCE OF 100 FEET; THENCE NORTHEASTERLY, PARALLEL WITH SAID NORTHWESTERLY RIGHT-OF-WAY LINE OF HOUSTON STREET, A DISTANCE OF 25 FEET; THENCE NORTHWESTERLY ALONG THE NORTHEASTERLY LINE OF LOT 2, BLOCK 23, NORTH SUBURB, IN THE CITY OF GREEN COVE SPRINGS, AS RECORDED IN PLAT BOOK 1, PAGE 40 OF SAID PUBLIC RECORDS AND THE NORTHWESTERLY PROLONGATION THEREOF TO AN INTERSECTION WITH THE SOUTHEASTERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 464, PAGE 103 OF SAID PUBLIC RECORDS, SAID POINT ALSO BEING THE NORTHEASTERLY CORNER OF LOT 10, BLOCK 52, SAID NORTH SUBURBS OF GREEN COVE SPRINGS AS RECORDED IN PLAT BOOK 2, PAGE 1; THENCE SOUTHWESTERLY ALONG THE NORTHWESTERLY LINE OF SAID LOT 10, BLOCK 52 TO AN INTERSECTION WITH THE NORTHEASTERLY RIGHT-OF-WAY LINE OF NORTH PINE AVENUE; THENCE NORTHWESTERLY ALONG LAST SAID LINE AND THE NORTHWESTERLY PROLONGATION THEREOF TO AN INTERSECTION WITH THE SOUTHEASTERLY PROLONGATION OF THE SOUTHWESTERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 4040, PAGE 911 OF SAID PUBLIC RECORDS; THENCE NORTHWESTERLY ALONG SAID PROLONGATION AND ALONG SAID SOUTHWESTERLY LINE OF OFFICIAL RECORDS BOOK 4040, PAGE 911 TO THE SHORELINE OF GOVERNOR'S CREEK AS DESCRIBED IN SAID OFFICIAL RECORDS BOOK 4040, PAGE 911; THENCE NORTHEASTERLY ALONG SAID SHORELINE OF GOVERNOR'S CREEK TO AN INTERSECTION WITH THE SOUTHWESTERLY RIGHT-OF-WAY LINE OF NORTH ORANGE AVENUE (U.S. HIGHWAY 17 / STATE ROAD 15); THENCE SOUTHEASTERLY ALONG SAID SOUTHWESTERLY RIGHT-OF-WAY LINE OF NORTH ORANGE AVENUE TO AN INTERSECTION WITH THE SOUTHEASTERLY RIGHT-OF-WAY LINE OF GOVERNOR STREET; THENCE NORTHEASTERLY, DEPARTING SAID SOUTHWESTERLY RIGHT-OF-WAY LINE, TO THE INTERSECTION OF THE NORTHEASTERLY RIGHT-OF-WAY LINE OF NORTH ORANGE AVENUE WITH THE SOUTHEASTERLY RIGHT-OF-WAY LINE OF GOVERNOR STREET; THENCE NORTHEASTERLY ALONG SAID SOUTHEASTERLY RIGHT-OF-WAY LINE OF GOVERNOR STREET TO AN INTERSECTION WITH THE NORTHEASTERLY LINE OF LOT 18, BLOCK 3, SAID NORTH SUBURBS OF GREEN COVE SPRINGS; THENCE SOUTHEASTERLY ALONG SAID NORTHEASTERLY LINE OF LOT 18, BLOCK 3 AND ALONG THE NORTHEASTERLY LINE OF LOT 16, SAID BLOCK 3, TO THE NORTHEASTERLY CORNER OF SAID LOT 16, BLOCK 3, ALSO BEING THE SOUTHEASTERLY CORNER OF SAID LOT 15, BLOCK 3, NORTH SUBURBS OF GREEN COVE SPRINGS; THENCE NORTHEASTERLY ALONG THE SOUTHEASTERLY LINE OF SAID LOT 15, BLOCK 3 TO AN INTERSECTION WITH THE SOUTHWESTERLY RIGHT-OF-WAY LINE OF ST. JOHNS AVENUE AND THE POINT OF BEGINNING.

07

POWERS OF A CRA

GREEN COVE Springs

VII. CHAPTER 163.370 POWERS

A. 163.370 POWERS; COUNTIES AND MUNICIPALITIES; COMMUNITY REDEVELOPMENT AGENCIES.

1. Counties and municipalities may not exercise the power of eminent domain for the purpose of preventing or eliminating a slum area or blighted area as defined in this part; however, counties and municipalities may acquire property by eminent domain within a community redevelopment area, subject to the limitations set forth in ss. 73.013 and 73.014 or other general law.

2. Every county and municipality shall have all the powers necessary or convenient to carry out and effectuate the purposes and provisions of this part, including the following powers in addition to others herein granted:

a. To make and execute contracts and other instruments necessary or convenient to the exercise of its powers under this part.

b. To disseminate slum clearance and community redevelopment information.

c. To undertake and carry out community redevelopment and related activities within the community redevelopment area, which may include:

1. Acquisition of property within a slum area or a blighted area by purchase, lease, option, gift, grant, bequest, devise, or other voluntary method of acquisition.

2. Demolition and removal of buildings and improvements.

3. Installation, construction, or reconstruction of streets, utilities, parks, playgrounds, public areas of major hotels that are constructed in support of convention centers, including meeting rooms, banquet facilities, parking garages, lobbies, and passageways, and other improvements necessary for carrying out in the community redevelopment area the community redevelopment objectives of this part in accordance with the community redevelopment plan.

4. Disposition of any property acquired in the community redevelopment area at its fair value as provided in s. 163.380 for uses in accordance with the community redevelopment plan.

5. Carrying out plans for a program of voluntary or compulsory repair and rehabilitation of buildings or other improvements in accordance with the community redevelopment plan.

6. Acquisition by purchase, lease, option, gift, grant, bequest, devise, or other voluntary method of acquisition of real property in the community redevelopment area which, under the community redevelopment plan, is to be repaired or rehabilitated for dwelling use or related facilities, repair or rehabilitation of the structures for guidance purposes, and resale of the property.

7. Acquisition by purchase, lease, option, gift, grant, bequest, devise, or other voluntary method of acquisition of any other real property in the community redevelopment area when necessary to eliminate unhealthful, unsanitary, or unsafe conditions; lessen density; eliminate obsolete or other uses detrimental to the public

welfare; or otherwise to remove or prevent the spread of blight or deterioration or to provide land for needed public facilities.

8. Acquisition, without regard to any requirement that the area be a slum or blighted area, of air rights in an area consisting principally of land in highways, railway or subway tracks, bridge or tunnel entrances, or other similar facilities which have a blighting influence on the surrounding area and over which air rights sites are to be developed for the elimination of such blighting influences and for the provision of housing (and related facilities and uses) designed specifically for, and limited to, families and individuals of low or moderate income.

9. Acquisition by purchase, lease, option, gift, grant, bequest, devise, or other voluntary method of acquisition of property in unincorporated enclaves surrounded by the boundaries of a community redevelopment area when it is determined necessary by the agency to accomplish the community redevelopment plan.

10. Construction of foundations and platforms necessary for the provision of air rights sites of housing (and related facilities and uses) designed specifically for, and limited to, families and individuals of low or moderate income.

d. To provide, or to arrange or contract for, the furnishing or repair by any person or agency, public or private, of services, privileges, works, streets, roads, public utilities, or other facilities for or in connection with a community redevelopment; to install, construct, and reconstruct streets, utilities, parks, playgrounds, and other public improvements; and to agree to any conditions that it deems reasonable and appropriate which are attached to federal financial assistance and imposed pursuant to federal law relating to the determination of prevailing salaries or wages or compliance with labor standards, in the undertaking or carrying out of a community redevelopment and related activities, and to include in any contract let in connection with such redevelopment and related activities provisions to fulfill such of the conditions as it deems reasonable and appropriate.

e. Within the community redevelopment area:

1. To enter into any building or property in any community redevelopment area in order to make inspections, surveys, appraisals, soundings, or test borings and to obtain an order for this purpose from a court of competent jurisdiction in the event entry is denied or resisted.

2. To acquire by purchase, lease, option, gift, grant, bequest, devise, or other voluntary method of acquisition any personal or real property, together with any improvements thereon.

3. To hold, improve, clear, or prepare for redevelopment any such property.

4. To mortgage, pledge, hypothecate, or otherwise encumber or dispose of any real property.

5. To insure or provide for the insurance of any real or personal property or operations of the county or municipality against any risks or hazards, including the power to pay premiums on any such insurance.

6. To enter into any contracts necessary to effectuate the purposes of this part.

7. To solicit requests for proposals for redevelopment of parcels of real property contemplated by a community redevelopment plan to be acquired for redevelopment purposes by a community redevelopment agency and, as a result of such requests for proposals, to advertise for the disposition of such real property to private persons pursuant to s. 163.380 prior to acquisition of such real property by the community redevelopment agency.

f. To invest any community redevelopment funds held in reserves or sinking funds or any such funds not required for immediate disbursement in property or securities in which savings banks may legally invest funds subject to their control and to redeem such bonds

as have been issued pursuant to s. 163.385 at the redemption price established therein or to purchase such bonds at less than redemption price, all such bonds so redeemed or purchased to be canceled.

g. To borrow money and to apply for and accept advances, loans, grants, contributions, and any other form of financial assistance from the Federal Government or the state, county, or other public body or from any sources, public or private, for the purposes of this part and to give such security as may be required and to enter into and carry out contracts or agreements in connection therewith; and to include in any contract for financial assistance with the Federal Government for or with respect to community redevelopment and related activities such conditions imposed pursuant to federal laws as the county or municipality deems reasonable and appropriate which are not inconsistent with the purposes of this part.

h. To make or have made all surveys and plans necessary to the carrying out of the purposes of this part; to contract with any person, public or private, in making and carrying out such plans; and to adopt or approve, modify, and amend such plans, which plans may include, but are not limited to:

1. Plans for carrying out a program of voluntary or compulsory repair and rehabilitation of buildings and improvements.

2. Plans for the enforcement of state and local laws, codes, and regulations relating to the use of land and the use and occupancy of buildings and improvements and to the compulsory repair, rehabilitation, demolition, or removal of buildings and improvements.

3. Appraisals, title searches, surveys, studies, and other plans and work necessary to prepare for the undertaking of community redevelopment and related activities.

i. To develop, test, and report methods and techniques, and carry out demonstrations and other activities, for the prevention and the elimination of slums and urban blight and developing and demonstrating new or improved means of providing housing for families and persons of low income.

j. To apply for, accept, and utilize grants of funds from the Federal Government for such purposes.

k. To prepare plans for and assist in the relocation of persons (including individuals, families, business concerns, nonprofit organizations, and others) displaced from a community redevelopment area and to make relocation payments to or with respect to such persons for moving expenses and losses of property for which reimbursement or compensation is not otherwise made, including the making of such payments financed by the Federal Government.

l. To appropriate such funds and make such expenditures as are necessary to carry out the purposes of this part; to zone or rezone any part of the county or municipality or make exceptions from building regulations; and to enter into agreements with a housing authority, which agreements may extend over any period, notwithstanding any provision or rule of law to the contrary, respecting action to be taken by such county or municipality pursuant to any of the powers granted by this part.

m. To close, vacate, plan, or replan streets, roads, sidewalks, ways, or other places and to plan or replan any part of the county or municipality.

n. To organize, coordinate, and direct the administration of the provisions of this part, as they may apply to such county or municipality, in order that the objective of remedying slum and blighted areas and preventing the causes thereof within such county or municipality may be most effectively promoted and achieved and to establish such new office or offices of the county or municipality or to reorganize existing offices in order to carry out such purpose most effectively.

o. To develop and implement community policing innovations.

3. The following projects may not be paid for or financed by increment revenues:

a. Construction or expansion of administrative buildings for public bodies or police and fire buildings, unless each taxing authority agrees to such method of financing for the construction or expansion, or unless the construction or expansion is contemplated as part of a community policing innovation.

b. Installation, construction, reconstruction, repair, or alteration of any publicly owned capital improvements or projects if such projects or improvements were scheduled to be installed, constructed, reconstructed, repaired, or altered within 3 years of the approval of the community redevelopment plan by the governing body pursuant to a previously approved public capital improvement or project schedule or plan of the governing body which approved the community redevelopment plan unless and until such projects or improvements have been removed from such schedule or plan of the governing body and 3 years have elapsed since such removal or such projects or improvements were identified in such schedule or plan to be funded, in whole or in part, with funds on deposit within the community redevelopment trust fund.

c. General government operating expenses unrelated to the planning and carrying out of a community redevelopment plan.

4. With the approval of the governing body, a community redevelopment agency may:

a. Prior to approval of a community redevelopment plan or approval of any modifications of the plan, acquire real property in a community redevelopment area by purchase, lease, option, gift, grant, bequest, devise, or other voluntary method of acquisition; demolish and remove any structures on the property; and pay all costs related to the acquisition, demolition, or removal, including any administrative or relocation expenses.

b. Assume the responsibility to bear any loss that may arise as the result of the exercise of authority under this subsection, in the event that the real property is not made part of the community redevelopment area.

5. A community redevelopment agency shall procure all commodities and services under the same purchasing processes and requirements that apply to the county or municipality that created the agency.

08

APPENDICES

GREEN COVE Springs

VIII. APPENDICES

City Finding of Necessity Resolution
County CRA Delegation Resolution
County approval of CRA Redevelopment Plan and Interlocal Agreement, Resolution 2022-2023-39
Green Cove Springs Downtown Master Plan

RESOLUTION NO. R-03-2022

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF GREEN COVE SPRINGS, FLORIDA, RELATING TO COMMUNITY REDEVELOPMENT; FINDING THE EXISTENCE OF BLIGHT IN AN AREA OF THE CITY OF GREEN COVE SPRINGS, FLORIDA; MAKING CERTAIN FINDINGS AND DETERMINATIONS; FINDING A NEED FOR CREATING A COMMUNITY REDEVELOPMENT AGENCY PURSUANT TO CHAPTER 163, PART III, FLORIDA STATUTES; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the City Council of the City of Green Cove Springs ("City Council") expressed its intention to consider the creation of a community redevelopment area, authorized a study to consider whether a finding of necessity resolution should be adopted, and defined a proposed redevelopment study area within the City of Green Cove Springs ("City); and

WHEREAS, a study has been done, and shall be identified as Exhibit B, supported by data and analysis, of the conditions in that part of the City, known and referred to as the Green Cove Springs Redevelopment Area, depicted in Exhibit "A" hereof (such area being referred to herein as the "Area" or the "Redevelopment Area"); and

WHEREAS, the results of the study have been presented to the City Council for its consideration and included in the public record; and

WHEREAS, after having considered the study's determinations and the facts and evidence of the conditions in the Area and having received and considered such other evidence of the conditions in the Area as have been presented to it, the City Council has determined that the conditions in the Area meet the criteria described in Chapter 163, Part III, Florida Statutes; and

WHEREAS, the City seeks approval from Clay County that the Area meets the criteria described in Chapter 163, Part III, Florida Statutes, and requests delegation of authority to create a Community Redevelopment Agency, adopt a Community Redevelopment Plan, and establish a Redevelopment Trust Fund.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF GREEN COVE SPRINGS, FLORIDA, AS FOLLOWS:

SECTION 1. FINDINGS OF CONDITIONS. Based upon the evidence, data, analysis, and facts presented to it, the City Council does hereby find that the following conditions are present in the Area of the City to be considered a "Blighted area" as specified in Section 163.340(7)©, Florida Statutes (2021):

(C) the existence of conditions that endanger life or property by fire or other causes. (Sec. 163.340(8)(a), F.S.);

SECTION 2. FINDINGS OF CONDITIONS. Based upon the evidence, data, analysis, and facts presented to it, the City Council does hereby find that the following conditions are present in the Area of the City to be considered a "Blighted area" as specified in Section 163.340(7)(c), Florida Statutes (2021):

A. Predominance of defective or inadequate street layout, parking facilities, roadways, bridges, or public transportation facilities.
B. Aggregate assessed values of real property in the area for ad valorem tax purposes have failed to show any appreciable increase over the 5 years prior to finding of such conditions (Sec. 163.340(8)(b), F.S.);
C. Deterioration of site or other improvements (Sec. 163.340(8)(e), F.S.);
D. Inadequate and outdated building density patterns (Sec. 163,340(8)(f), F.S.);
E. Residential and commercial vacancy rates higher in the area than in the remainder of the municipality (Sec. 163.340(8)(i), F.S.);

SECTION 3. FINDING OF NECESSITY. The City Council does hereby make a legislative finding that the conditions of the Area meet the criteria described in Section 163.340(8), Florida Statutes (2021) and the following:

A. One or more slum or blighted areas, or one or more areas in which there is a shortage of housing affordable to residents of low or moderate income, including the elderly, exist in the City; and,
B. The rehabilitation, conservation, or redevelopment, or combination thereof, of such area or areas, including, if appropriate, the development of housing which residents of low or moderate income, including the elderly, can afford, is necessary in the interest of the public health, safety, morals, or welfare of the residents of the City.

SECTION 4. COMMUNITY REDEVELOPMENT AREA. Based upon the facts presented and contained in the public record, the City does hereby find the Area contains conditions of blight as defined in Section 163.340, Florida Statutes (2021), and that such Area constitutes a Community Redevelopment Area as defined in Section 163.340(10), Florida Statutes (2021).

SECTION 5. COMMUNITY REDEVELOPMENT AGENCY. The City Council does hereby expressly find that it is necessary, appropriate, proper, and timely that a Community Redevelopment Agency be created to carry out the community redevelopment contemplated by Chapter 163, Part III, Florida Statutes (2021), to further cause, promote, and encourage rehabilitation, conservation, and redevelopment in the Area.

SECTION 6. DELEGATION OF AUTHORITY. The City Council seeks approval from Clay County that the Area meets the criteria described in Chapter 163, Part III, Florida Statutes (2021), and requests delegation of authority to create a Community Redevelopment Agency, adopt a Community Redevelopment Plan, and establish a Redevelopment Trust Fund.

SECTION 7. EFFECTIVE DATE. This Resolution shall take effect immediately upon its passage.

DONE AND RESOLVED BY THE CITY COUNCIL OF THE CITY OF GREEN COVE SPRINGS, FLORIDA, IN REGULAR SESSION THIS 19TH DAY OF APRIL, 2022.

CITY OF GREEN COVE SPRINGS, FLORIDA

Edward R. Gaw, Mayor

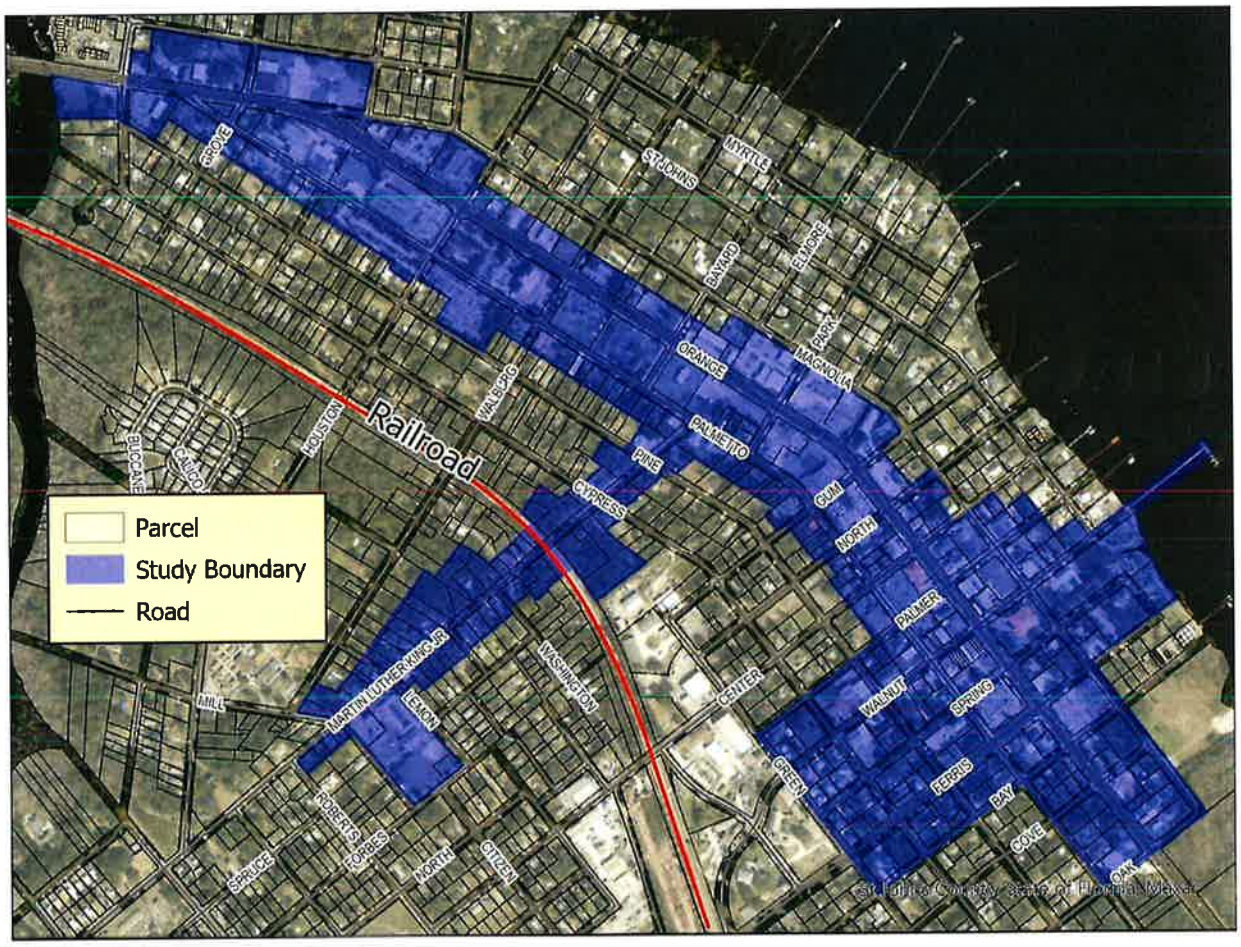
ATTEST:

Erin West, City Clerk

APPROVED AS TO FORM:

L. J. Arnold, III, City Attorney

Exhibit "A"



0 500 1,000 2,000 Feet

Green Cove Springs
Development Services Department
March 2022

Through this, we encourage new development and redevelopment to improve quality of life, enhance economic conditions, increase vibrancy, and better realize the sense of place in key districts of the City.

Downtown / US 17 Finding of Necessity

City of Green Cove Springs, FL

Heather Glisson, Planning Technician

Table of Contents

1. Executive Summary 4
2. Introduction 5
2.1. Background 6
2.2. Study Purpose 7
2.3. Community Redevelopment Act Overview 7
2.3.1. Definitions of Slum Area 8
2.3.2. Definitions of Blighted Area 9
2.3.2. Assessment Process 10
2.4. Study Area 10
3. Slum and Blighted Area Analysis 12
3.1. Slum 12
3.2. Defective or inadequate public transportation facilities 13
3.3. Aggregate assessed values do not show appreciable increase over past 5 years 18
3.4. Faulty lot layout in relation to size, adequacy, accessibility, or usefulness 19
3.5. Unsanitary or unsafe conditions 20
3.6. Deterioration of site or other improvements 24
3.7. Inadequate and outdated building density patterns 25
3.8. Vacancy rates 26
4. Recommendations 28

Maps

Map 1. Study Area 11
Map 2. Study Area in Reference to the City 12
Map 3. Bus Route – Blue Line 17
Map 4. Bus Route – Green Line 18
Map 5. Faulty Lots 20
Map 6. Vacancy Rates 28

Figures

Figure 1. Sidewalk Cracking, Palmer St, near 14 N Magnolia Ave 14
Figure 2. Sidewalk Cracking & Loss, Martin Luther King Jr. Blvd 14
Figure 3. Deteriorating accessibility feature, Corner of Orange Ave & Center St 14
Figure 4. Deteriorating accessibility feature, Southwest Corner of Orange Ave & Palmer St 14
Figure 5. Road Disrepair, Walnut St 15
Figure 6. Road Disrepair, Intersection of Green St & Walnut St 15
Figure 7. Non-Fixed Obstruction, Martin Luther King Jr. Blvd 16

FIGURE 8. NON-FIXED OBSTRUCTION, MARTIN LUTHER KING JR. BLVD....16
FIGURE 9. SIDEWALK SPALLING, MARTIN LUTHER KING JR. BLVD....16
FIGURE 10. SIDEWALK – STANDING WATER, MARTIN LUTHER KING JR. BLVD....16
FIGURE 11. SIDEWALK UPLIFT & SPALLING, MARTIN LUTHER KING JR. BLVD....16
FIGURE 12. SIDEWALK LOSS, MARTIN LUTHER KING JR. BLVD....16
FIGURE 13. UNSAFE, DETERIORATING ROOF, 116 N MAGNOLIA AVE....21
FIGURE 14. UNSAFE, CONDEMNED BUILDING, 428 N ORANGE AVE....21
FIGURE 15. UNSAFE, BOARDED OPENINGS, 115 N MAGNOLIA AVE....21
FIGURE 16. UNSAFE AND UNSANITARY, OPENINGS / JUNK STORAGE, 115 N MAGNOLIA....21
FIGURE 17. UNSAFE, NO SIDEWALK, ROW USED FOR RV PARKING, 327 N ORANGE AVE....21
FIGURE 18. UNSAFE, NO SIDEWALK, ACROSS FROM FIGURE 5, 425 N ORANGE AVE....21
FIGURE 19. UNSANITARY, DISCONTINUED GAS PUMPS, 201 N ORANGE AVE....22
FIGURE 20. UNSAFE, COLLAPSED CANOPY, PETROLEUM CONTAMINATION SITE, 100 N ORANGE AVE....22
FIGURE 21. UNSAFE, LOW HANGING POWER LINES, CONCRETE DRIVE IN DISREPAIR, SOUTH OF 25 N ORANGE AV....22
FIGURE 22. UNSAFE, ROW IN DISREPAIR, BUSINSES PARKS IN ROW, 3 S PALMETTO AVE....22
FIGURE 23. UNSAFE, LACK OF SIGNAGE, MARKED PARKING SPACES, PEDESTRIAN SAFETY, 24 GREEN ST....22
FIGURE 24. UNSAFE AREA IN FRONT OF ACTIVE COMMERCIAL BUILDING, 1100 MARTIN LUTHER KING....23
FIGURE 25. UNSAFE STRUCTURE / ABANDONED, 1007 MARTIN LUTHER KING JR BLVD....23
FIGURE 26. UNSAFE / ABANDONED STRUCTURE, 1001 MARTIN LUTHER KING JR BLVD....23
FIGURE 27. UNSAFE / ABANDONED STRUCTURE, 713 MARTIN LUTHER KING JR BLVD....23
FIGURE 28. UNSAFE / ABANDONED STRUCTURE, 613 MARTIN LUTHER KING JR. BLVD....23
FIGURE 29. UNSAFE STRUCTURE, 612 MARTIN LUTHER KING JR. BLVD....23
FIGURE 30. DETERIORATING DRIVE / SIDEWALK, 220 PALMER....24
FIGURE 31. DETERIORATING DRIVE, 327 N ORANGE AVE....24
FIGURE 32. PARKING LOT DISREPAIR, BETWEEN 604 & 500 WALNUT ST....24
FIGURE 33. SIDEWALK DISREPAIR, BETWEEN 604 & 500 WALNUT ST....24
FIGURE 36. OUTDATED BUILDING PATTERN, 208 N ORANGE AVE, FOOD STORE....25
FIGURE 37. OUTDATED BUILDING PATTERN, 425 N ORANGE AVE, WELLS FARGO....25
FIGURE 38. OUTDATED BUILDING PATTERN, 327 N ORANGE AVE, RICK BAKER'S RV....25
FIGURE 39. LOW DENSITY DEVELOPMENT, 606 SPRING ST....26
FIGURE 40. LOW DENSITY DEVELOPMENT, 627 SPRING ST....26
FIGURE 41. LOW DENSITY DEVELOPMENT, NOT FRONTING STREET, 702 FERRIS ST / 709 SPRING ST....26
FIGURE 42. UNDEVELOPED, GUSTAFSON PROPERTY, PINE ST (BEHIND HOUSE ON WALNUT ST)....26
FIGURE 43. VACANT LOT, PREVIOUSLY 208 N ORANGE AVE....27
FIGURE 44. VACANT LOT, EAST OF 604 WALNUT ST....27
FIGURE 45. VACANT LOT, BROWNFIELD, SOUTH OF 535 N ORANGE AVE....27
FIGURE 46. VACANT LOT AT THE NORTHEAST CORNER OF ORANGE AVE &WALBURG ST....27
FIGURE 47. VACANT LOT AT THE NORTHWEST CORNER OF ORANGE AVE & GOVERNOR ST....27

Tables

TABLE 1. SLUM FACTORS....4
TABLE 2. BLIGHT FACTORS....4
TABLE 3. AGGREGATE ASSESSED VALUE COMPARISON....18

1. Executive Summary

This study has been prepared to fulfill the requirements for a Finding of Necessity (FON) in accordance with the Community Redevelopment Act of 1969, Chapter 163, Part III, Florida Statutes. This report has reviewed data from multiple sources including the Clay County Property Appraiser and field observations, which lead to analysis to determine if conditions of slum and / or blight exist within the study area. This report represents the first step in creating a Community Redevelopment Area (CRA) which will use Tax Increment Financing to invest in the area and improve its conditions. There are three statutory conditions that may be evaluated to determinate a slum condition and fourteen statutory conditions that may be evaluated to determine a blight condition. For a slum condition, only one of the three is required to be met to make a finding of slum. For a blight condition, only two of the fourteen are required to be met to make a finding of blight.

One of three factors of slum was identified as being met, and seven of fourteen factors of blight were determined as being met, satisfying the statutory requirements to determine the Study Area is a slum area as well as a blighted area. With the adoption of this FON, the City Council of Green Cove Springs may designate a Community Redevelopment Area.

Table 1. Slum Factors

Factor	Met?
(a) Inadequate provision for ventilation, light, air, sanitation, or open spaces;	No
(b) High density of population, compared to the population density of adjacent areas within the county or municipality; and overcrowding, as indicated by government-maintained statistics or other studies and the requirements of the Florida Building Code;	No
(c) The existence of conditions that endanger life or property by fire or other causes.	**Yes**

Table 2. Blight Factors

Factor	Met?
(a) Predominance of defective or inadequate street layout, parking facilities, roadways, bridges, or public transportation facilities.	**Yes**
(b) Aggregate assessed values of real property in the area for ad valorem tax purposes have failed to show any appreciable increase over the 5 years prior to the finding of such conditions.	**Yes**
(c) Faulty lot layout in relation to size, adequacy, accessibility, or usefulness.	**Yes**
(d) Unsanitary or unsafe conditions.	**Yes**
(e) Deterioration of site or other improvements.	**Yes**

(f) Inadequate and outdated building density patterns.	**Yes**
(g) Falling lease rates per square foot of office, commercial, or industrial space compared to the remainder of the county or municipality.	Data unavailable
(h) Tax or special assessment delinquency exceeding the fair value of the land.	Not analyzed
(i) Residential and commercial vacancy rates higher in the area than in the remainder of the county or municipality.	**Yes**
(j) Incidence of crime in the area higher than in the remainder of the county or municipality.	Not analyzed
(k) Fire and emergency medical service calls to the area proportionately higher than in the remainder of the county or municipality.	Not analyzed
(l) A greater number of violations of the Florida Building Code in the area than the number of violations recorded in the remainder of the county or municipality.	Not analyzed
(m) Diversity of ownership or defective or unusual conditions of title which prevent the free alienability of land within the deteriorated or hazardous area.	Not analyzed
(n) Governmentally owned property with adverse environmental conditions caused by a public or private entity.	N/A
(o) A substantial number or percentage of properties damaged by sinkhole activity which have not been adequately repaired or stabilized.	N/A

Recommendations

The Study Area meets the criteria established in Section 163.340, Florida Statutes. It is staff recommendation that the City of Green Cove Springs adopt this Finding of Necessity by resolution per F.S. 163.355 and create a Community Redevelopment Agency for the Study Area as defined herein.

2. Introduction

The City of Green Cove Springs seeks to determine the feasibility of designating the Downtown and US 17 Corridor as a Community Redevelopment Area through the development of a Finding of Necessity and would also like to implement redevelopment in this area through the adoption of a Redevelopment Area Plan.

2.1. Background

Green Cove Springs is a city located along the west bank of the historic St. Johns River and since 1971 has served as the County Seat of Government for Clay County. The 2020 Census identified the population count to be 9,786, a 41.66% increase from the 2010 Census.

The city's name originates from the three physical characteristics. "Green" refers to the perennially green vegetation characterized by its tree scape and foliage. "Cove" refers to a bend in the St. Johns River creating a safe area for mooring of boats during inclement weather periods. "Springs" refers to the natural spring (one of 600 in Florida), originating from the Floridan Aquifer with an estimated flow rate of approximately 2,200 gallons per minute. The spring water flows into the west side of the municipal swimming pool and then flows out the east side forming a stream eventually emptying into the St. Johns River.

The first inhabitants of the area were attracted to it because of the warm mineral spring, known as "The Boil." The medicinal qualities of the spring and its location along the St. Johns River served as major contributors to the community's development as a prominent attraction and destination for tourists during the 19th Century.

Green Cove Springs has had a storied history. It was home to Gustafson's Farm, a family dairy operation owned by Frank and Agnes Gustafson that began in 1908. In the 1930s, the federal government located Benjamin Lee Field within the City. The United States Department of the Navy opened a flight training facility. In the 1950s, major American automakers had dealerships in Green Cove Springs along US 17, which led to the City being known as "the Little Detroit."

The City grew economically and geographically, annexing land to include Magnolia Point Golf and Country Club and Magnolia West to the northwestern end, Cove Plaza on the southern end, and to the southeastern edge, FCT-granted land proposed to be the Ed Gustafson Regional Park as well as 560 acres intended to develop as a 2,100 unit residential subdivision.

In 2005, the City of Green Cove Springs adopted "Tomorrow's Vision" as the guiding vision document for the future of the city. This document established goals for the City such as: maintain the small-town character; provide affordable housing; promote redevelopment in the corridors (US 17 / SR 16); improve traffic circulation; expand recreational opportunities; promote a business-friendly environment; strengthen Code Enforcement. One implementation mechanism included in the visioning document was the potential for a Community Redevelopment Agency. In 2014, the City adopted a Finding of Necessity, but the Community Redevelopment Agency was unable to come to fruition at that time.

Since then, the City has experienced additional growth and undergone further planning activities. In February 2021, the City began the process of updating the comprehensive plan, which was adopted a year later in February 2022. The 2045 Comprehensive Plan is designed to prepare the City for upcoming growth. The Future Land Use Map was amended from 13 categories to 6 categories: Neighborhood (NBD), Downtown (DT), Mixed Use (MU), Mixed-Use Reynolds Park (MURP), Industrial (IND), and Public (PUB).

Further, the Future Land Use element established an objective to continue to redevelop and invest in blighted areas of the City, with Policy 1.6.1 directing the City to explore the creation of a Community Redevelopment Agency / Area.

Additionally, the Future Land Use elements directs the City in Policy 1.6.2 to develop a Downtown Master Plan and assess Walnut Street to determine how to increase safety and attractiveness of the streetscape. The Walnut Street assessment was completed in late 2021 and the Downtown Master Plan is underway, with a goal of adopting the plan by mid-April 2022.

2.2. Study Purpose

This Finding of Necessity will determine if the Study Area meetings the statutory criteria to be designated as a Community Redevelopment Area. With this, the City aims to establish said area in an attempt to halt and reverse the decline within it in order to encourage new development and redevelopment to improve the overall quality of the area, leading to improved economic conditions, increased vibrancy, and a more established sense of place in the area.

If the Study Area meets the statutory criteria, the City will adopt this Finding of Necessity and seek to move forward with adopting a Redevelopment Plan.

2.3. Community Redevelopment Act Overview[1]

The Florida Legislature enacted the Community Redevelopment Act (Act) in 1969. The legislature created the law to allow local governments to improve declining areas, as defined in the Act and detailed in subsections below. Such areas are detrimental to the health, safety, and welfare of residents as well as being a nuisance to growth and the provision of adequate infrastructure and housing; the Act provides a way for the local governments to create a Redevelopment Area and fund redevelopment within it.

The Statute defines *community redevelopment* as local government or community redevelopment agency lead projects in an established community redevelopment area "for the elimination and prevention of the development or spread of slums and blight, or for the reduction or prevention of crime, or for the provision of affordable housing." This may include slum clearance, redevelopment, rehabilitation, or conservation in a community redevelopment area, or any combination or part thereof, pursuant to the community redevelopment plan.

The Act establishes that powers granted by the Act are "for public uses and purposes" which involve the spending of public money and the potential exercise of police power, for which reason public interest, meaning a legitimate concern for general health, safety, and welfare within the area, is a requirement to implement the Act.

The Act further establishes the legitimacy of tax increment financing (TIF) as a method of successfully preserving and enhancing the tax base of an area, which will then serve to increase tax revenues for all taxing authorities for the area, enabling them to carry out

[1] The 2021 Florida Statutes, Title XI Chapter 163, Part III

their respective objectives more effectively. A redevelopment trust fund may be established by ordinance after the approval of a Community Redevelopment Plan to allow for the deposit of funds to be used by the agency to finance or refinance redevelopment. This fund must be established prior to receipt of any increment revenues. The statutes further state:

> "The annual funding of the redevelopment trust fund shall be in an amount not less than the increment in the income, proceeds, revenues, and funds of each taxing authority derived from or held in connection with the undertaking and carrying out of community redevelopment under this part. Such increment shall be determined annually and shall be that amount equal to 95% of the difference between:
>
> 1. The amount of ad valorem taxes levied each year by each taxing authority, exclusive of any amount from any debt service millage, on taxable real property contained within the geographic boundaries of a community redevelopment area; and
>
> 2. The amount of ad valorem taxes which would have been produced by the rate upon which the tax is levied each year by or for each taxing authority, exclusive of any debt service millage, upon the total of the assessed value of the taxable real property in the community redevelopment area as shown upon the most recent assessment roll used in connection with the taxation of such property by each taxing authority prior to the effective date of the ordinance providing for the funding of the trust fund."

Florida Statutes additionally require counties or municipalities seeking to exercise the power granted by the Act to adopt by a resolution "supported by data and analysis, which makes a legislative finding that the conditions in the area meet the criteria" of a slum or blighted area, detailed in 163.340(7) and 163.340(8) and defined below in subsections 2.3.1 and 2.3.2. To make this legislative finding, governing bodies draft a Finding of Necessity (FON), which supports this legislative finding through in-depth analysis of the study area. The analysis contained in this report evaluates the existing conditions and identifies the existence, if any, of a slum or blighted area. This FON will be used by the City in designating and creating the Community Redevelopment Area, if it is determined the area meets the statutory requirements to be classified as a slum or blighted area.

2.3.1. Definitions of Slum Area

According to the Florida Statute Section 163.340(7), "slum area" is an area having physical or economic conditions conducive to disease, infant mortality, juvenile delinquency, poverty, or crime because there is a predominance of buildings or improvements, whether residential or nonresidential, which are impaired by reason of dilapidation, deterioration, age, or obsolescence, and exhibiting one or more of the following factors:

(a) "Inadequate provision for ventilation, light, air, sanitation, or open spaces;

(b) High density of population, compared to the population density of adjacent areas within the county or municipality; and overcrowding, as indicated by government-maintained statistics or other studies and the requirements of the Florida Building Code;

or

(c) The existence of conditions that endanger life or property by fire or other causes."

2.3.2. Definitions of Blighted Area

According to the Florida Statute Section 163.340(8), "blighted area" means:

an "area in which there are a substantial number of deteriorated or deteriorating structures; in which conditions, as indicated by government-maintained statistics or other studies, endanger life or property or are leading to economic distress; and in which two or more of the following factors are present:

(a) Predominance of defective or inadequate street layout, parking facilities, roadways, bridges, or public transportation facilities.

(b) Aggregate assessed values of real property in the area for ad valorem tax purposes have failed to show any appreciable increase over the 5 years prior to the finding of such conditions.

(c) Faulty lot layout in relation to size, adequacy, accessibility, or usefulness.

(d) Unsanitary or unsafe conditions.

(e) Deterioration of site or other improvements.

(f) Inadequate and outdated building density patterns.

(g) Falling lease rates per square foot of office, commercial, or industrial space compared to the remainder of the county or municipality.

(h) Tax or special assessment delinquency exceeding the fair value of the land.

(i) Residential and commercial vacancy rates higher in the area than in the remainder of the county or municipality.

(j) Incidence of crime in the area higher than in the remainder of the county or municipality.

(k) Fire and emergency medical service calls to the area proportionately higher than in the remainder of the county or municipality.

(l) A greater number of violations of the Florida Building Code in the area than the number of violations recorded in the remainder of the county or municipality.

(m) Diversity of ownership or defective or unusual conditions of title which prevent the free alienability of land within the deteriorated or hazardous area.

(n) Governmentally owned property with adverse environmental conditions caused by a public or private entity.

(o) A substantial number or percentage of properties damaged by sinkhole activity which have not been adequately repaired or stabilized."

The term "blighted area" may also be used for any area in which at least one of the factors identified in paragraphs (a) through (o) is present and all taxing authorities subject to 163.387(2)(a) agree, by interlocal agreement or by resolution, that the area is blighted.

2.3.2. Assessment Process

City Staff assessed the Study Area through a multitude of resources, including but not limited to existing data, especially that included in the Green Cove Springs GeoHub; data collected from other departments, especially Public Works and Police; desktop reviews of the area; in person / walking review of the area. Staff assessed the area for many aspects of blight as defined in the Florida Statutes, and this report describes the existing conditions as they relate to these factors.

2.4. Study Area

The specified Study Area encompasses ±172.8 acres and is known as the Downtown and US 17 Corridor. The corridor spans Orange Avenue from Governor Street on the north end to Oak Street on the south end. The Corridor lies between St. Johns Avenue and Magnolia Avenue on its eastern edge and Pine Avenue on its western edge. The Downtown portion reaches slightly farther to the west and east. On the western side, it is bound by Palmer Street, Green Street, and Bay Street. On the eastern side, it expands diagonally eastward from Magnolia starting at Center Street, culminating at the river's edge with Spring Park property. The area is shown in Map 1.

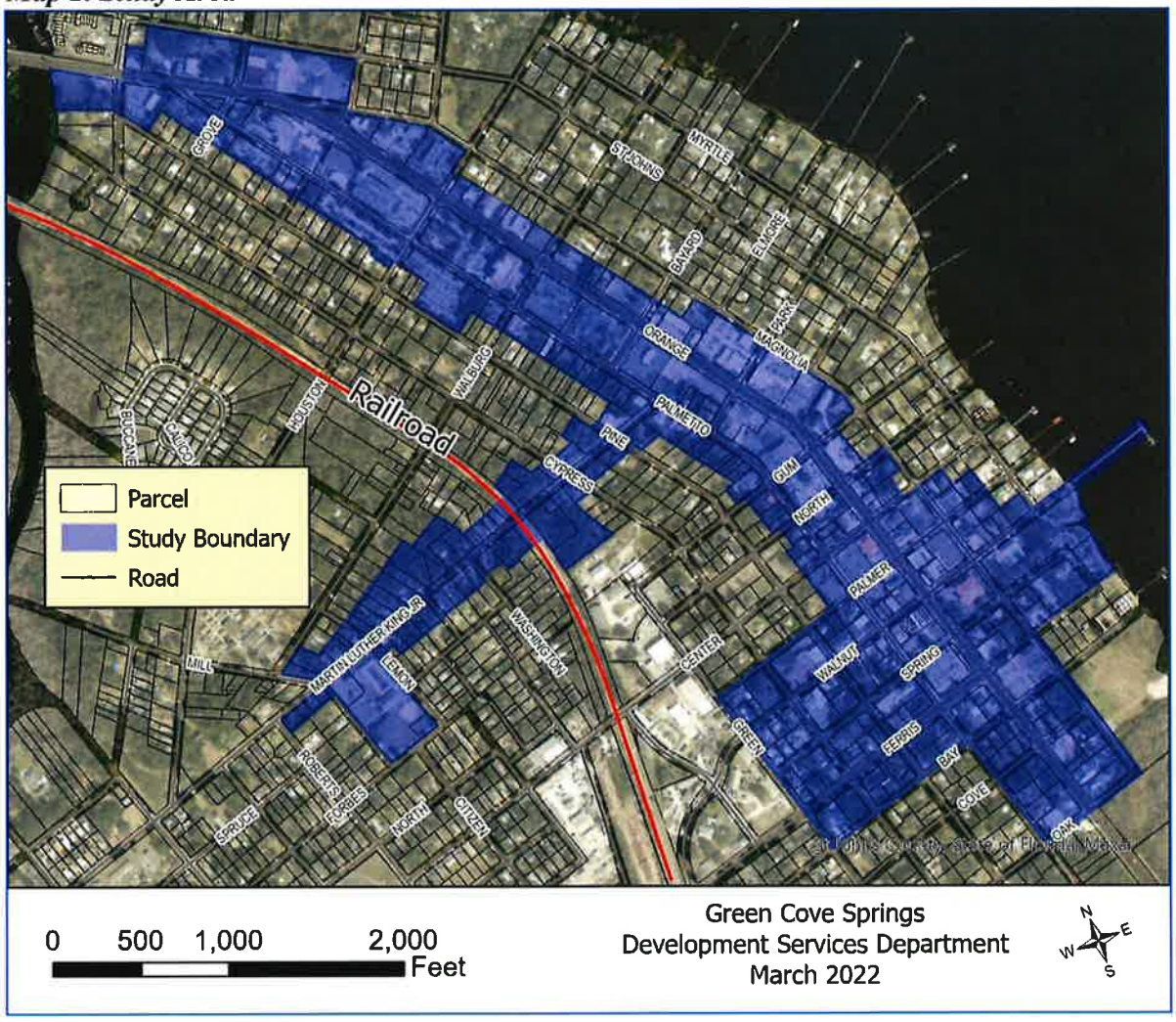
The Study Area contains primarily commercial and institutional uses. Well known locations within the Study Area include: churches such as Springs Baptist Church, First Presbyterian Church, Doxa Church, and United Methodist Church; County government buildings including the Courthouse, Jail, Supervisor of Elections, and Administration Building; food / beverage service businesses such as Spring Park Coffee, Dunkin' Donuts, Burger King, La Casita, and Sweet Sensations; financial institutions, including Wells Fargo and VyStar Credit Union; automobile sales lots such as Green Cove Auto and Good Guys Motors as well as service businesses like Jesse's Auto Services and Darren's Custom & Restorations; retail uses like CVS, The Treasure Box, Walgreens, SS Something Special, and Green Cove Liquors; office uses including Exit Magnolia Realty, Vallencourt Construction, and Action Medical Staffing; and an event venue, Clay Theatre. Additionally, there are numerous vacant properties, including the recently demolished 1050 N Orange Ave, which previously housed an abandoned automobile sales lot, as well as the corner of North Street and Orange Avenue, which once housed two buildings and businesses. The Study Area also contains Spring Park, a well-known and loved park featuring the natural spring, a public spring-fed pool, walking trails, swinging benches, play structures, and great views of the St. Johns River. The foregoing list is not meant to be exhaustive but instead meant to provide a feel of the activity within the Study Area.

The expanse around the Study Area is primarily residential in nature, with some exception specifically along Martin Luther King Jr Blvd, which features some commercial spaces, as well as east of Green Street, which features County School Board property and related uses.

Within the Study Area, there are some planned or potential improvements. These include a proposed freestanding emergency medical facility operated by St. Vincent's as well as

the Palmetto Trail project which will see an eight-foot multi-use path constructed along Palmetto Avenue from its southern end up to the Governors Creek Bridge. As part of the Walnut Street assessment, the City is also planning improvements to Walnut Street, particularly the block between Palmetto Avenue and Orange Avenue.

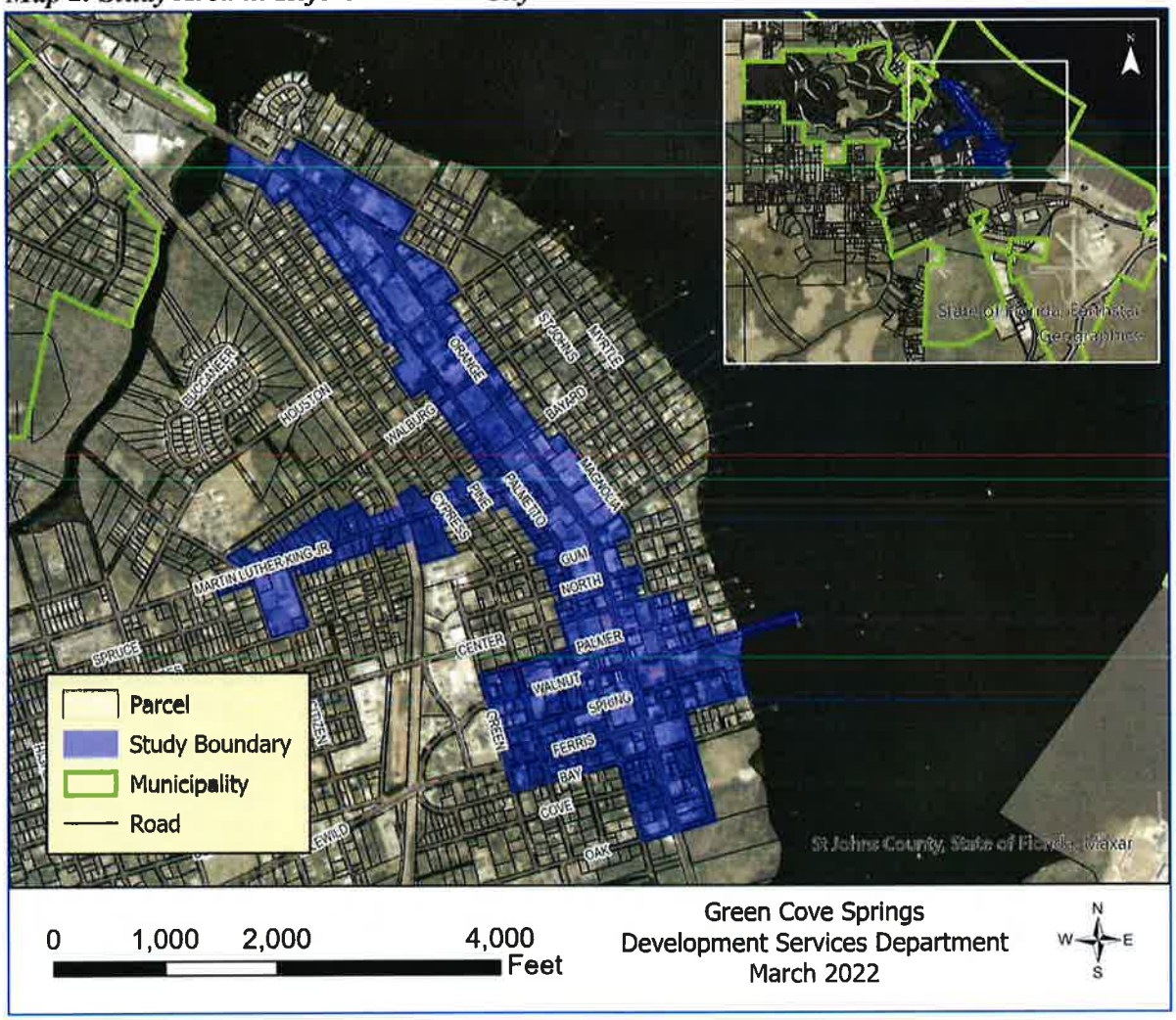
Map 1. Study Area



The Study Area is located somewhat centrally within the City, particularly for commercial development. Its location within the boundaries of the City can be viewed in Map 2. The northwest portion of the City consists of two subdivisions and the southeastern portion of the City consists of Reynolds Park / Clay Port – a future mixed-use development operating as an industrial site at present. The Study Area is contained within what is referred to as the Core City. The western portion of the Core City is dominated by residential development with a smattering of institutional development, namely School Board related properties. US 17 / Orange Avenue, Martin Luther King Blvd, and Palmetto

Avenue, all within the Study Are, feature commercial development with some residential development as well.

Map 2. Study Area in Reference to the City



3. Slum and Blighted Area Analysis

City Staff reviewed the Study Area in relation to the statutory requirements for an area to be determined a slum area or a blighted area.

3.1. Slum

The condition of slum in the Study Area is met under the following criteria:

(c) The existence of conditions that endanger life or property by fire or other causes.

Documentation of existing conditions provided in subsequent sections in this analysis indicates life and / or properties are endangered, specifically by dilapidation; unsecured inhabitable properties; deteriorating roadways, sidewalks, and accessibility features; abandoned homes; and overall deterioration of the Study Area.

3.2. Defective or inadequate public transportation facilities

The City of Green Cove Springs does not have locally operated public transportation facilities. Public transportation within Clay County, called Clay Community Transportation, is operated by the Jacksonville Transportation Authority[2]. Of 4 available lines, 2 lines travel through Green Cove Springs. These lines operate from 6am to 7pm Monday through Friday, excluding holidays. The lines do include a flex service option wherein customers can call a reservation line to schedule a pick-up from their location that will be accommodated *when time allows*. The deviation will go as far as a ¾ mile off the route.

The Blue Line (Map 3) has one stop within the Study Area, the Clay County Courthouse (825 N Orange Ave), and one other stop within City Limits, at the Clay County Health Department. There are two stops moderately close to City Limits – the Pier Station stop west of town on State Road 16 and the Challenge Enterprises stop on Enterprise Way just north of town. There is two to three hours between pickups at the local stops, excluding Challenge Enterprises which only has one pickup time and one drop-off time.

The Green Line (Map 4) has one stop within the Study Area (and the City at large), the Clayton and Mildred Revels Senior Center (604 Walnut St). There are three hours between pickups at this stop, and similarly three hours between drop-offs to the location.

There are no options for local transit from residential to commercial or recreational areas of town. Additionally, the sidewalk and roadway conditions through the Study Area are in a poor state. Many streets show deterioration, especially with top layers breaking down, revealing the older brick streets beneath, which creates uneven surfaces. Sidewalks show significant deterioration as well with the following conditions being regularly observed throughout the Study Area:

- **Cracking**: Locations where the paved surface of the sidewalk has cracked or crumbled
- **Uplift**: A vertical change in height along a sidewalk (generally where "panels" of the sidewalk meet or where cracking has occurred)
- **Fixed Obstructions**: Anchored objects (such as utility poles) that reduce sidewalk width
- **Non-Fixed Obstruction**: Vegetation, non-anchored objects, or uncleanliness that reduces sidewalk width or walkability
- **Spalling**: Surface deterioration that appears as small indentations in the surface
- **Standing Water**: Locations where there is or there is evidence of standing water on the sidewalk
- **Loss**: Locations where a piece or pieces of the sidewalk were removed, whether purposefully for work or through erosion.

Examples of the above defined items are provided in the figures below.

[2] Jacksonville Transit Authority, https://www.jtafla.com/ride-jta/regional-services/clay-community-transportation/ accessed 3/14/2022

Further, there are many places in the Study Area completely lacking sidewalks, primarily on local streets or only on one side of the street and often without excellent road crossing conditions to get from sidewalk to sidewalk as needed.

Such road and sidewalk conditions reduce the ability of the community to safely traverse the Study Area on foot, by micromobility[3] device (bicycle, scooter, skateboard, et cetera) or by motorized vehicle.

Figure 1. Sidewalk Cracking, Palmer St, near 14 N Magnolia Ave

Figure 2. Sidewalk Cracking & Loss, Martin Luther King Jr. Blvd

Figure 3. Deteriorating accessibility feature, Corner of Orange Ave & Center St

Figure 4. Deteriorating accessibility feature, Southwest Corner of Orange Ave & Palmer St

[3] Institute for Transportation & Development Policy, https://www.itdp.org/multimedia/defining-micromobility/ accessed 4/7/2022

Figure 5. Road Disrepair, Walnut St

Figure 6. Road Disrepair, Intersection of Green St & Walnut St

Figure 7. Non-Fixed Obstruction, Martin Luther King Jr. Blvd

Figure 8. Non-Fixed Obstruction, Martin Luther King Jr. Blvd

Figure 9. Sidewalk Spalling, Martin Luther King Jr. Blvd

Figure 10. Sidewalk – Standing Water, Martin Luther King Jr. Blvd.

Figure 11. Sidewalk Uplift & Spalling, Martin Luther King Jr. Blvd

Figure 12. Sidewalk Loss, Martin Luther King Jr. Blvd

Map 3. Bus Route – Blue Line[4]

[4] Jacksonville Transportation Authority, https://www.jtafla.com/ride-jta/regional-services/clay-community-transportation/clay-blue-line/

Map 4. Bus Route – Green Line[5]

3.3. Aggregate assessed values do not show appreciable increase over past 5 years

The Study Area has experienced some redevelopment in the past five years, but the deterioration present, as shown in later sections, has prevented the Study Area from seeing an appreciable increase in its aggregate assessed value (AAV) as compared to the City as a whole. In Table 1, it is demonstrated that the City as a whole has experienced an increased AAV of 50.71% while the Study Area has only seen an increase of 20.53%.

Table 3. Aggregate Assessed Value Comparison

Year	Study Area	City
2017	$ 85,088,819.00	$590,524,531.00
2018	$88,913,992.00	$642,232,893.00
2019	$95,646,152.00	$802,652,764.00
2020	$95,809,061.00	$802,652,764.00
2021	$102,557,978.00	$890,001,640.00
% Increase	20.53%	50.71%

[5] Jacksonville Transportation Authority, https://www.jtafla.com/ride-jta/regional-services/clay-community-transportation/clay-green-line/

3.4. Faulty lot layout in relation to size, adequacy, accessibility, or usefulness

Within the Study Area, approximately 25.6% of the lots could be considered faulty (Map 4). The criteria for this determination were as follows:

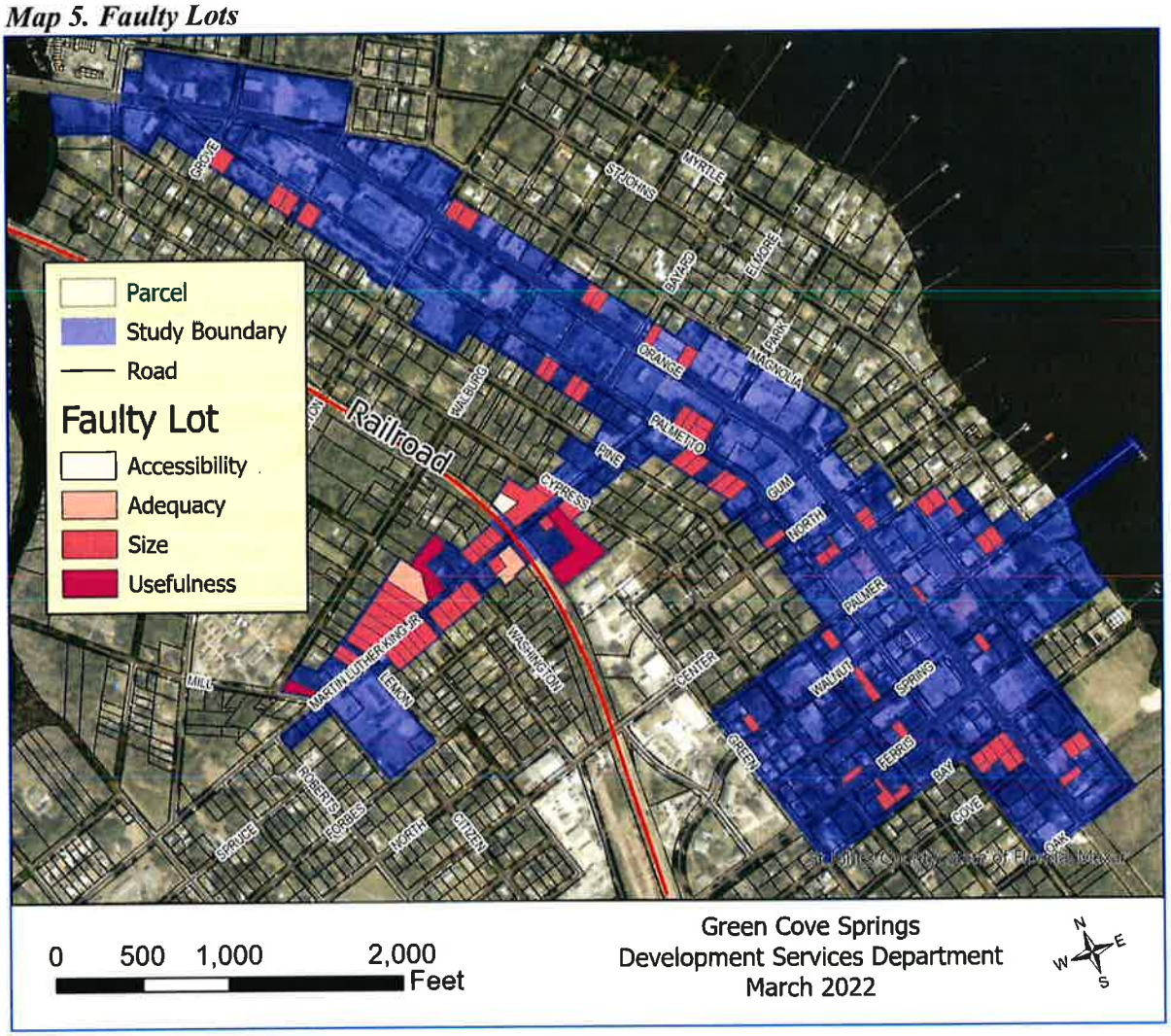
- **Size**: Commercially zoned lots with less than approximately 75 feet of frontage and approximately 100 feet of depth – despite the zoning code identifying no minimum lot requirements in commercial districts, the size of these lots is not suited for adequate commercial development, assuming they are developed individually given the diversity of ownership.
- **Adequacy**: Lots deemed inadequate are shaped in a manner which decreases their developability.
- **Usefulness**: Lots deemed less than useful are shaped in a manner which will likely completely prevent or deter their development or redevelopment.
- **Accessibility**: Lots deemed inaccessible are landlocked.

The City does permit residential development within many commercially zoned areas, and some of the identified lots have historically or recently been developed residentially as a consequence. Ideally, as identified in the Future Land Use Map, these lots would develop commercially or with a mix of uses to better support the neighborhood.

Recent development exemplifies the difficulties with developing commercially on narrow or otherwise small lots. Between 2019 and 2020, Dunkin Donuts constructed a new location within the Study Area – 610 N Orange Ave. The site is approximately 250ft along Orange Avenue (the primary roadway) by 125ft deep. The development received a variance from the City's Zoning Code requirements, which require parking to be to the side or back of a building in the Gateway Commercial Corridor. Due to the depth of the property and the type of development (drive-thru fast food), the lot layout was inadequate to permit development without a variance.

On the basis of the plight of Dunkin Donuts and the criteria identified above, additional lots are truly eligible to be considered faulty within the Study Area, but being that they are already commercially developed, at this time, they are not being considered faulty.

Map 5. Faulty Lots



3.5. Unsanitary or unsafe conditions

There are several sites with unsafe or unsanitary conditions located within the Study Area. Figures 13-29 (following) demonstrate the conditions for a portion of these properties.

Field inspection and Google StreetView inspection of the Study Area identified sites with deteriorating or damaged structures which pose a threat to building occupants, condemned or abandoned buildings, incomplete construction projects, lack of sidewalks or blocked rights-of-way (ROW[s]), as well as brownfield sites. There are unsafe commercial spaces where there is either a lack of defined pedestrian versus vehicular space or a lack of maintenance that would keep the area safe for traversing to and from a business.

These figures represent some of the many deteriorating, unsafe, and at times abandoned structures in the area.

Figure 13. Unsafe, Deteriorating Roof, 116 N Magnolia Ave

Figure 14. Unsafe, Condemned Building, 428 N Orange Ave

Figure 15. Unsafe, Boarded Openings, 115 N Magnolia Ave

Figure 16. Unsafe and unsanitary, Openings / Junk Storage, 115 N Magnolia

Figure 17. Unsafe, No Sidewalk, ROW used for RV Parking, 327 N Orange Ave

Figure 18. Unsafe, No Sidewalk, across from Figure 5, 425 N Orange Ave

Figure 19. Unsanitary, Discontinued Gas Pumps, 201 N Orange Ave

Figure 20. Unsafe, Collapsed Canopy, Petroleum Contamination Site[6], 100 N Orange Ave

Figure 21. Unsafe, Low hanging power lines, concrete drive in disrepair, south of 25 N Orange Av

Figure 22. Unsafe, ROW in disrepair, businses parks in ROW, 3 S Palmetto Ave

Figure 23. Unsafe, Lack of signage, marked parking spaces, pedestrian safety, 24 Green St

[6] FL Department of Environmental Protection's Contamination Locator Map, https://prodenv.dep.state.fl.us/DepClnup

Figure 24. Unsafe area in front of active commercial building, 1100 Martin Luther King

Figure 25. Unsafe Structure / Abandoned, 1007 Martin Luther King Jr Blvd

Figure 26. Unsafe / Abandoned Structure, 1001 Martin Luther King Jr Blvd

Figure 27. Unsafe / Abandoned Structure, 713 Martin Luther King Jr Blvd

Figure 28. Unsafe / Abandoned Structure, 613 Martin Luther King Jr. Blvd

Figure 29. Unsafe Structure, 612 Martin Luther King Jr. Blvd

3.6. Deterioration of site or other improvements

In addition to the deterioration of site improvements shown in section 3.5, within the Study Area, there are multiple occurrences of deteriorating improvements, especially access points or paved areas in surrounding buildings. Paving is wearing away or cracking creating hazardous conditions for drivers using the lots to park or maneuver the site and pedestrians crossing the access points. Figures below provide examples of this type of wear and tear in the corridor.

Figure 30. Deteriorating Drive / Sidewalk, 220 Palmer

Figure 31. Deteriorating Drive, 327 N Orange Ave

Figure 32. Parking lot disrepair, between 604 & 500 Walnut St

Figure 33. Sidewalk disrepair, between 604 & 500 Walnut St

3.7. Inadequate and outdated building density patterns

The applicable zoning districts for the Study Area generally include: Central Business District, Gateway Corridor Commercial, Gateway Corridor Neighborhood, and C-1 Neighborhood Commercial. The heart of the Study Area is where the Central Business District is located – also known as the Downtown area. The Gateway districts are located along the "corridor" area, notably US 17 or Orange Ave. The Martin Luther King Blvd corridor is zoned as neighborhood commercial but features primarily low density residential development including active and abandoned residential structures, churches, vacant lots, concrete block commercial buildings lacking transparency and activation.

Figure 36. Outdated building pattern, 208 N Orange Ave, Food Store

Figure 37. Outdated building pattern, 425 N Orange Ave, Wells Fargo

Figure 38. Outdated Building Pattern, 327 N Orange Ave, Rick Baker's RV

Figure 39. Low Density Development, 606 Spring St

Figure 40. Low Density Development, 627 Spring St

Figure 41. Low Density Development, Not Fronting Street, 702 Ferris St / 709 Spring St

Figure 42. Undeveloped, Gustafson Property, Pine St (behind house on Walnut St)

3.8. Vacancy rates

17.1% of properties within the Study Area are classified as vacant by the Clay County Property Appraiser. This level of vacancy within the Study Area is 44.9% higher than that of the rest of the municipality, which has an 11.8% rate of vacancy.

Many of these lots, shown in the figures below, are prime locations that once housed a local business which has since been removed. The lots have yet to have been redeveloped despite their prime locations in the commercial areas of the City.

Figure 43. Vacant Lot, Previously 208 N Orange Ave

Figure 44. Vacant Lot, East of 604 Walnut St

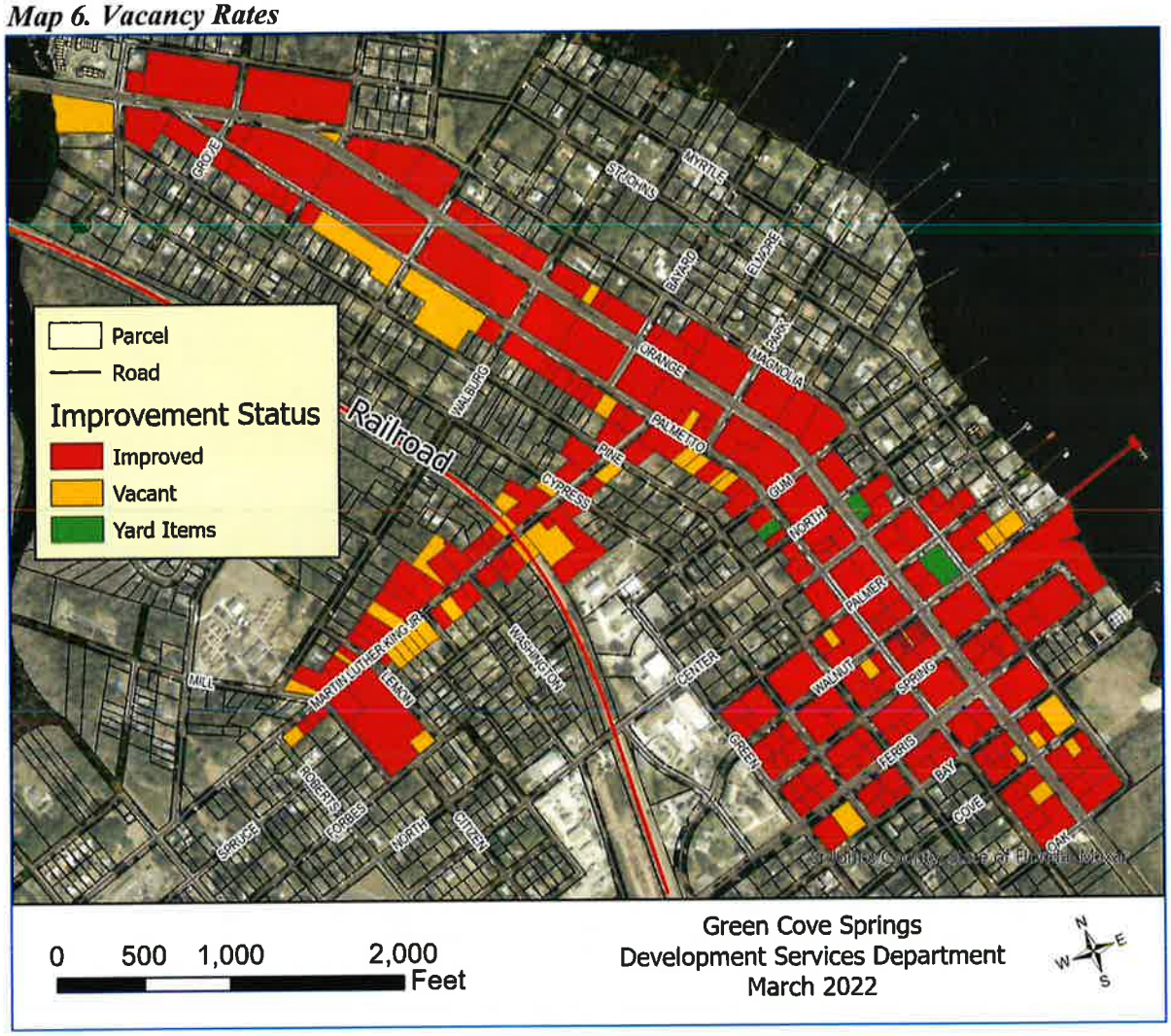
Figure 45. Vacant Lot, BROWNFIELD[7], south of 535 N Orange Ave

Figure 46. Vacant Lot at the northeast corner of Orange Ave &Walburg St

Figure 47. Vacant Lot at the northwest corner of Orange Ave & Governor St

[7] FL Department of Environmental Protection's Contamination Locator Map, https://prodenv.dep.state.fl.us/DepClnup

Map 6. Vacancy Rates



4. Recommendations

The Study Area meets the criteria established in Section 163.340, Florida Statutes (F.S.). It is staff recommendation that the City of Green Cove Springs adopt this Finding of Necessity by resolution per Section 163.355, F.S., and create a Community Redevelopment Agency for the Study Area as defined herein. This will enable redevelopment of the area which is necessary for the safety and economic welfare of the community.

RESOLUTION NO. 2021/2022-56

A RESOLUTION OF THE BOARD OF COUNTY COMMISSIONERS OF CLAY COUNTY, FLORIDA DECLARING AND FINDING A CERTAIN GEOGRAPHIC AREA IN THE CITY OF GREEN COVE SPRINGS, FLORIDA TO BE SLUM OR BLIGHTED; FINDING A NEED FOR THE CREATION OF A COMMUNITY REDEVELOPMENT AGENCY; DELEGATING THE EXERCISE OF CERTAIN POWERS TO CREATE A COMMUNITY REDEVELOPMENT AGENCY WITH THE POWER TO PREPARE AND ADOPT A PLAN OF REDEVELOPMENT AS CONFERRED UPON CLAY COUNTY REGARDING COMMUNITY REDEVELOPMENT WITHIN THE INCORPORATED LIMITS OF THE CITY OF GREEN COVE SPRINGS TO THE CITY OF GREEN COVE SPRINGS IN ACCORDANCE WITH CHAPTER 163, PART III, FLORIDA STATUTES; PROVIDING FOR NO SEVERABILITY; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the Florida Legislature during its 1969 Legislative Session enacted the Community Redevelopment Act of 1969 which is presently codified at Part III, Chapter 163, Florida Statutes, as amended (the "Act"); and

WHEREAS, section 163.410 of the Act provides, in part, "the governing body of any … county which has adopted a home rule charter may, in its discretion, by resolution delegate the exercise of the powers conferred upon the county by [the Act] within the boundaries of a municipality to the governing body of such a municipality;" and

WHEREAS, the Act further provides that "[s]uch a delegation to a municipality shall confer only such powers upon a municipality as shall be specifically enumerated in the delegating resolution;" and

WHEREAS, the City Council of the City of Green Cove Springs adopted Resolution No. R-03-2022 (the "Resolution"), which is attached hereto as Attachment A and incorporated herein

by reference, and which, among other things, declared an area within the municipal boundaries of the City of Green Cove Springs (the "City"), generally described as the downtown and US 17 corridor and referred to as the Green Cove Springs Redevelopment Area (the "Area"), to be a "slum or blighted area"; and

WHEREAS, the City Council further made a finding of necessity as to the rehabilitation, conservation or redevelopment, or a combination of each, with respect to the Area; and

WHEREAS, this Board has considered the "Finding of Necessity" Study, which is attached to the City's Resolution as Exhibit B, concerning the existence of slum or blighted areas within the boundaries of the Area; and

WHEREAS, this Board agrees with the City Council's findings as set forth in the Study and finds that one or more slum or blighted areas, as defined in section 163.340(7) and (8), respectively, of the Act exist within the Area; and

WHEREAS, this Board finds that rehabilitation, conservation, or redevelopment, or a combination thereof, of said slum or blighted area is necessary in the interest of the public health, safety, morals, and welfare of the residents of the City and of Clay County; and

WHEREAS, accordingly this Board finds that there is a need for a community redevelopment agency to carry out the community redevelopment purposes of the Act; and

WHEREAS, the City, pursuant to section 163.410 of the Act, requested that the County delegate powers to the City to create a community redevelopment agency; and

WHEREAS, this Board finds that at this time the City has met its obligations as set forth in section 163.410 of the Act, including, but not limited to, submitting all documentation required by the County; and

WHEREAS, this Board desires to delegate certain limited community redevelopment powers as set forth herein to the City pursuant to the Act.

NOW THEREFORE, BE IT RESOLVED by the Board of County Commissioners of Clay County, Florida, as follows:

Section 1. The foregoing recitations are incorporated as a part of the Resolution by reference.

Section 2. Pursuant to Chapter 163, Part III, Florida Statutes (the "Act"), specifically, section 163.355, Florida Statutes, this Board finds and declares, that based on findings of the City and the Study a slum or blighted area, as defined by section 163.340(7) and (8), respectively, of the Act, exists in an area of the City described generally as the downtown and US 17 corridor, which is specifically described in the Study and is referred to as the Green Cove Springs Redevelopment Area (the "Area").

Section 3. This Board finds and declares that the rehabilitation, conservation and redevelopment, or a combination thereof, of the Area is necessary and in the best interest of the public health, safety, morals, and welfare of the residents of the City and of Clay County as a whole.

Section 4. This Board finds there is a need for a community redevelopment agency to function in the Area to carry out the community redevelopment purposes of the Act.

Section 5. This Board delegates to the City the limited power to create a community redevelopment agency pursuant to the Act, provided that (1) the composition of the community redevelopment agency shall consist of two members appointed by the City, two members appointed by the Board, and one at-large member appointed by the other four members, and (2) the sole power initially delegated to the community redevelopment agency is to prepare and adopt a plan of redevelopment for the Area, which plan shall then be submitted to the City and the County for review and upon the completion of their respective reviews, be submitted to the Council and thereafter the Board for approval after notice.

Section 6. This Board shall consider the delegation of additional community redevelopment powers to the community redevelopment agency in the form of an interlocal agreement by subsequent resolution of this Board.

Section 7. The community redevelopment agency created by the City shall cease to exist within 12 months from the adoption of this Resolution if: (1) the City has not approved a redevelopment plan and interlocal agreement acceptable to the County; and (2) the County has not approved same in accordance with the Act and this Resolution, and the delegation of powers hereunder shall be deemed to be void and to have no further force and effect.

Section 8. This Resolution and the delegation of the powers hereunder shall not be deemed or construed to create any obligation on the part of the Board or the County to enter into an agreement or adopt a resolution.

Section 9. The provisions of this Resolution are not severable. If any part of this Resolution is held invalid by a court of competent jurisdiction, this Resolution shall be deemed void and of no further effect.

Section 10. This Resolution shall become effective upon adoption.

DULY ADOPTED by the Board of County Commissioners of Clay County, Florida, this 9th day of August, 2022.

BOARD OF COUNTY COMMISSIONERS
CLAY COUNTY, FLORIDA

By: WFBolla (Aug 11, 2022 14:37 EDT)
Wayne Bolla, Its Chairman

ATTEST:

Tara S. Green
Clay County Clerk of Court and Comptroller
Ex Officio Clerk to the Board

F:\Ordinances\communityredevelopment\GCS 2022\Resolution CRA 8.5.22.docx

2021-2022-56 Resolution- Declaring the Need - Creation of the Green Cove Springs CRA BCC #11

Final Audit Report 2022-08-11

Created:	2022-08-10
By:	Lisa Osha (Lisa.Osha@claycountygov.com)
Status:	Signed
Transaction ID:	CBJCHBCAABAA8PWW_XD4tkpTa4FDtxoh5Zna-D_pFdVw

"2021-2022-56 Resolution- Declaring the Need - Creation of the Green Cove Springs CRA BCC #11" History

Document created by Lisa Osha (Lisa.Osha@claycountygov.com)
2022-08-10 - 6:58:47 PM GMT

Document emailed to clayesign@claycountygov.com for signature
2022-08-10 - 7:00:01 PM GMT

Email viewed by clayesign@claycountygov.com
2022-08-11 - 6:36:40 PM GMT

Signer clayesign@claycountygov.com entered name at signing as WFBolla
2022-08-11 - 6:37:18 PM GMT

Document e-signed by WFBolla (clayesign@claycountygov.com)
Signature Date: 2022-08-11 - 6:37:19 PM GMT - Time Source: server

Document emailed to bccdocs@clayclerk.com for signature
2022-08-11 - 6:37:24 PM GMT

Email viewed by bccdocs@clayclerk.com
2022-08-11 - 9:03:10 PM GMT

Signer bccdocs@clayclerk.com entered name at signing as Tara S. Green
2022-08-11 - 9:03:57 PM GMT

Document e-signed by Tara S. Green (bccdocs@clayclerk.com)
Signature Date: 2022-08-11 - 9:03:58 PM GMT - Time Source: server

Agreement completed.

2022-08-11 - 9:03:58 PM GMT

RESOLUTION NO. 2022/2023 - 39

A RESOLUTION OF THE BOARD OF COUNTY COMMISSIONERS OF CLAY COUNTY, FLORIDA, APPROVING THE COMMUNITY REDEVELOPMENT PLAN RELATED TO THAT CERTAIN GEOGRAPHIC AREA OF THE CITY OF GREEN COVE SPRINGS KNOWN AS THE GREEN COVE SPRINGS COMMUNITY REDEVELOPMENT AREA, WHICH IS GENERALLY DESCRIBED AS THE DOWNTOWN AND U.S. 17 CORRIDOR, APPROVING THE INTERLOCAL AGREEMENT BETWEEN THE COUNTY, THE CITY, AND THE GREEN COVE SPRINGS COMMUNITY REDEVELOPMENT AGENCY, AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, during its 1969 Legislative Session, the Florida Legislature enacted the Community Redevelopment Act of 1969, which is presently codified at Part III, Chapter 163, Florida Statutes, as amended (the "Act"); and

WHEREAS, the Act confers certain powers upon counties with home rule charters, which include, but are not limited to, the power to delegate certain of the county's powers to a community redevelopment agency created pursuant to the Act; and

WHEREAS, on August 9, 2022, this Board adopted Resolution No. 2021/2022-56 which declared a certain geographic area referred to as the Green Cove Springs Redevelopment Area, which is generally described as the downtown and U.S. 17 corridor (the "Redevelopment Area"), to be a slum or blighted area, declared the rehabilitation, conservation and redevelopment, or a combination thereof to be necessary in the interest of the public health, safety, morals and welfare of the residents of the City of Green Cove Springs ("City") and the County, and found the need for the creation of a community redevelopment agency; and

WHEREAS, this Board through Resolution No. 2021/2022-56 also delegated the power to create a community redevelopment agency to the City; and

WHEREAS, this Board through Resolution No. 2021/2022-56 also delegated the power for the community redevelopment agency to prepare and adopt a redevelopment plan for the Redevelopment Area, subject to approval by the City and this Board; and

WHEREAS, on December 13, 2022, the City adopted Ordinance O-24-2022 which created the Green Cove Springs Community Redevelopment Agency (the "Agency") and identified the five members of the board of commissioners of the Agency; and

WHEREAS, on January 12, 2023, the Agency approved the Community Redevelopment Plan ("Plan"), a copy of which is attached as Exhibit "A" and incorporated herein by reference; and

WHEREAS, the City, on behalf of the Agency, has submitted for this Board's approval, the Plan; and

WHEREAS, this Board understands the needs of the Redevelopment Area to reverse the slum or blight that has occurred in such Redevelopment Area and, therefore, wishes to approve the Plan; and

WHEREAS, the City, the County and the Agency now desire to enter into an Interlocal Agreement to further define the powers, authority and obligations of each entity ("Interlocal Agreement"), which is attached hereto as Exhibit "B" and incorporated herein by reference, which has been submitted to this Board for its approval; and

WHEREAS, this Board desires to approve the terms of the Interlocal Agreement in order to delegate additional community redevelopment powers to the Agency and further define obligations of the City, the Agency and the County.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF CLAY COUNTY, FLORIDA, AS FOLLOWS:

1. The foregoing recitals are incorporated as a part of this Resolution by reference.

2. In accordance with Section 163.360, Florida Statutes, this Board accepts the submittal by the City of the Green Cove Springs Community Redevelopment Plan in the form attached hereto as Exhibit "A" and incorporated herein by reference.

3. This Board relies on the review, findings and adoption to be made by the City that the Plan complies with Section 163.360 and 163.362, Florida Statutes.

4. This Board approves and adopts the Plan attached hereto as Exhibit "A" for the Redevelopment Area in accordance with the Act, except that to the extent the Plan may conflict with the Interlocal Agreement, the Interlocal Agreement controls. The Plan is designated as the official Redevelopment Plan for the Redevelopment Area and it is the purpose and intent of the Board that the Plan, as the same may be amended and supplemented by the Agency, with approval by the City and this Board, be implemented in the Redevelopment Area.

5. This Board further approves the Interlocal Agreement, between the County, the City, and Agency in the form attached hereto as Exhibit "B".

6. This Resolution shall become effective upon adoption.

[Remainder of page left intentionally blank]

DULY ADOPTED, by the Board of County Commissioners of Clay County, Florida this 25 day of April, 2023.

BOARD OF COUNTY COMMISSIONERS OF CLAY COUNTY, FLORIDA

Betsy Condon (May 3, 2023 13:51 EDT)

Betsy Condon, Its Chairman

ATTEST:

Tara S. Green
Clay County Clerk of Court and Comptroller
Ex Officio Clerk to the Board

Ordinances/Communityredevelopment/GCS 2022/BCC Resolution-Draft 04.20.23

Exhibit “A”

EXHIBIT A

GREEN COVE Springs

CRA REDEVELOPMENT PLAN

January 11, 2023

Contents

I. EXECUTIVE SUMMARY / FINDING OF NECESSITY I-1

A. EXECUTIVE SUMMARY I-1

1. Plan Funding I-2

B. FINDING OF NECESSITY OBSERVED CONDITIONS I-3

1. Recommendations I-5

C. FINDING OF NECESSITY STUDY I-5

1. Background I-5

2. Study Purpose I-6

3. Community Redevelopment Act Overview I-7

4. Definitions of Slum Area I-8

5. Definitions of Blighted Area I-8

6. Assessment Process I-9

7. Study Area I-9

D. SLUM AND BLIGHTED AREA ANALYSIS I-12

1. Slum I-12

2. Defective or inadequate public transportation facilities I-13

3. Aggregate assessed values do not show appreciable increase over past 5 years I-21

4. Faulty lot layout in relation to size, adequacy, accessibility, or usefulness I-22

5. Unsanitary or unsafe conditions I-23

6. Deterioration of site or other improvements I-29

7. Inadequate and outdated building density patterns I-31

8. Vacancy rates I-34

E. RECOMMENDATIONS I-38

II. AUTHORITY TO UNDERTAKE COMMUNITY REDEVELOPMENT II-1

A. AUTHORITY TO UNDERTAKE COMMUNITY REDEVLOPMENT, CREATION, POWERS II-1

1. Creation of the Community Redevelopment Agency II-1

2. Powers of the Community Redevelopment Agency II-1

3. Community Redevelopment Area II-1

4. The Community Redevelopment Plan II-2

III. INTERLOCAL AGREEMENT WITH CLAY COUNTY III-1

IV. REDEVELOPMENT VISION, OBJECTIVES AND STRATEGIES IV-1

A. APPROACH IV-1
B. VISION FOR THE COMMUNITY REDEVELOPMENT AREA IV-1
C. REDEVELOPMENT OBJECTIVES AND STRATEGIES IV-3
1. Objectives and Strategies IV-3

V. FINANCIAL INFORMATION V-1
A. BASE-YEAR PROPERTY VALUES V-1

VI. LEGAL DESCRIPTION VI-1

VII. CHAPTER 163.370 POWERS VII-1
A. 163.370 POWERS; COUNTIES AND MUNICIPALITIES; COMMUNITY REDEVELOPMENT AGENCIES. VII-1

VIII. APPENDICES VIII-1

List of Figures

Figure I-1. Sidewalk Cracking, Palmer St, near 14 N Magnolia Ave I-14
Figure I-2. Sidewalk Cracking & Loss, Martin Luther King Jr. Blvd I-14
Figure I-3. Deteriorating accessibility feature, Corner of Orange Ave & Center St I-14
Figure I-4. Deteriorating accessibility feature, Southwest Corner of Orange Ave & Palmer St I-15
Figure I-5. Road Disrepair, Walnut St I-15
Figure I-6. Intersection of Green St & Walnut St I-16
Figure I-7. Non-Fixed Obstruction, Martin Luther King Jr. Blvd I-17
Figure I-8. Non-Fixed Obstruction, Martin Luther King Jr. Blvd I-17
Figure I-9. Sidewalk Spalling, Martin Luther King Jr. Blvd I-18
Figure I-10. Sidewalk – Standing Water, Martin Luther King Jr. Blvd. I-18
Figure I-11. Sidewalk Uplift & Spalling, Martin Luther King Jr. Blvd I-19
Figure I-12. Sidewalk Loss, Martin Luther King Jr. Blvd I-19
Figure I-13. Unsafe, Deteriorating Roof, 116 N Magnolia Ave I-24
Figure I-14. Unsafe, Condemned Building, 428 N Orange Ave I-24
Figure I-15. Unsafe, Boarded Openings, 115 N Magnolia Ave I-24
Figure I-16. Unsafe and unsanitary, Openings / Junk Storage, 115 N Magnolia I-25
Figure I-17. Unsafe, No Sidewalk, ROW used for RV Parking, 327 N Orange Ave I-25
Figure I-18. Unsafe, No Sidewalk, across from Figure 5, 425 N Orange Ave I-25
Figure I-19. Unsanitary, Discontinued Gas Pumps, 201 N Orange Ave I-25
Figure I-20. Unsafe, Collapsed Canopy, Petroleum Contamination Site, 100 N Orange Ave I-26
Figure I-21. Unsafe, Low hanging power lines, concrete drive in disrepair, south of 25 N Orange Ave I-26
Figure I-22. Unsafe, ROW in disrepair, business parks in ROW, 3 S Palmetto Ave I-27
Figure I-23. Unsafe, Lack of signage, marked parking spaces, pedestrian safety, 24 Green St I-27
Figure I-24. Unsafe area in front of active commercial building, 1100 Martin Luther King I-28
Figure I-25. Unsafe Structure / Abandoned, 1007 Martin Luther King Jr Blvd I-28
Figure I-26. Unsafe Structure / Abandoned Structure, 1001 Martin Luther King Jr Blvd I-28
Figure I-27. Unsafe Structure / Abandoned Structure, 713 Martin Luther King Jr Blvd I-29

Figure I-28. Unsafe Structure / Abandoned Structure, 613 Martin Luther King Jr. Blvd I-29
Figure I-29. Unsafe Structure / Abandoned Structure, 612 Martin Luther King Jr. Blvd I-29
Figure I-30. Deteriorating Drive / Sidewalk, 220 Palmer I-30
Figure I-31. Deteriorating Drive, 327 N Orange Ave I-30
Figure I-32. Parking lot disrepair, between 604 & 500 Walnut St I-31
Figure I-33. Sidewalk disrepair, between 604 & 500 Walnut St I-31
Figure I-34. Outdated building pattern, 208 N Orange Ave, Food Store I-32
Figure I-35. Outdated building pattern, 425 N Orange Ave, Wells Fargo I-32
Figure I-36. Outdated building pattern, 327 N Orange Ave, Rick Baker's RV I-33
Figure I-37. Low Density Development, 606 Spring St I-33
Figure I-38. Low Density Development, 627 Spring St I-34
Figure I-39. Low Density Development, Not Fronting Street, 702 Ferris St / 709 Spring St I-34
Figure I-40. Undeveloped, Gustafson Property, Pine St (behind house on Walnut St) I-34
Figure I-41. Vacant Lot, Previously 208 N Orange Ave I-35
Figure I-42. Vacant Lot, East of 604 Walnut St I-35
Figure I-43. Vacant Lot, BROWNFIELD, south of 535 N Orange Ave I-36
Figure I-44. Vacant Lot at the northeast corner of Orange Ave &Walburg St I-36
Figure I-45. Vacant Lot at the northwest corner of Orange Ave & Governor St I-37

List of Maps

Map I-1. Green Cove Springs I-1
Map I-2. Study Area I-11
Map I-3. Study Area in Reference to the City I-12
Map I-4. Bus Route – Blue Line I-20
Map I-5. Bus Route – Green Line I-21
Map I-6. Faulty Lots I-23
Map I-7. Vacancy Rates I-38
Map II-1 ..... II-2
Map IV-1. Study Area IV-2

List of Tables

Table I-1. Slum Factors I-4
Table V-1. Project Green Cove Springs CRA TIF Revenues (3% Growth Rate) V-1

01 EXECUTIVE SUMMARY / FINDING OF NECESSITY

GREEN COVE Springs

I. EXECUTIVE SUMMARY / FINDING OF NECESSITY

A. EXECUTIVE SUMMARY

The Green Cove Springs CRA is located within the city limits of Clay County's most populous city, and it encompasses the City's historic downtown. Green Cove Springs is a welcoming city with a "small-town" atmosphere and urban amenities that make it an increasingly desirable place to live and raise a family, as evidenced by sustained population growth. Green Cove Springs is in the southeastern quadrant of Clay County.

Map I-1. Green Cove Springs

Just 27 miles south of downtown Jacksonville, Florida, and 27 miles northwest of St. Augustine, Green Cove Springs lines the middle bend of the St. Johns River. Originally inhabited by native aboriginals thousands of years ago, the City first began to take shape in 1816 when George I.F. Clarke established the area's first large-scale lumbering operation.

In the 1850s, the area was often referred to as White Sulfur Springs before being renamed to Green Cove Springs in 1866. 'Green' refers to the lush, green vegetation in the area and the natural spring in the City, while 'Cove' refers to the bend of the St. Johns River on which the City was established. Continuing the timber legacy of George Clarke, Green Cove Springs' economy was sustained and amplified by the live oak harvesting industry. Moreover, livestock and hunting activities were increasingly prevalent within the area during the in mid-1800s. However, the area's main attractor of early settlers and tourists was the area's warm springs, which quickly grew in popularity with both Florida residents and traveling northerners in late 19th century. As a testament to the area's early tourism industry, several historic full-service hotels from this era continue to line the St. Johns River.

Shortly after this period, a third industry grew into significance: dairy farming. Gustafson's Farm opened in 1908, eventually becoming one of the largest privately-owned dairies in the southeast region of the United States. In 2004, the operation was purchased by Southeast Milk and changes in consumer taste forced the company to close its centurion Green Cove Springs doors in 2013, which caused a significant loss of local jobs and revenue. Dairy farming was not the only economic stronghold to suffer. The great winter freeze of 1894-1895 inspired railroad owner Henry Flagler to extend his tracks further south towards what is now known as the City of Miami. After Henry Flagler's Florida East Coast (FEC) Railway offered northern Americans access to south Florida locations, such as Palm Beach and Miami, tourism activity greatly declined within Green Cove Springs.

Even with the success of the Gustafson Farm, Green Cover Springs suffered greatly from the American Great Depression of the early 1930s. Fortunately, the military installations, Benjamin Lee Field (renamed Naval Air Station Green Cove Springs) and Camp Blanding, encouraged economic recovery towards the end of the 1930s. The Naval Air Station was purchased by the City after its 1961 decommission but was eventually sold to Louis Reynolds for the construction of the Reynolds Industrial Park with hopes for substantial job creation. The Park remains an important part of the City's future growth.

Green Cove Springs has served as the County Seat of Government for Clay County, Florida since1871, preceding its incorporation as a town on November 2, 1874. Green Cove's last Comprehensive Plan update was in 2011. In 2020, the Census-recorded population was just under 10,000 residents and has grown nearly 16% through 2020. Activity and population increases are anticipated with the completion of the First Coast Expressway (Florida 23) - estimated to begin its final construction phase in 2023. Phase 2, which runs through Clay County, is currently under construction.

As with many small towns across the country, Green Cove Springs's downtown area has witnessed a decline over the years as new developments began to spring up outside of the urban core. This slow decline is true for both commercial and residential areas. As a result, the increase over time of taxable values has not kept up with "newer" areas of town. As shown in table 1 below, the CRA area has shown some redevelopment in the past five years but overall has failed to appreciably increase its aggregate assessed value (AAV) as compared to the City as a whole.

1. Plan Funding

The redevelopment of the Green Cove Springs Community Redevelopment Area will require a substantial financial investment on the part of the CRA. As provided for by Florida's Community Redevelopment

Act, Florida Statutes Chapter 163, Part III, the principal source of funding for the CRA will be through Tax Increment Revenue from the City of Green Cove Springs and Clay County. Additionally, the CRA and the City may utilize other City, County, State, and Federal funding sources, as appropriate and available, to carry out the provisions of the Redevelopment Plan.

As required by F.S. 163.362(10), the Green Cove Springs Redevelopment Plan provides a time certain for completing all redevelopment financed by increment revenues. F.S. 163.362(10)(a) allows the Green Cove Springs CRA to use increment revenue for up to 40 total years after the year the initial Redevelopment Plan was adopted. The initial Green Cove Springs CRA Redevelopment Plan shall be adopted in 2022, therefore the maximum life permitted by statute would be until December 13, 2062.

This Redevelopment Plan contains Goals and Initiatives designed to address slum/blight conditions in the CRA district and attract private sector investment back into the urban core of the City. The projected total increment over the 30-year time horizon of the CRA is between $18,995,996 to $36,171,916.

a. Organization of the Plan

This Redevelopment Plan Amendment is organized into several sections, briefly described as follows:

Section 1 – Executive Summary / Finding of Necessity (Need for a Community Redevelopment Agency) - a Finding of Necessity (FON) in accordance with the Community Redevelopment Act of 1969, Chapter 163, Part III, Florida Statutes is required to determine if slum and / or blight exist within the Study Area

Section 2 – Authority to Undertake Community Redevelopment - provides a summary of certain statutory requirements of the Community Redevelopment Act, as provided for in Florida Statutes 163, Part III

Section 3 – Interlocal Agreement with Clay County - provides the framework for creation of the Green Cove Springs CRA.

Section 4 – Redevelopment Vision, Objectives & Strategies - introduces ten (10) Objectives for Redevelopment with Corresponding strategies for each Objective

Section 5 – Financial Information - contains financial projections, plan cost and timeline

Section 6 – Legal Description - outlines the boundaries of the Green Cove Springs CRA

Section 7 – Powers of a CRA - identifies the powers of the CRA in regards of utilization of funding

Section 8 – Appendices

B. FINDING OF NECESSITY OBSERVED CONDITIONS

This study has been prepared to fulfill the requirements for a Finding of Necessity (FON) in accordance with the Community Redevelopment Act of 1969, Chapter 163, Part III, Florida Statutes. This report has reviewed data from multiple sources including the Clay County Property Appraiser and field observations, which lead to analysis to determine if conditions of slum and / or blight exist within the study area. This report represents the first step in creating a Community Redevelopment Area (CRA) which will use Tax Increment Financing to invest in the area and improve its conditions. There are three statutory conditions that may be evaluated to

determinate a slum condition and fourteen statutory conditions that may be evaluated to determine a blight condition. For a slum condition, only one of the three is required to be met to make a finding of slum. For a blight condition, only two of the fourteen are required to be met to make a finding of blight.

One of three factors of slum was identified as being met, and seven of fourteen factors of blight were determined as being met, satisfying the statutory requirements to determine the Study Area is a slum area as well as a blighted area. With the adoption of this FON, the City Council of Green Cove Springs may designate a Community Redevelopment Area.

Table I-1. Slum Factors

Factor	Met?
(a) Inadequate provision for ventilation, light, air, sanitation, or open spaces;	No
(b) High density of population, compared to the population density of adjacent areas within the county or municipality; and overcrowding, as indicated by government-maintained statistics or other studies and the requirements of the Florida Building Code;	No
(c) The existence of conditions that endanger life or property by fire or other causes.	Yes

Table I-2. Blight Factors

Factor	Met?
(a) Predominance of defective or inadequate street layout, parking facilities, roadways, bridges, or public transportation facilities.	Yes
(b) Aggregate assessed values of real property in the area for ad valorem tax purposes have failed to show any appreciable increase over the 5 years prior to the finding of such conditions.	Yes
(c) Faulty lot layout in relation to size, adequacy, accessibility, or usefulness.	Yes
(d) Unsanitary or unsafe conditions.	Yes
(e) Deterioration of site or other improvements.	Yes
(f) Inadequate and outdated building density patterns.	Yes
(g) Falling lease rates per square foot of office, commercial, or industrial space compared to the remainder of the county or municipality.	Data unavailable

(h) Tax or special assessment delinquency exceeding the fair value of the land.	Not analyzed
(i) Residential and commercial vacancy rates higher in the area than in the remainder of the county or municipality.	Yes
(j) Incidence of crime in the area higher than in the remainder of the county or municipality.	Not analyzed
(k) Fire and emergency medical service calls to the area proportionately higher than in the remainder of the county or municipality.	Not analyzed
(l) A greater number of violations of the Florida Building Code in the area than the number of violations recorded in the remainder of the county or municipality.	Not analyzed
(m) Diversity of ownership or defective or unusual conditions of title which prevent the free alienability of land within the deteriorated or hazardous area.	Not analyzed
(n) Governmentally owned property with adverse environmental conditions caused by a public or private entity.	N/A
(o) A substantial number or percentage of properties damaged by sinkhole activity which have not been adequately repaired or stabilized.	N/A

1. Recommendations

The Study Area meets the criteria established in Section 163.340, Florida Statutes. It is staff recommendation that the City of Green Cove Springs adopt this Finding of Necessity by resolution per F.S. 163.355 and create a Community Redevelopment Agency for the Study Area as defined herein.

C. FINDING OF NECESSITY STUDY

The City of Green Cove Springs seeks to determine the feasibility of designating the Downtown and US 17 Corridor as a Community Redevelopment Area through the development of a Finding of Necessity and would also like to implement redevelopment in this area through the adoption of a Redevelopment Area Plan.

1. Background

Green Cove Springs is a city located along the west bank of the historic St. Johns River and since 1971 has served as the County Seat of Government for Clay County. The 2020 Census identified the population count to be 9,786, a 41.66% increase from the 2010 Census.

The city's name originates from the three physical characteristics. "Green" refers to the perennially green vegetation characterized by its tree scape and foliage. "Cove" refers to a bend in the St. Johns River creating a safe area for mooring of boats during inclement weather periods. "Springs" refers to the natural spring (one of 600 in Florida), originating from the Floridan Aquifer with an estimated flow rate of approximately 2,200 gallons per minute. The spring water flows into the west side of the municipal

swimming pool and then flows out the east side forming a stream eventually emptying into the St. Johns River.

The first inhabitants of the area were attracted to it because of the warm mineral spring, known as "The Boil." The medicinal qualities of the spring and its location along the St. Johns River served as major contributors to the community's development as a prominent attraction and destination for tourists during the 19th Century.

Green Cove Springs has a storied history. It was home to Gustafson's Farm, a family dairy operation owned by Frank and Agnes Gustafson that began in 1908. In the 1930s, the federal government located Benjamin Lee Field within the City. The United States Department of the Navy opened a flight training facility. In the 1950s, major American automakers had dealerships in Green Cove Springs along US 17, which led to the City being known as "the Little Detroit."

The City grew economically and geographically, annexing land to include Magnolia Point Golf and Country Club and Magnolia West to the northwestern end, Cove Plaza on the southern end, and to the southeastern edge, FCT-granted land proposed to be the Ed Gustafson Regional Park as well as 560 acres intended to develop as a 2,100 unit residential subdivision.

In 2005, the City of Green Cove Springs adopted "Tomorrow's Vision" as the guiding vision document for the future of the city. This document established goals for the City such as: maintain the small-town character; provide affordable housing; promote redevelopment in the corridors (US 17 / SR 16); improve traffic circulation; expand recreational opportunities; promote a business-friendly environment; strengthen Code Enforcement. One implementation mechanism included in the visioning document was the potential for a Community Redevelopment Agency. In 2014, the City adopted a Finding of Necessity, but the Community Redevelopment Agency was unable to come to fruition at that time.

Since then, the City has experienced additional growth and undergone further planning activities. In February 2021, the City began the process of updating the comprehensive plan, which was adopted a year later in February 2022. The 2045 Comprehensive Plan is designed to prepare the City for upcoming growth. The Future Land Use Map was amended from 13 categories to 6 categories: Neighborhood (NBD), Downtown (DT), Mixed Use (MU), Mixed-Use Reynolds Park (MURP), Industrial (IND), and Public (PUB). Further, the Future Land Use element established an objective to continue to redevelop and invest in blighted areas of the City, with Policy 1.6.1 directing the City to explore the creation of a Community Redevelopment Agency / Area.

Additionally, the Future Land Use elements directs the City in Policy 1.6.2 to develop a Downtown Master Plan and assess Walnut Street to determine how to increase safety and attractiveness of the streetscape. The Walnut Street assessment was completed in late 2021 and the Downtown Master Plan is underway, with a goal of adopting the plan by mid-April 2022.

2. Study Purpose

This Finding of Necessity will determine if the Study Area meetings the statutory criteria to be designated as a Community Redevelopment Area. With this, the City aims to establish said area in an attempt to halt and reverse the decline within it in order to encourage new development and redevelopment to

improve the overall quality of the area, leading to improved economic conditions, increased vibrancy, and a more established sense of place in the area.

If the Study Area meets the statutory criteria, the City will adopt this Finding of Necessity and seek to move forward with adopting a Redevelopment Plan.

3. Community Redevelopment Act Overview[1]

The Florida Legislature enacted the Community Redevelopment Act (Act) in 1969. The legislature created the law to allow local governments to improve declining areas, as defined in the Act and detailed in subsections below. Such areas are detrimental to the health, safety, and welfare of residents as well as being a nuisance to growth and the provision of adequate infrastructure and housing; the Act provides a way for the local governments to create a Redevelopment Area and fund redevelopment within it.

The Statute defines community redevelopment as local government or community redevelopment agency lead projects in an established community redevelopment area "for the elimination and prevention of the development or spread of slums and blight, or for the reduction or prevention of crime, or for the provision of affordable housing." This may include slum clearance, redevelopment, rehabilitation, or conservation in a community redevelopment area, or any combination or part thereof, pursuant to the community redevelopment plan.

The Act establishes that powers granted by the Act are "for public uses and purposes" which involve the spending of public money and the potential exercise of police power, for which reason public interest, meaning a legitimate concern for general health, safety, and welfare within the area, is a requirement to implement the Act.

The Act further establishes the legitimacy of tax increment financing (TIF) as a method of successfully preserving and enhancing the tax base of an area, which will then serve to increase tax revenues for all taxing authorities for the area, enabling them to carry out their respective objectives more effectively. A redevelopment trust fund may be established by ordinance after the approval of a Community Redevelopment Plan to allow for the deposit of funds to be used by the agency to finance or refinance redevelopment. This fund must be established prior to receipt of any increment revenues. The statutes further state:

> "The annual funding of the redevelopment trust fund shall be in an amount not less than the increment in the income, proceeds, revenues, and funds of each taxing authority derived from or held in connection with the undertaking and carrying out of community redevelopment under this part. Such increment shall be determined annually and shall be that amount equal to 95% of the difference between:
>
> 1. The amount of ad valorem taxes levied each year by each taxing authority, exclusive of any amount from any debt service millage, on taxable real property contained within the geographic boundaries of a community redevelopment area; and
>
> 2. The amount of ad valorem taxes which would have been produced by the rate upon which the tax is levied each year by or for each taxing authority, exclusive of any debt service millage, upon the

[1] The 2022 Florida Statutes, Title XI Chapter 163, Part III

total of the assessed value of the taxable real property in the community redevelopment area as shown upon the most recent assessment roll used in connection with the taxation of such property by each taxing authority prior to the effective date of the ordinance providing for the funding of the trust fund."

Florida Statutes additionally require counties or municipalities seeking to exercise the power granted by the Act to adopt by a resolution "supported by data and analysis, which makes a legislative finding that the conditions in the area meet the criteria" of a slum or blighted area, detailed in 163.340(7) and 163.340(8) and defined below in subsections 2.3.1 and 2.3.2. To make this legislative finding, governing bodies draft a Finding of Necessity (FON), which supports this legislative finding through in-depth analysis of the study area. The analysis contained in this report evaluates the existing conditions and identifies the existence, if any, of a slum or blighted area. This FON will be used by the City in designating and creating the Community Redevelopment Area, if it is determined the area meets the statutory requirements to be classified as a slum or blighted area.

4. Definitions of Slum Area

According to the Florida Statute Section 163.340(7), "slum area" is an area having physical or economic conditions conducive to disease, infant mortality, juvenile delinquency, poverty, or crime because there is a predominance of buildings or improvements, whether residential or nonresidential, which are impaired by reason of dilapidation, deterioration, age, or obsolescence, and exhibiting one or more of the following factors:

(a) "Inadequate provision for ventilation, light, air, sanitation, or open spaces;

(b) High density of population, compared to the population density of adjacent areas within the county or municipality; and overcrowding, as indicated by government-maintained statistics or other studies and the requirements of the Florida Building Code;

or

(c) The existence of conditions that endanger life or property by fire or other causes."

5. Definitions of Blighted Area

According to the Florida Statute Section 163.340(8), "blighted area" means:

an "area in which there are a substantial number of deteriorated or deteriorating structures; in which conditions, as indicated by government-maintained statistics or other studies, endanger life or property or are leading to economic distress; and in which two or more of the following factors are present:

(a) Predominance of defective or inadequate street layout, parking facilities, roadways, bridges, or public transportation facilities.

(b) Aggregate assessed values of real property in the area for ad valorem tax purposes have failed to show any appreciable increase over the 5 years prior to the finding of such conditions.

(c) Faulty lot layout in relation to size, adequacy, accessibility, or usefulness.

(d) Unsanitary or unsafe conditions.

(e) Deterioration of site or other improvements.

(f) Inadequate and outdated building density patterns.

(g) Falling lease rates per square foot of office, commercial, or industrial space compared to the remainder of the county or municipality.

(h) Tax or special assessment delinquency exceeding the fair value of the land.

(i) Residential and commercial vacancy rates higher in the area than in the remainder of the county or municipality.

(j) Incidence of crime in the area higher than in the remainder of the county or municipality.

(k) Fire and emergency medical service calls to the area proportionately higher than in the remainder of the county or municipality.

(l) A greater number of violations of the Florida Building Code in the area than the number of violations recorded in the remainder of the county or municipality.

(m) Diversity of ownership or defective or unusual conditions of title which prevent the free alienability of land within the deteriorated or hazardous area.

(n) Governmentally owned property with adverse environmental conditions caused by a public or private entity.

(o) A substantial number or percentage of properties damaged by sinkhole activity which have not been adequately repaired or stabilized."

The term "blighted area" may also be used for any area in which at least one of the factors identified in paragraphs (a) through (o) is present and all taxing authorities subject to 163.387(2)(a) agree, by interlocal agreement or by resolution, that the area is blighted.

6. Assessment Process

City Staff assessed the Study Area through a multitude of resources, including but not limited to existing data, especially that included in the Green Cove Springs GeoHub; data collected from other departments, especially Public Works and Police; desktop reviews of the area; in person / walking review of the area. Staff assessed the area for many aspects of blight as defined in the Florida Statutes, and this report describes the existing conditions as they relate to these factors.

7. Study Area

The specified Study Area encompasses ±172.8 acres and is known as the Downtown and US 17 Corridor. The corridor spans Orange Avenue from Governor Street on the north end to Oak Street on the south end. The Corridor lies between St. Johns Avenue and Magnolia Avenue on its eastern edge and Pine Avenue on its western edge. The Downtown portion reaches slightly farther to the west and east. On the western side, it is bound by Palmer Street, Green Street, and Bay Street. On the eastern side, it expands diagonally eastward from Magnolia starting at Center Street, culminating at the river's edge with Spring Park property. The area is shown in Map 1.

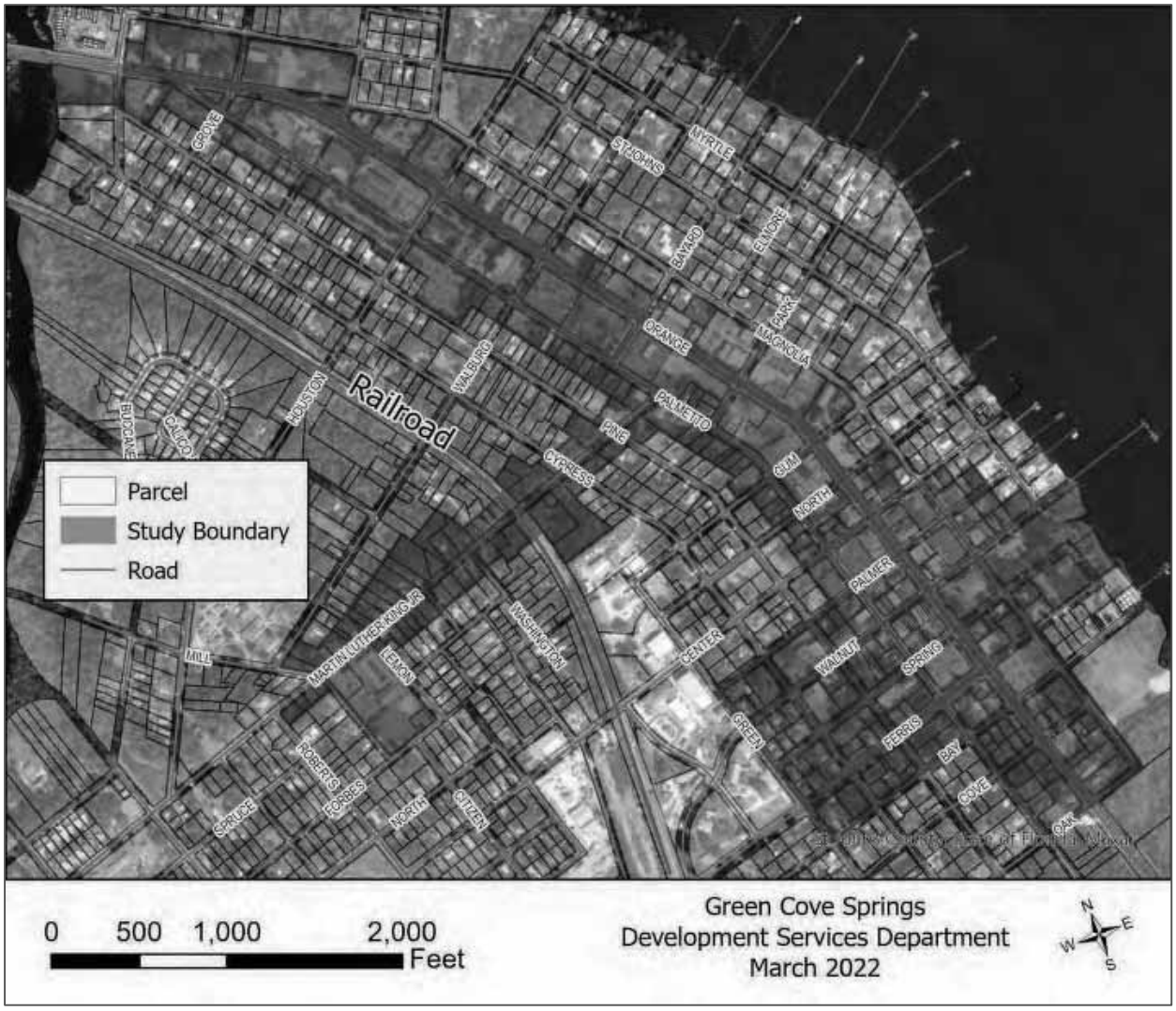
The Study Area contains primarily commercial and institutional uses. Well known locations within the Study Area include: churches such as Springs Baptist Church, First Presbyterian Church, Doxa Church, and United Methodist Church; County government buildings including the Courthouse, Jail, Supervisor

of Elections, and Administration Building; food / beverage service businesses such as Spring Park Coffee, Dunkin' Donuts, Burger King, La Casita, and Sweet Sensations; financial institutions, including Wells Fargo and VyStar Credit Union; automobile sales lots such as Green Cove Auto and Good Guys Motors as well as service businesses like Jesse's Auto Services and Darren's Custom & Restorations; retail uses like CVS, The Treasure Box, Walgreens, SS Something Special, and Green Cove Liquors; office uses including Exit Magnolia Realty, Vallencourt Construction, and Action Medical Staffing; and an event venue, Clay Theatre. Additionally, there are numerous vacant properties, including the recently demolished 1050 N Orange Ave, which previously housed an abandoned automobile sales lot, as well as the corner of North Street and Orange Avenue, which once housed two buildings and businesses. The Study Area also contains Spring Park, a well-known and loved park featuring the natural spring, a public spring-fed pool, walking trails, swinging benches, play structures, and great views of the St. Johns River. The foregoing list is not meant to be exhaustive but instead meant to provide a feel of the activity within the Study Area.

The expanse around the Study Area is primarily residential in nature, with some exception specifically along Martin Luther King Jr Blvd, which features some commercial spaces, as well as east of Green Street, which features County School Board property and related uses.

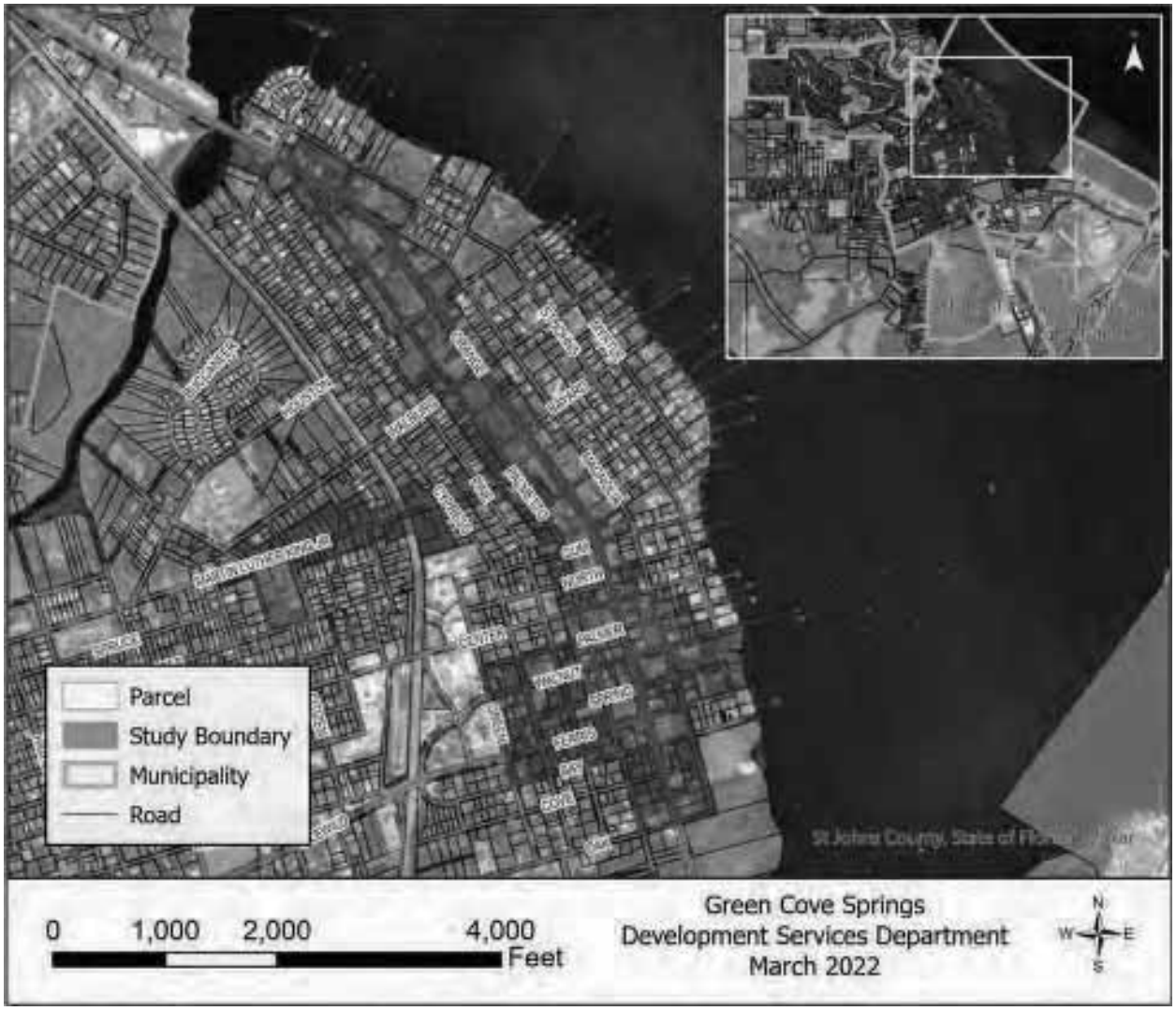
Within the Study Area, there are some planned or potential improvements. These include a proposed freestanding emergency medical facility operated by St. Vincent's as well as the Palmetto Trail project which will see an eight-foot multi-use path constructed along Palmetto Avenue from its southern end up to the Governors Creek Bridge. As part of the Walnut Street assessment, the City is also planning improvements to Walnut Street, particularly the block between Palmetto Avenue and Orange Avenue.

Map I-2. Study Area



The Study Area is located somewhat centrally within the City, particularly for commercial development. Its location within the boundaries of the City can be viewed in Map 2. The northwest portion of the City consists of two subdivisions and the southeastern portion of the City consists of Reynolds Park / Clay Port – a future mixed-use development operating as an industrial site at present. The Study Area is contained within what is referred to as the Core City. The western portion of the Core City is dominated by residential development with a smattering of institutional development, namely School Board related properties. US 17 / Orange Avenue, Martin Luther King Blvd, and Palmetto Avenue, all within the Study Are, feature commercial development with some residential development as well.

Map I-3. Study Area in Reference to the City



D. SLUM AND BLIGHTED AREA ANALYSIS

City Staff reviewed the Study Area in relation to the statutory requirements for an area to be determined a slum area or a blighted area.

1. Slum

The condition of slum in the Study Area is met under the following criteria:

(c) The existence of conditions that endanger life or property by fire or other causes.

Documentation of existing conditions provided in subsequent sections in this analysis indicates life and / or properties are endangered, specifically by dilapidation; unsecured inhabitable properties; deteriorating roadways, sidewalks, and accessibility features; abandoned homes; and overall deterioration of the Study Area.

2. Defective or inadequate public transportation facilities

The City of Green Cove Springs does not have locally operated public transportation facilities. Public transportation within Clay County, called Clay Community Transportation, is operated by the Jacksonville Transportation Authority.[2] Of 4 available lines, 2 lines travel through Green Cove Springs. These lines operate from 6am to 7pm Monday through Friday, excluding holidays. The lines do include a flex service option wherein customers can call a reservation line to schedule a pick-up from their location that will be accommodated when time allows. The deviation will go as far as a ¾ mile off the route.

The Blue Line (Map 3) has one stop within the Study Area, the Clay County Courthouse (825 N Orange Ave), and one other stop within City Limits, at the Clay County Health Department. There are two stops moderately close to City Limits – the Pier Station stop west of town on State Road 16 and the Challenge Enterprises stop on Enterprise Way just north of town. There is two to three hours between pickups at the local stops, excluding Challenge Enterprises which only has one pickup time and one drop-off time.

The Green Line (Map 4) has one stop within the Study Area (and the City at large), the Clayton and Mildred Revels Senior Center (604 Walnut St). There are three hours between pickups at this stop, and similarly three hours between drop-offs to the location.

There are no options for local transit from residential to commercial or recreational areas of town. Additionally, the sidewalk and roadway conditions through the Study Area are in a poor state. Many streets show deterioration, especially with top layers breaking down, revealing the older brick streets beneath, which creates uneven surfaces. Sidewalks show significant deterioration as well with the following conditions being regularly observed throughout the Study Area:

- Cracking: Locations where the paved surface of the sidewalk has cracked or crumbled

- Uplift: A vertical change in height along a sidewalk (generally where "panels" of the sidewalk meet or where cracking has occurred)

- Fixed Obstructions: Anchored objects (such as utility poles) that reduce sidewalk width

- Non-Fixed Obstruction: Vegetation, non-anchored objects, or uncleanliness that reduces sidewalk width or walkability

- Spalling: Surface deterioration that appears as small indentations in the surface

- Standing Water: Locations where there is or there is evidence of standing water on the sidewalk

- Loss: Locations where a piece or pieces of the sidewalk were removed, whether purposefully for work or through erosion.

Examples of the above defined items are provided in the figures below.

Further, there are many places in the Study Area completely lacking sidewalks, primarily on local streets or only on one side of the street and often without excellent road crossing conditions to get from sidewalk to sidewalk as needed.

[2] Jacksonville Transit Authority, https://www.jtafla.com/ride-jta/regional-services/clay-community-transportation/ accessed 3/14/2022

Such road and sidewalk conditions reduce the ability of the community to safely traverse the Study Area on foot, by micromobility[3] device (bicycle, scooter, skateboard, et cetera) or by motorized vehicle.

Figure I-1. Sidewalk Cracking, Palmer St, near 14 N Magnolia Ave

Figure I-2. Sidewalk Cracking & Loss, Martin Luther King Jr. Blvd

Figure I-3. Deteriorating accessibility feature, Corner of Orange Ave & Center St

[3] Institute for Transportation & Development Policy, https://www.itdp.org/multimedia/defining-micromobility/ accessed 4/7/2022

Figure I-4. Deteriorating accessibility feature, Southwest Corner of Orange Ave & Palmer St

Figure I-5. Road Disrepair, Walnut St

Figure I-6. Intersection of Green St & Walnut St

Figure I-7. Non-Fixed Obstruction, Martin Luther King Jr. Blvd

Figure I-8. Non-Fixed Obstruction, Martin Luther King Jr. Blvd

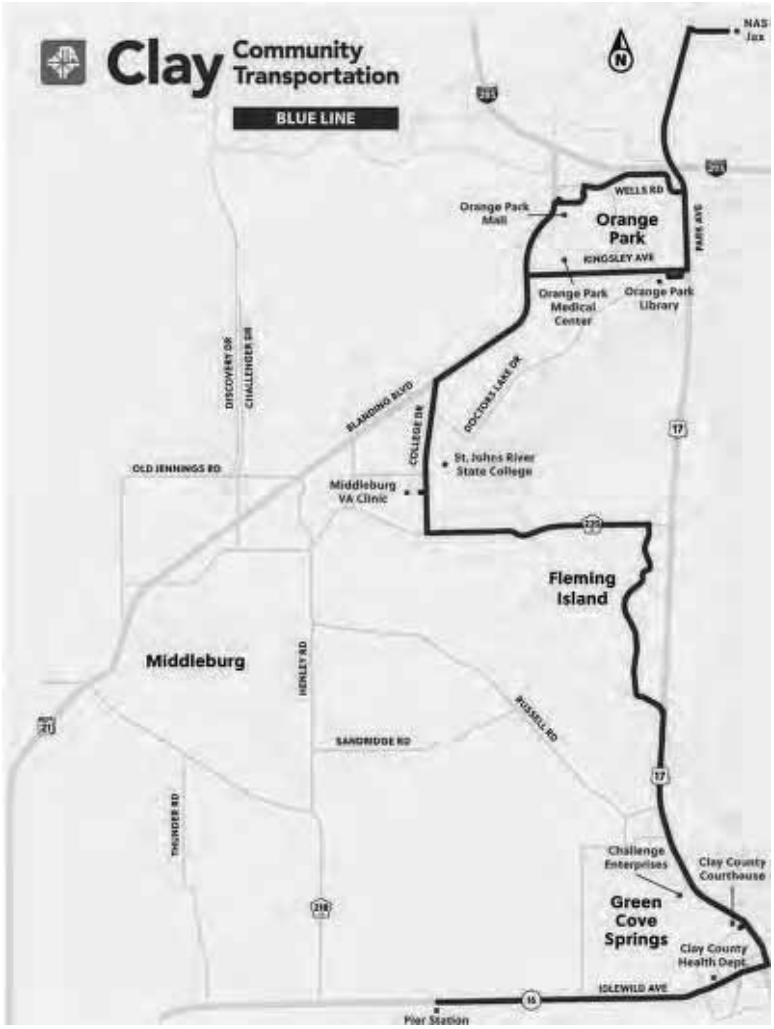
Figure I-9. Sidewalk Spalling, Martin Luther King Jr. Blvd

Figure I-10. Sidewalk – Standing Water, Martin Luther King Jr. Blvd.

Figure I-11. Sidewalk Uplift & Spalling, Martin Luther King Jr. Blvd

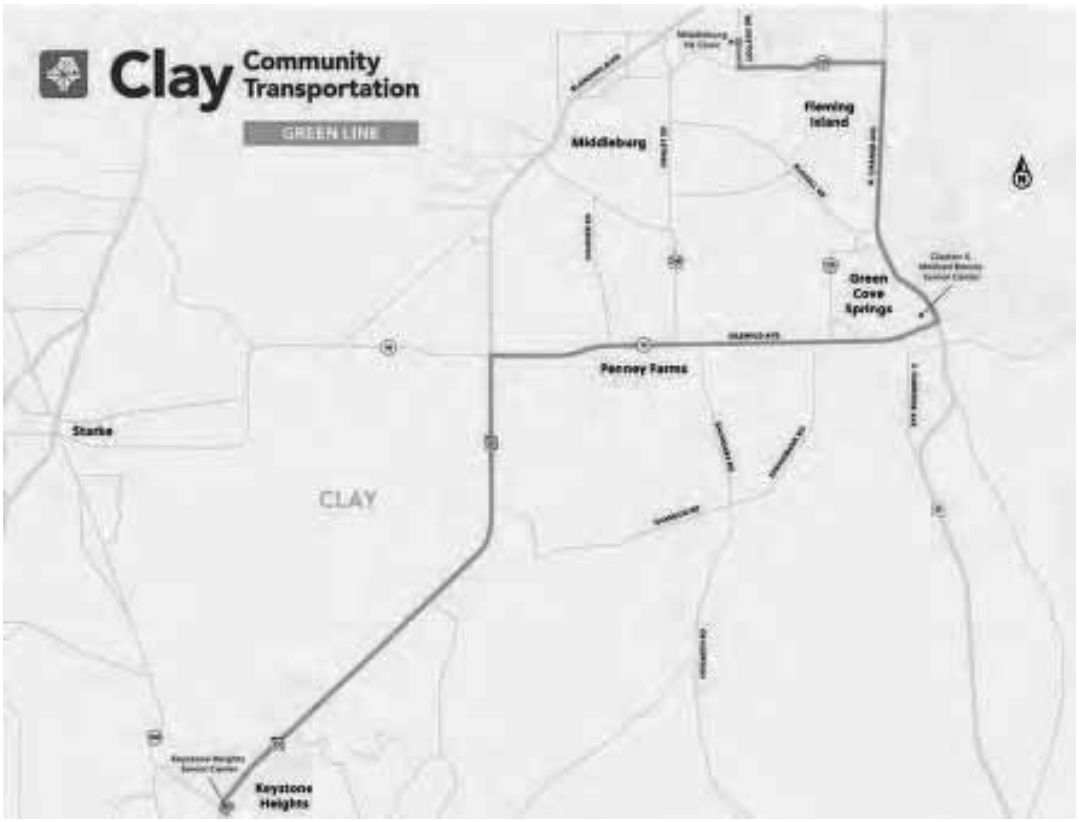
Figure I-12. Sidewalk Loss, Martin Luther King Jr. Blvd

Map I-4. Bus Route – Blue Line[4]



[4] Jacksonville Transportation Authority, https://www.jtafla.com/ride-jta/regional-services/clay-community-transportation/clay-blue-line/

Map I-5. Bus Route – Green Line[5]



3. Aggregate assessed values do not show appreciable increase over past 5 years

The Study Area has experienced some redevelopment in the past five years, but the deterioration present, as shown in later sections, has prevented the Study Area from seeing an appreciable increase in its aggregate assessed value (AAV) as compared to the City as a whole. In Table 1, it is demonstrated that the City as a whole has experienced an increased AAV of 50.71% while the Study Area has only seen an increase of 20.53%.

Table I-3. Aggregate Assessed Value Comparison

Year	Study Area	City
2017	$ 85,088,819.00	$590,524,531.00
2018	$88,913,992.00	$642,232,893.00
2019	$95,646,152.00	$802,652,764.00
2020	$95,809,061.00	$802,652,764.00
2021	$102,557,978.00	$890,001,640.00
% Increase	20.53%	50.71%

[5] Jacksonville Transportation Authority, https://www.jtafla.com/ride-jta/regional-services/clay-community-transportation/clay-green-line/

4. Faulty lot layout in relation to size, adequacy, accessibility, or usefulness

Within the Study Area, approximately 25.6% of the lots could be considered faulty (Map 4). The criteria for this determination were as follows:

- Size: Commercially zoned lots with less than approximately 75 feet of frontage and approximately 100 feet of depth – despite the zoning code identifying no minimum lot requirements in commercial districts, the size of these lots is not suited for adequate commercial development, assuming they are developed individually given the diversity of ownership.

- Adequacy: Lots deemed inadequate are shaped in a manner which decreases their developability.

- Usefulness: Lots deemed less than useful are shaped in a manner which will likely completely prevent or deter their development or redevelopment.

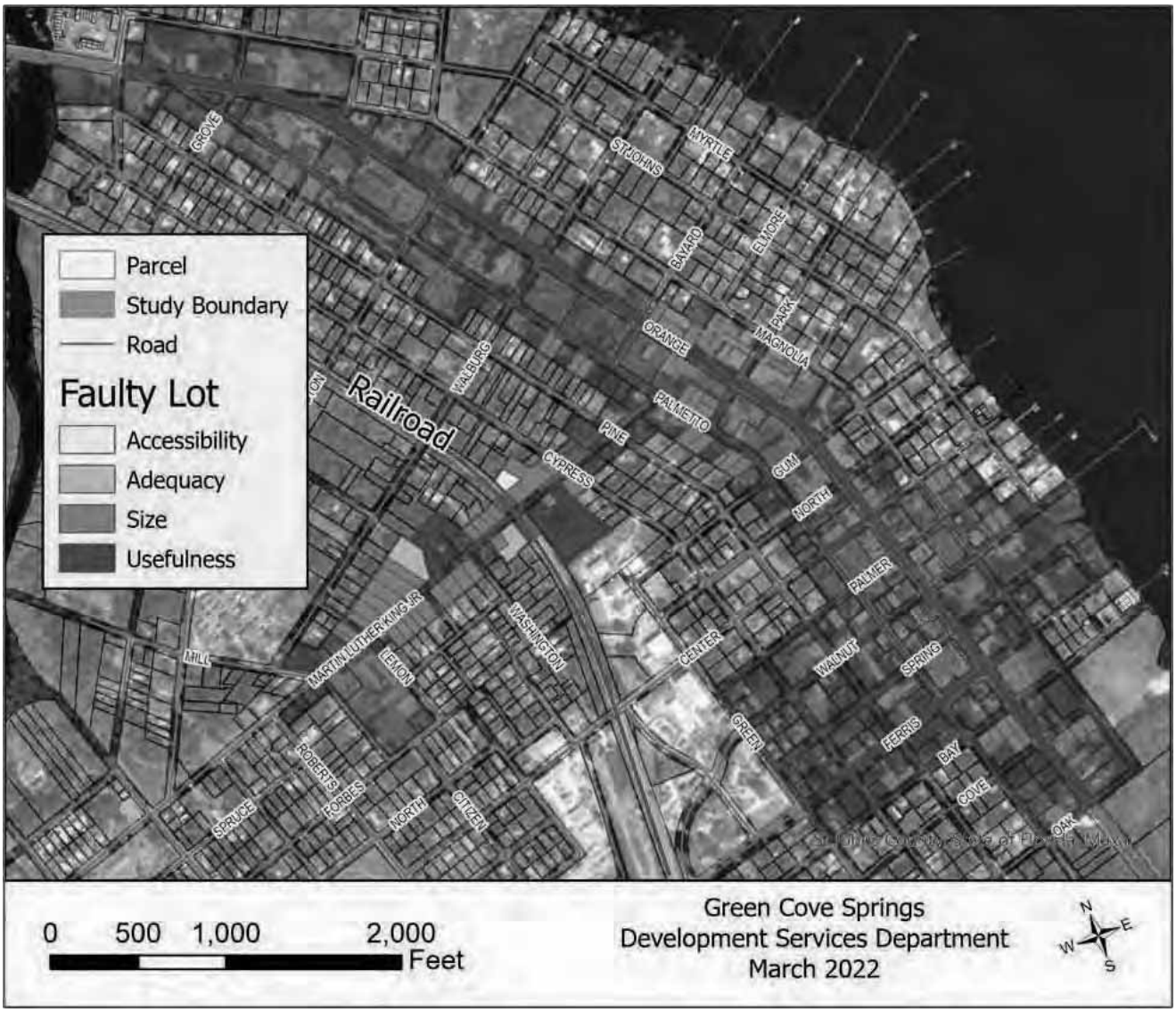
- Accessibility: Lots deemed inaccessible are landlocked.

The City does permit residential development within many commercially zoned areas, and some of the identified lots have historically or recently been developed residentially as a consequence. Ideally, as identified in the Future Land Use Map, these lots would develop commercially or with a mix of uses to better support the neighborhood.

Recent development exemplifies the difficulties with developing commercially on narrow or otherwise small lots. Between 2019 and 2020, Dunkin Donuts constructed a new location within the Study Area – 610 N Orange Ave. The site is approximately 250ft along Orange Avenue (the primary roadway) by 125ft deep. The development received a variance from the City's Zoning Code requirements, which require parking to be to the side or back of a building in the Gateway Commercial Corridor. Due to the depth of the property and the type of development (drive-thru fast food), the lot layout was inadequate to permit development without a variance.

On the basis of the plight of Dunkin Donuts and the criteria identified above, additional lots are truly eligible to be considered faulty within the Study Area, but being that they are already commercially developed, at this time, they are not being considered faulty.

Map I-6. Faulty Lots



5. Unsanitary or unsafe conditions

There are several sites with unsafe or unsanitary conditions located within the Study Area. Figures 13-29 (following) demonstrate the conditions for a portion of these properties.

Field inspection and Google StreetView inspection of the Study Area identified sites with deteriorating or damaged structures which pose a threat to building occupants, condemned or abandoned buildings, incomplete construction projects, lack of sidewalks or blocked rights-of-way (ROW[s]), as well as brownfield sites. There are unsafe commercial spaces where there is either a lack of defined pedestrian versus vehicular space or a lack of maintenance that would keep the area safe for traversing to and from a business.

These figures represent some of the many deteriorating, unsafe, and at times abandoned structures in the area.

Figure I-13. Unsafe, Deteriorating Roof, 116 N Magnolia Ave

Figure I-14. Unsafe, Condemned Building, 428 N Orange Ave

Figure I-15. Unsafe, Boarded Openings, 115 N Magnolia Ave

Figure I-16. Unsafe and unsanitary, Openings / Junk Storage, 115 N Magnolia

Figure I-17. Unsafe, No Sidewalk, ROW used for RV Parking, 327 N Orange Ave

Figure I-18. Unsafe, No Sidewalk, across from Figure 5, 425 N Orange Ave

Figure I-19. Unsanitary, Discontinued Gas Pumps, 201 N Orange Ave

Figure I-20. Unsafe, Collapsed Canopy, Petroleum Contamination Site[6], 100 N Orange Ave

Figure I-21. Unsafe, Low hanging power lines, concrete drive in disrepair, south of 25 N Orange Ave

[6] FL Department of Environmental Protection's Contamination Locator Map, https://prodenv.dep.state.fl.us/DepClnup

Figure I-22. Unsafe, ROW in disrepair, business parks in ROW, 3 S Palmetto Ave

Figure I-23. Unsafe, Lack of signage, marked parking spaces, pedestrian safety, 24 Green St

Figure I-24. Unsafe area in front of active commercial building, 1100 Martin Luther King

Figure I-25. Unsafe Structure / Abandoned, 1007 Martin Luther King Jr Blvd

Figure I-26. Unsafe Structure / Abandoned Structure, 1001 Martin Luther King Jr Blvd

Figure I-27. Unsafe Structure / Abandoned Structure, 713 Martin Luther King Jr Blvd

Figure I-28. Unsafe Structure / Abandoned Structure, 613 Martin Luther King Jr. Blvd

Figure I-29. Unsafe Structure / Abandoned Structure, 612 Martin Luther King Jr. Blvd

6. Deterioration of site or other improvements

In addition to the deterioration of site improvements shown in section 3.5, within the Study Area, there are multiple occurrences of deteriorating improvements, especially access points or paved areas in surrounding buildings. Paving is wearing away or cracking creating hazardous conditions for drivers using the lots to park

or maneuver the site and pedestrians crossing the access points. Figures below provide examples of this type of wear and tear in the corridor.

Figure I-30. Deteriorating Drive / Sidewalk, 220 Palmer

Figure I-31. Deteriorating Drive, 327 N Orange Ave

Figure I-32. Parking lot disrepair, between 604 & 500 Walnut St

Figure I-33. Sidewalk disrepair, between 604 & 500 Walnut St

7. Inadequate and outdated building density patterns

The applicable zoning districts for the Study Area generally include: Central Business District, Gateway Corridor Commercial, Gateway Corridor Neighborhood, and C-1 Neighborhood Commercial. The heart of the Study Area is where the Central Business District is located – also known as the Downtown area. The Gateway districts are located along the "corridor" area, notably US 17 or Orange Ave. The Martin Luther King Blvd corridor is zoned as neighborhood commercial but features primarily low density residential development including active and abandoned residential structures, churches, vacant lots, concrete block commercial buildings lacking transparency and activation.

Figure I-34. Outdated building pattern, 208 N Orange Ave, Food Store

Figure I-35. Outdated building pattern, 425 N Orange Ave, Wells Fargo

Figure I-36. Outdated building pattern, 327 N Orange Ave, Rick Baker's RV

Figure I-37. Low Density Development, 606 Spring St

Figure I-38. Low Density Development, 627 Spring St

Figure I-39. Low Density Development, Not Fronting Street, 702 Ferris St / 709 Spring St

Figure I-40. Undeveloped, Gustafson Property, Pine St (behind house on Walnut St)

8. Vacancy rates

17.1% of properties within the Study Area are classified as vacant by the Clay County Property Appraiser. This level of vacancy within the Study Area is 44.9% higher than that of the rest of the municipality, which has an 11.8% rate of vacancy.

Many of these lots, shown in the figures below, are prime locations that once housed a local business which has since been removed. The lots have yet to have been redeveloped despite their prime locations in the commercial areas of the City.

Figure I-41. Vacant Lot, Previously 208 N Orange Ave

Figure I-42. Vacant Lot, East of 604 Walnut St

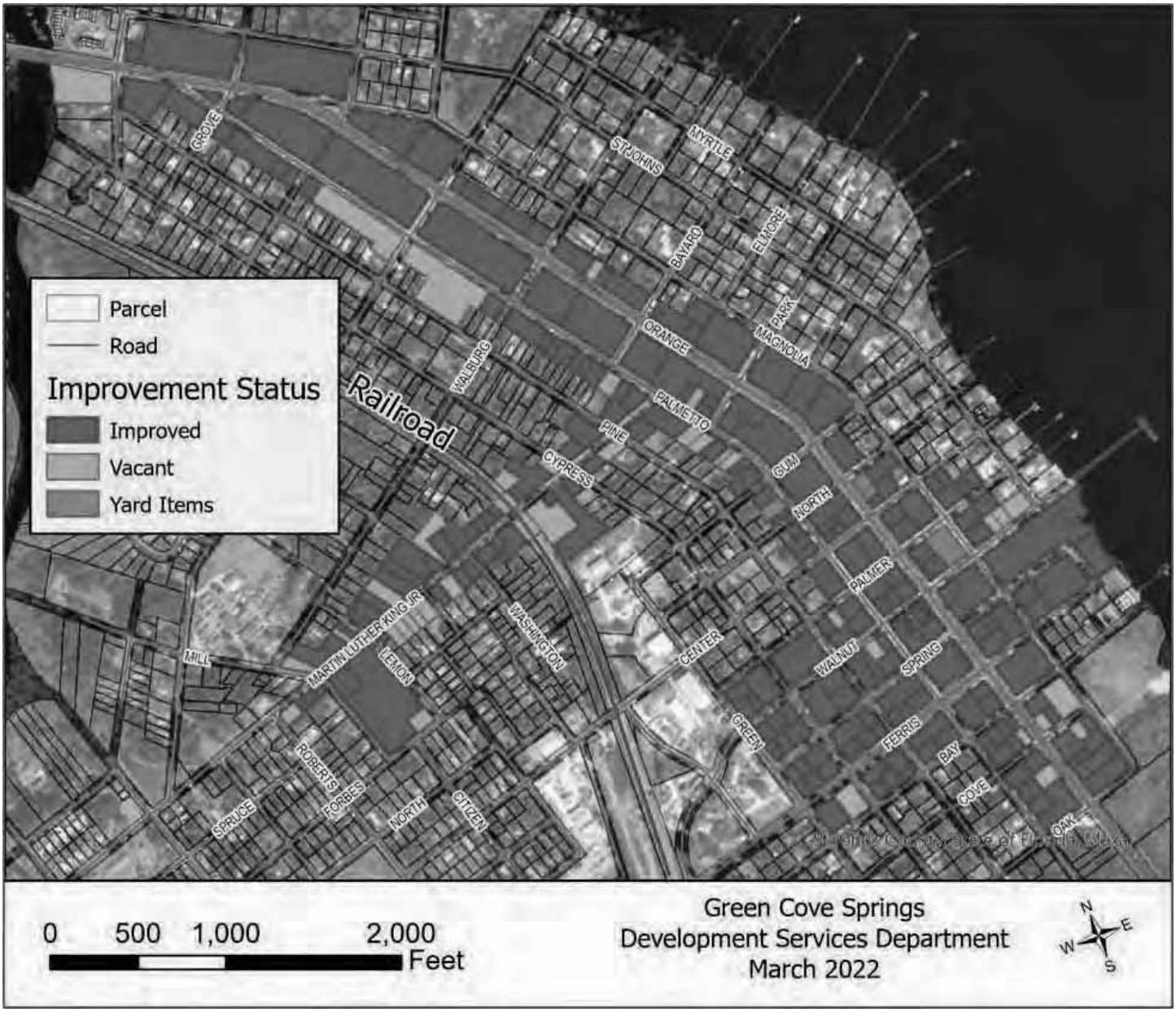
Figure I-43. Vacant Lot, BROWNFIELD[7], south of 535 N Orange Ave

Figure I-44. Vacant Lot at the northeast corner of Orange Ave &Walburg St

[7] FL Department of Environmental Protection's Contamination Locator Map, https://prodenv.dep.state.fl.us/DepClnup

Figure I-45. Vacant Lot at the northwest corner of Orange Ave & Governor St

Map I-7. Vacancy Rates



E. RECOMMENDATIONS

The Study Area meets the criteria established in Section 163.340, Florida Statutes (F.S.). It is staff recommendation that the City of Green Cove Springs adopt this Finding of Necessity by resolution per Section 163.355, F.S., and create a Community Redevelopment Agency for the Study Area as defined herein. This will enable redevelopment of the area which is necessary for the safety and economic welfare of the community

.

02

AUTHORITY TO UNDERTAKE COMMUNITY REDEVELOPMENT

GREEN COVE Springs

II. AUTHORITY TO UNDERTAKE COMMUNITY REDEVELOPMENT

A. AUTHORITY TO UNDERTAKE COMMUNITY REDEVLOPMENT, CREATION, POWERS

This document has been prepared under the direction of the Green Cove Springs Community Redevelopment Agency in accordance with the Community Redevelopment Act of 1969, F.S. 163, Part III. In recognition of the need to prevent and eliminate slum and blighted conditions within the community, the Act confers upon counties and municipalities the authority and powers to carry out "Community Redevelopment". For the purposes of this Community Redevelopment Plan, the following definition, taken from the Florida State Statutes, Section 163.340, shall apply:

"Community redevelopment" or "redevelopment" means undertakings, activities, or projects of a county, municipality, or community redevelopment agency in a community redevelopment area for the elimination and prevention of the development or spread of slums and blight, or for the reduction or prevention of crime, or for the provision of affordable housing, whether for rent or for sale, to residents

of low or moderate income, including the elderly, and may include slum clearance and redevelopment in a community redevelopment area or rehabilitation and revitalization of coastal resort and tourist areas that are deteriorating and economically distressed, or rehabilitation or conservation in a community redevelopment area, or any combination or part thereof, in accordance with a community redevelopment plan and may include the preparation of such a plan.

The ability of a county or municipality to utilize the authority granted under the Act is predicated upon the adoption of a "Finding of Necessity" by the governing body which was approved by Resolution R-03-2022 on April 14, 2022.

1. Creation of the Community Redevelopment Agency

Upon the adoption of a "Finding of Necessity" by the governing body and upon further finding that there is a need for a Community Redevelopment Agency to function in the county or municipality to carry out community redevelopment purposes, any county or municipality may create a public body corporate and politic to be known as a "Community Redevelopment Agency". The Agency shall be constituted as a public instrumentality, and the exercise by the Agency of the powers conferred by Chapter 163, Part III, Florida Statutes shall be deemed and held to be the performance of an essential public function (Section 163.356(1) Florida Statutes).

2. Powers of the Community Redevelopment Agency

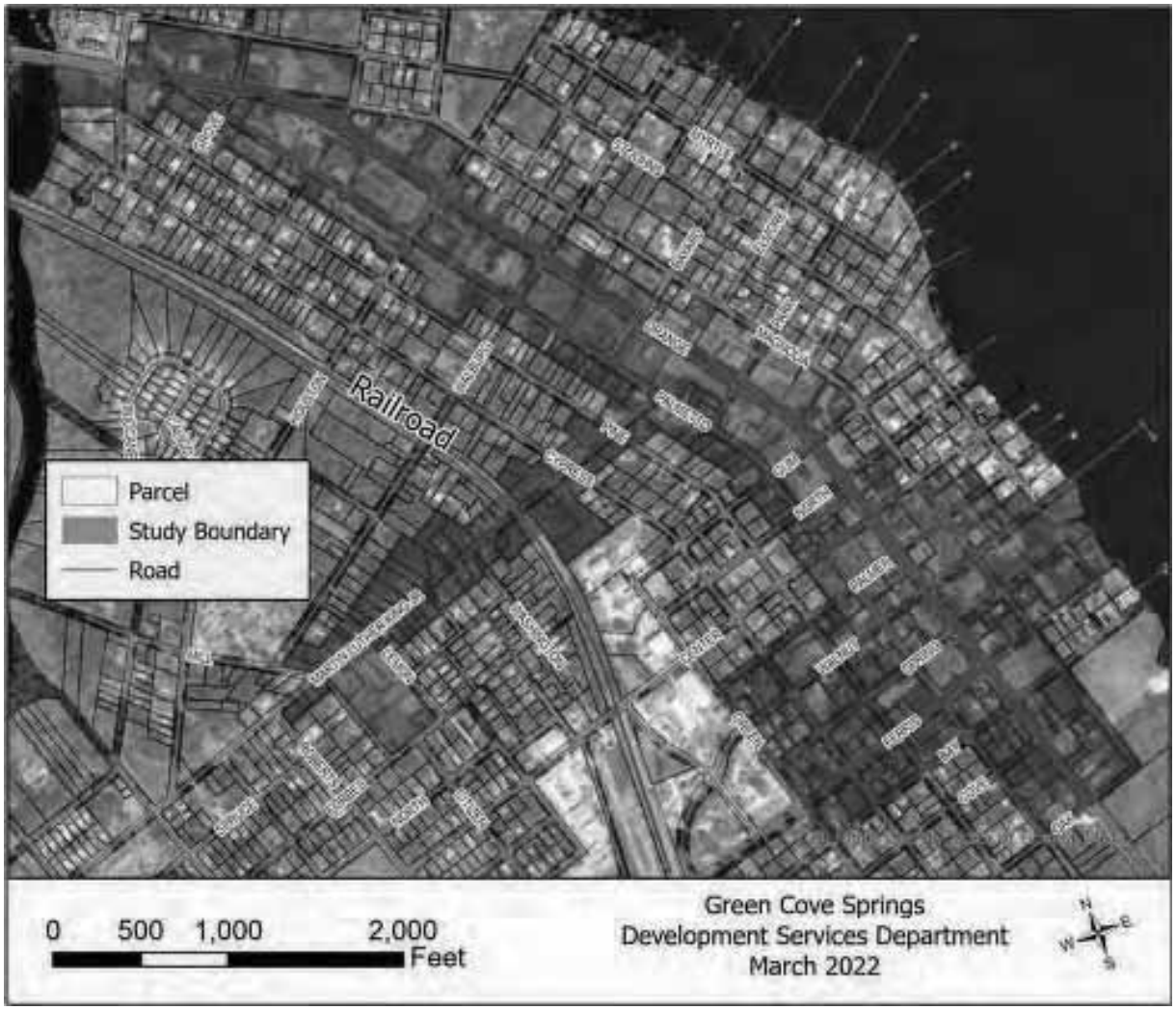
The Community Redevelopment Act confers a wide array of redevelopment powers to counties and municipalities with home rule charters, as specified in Florida Statute 163.410. As a charter county, Clay County has retained those powers, except as delegated (the "conveyed powers") to the City of Green Cove Springs through incorporation in an Interlocal Agreement to carry out redevelopment activities. The City then, has delegated the conveyed powers to the Community Redevelopment Agency (CRA).

3. Community Redevelopment Area

Pursuant to Statutes, a community redevelopment area must be a slum area, a blighted area, or an area in which there is a shortage of housing that is affordable to residents of low or moderate income, including the elderly.

The Green Cove Springs Community Redevelopment Area generally consists of the older central core of the City and surrounding neighborhoods, which have become deteriorated due to age, obsolescence, and the lack of investment. Unfortunately, a deteriorating area is self- propagating, and as conditions worsen, residents and private businesses become less willing to put their financial resources into the area. This cycle severely limits the ability of private enterprise to stop the spread of slum and blight without public assistance.

Map II-1.



4. The Community Redevelopment Plan

All redevelopment activities expressly authorized by the Community Redevelopment Act and funded by tax increment revenue must be in accordance with a Redevelopment Plan, which shall be approved by the CRA Board, the City of Green Cove Springs and the Clay County Commission. Like the City's Comprehensive Plan, the Community Redevelopment Plan is an evolving document, which may be evaluated and amended on a regular basis to accurately reflect changing conditions and community objectives.

The CRA Plan provides for effective implementation of redevelopment Goals and Initiatives to remove slum and blighted conditions within the CRA district as provided by Florida Statutes.

03

INTERLOCAL AGREEMENT WITH CLAY COUNTY

GREEN COVE Springs

III. INTERLOCAL AGREEMENT WITH CLAY COUNTY

The Green Cove Springs CRA, Green Cove Springs City Council and the Clay County Commission entered into a negotiated Interlocal Agreement that established the terms under which the City of Green Cove Springs could establish a Community Redevelopment Agency. A summary of the terms of the agreement are as follows (see full copy of the Agreement in Section 9, Appendix):

1) The initial term of the Green Cove Springs CRA shall begin on January 1, 2023 and continue for 30 years from that date;

2) The City may extend the CRA Plan based on an affirmative vote of the City of Green Cove Springs and County Commission;

3) The "base year taxable property assessment roll, used to calculate the tax increment to be deposited into the CRA trust fund, shall be 2023;

4) The CRA Redevelopment Plan must be approved by affirmative vote of the County Commission and City Council;

a. The Redevelopment Plan and any amendments shall meet all requirements of state statutes, and contain a detailed statement of the projected costs of redevelopment;

b. Funds shall be used to fund all CRA projects included in the Redevelopment Plan;

c. Redevelopment activities and projects in the Plan must be designed to mitigate slum/blight conditions which were the basis of the Finding of Necessity;

5) The City shall deposit 95% of an amount based on the calculation of increment using the City's millage in that year into the CRA trust fund, unless otherwise provided by the Agreement. The remaining 5% is an administration fee for the City.

6) The CRA may sell bonds and execute notes, and enter other forms of debt or leveraging, as well as collateral documents, to finance capital improvements deemed necessary by the CRA for redevelopment purposes. However, no debts my extend beyond the expiration date of the CRA Plan;

7) The CRA shall abide by all provisions of the Community Redevelopment Act;

8) The County shall, by resolution, delegate to the City all the powers for redevelopment in the Community Redevelopment Act;

9) If the City chooses to establish a CRA and complies with all of the provisions of statute and this agreement to establish the CRA trust fund, the County shall deposit 95% of an amount based on the calculation of increment using the City's millage in that year into the CRA trust fund;

10) The County shall abide by all provisions of the Community Redevelopment Act.

Once the Redevelopment Plan is approved by the CRA, it will be required to be ratified by the City of Green Cove Springs and the Clay County Commission. In addition to the approval of the Redevelopment Plan, the City and County shall also be required to ratify an interlocal agreement pursuant to Section 163.410, Florida Statutes, the Clay County Commission delegated the authority to exercised community redevelopment powers to the City of Green Cove Springs via Resolution 2021/22-56, subject to the conditions in the interlocal agreement- see copy of Resolution 2021/22-56 in Sections 5,6,7 and 8, in Appendix.

04

REDEVLOPMENT VISION, OBJECTIVES & STRATEGIES

GREEN COVE Springs

IV. REDEVELOPMENT VISION, OBJECTIVES AND STRATEGIES

A. APPROACH

This Chapter presents the vision for the Redevelopment Area. In addition, this Chapter identifies potential objectives and strategies, and lays a foundation for the programs and projects to be considered by the City of Green Cove Springs, Clay County, the CRA, and private enterprise in implementing this vision.

Projects, costs, or budgets provided in the Redevelopment Plan are estimated, and will be refined as additional research, plans, and documents are prepared to implement the particular objectives, strategies, resulting programs, and projects. The costs given for budgeting purposes establish the framework for the financial planning analysis.

Costs or budgets should not be construed as exclusively the burden of the public sector. Costs or budgets are intended to be total costs with potential allocations to the public and private sectors assigned on the basis of the encouragement of private enterprise as a tool to carry out a significant portion of this Plan and apparent benefit, value, revenues, or other relevant factors.

B. VISION FOR THE COMMUNITY REDEVELOPMENT AREA

The vision for the Redevelopment Area focuses on creating a vibrant multimodal mixed-use corridor that offer residents and visitors a high-quality destination featuring active uses, pedestrian connections, a safe transportation network, and inviting public spaces in a manner that promotes and accommodates growth while continuing to honor the City's rich small-town charm and history. At the same time, redevelopment efforts shall be complimented with maintaining affordable housing options for residents of low or moderate income, including the elderly. The CRA will support infrastructure and not impact the City's ability to provide an adequate level of service within the Redevelopment Area.

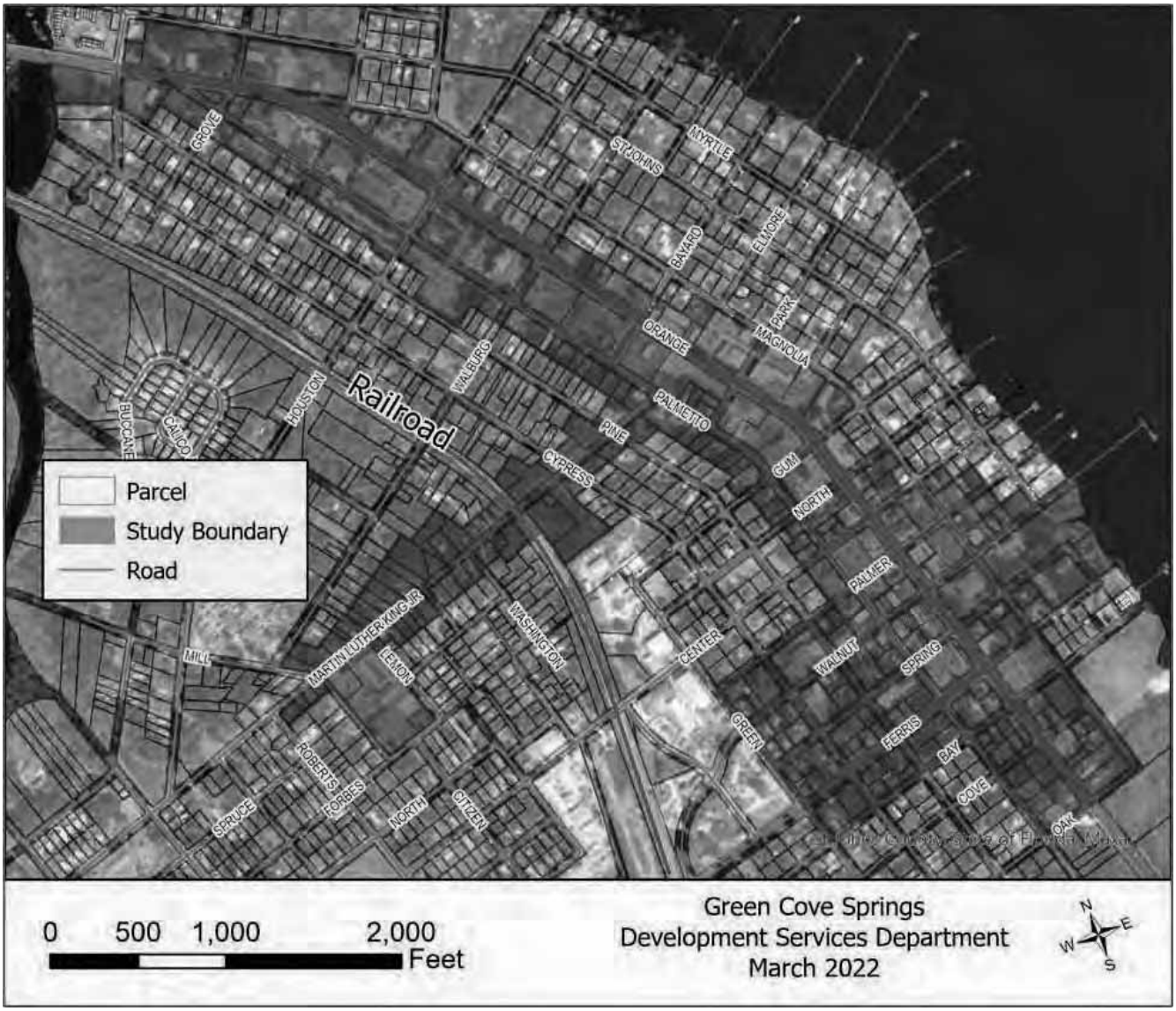
The development of certain segments of the subject corridors will lead to the conversion of the existing, non-sustainable, haphazard development pattern that has occurred along the corridors. The CRA will be treated with improved infrastructure intended to promote area rehabilitation and ultimately the highest and best use of structures. Gateways and wayfinding signage will be developed at key locations as identified in the Downtown Master Plan to identify entry to serve as focal points for the Community Redevelopment Area. Linear features will be beautified with landscape improvements and hardscapes.

The intent of this Plan is to serve as a framework for guiding development and redevelopment in the Redevelopment Area. This Plan identifies redevelopment objectives and lays the foundation for programs and capital projects to be undertaken, which will reverse and remove blight documented in the Findings of Necessity. This Plan addresses implementation strategies that were adopted as part of the Downtown Master Plan. These programs, projects, funding, and administrative opportunities will continue to be refined as they are implemented. It is clearly understood that grants and other revenues (impact fees, general revenue, grants etc.) need to be used in conjunction with available increment revenues to achieve these stated goals. While based on the most accurate data available, the various strategies and costs identified in this Plan will require additional study as specific programs and projects are initiated, refined, and implemented.

The focus of the Plan is the mitigation or correction of the various blighted area conditions documented in the adopted Finding of Necessity Report and the implementation strategies identified in the 2022 Downtown Master Plan. Changing social, physical, and economic conditions could warrant the modification of this Plan. If the Plan is modified, the CRA must comply with Section 163.361, Florida Statutes and applicable County Resolutions.

As the redevelopment process unfolds, a Conceptual Diagram will be generated to illustrate specific improvements planned. The elements shown in the Conceptual Diagram may be relocated or realigned as part of future planning initiatives, so long as modifications are generally consistent with the vision articulated in this Plan. The City Land Development Code (LDC) shall address the redevelopment area's urban design framework.

Map IV-1. Study Area



C. REDEVELOPMENT OBJECTIVES AND STRATEGIES

In partnership with private enterprise and the County, the redevelopment initiative embodied in this Plan will reverse and remove the observed blighted conditions within the Redevelopment Area by leveraging public assets to improve the overall economic condition and the physical condition of the Redevelopment Area. Creating safe, vibrant and pedestrian friendly corridors along US 17 and downtown roadways / featuring more attractive mixed use and commercial opportunity will greatly enhance the quality of life not only for the residents but the population of the City and County at large.

Strategic initiatives are to be identified and placed into action to address, reverse, and remove the blighted area conditions, which have substantially impaired reinvestment activity within the Redevelopment Area; and ultimately will be substantially redeveloped and revitalized as a community focal point to the benefit of City and County residents, businesses, property owners, and visitors through the implementation of this Redevelopment Plan.

Objectives have been identified and placed into action to address, reverse, and remove the blighted area conditions, which have substantially impaired reinvestment activity within the Redevelopment Area; and ultimately will be redeveloped and revitalized as a community focal point for the benefit of City and County residents, businesses, property owners and visitors through the implementation of the plan.

1. Objectives and Strategies

Objective 1: Improve transportation facilities within the Redevelopment Area including sidewalks, crosswalks, bike paths, and other multi-modal options to enhance regional connection. These strategies will correct the blighted conditions of defective or inadequate public transportation facilities (Figures 1-12 and Map 3 & 4 of the Finding of Necessity Report).

1. Sidewalk Repair and obstruction relocation as set forth along Magnolia Avenue, Martin Luther King Jr. Blvd, Orange, Palmer and Center Streets as shown in figures 1-4 , and 7-8,

2. Repair the deterioration of Walnut Street between Green Street and Pine Avenue as shown in figures 5-6 of the Finding of Necessity Report. This will improve safety, traffic flow and access.

3. Provide for updated surveys of downtown roadways to determine right of way widths and obstructions to determine where additional multimodal improvements are viable such as:

a. roadway, sidewalk, and lighting improvements on appropriate streets, and provide safe pedestrian routes.

b. roadway and streetscape improvements based on a phasing plan which emphasizes visual impact in addition to improved access and circulation.

c. Provide the ability for vehicles, pedestrians, and bicyclists to access an enhanced internal transportation network which connects, if applicable, the neighborhoods to services and commercial corridors.

d. Develop and incorporate landscape and lighting design standards to create a safe and inviting environment.

e. Integrate traffic calming techniques throughout the internal roadway system to enhance safety and facilitate a pedestrian/bicycle friendly environment. Traffic calming techniques may include the use of pavers or decorative concrete, raised pavement, roundabouts, change of landscape treatment, and the creation of pedestrian nodes at major intersection, mid-block crossings and other locations where potential conflicts exist between vehicles, pedestrians and bicyclists.

f. Traffic lights, crosswalks, and regulatory/wayfinding signage will be used to enhance the safety of vehicles, pedestrians, and bicyclists in key locations throughout the Redevelopment Area

4. Add curb extensions, and narrow travel lanes and add decorative pedestrian crossings to reduce the pedestrian crossing distance across Orange Avenue at the intersection with Walnut Street. This will improve pedestrian safety and provide a clear sense of arrival into the Downtown and serve to effectively bridge the eastern and western portions of the downtown.

5. Coordinate with the Florida Department of Transportation to reduce travel lane widths, provide and expand landscape buffers, install street trees, and widen sidewalks along the US 17 Corridor to enhance pedestrian comfort, safety and a greater sense of arrival to Green Cove Springs as set forth as implementation phase 1, #11 in the GCS Downtown Master Plan.

6. Promote the Redevelopment Area through designing and implementing a signage and wayfinding system directing traffic to and from the major connectors, and destinations in the region, as set forth in implementation phase 1, #3 of the GCS Downtown Master Plan.

Objective 2: Create a vibrant Downtown area with a mixed-use, multimodal development pattern. These strategies will correct the blighted conditions of faulty lot layout (Figures of the Finding of Necessity Report); unsafe conditions (Pgs. 19 and 21 - 25 of the Finding of Necessity Report); and deterioration of site or other improvements (Pgs. 16, 17, 20 and 24 of the Finding of Necessity Report). In addition, this objective addresses the implementation strategies set forth in the Downtown Master Plan.

1. Implement a Form Based Code with mixed use urban design/development standards for the Downtown Core as set forth in implementation step phase 1, # 4 in the GCS Downtown Master Plan.

The standards will address the incorporation of parking lot layout, building design, landscaping, signage, pedestrian connections, and linkages between land uses through a functional cross access system.

2. Implement the branding and wayfinding plan set forth in the GCS Downtown Master Plan Implementation Phase 1, Step #3. The wayfinding plan will help to establish he unique place the downtown area has within the City and region.

3. Reposition the Green Cove Springs downtown through marketing initiatives to attract targeted uses/industries retain existing businesses and improve the quality of life within the CRA.

4. Provide public art along Walnut Street and Spring Park in coordination with the Clay County Tourism Strategic Plan.

5. Provide the following incentive programs to encourage and support private sector investment and encourage targeted retail development:

a. Anchor Tenant Incentive Program

The Anchor Tenant Incentive Program provides loan-to-grant funding to commercial property owners and/or commercial tenants to assist with interior building improvements and business start-up costs. The goal of the program is primarily to incentivize anchor restaurants and breweries (food and drink establishments), and hotels to establish in Downtown, which in turn will help stimulate the local economy and improve the quality of life for Green Cove Springs residents and visitors. Eligible participants may receive loan-to-grant funding for 35% of the total interior building improvement and business start-up costs, up to a maximum of $75,000. Loan-to-grant funding may exceed $75,000 and be made available to businesses outside the food and drink category if the City is presented with a unique 'catalyst' project. A catalyst project is generally defined as a business that is first-to-market and anticipated to have a catalytic impact that will promote the City of Green Cove Springs Downtown Master Plan vision for a thriving Downtown where people can live, work and play. The term of the loan will be five years from the issuance of a Certificate of Occupancy. For each year the business is open and operating, 20% of the loan will be forgiven. If after five years the business is open and operating, the loan will be forgiven entirely and converted into a grant. Properties that pay no Ad-valorem taxes or are otherwise tax exempt are not eligible. In cases where a portion of a property is tax-exempt, funding may be made only to the taxable portion/percentage of the property. Loan-to-grant funds maybe disbursed to a program participant on a reimbursement basis. The City and program

participant would create a payment schedule based on project milestones. The Incentive Program can also be used for payment of mobility and impact fees.

b. Rental Subsidy Program

The proposed Rental Subsidy Program would provide an 18-month partial rental subsidy (up to $25,000) to qualifying targeted businesses. The funding award would be administered over an 18 consecutive month period. The award recipient would be paid the rent subsidy as agreed upon in an executed performance agreement between the applicant and the City. The applicant must have an executed multi-year lease (two-year minimum) with the owner. A copy of the lease, or binding or proposed multi-year commercial lease agreement must be provided to the city.

c. Business Façade Grant

The Business Façade Grant Program provides a matching grant to commercial property owners and/or commercial tenants, located in the targeted area, to assist with eligible exterior building and site improvements. Eligible applicants include both commercial property owners and business lessees with written authorization of the property owner. Eligible businesses must be from a small business industry sector targeted by the City and may be an individually owned franchise as long as it meets all other criteria. The façade grant award would be a 50% reimbursement of total projects costs with a maximum award of $15,000. Up to $4,000 of the total available may be spent on outdoor furniture and dining fixtures. The grant award amount will decline over time rewarding projects completed in a timely manner. If an awarded project is not started within one year of award, the award will be withdrawn.

d. Tax Increment Fund Rebate

Refunding a portion of City tax revenue generated by on-site/building improvements or new construction (increment) could be another potential incentive to encourage targeted retail development in Downtown Green Cove Springs. The refunded amount would be paid out over a five (5) year period with a declining scale of refunds to be determined by the City. The applicant would enter into a Performance Agreement with the City detailing the proposed capital investment and improvements to be made and the proposed increment rebate amounts and periods. The grant is a reimbursement of a portion of City Ad-Valorem taxes paid by the applicant. The CRA shall utilize the Tax Increment Fund of the Community Redevelopment Agency to provide the tax increment rebate proposed in addition to other

incentives and CRA programming and redevelopment powers as authorized by F.S. 163.360, Part III.

6. When feasible, the City should encourage acquisition and subsequent redevelopment by the private market. Other related activities that may be undertaken by the City include:

a. Map and index all commercial properties in the Redevelopment Area to provide detailed information on parcel boundaries, sizes, and ownership.

b. Identify and inventory all relevant substandard properties.

c. Document and analyze parking demands and infrastructure constraints throughout the Redevelopment Area.

d. Document site criteria for modern mixed-use developments by business type to facilitate the understanding of contemporary developer site and parking requirements.

e. The City may facilitate aggregation and redevelopment of "problem" or constrained parcels or groups of parcels.

f. The City may assist in the purchase, sale, negotiation, and coordination of land assembly. However, the City shall not use eminent domain to acquire land that will be ultimately used or transferred for private development.

g. Identify catalyst sites such as the City property at Walnut and St Johns Avenue to serve as important strategic assets to cause an early and precedent-setting change in the community redevelopment area and to spur other growth.

Objective 3: Increase the Downtown Parking Supply

1. Provide additional parking spaces within City owned property at the Palmetto Avenue and Spring Street intersection, GCS Downtown Master Plan Implementation Phase 1, #7C.

2. Provide Festival Street Parking along Magnolia Avenue between Walnut and Spring Street, GCS Downtown Master Plan Implementation Phase 1, #7D.

3. Provide on-street parking on Magnolia Avenue between Spring and Ferris Street, GCS Downtown Master Plan Implementation Phase 1, #7E.

4. Provide on-street parking along Magnolia Avenue between Oak Street and Ferris Street. (GCS Parking Study Recommendation).

Objective 4: Incorporate housing revitalization through housing maintenance programs and rehabilitation services. These strategies funded through the SHIP and CDBG programs will help correct the blighted conditions of unsanitary or unsafe conditions Unsanitary or unsafe conditions (Figures 13-29 of the Finding of Necessity Report), associated with residential uses; and deterioration of site or other improvements (Figures 30-33 of the Finding of Necessity Report.

1. By addressing the problems associated with substandard and dilapidated housing, the City/CRA will mitigate contributing blight conditions within the Redevelopment Area.

2. In the same manner, redevelopment efforts shall be complimented with efforts to provide affordable/workforce housing to residents of low to moderate income, including the elderly.

3. Promote programs for homeowners to rehabilitate their homes. Such programs include zero interest loans or information on other funding sources for the repair of single and multi-family homes depending on the applicant's income.

4. Assist low-income households through the SHIP program with down payment and closing costs assistance. The assistance may be for the purchase of an existing structure.

5. Infrastructure improvements such as roadway improvements, stormwater, wastewater, and potable water make properties more conducive for development. The City may undertake infrastructure improvements in partnership with private entities. If determined improving the infrastructure of certain properties is beneficial to the City for housing revitalization and blight mitigation within the Redevelopment Area, the CRA may undertake capital improvements on these individual properties.

6. Work with the private sector and Non-Government Organizations to create programs that improve the availability of affordable workforce housing for low to moderate income residents

7. Work with the City of Green Cove Springs and Clay County to encourage development and renovation of Mixed-Use, Affordable, Workforce, and Mixed-Income Housing.

Objective 5: Establish a creative, equitable, efficient and practical funding and financing mechanism to properly implement this Plan. These strategies will correct the blighted conditions of identified in the Finding of Necessity Report and the Implementation steps identified in the Downtown Master Plan.

1. It is important the City/CRA identify and secure all effective sources of funding including, but not necessarily limited to, increment revenues, non-ad valorem assessments, and grant funding revenue.

2. The City/CRA shall be willing to contemplate the issuance of bonds, secure other financial instruments, seek and utilize grants, and seek out other sources and alternatives to aid in implementing this Plan.

Objective 6: Ensure the Redevelopment Area is safe and clean over a period of time. These strategies will correct the blighted conditions of unsanitary or unsafe conditions Unsanitary or unsafe conditions (Figures 13-29 of the Finding of Necessity Report), associated with residential uses; and deterioration of site or other improvements (Figures 30-33 of the Finding of Necessity Report.

1. The City will identify, execute, and coordinate special maintenance standards and programs for public facilities, roadways, open space areas, entries, and commercial uses along the three corridors.

2. The Community Redevelopment Act encourages "community policing innovations." This concept is defined as policing techniques or strategies designed to decrease crime by reducing opportunities for, and increasing the perceived risks of engaging in, criminal activity through visible presence of law enforcement in the community, including, but not limited to, community mobilization, neighborhood watch programs, citizen patrol, foot patrol, or intensified motorized patrol. The City will review these programs to improve the actual and perceived security, building safety, and appearance of the Redevelopment Area.

Objective 7: The City may plan, design, and deliver additional infrastructure improvements or services within the Redevelopment Area, if deemed those improvements enhance the quality or attractiveness of the Redevelopment Area especially with regard to public amenities. These strategies will correct the blighted conditions of unsanitary or unsafe conditions (Pgs. 18, 23 and 24 of the Finding of Necessity Report); and deterioration of site or other improvements (Pgs. 18, 23 and 24 of the Finding of Necessity Report).

1. Such additional infrastructure may include undergrounding utilities in certain areas to achieve a desired visual impact, upgrading technology, and telecommunications availability to attract businesses or the enhancement of landscape areas. Such additional improvements will complement the redevelopment plans for the Redevelopment Area.

2. Additional services may include extraordinary right-of-way or other public area maintenance, planning, and implementing cultural, charitable or place-making activities, events and related services which showcase the Redevelopment Area.

3. The CRA shall acquire land and create / expand regional stormwater retention areas and conveyance systems as needed to accommodate proposed growth

Objective 8: Historic Preservation

1. Support programs that contribute to the renovation and preservation of historic structures and the downtown historic district.

2. Restoration of the Rivers House located at Spring Street and Magnolia Avenue. Provide additional funding to upgrade the Rivers House to address site and building code violations and to approve the visual appeal of a vital community landmark.

Objective 9: Parks/Public Spaces

1. Provide support, including funding, for construction of facilities for Spring Park that will draw visitors to the CRA commercial district while simultaneously building a sense of, "Place," in the downtown area.

2. Work to improve pedestrian access from in the downtown area to Spring Park.

3. Design and construct City Hall Park between City Hall and US 17 (Implementation step #12, Downtown Master Plan).

Objective 10: Redevelopment Administration

As provided for in Florida Statute 163, Part III, the Green Cove Springs Community Redevelopment Agency will utilize Incremental Tax Revenues to fund administration, overhead or any other expenses encumbered to achieve the Redevelopment Goals identified within this CRA Plan, including:

1. Redevelopment planning, surveys, and financial analysis.

2. Acquisition of real property in the CRA District.

3. Clearance and preparation of areas for redevelopment.

4. Repayment of borrowed funds.

5. All expenses related to bonds and other indebtedness.

6. Development of affordable and workforce housing.

7. Provide funding for legal and professional services as needed.

05

FINANCIAL INFORMATION

GREEN COVE Springs

V. FINANCIAL INFORMATION

A. BASE-YEAR PROPERTY VALUES

The base-year for the Green Cove Springs CRA is 2023, as defined in the interlocal agreement between the Green Cove Springs CRA, the City of Green Cove Springs and the Clay County Commission, and the first contributions to the Green Cove Springs CRA Trust Fund will begin after January 1, 2024. Implementation of the CRA Plan is projected to generate approximately $9.7 million in net new property taxes between FY 2023 and 2053. The distribution of these net new taxes is provided in the following estimates. This estimate assumes an annual average growth of TIF of 1.5%.

Table V-1. Project Green Cove Springs CRA TIF Revenues (3% Growth Rate)

	City TIF	County TIF	Total TIF
2024	5,798	9,508	15,306
2025	11,770	19,302	31,072
2026	17,921	29,389	47,310
2027	24,256	39,779	64,036
2028	30,782	50,481	81,263
2029	37,503	61,504	99,007
2030	44,427	72,857	117,284
2031	51,557	84,551	136,109
2032	58,902	96,596	155,498
2033	66,467	109,002	175,469
2034	74,259	121,781	196,040
2035	82,285	134,942	217,227
2036	90,551	148,499	239,050
2037	99,066	162,462	261,528
2038	107,835	176,845	284,680
2039	116,869	191,658	308,527
2040	126,173	206,916	333,089
2041	135,756	222,632	358,388
2042	145,626	238,819	384,446
2043	155,793	255,492	411,285
2044	166,265	272,665	438,930
2045	177,051	290,354	467,404
2046	188,160	308,573	496,733
2047	199,603	327,338	526,941
2048	211,389	346,667	558,055
2049	223,528	366,575	590,103
2050	236,032	387,080	623,113
2051	248,911	408,201	657,112
2052	262,176	429,956	692,132
2053	275,840	452,363	728,202
Total	**$ 3,672,550**	**$ 6,022,789**	**$ 9,695,338**

06

LEGAL DESCRIPTION

GREEN COVE Springs

VI. LEGAL DESCRIPTION

GREEN COVE SPRINGS CRA DESCRIPTION

A PORTION OF SECTION 38, TOWNSHIP 6 SOUTH, RANGE 26 EAST, CLAY COUNTY, FLORIDA TOGETHER WITH PORTIONS OF THE NORTH SUBURBS OF GREEN COVE SPRINGS, AS SHOWN ON MAP RECORDED IN PLAT BOOK 2, PAGE 1 OF THE PUBLIC RECORDS OF SAID COUNTY AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

FOR A POINT OF REFERENCE, COMMENCE AT THE INTERSECTION OF THE SOUTHEASTERLY RIGHT-OF-WAY LINE OF GOVERNOR STREET (A 60 FOOT RIGHT-OF-WAY) WITH THE SOUTHWESTERLY RIGHT-OF-WAY LINE OF ST. JOHNS AVENUE (A 60 FOOT RIGHT-OF-WAY) AND THENCE RUN SOUTHEASTERLY ALONG SAID SOUTHWESTERLY RIGHT-OF-WAY LINE OF ST. JOHNS AVENUE TO AN INTERSECTION WITH THE SOUTHEASTERLY LINE OF LOT 15, BLOCK 3, AFORESAID NORTH SUBURBS OF GREEN COVE SPRINGS AND THE POINT OF BEGINNING; THENCE CONTINUE SOUTHEASTERLY ALONG SAID SOUTHWESTERLY RIGHT-OF-WAY LINE TO AN INTERSECTION WITH THE NORTHWESTERLY RIGHT-OF-WAY LINE OF LAMONT STREET; THENCE SOUTHWESTERLY ALONG SAID NORTHWESTERLY RIGHT-OF-WAY LINE TO AN INTERSECTION WITH THE SOUTHWESTERLY RIGHT-OF-WAY LINE OF NORTH MAGNOLIA AVENUE; THENCE SOUTHEASTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE NORTHWESTERLY RIGHT-OF-WAY LINE OF HOUSTON STREET; THENCE SOUTHWESTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE NORTHWESTERLY PROLONGATION OF THE NORTHEASTERLY LINE OF LOT 22, BLOCK 13, SAID NORTH SUBURBS OF GREEN COVE SPRINGS; THENCE SOUTHEASTERLY ALONG SAID PROLONGATION AND ALONG SAID NORTHEASTERLY LINE OF SAID LOT 22 BLOCK 13 AND THE SOUTHEASTERLY PROLONGATION THEREOF TO AN INTERSECTION WITH THE SOUTHEASTERLY LINE OF THE NORTHWESTERLY 30 FEET OF LOT 6, BLOCK 11, BORDEN PLACE, AS RECORDED IN PLAT BOOK 2, PAGE 57 OF AFORESAID PUBLIC RECORDS. ALSO BEING THE MOST SOUTHERLY CORNER OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 1576, PAGE 2016 OF SAID PUBLIC RECORDS; THENCE NORTHEASTERLY ALONG THE SOUTHEASTERLY LINE OF LAST SAID LANDS TO THE SOUTHWESTERLY RIGHT-OF-WAY LINE OF NORTH MAGNOLIA AVENUE; THENCE SOUTHEASTERLY ALONG LAST SAID LINE TO AN ANGLE POINT; THENCE SOUTHERLY ALONG THE WESTERLY RIGHT-OF-WAY LINE OF SAID NORTH MAGNOLIA AVENUE TO AN INTERSECTION WITH THE NORTHERLY RIGHT-OF-WAY LINE OF GUM STREET; THENCE WESTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE NORTHERLY PROLONGATION OF THE EASTERLY LINE OF LOT 2, BLOCK 35, GREEN COVE SPRINGS, AS RECORDED IN PLAT BOOK 1, PAGES 9 AND 10 AND ALSO IN SAID PLAT BOOK 2, PAGE 1; THENCE SOUTHERLY ALONG LAST SAID LINE AND ALONG THE EASTERLY LINE OF LOTS 2 AND 3, SAID BLOCK 35 TO AN INTERSECTION WITH THE NORTHERLY RIGHT-OF-WAY LINE OF NORTH STREET; THENCE EASTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH SAID WESTERLY RIGHT-OF-WAY LINE OF NORTH MAGNOLIA AVENUE; THENCE SOUTHERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE SOUTHERLY LINE OF LOT 1, BLOCK 32, SAID NORTH SUBURBS OF GREEN COVE SPRINGS; THENCE WESTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE WESTERLY LINE OF THE EASTERLY 80 FEET OF LOT 4, SAID BLOCK 32; THENCE SOUTHERLY ALONG LAST SAID LINE AND THE SOUTHERLY PROLONGATION THEREOF TO AN INTERSECTION WITH THE SOUTHERLY RIGHT-OF-WAY LINE OF CENTER STREET; THENCE EASTERLY ALONG SAID SOUTHERLY RIGHT-OF-WAY LINE OF CENTER STREET TO AN INTERSECTION WITH THE EASTERLY LINE OF LOT 3, BLOCK 8, SAID NORTH SUBURBS OF GREEN COVE SPRINGS; THE SOUTHERLY ALONG LAST SAID LINE TO THE SOUTHEASTERLY CORNER OF SAID LOT 3; THENCE EASTERLY ALONG THE NORTHERLY LINE OF LOT 5, SAID BLOCK 8 TO THE NORTHEASTERLY CORNER

OF SAID LOT 5; THENCE SOUTHERLY ALONG THE EASTERLY LINE OF SAID LOT 5, BLOCK 8 AND THE SOUTHERLY PROLONGATION THEREOF TO THE SOUTHWESTERLY CORNER OF LOT 1, BLOCK 7, SAID NORTH SUBURBS OF GREEN COVE SPRINGS; THENCE EASTERLY ALONG THE SOUTHERLY LINE OF SAID LOT 1, BLOCK 7 TO AN INTERSECTION WITH THE WESTERLY RIGHT-OF-WAY LINE OF ST. JOHNS AVENUE; THENCE SOUTHERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE NORTHERLY RIGHT-OF-WAY LINE OF WALNUT STREET; THENCE EASTERLY ALONG SAID NORTHERLY RIGHT-OF-WAY LINE OF WALNUT STREET TO THE WATERS OF THE ST. JOHNS RIVER; THENCE SOUTHERLY ALONG THE MEAN HIGH WATER LINE OF THE ST. JOHNS RIVER TO THE SUBMERGED LANDS OF THE STATE OF FLORIDA SURROUNDING THE CITY OF GREEN COVE SPRINGS PIER; THENCE EASTERLY, NORTHERLY, EASTERLY, SOUTHERLY, WESTERLY, NORTHERLY AND WESTERLY ALONG SAID SUBMERGED LANDS FOR GREEN COVE SPRINGS PIER TO SAID MEAN HIGH WATER LINE; THENCE SOUTHERLY ALONG SAID WATERS OF THE ST. JOHNS RIVER TO AN INTERSECTION WITH THE SOUTHERLY LINE OF WATER LOT "A", AS PER PLAT RECORDED IN PLAT BOOK 1, PAGE 40 OF THE PUBLIC RECORDS OF SAID COUNTY; THENCE WESTERLY ALONG SAID SOUTHERLY LINE OF LOT "A" AND ALONG THE NORTHERLY RIGHT-OF-WAY LINE OF FERRIS STREET TO AN INTERSECTION WITH THE EASTERLY RIGHT-OF-WAY LINE OF SOUTH MAGNOLIA AVENUE; THENCE SOUTHERLY ALONG SAID EASTERLY RIGHT-OF-WAY LINE OF SOUTH MAGNOLIA AVENUE TO AN INTERSECTION WITH THE SOUTHERLY RIGHT-OF-WAY LINE OF OAK STREET; THENCE WESTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE WESTERLY RIGHT-OF-WAY LINE OF SOUTH PALMETTO AVENUE; THENCE NORTHERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE SOUTHERLY RIGHT-OF-WAY LINE OF BAY STREET; THENCE WESTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE WESTERLY RIGHT-OF-WAY LINE OF GREEN STREET; THENCE NORTHERLY ALONG SAID WESTERLY RIGHT-OF-WAY LINE OF GREEN STREET TO AN INTERSECTION WITH THE NORTHERLY RIGHT-OF-WAY LINE OF PALMER STREET; THENCE EASTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE EASTERLY LINE OF LOT 3, BLOCK 11, SAID NORTH SUBURBS OF GREEN COVE SPRINGS; THENCE NORTHERLY ALONG SAID EASTERLY LINE OF LOT 3, BLOCK 11 AND THE NORTHERLY PROLONGATION THEREOF TO AN INTERSECTION WITH THE NORTHERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 2540, PAGE 267 OF SAID PUBLIC RECORDS; THENCE EASTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE EASTERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 2465, PAGE 1852 OF SAID PUBLIC RECORDS; THENCE NORTHERLY ALONG LAST SAID LINE AND THE NORTHERLY PROLONGATION THEREOF TO AN INTERSECTION WITH THE NORTHERLY RIGHT-OF-WAY LINE OF NORTH STREET; THENCE WESTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE WESTERLY LINE OF LOT 4, BLOCK 37, SAID NORTH SUBURBS OF GREEN COVE SPRINGS; THENCE NORTHERLY ALONG LAST SAID LINE AND THE NORTHERLY PROLONGATION THEREOF TO AN INTERSECTION WITH THE NORTHERLY RIGHT-OF-WAY LINE OF GUM STREET; THENCE WESTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE EASTERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 3291, PAGE 1137 OF SAID PUBLIC RECORDS; THENCE NORTHERLY ALONG SAID EASTERLY LINE OF OFFICIAL RECORDS BOOK 3291, PAGE 1137 TO THE NORTHEASTERLY CORNER THEREOF; THENCE EASTERLY ALONG THE SOUTHERLY LINE OF LOT 1, BLOCK 20, SAID NORTH SUBURBS OF GREEN COVE SPRINGS, TO AN INTERSECTION WITH THE EASTERLY LINE OF THE WEST ONE-HALF OF SAID BLOCK 20; THENCE NORTHWESTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE NORTHERLY LINE OF LOT 4, BLOCK 20, SAID NORTH SUBURBS OF GREEN COVE SPRINGS; THENCE WESTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE NORTHEASTERLY RIGHT-OF-WAY LINE OF PINE AVENUE; THENCE NORTHWESTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE EASTERLY PROLONGATION OF THE SOUTHERLY LINE OF LOT 4, ANNIE JONES SUBDIVISION, AS RECORDED IN PLAT BOOK 1, PAGE 25 OF SAID PUBLIC RECORDS; THENCE WESTERLY ALONG SAID PROLONGATION AND ALONG THE SOUTHERLY LINE OF LOTS 4 AND 5, ANNIE JONES SUBDIVISION TO AN INTERSECTION WITH THE NORTHEASTERLY RIGHT-OF-WAY LINE OF NORTH CYPRESS AVENUE; THENCE NORTHWESTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE EASTERLY PROLONGATION OF THE SOUTHERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 3330, PAGE 916 OF SAID PUBLIC RECORDS; THENCE WESTERLY ALONG SAID PROLONGATION AND ALONG SAID SOUTHERLY LINE OF OFFICIAL RECORDS

BOOK 3330, PAGE 916 TO THE SOUTHWEST CORNER THEREOF; THENCE SOUTHEASTERLY ALONG THE NORTHEASTERLY LINE OF THOSE LANDS RECORDED IN OFFICIAL RECORDS BOOK 337, PAGE 131 OF SAID PUBLIC RECORDS TO AN INTERSECTION WITH THE NORTHERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 1247, PAGE 283 OF SAID PUBLIC RECORDS; THENCE WESTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE NORTHEASTERLY RIGHT-OF-WAY LINE OF A.C.L. RAILROAD; THENCE NORTHWESTERLY ALONG LAST SAID LINE BEING THE ARC OF A CURVE CONCAVE SOUTHWESTERLY TO AN INTERSECTION WITH THE EASTERLY PROLONGATION OF THE SOUTHERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 3243, PAGE 1356 OF SAID PUBLIC RECORDS; THENCE WESTERLY ALONG SAID PROLONGATION AND ALONG SAID SOUTHERLY LINE OF OFFICIAL RECORDS BOOK 3243, PAGE 1356 TO THE SOUTHWESTERLY CORNER THEREOF; THENCE NORTHWESTERLY ALONG THE SOUTHWESTERLY LINE OF LAST SAID LANDS TO AN INTERSECTION WITH THE NORTHERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 3243, PAGE 1356 OF SAID PUBLIC RECORDS; THENCE WESTERLY ALONG LAST SAID LINE AND THE WESTERLY PROLONGATION THEREOF TO AN INTERSECTION WITH THE WESTERLY RIGHT-OF-WAY LINE OF WASHINGTON LANE; THENCE SOUTHERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE SOUTHERLY LINE OF LOT 1, BLOCK 3, OF S.G. BERRIAN'S SUBDIVISION OF LOT 2, BLOCK 28, SAID NORTH SUBURBS OF GREEN COVE SPRINGS; THENCE WESTERLY ALONG THE SOUTHERLY LINE OF LOTS 1, 3, 5 AND 7, SAID BLOCK 3 OF S.G. BERRIAN'S SUBDIVISION TO AN INTERSECTION WITH THE EASTERLY RIGHT-OF-WAY LINE OF FRANKLIN STREET; THENCE SOUTHERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE EASTERLY PROLONGATION OF THE NORTHERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 717, PAGE 19 OF SAID PUBLIC RECORDS; THENCE WESTERLY ALONG LAST SAID LINE AND THE WESTERLY PROLONGATION THEREOF TO AN INTERSECTION WITH THE WESTERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 1383, PAGE 908 OF SAID PUBLIC RECORDS; THENCE NORTHERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE SOUTHERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 3687, PAGE 622 OF SAID PUBLIC RECORDS; THENCE WESTERLY ALONG LAST SAID LINE AND THE WESTERLY PROLONGATION THEREOF TO AN INTERSECTION WITH THE WESTERLY RIGHT-OF-WAY LINE OF LEMON STREET; THENCE SOUTHERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE NORTHERLY RIGHT-OF-WAY LINE OF FORBES STREET; THENCE WESTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE EASTERLY RIGHT-OF-WAY LINE OF BELLE AVENUE; THENCE NORTHERLY ALONG SAID EASTERLY RIGHT-OF-WAY LINE OF BELLE AVENUE TO AN INTERSECTION WITH THE EASTERLY PROLONGATION OF THE SOUTHERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL BOOK 4242, PAGE 2055 OF SAID PUBLIC RECORDS; THENCE WESTERLY ALONG SAID PROLONGATION AND ALONG SAID SOUTHERLY LINE OF OFFICIAL RECORDS BOOK 4242, PAGE 2055 AND THE WESTERLY PROLONGATION THEREOF TO AN INTERSECTION WITH THE EASTERLY RIGHT-OF-WAY LINE OF NORTH ROBERTS STREET; THENCE NORTHERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE SOUTHERLY RIGHT-OF-WAY LINE OF MARTIN LUTHER KING JR BOULEVARD; THENCE EASTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE SOUTHEASTERLY PROLONGATION OF THE NORTHEASTERLY RIGHT-OF-WAY LINE OF MILL STREET; THENCE NORTHWESTERLY ALONG SAID PROLONGATION AND ALONG SAID NORTHEASTERLY RIGHT-OF-WAY LINE OF MILL STREET TO AN INTERSECTION WITH THE SOUTHEASTERLY RIGHT-OF-WAY LINE OF WALBURG STREET; THENCE NORTHEASTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE EASTERLY LINE OF LOT 4 OF L.E. CARTER SUBDIVISION OF LOT 12, BLOCK 29, GREEN COVE SPRINGS, AS RECORDED IN PLAT BOOK 1, PAGE 41 OF SAID PUBLIC RECORDS; THENCE SOUTHEASTERLY ALONG SAID EASTERLY LINE OF LOT 4 TO AN INTERSECTION WITH THE SOUTHERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 1415, PAGE 1724 OF SAID PUBLIC RECORDS; THENCE NORTHEASTERLY ALONG LAST SAID LINE TO THE NORTHEASTERLY CORNER THEREOF, SAID POINT LYING ON THE WESTERLY LINE OF LOT 2 OF SAID L.E. CARTER SUBDIVISION OF LOT 12, BLOCK 29; THENCE NORTHERLY ALONG SAID WESTERLY LINE OF LOT 2 TO THE NORTHWEST CORNER THEREOF; THENCE NORTHEASTERLY ALONG THE NORTHWESTERLY LINE OF SAID LOT 2 AND THE NORTHEASTERLY PROLONGATION THEREOF TO AN INTERSECTION WITH THE NORTHEASTERLY

RIGHT-OF-WAY LINE OF LEMON STREET; THENCE SOUTHEASTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE SOUTHEASTERLY LINE OF LOT D OF LOT 11, BLOCK 29 OF SAID NORTH SUBURBS OF GREEN COVE SPRINGS; THENCE NORTHEASTERLY ALONG THE SOUTHEASTERLY LINE OF LOTS A, B, C AND D OF SAID LOT 11, BLOCK 29 TO THE SOUTHEASTERLY CORNER OF SAID LOT A; THENCE NORTHEASTERLY ALONG THE SOUTHEASTERLY LINE OF LOT 9, SAID BLOCK 29 AND THE NORTHEASTERLY PROLONGATION THEREOF TO AN INTERSECTION WITH THE NORTHEASTERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 1077, PAGE 22 OF SAID PUBLIC RECORDS; THENCE SOUTHEASTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE SOUTHEASTERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 1374, PAGE 366 OF SAID PUBLIC RECORDS; THENCE NORTHEASTERLY ALONG LAST SAID LINE AND ALONG THE SOUTHEASTERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 4690, PAGE 1488 OF SAID PUBLIC RECORDS TO THE SOUTHEASTERLY CORNER THEREOF; THENCE SOUTHEASTERLY ALONG THE SOUTHWESTERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL BOOK 4459, PAGE 356 OF SAID PUBLIC RECORDS TO THE SOUTHWESTERLY CORNER THEREOF; THENCE SOUTHEASTERLY ALONG THE SOUTHWESTERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL BOOK 1213, PAGE 320 OF SAID PUBLIC RECORDS TO THE SOUTHWESTERLY CORNER THEREOF; THENCE EASTERLY ALONG THE SOUTHERLY LINE OF SAID LANDS RECORDED IN OFFICIAL RECORDS BOOK 1213, PAGE 320 TO THE SOUTHEASTERLY CORNER THEREOF; THENCE CONTINUE EASTERLY ALONG THE SOUTHERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 186, PAGE 273 OF SAID PUBLIC RECORDS AND THE EASTERLY PROLONGATION THEREOF TO AN INTERSECTION WITH SAID NORTHEASTERLY RIGHT-OF-WAY LINE OF A.C.L. RAILROAD; THENCE NORTHWESTERLY ALONG LAST SAID LINE BEING THE ARC OF A CURVE CONCAVE SOUTHWESTERLY TO AN INTERSECTION WITH THE NORTHWESTERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 475, PAGE 665 OF SAID PUBLIC RECORDS; THENCE NORTHEASTERLY ALONG LAST SAID LINE AND ALSO ALONG THE NORTHWESTERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 1712, PAGE 188 TO THE MOST NORTHERLY CORNER THEREOF; THENCE SOUTHEASTERLY ALONG THE NORTHEASTERLY LINE OF LAST SAID LANDS TO THE SOUTHWESTERLY CORNER OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 4571, PAGE 1586 OF SAID PUBLIC RECORDS; THENCE EASTERLY ALONG THE SOUTHERLY LINE OF LAST SAID LANDS AND THE EASTERLY PROLONGATION THEREOF TO AN INTERSECTION WITH THE NORTHEASTERLY RIGHT-OF-WAY LINE OF NORTH CYPRESS AVENUE; THENCE SOUTHEASTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE SOUTHERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 1767, PAGE 740 OF SAID PUBLIC RECORDS; THENCE EASTERLY ALONG LAST SAID LINE TO THE SOUTHEASTERLY CORNER THEREOF; THENCE NORTHWESTERLY ALONG THE SOUTHWESTERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 3770, PAGE 1809 OF SAID PUBLIC RECORDS TO THE NORTHWESTERLY CORNER THEREOF; THENCE NORTHEASTERLY ALONG THE NORTHWESTERLY LINE OF LAST SAID LANDS TO AN INTERSECTION WITH THE SOUTHWESTERLY RIGHT-OF-WAY LINE OF NORTH PINE AVENUE; THENCE SOUTHEASTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE WESTERLY PROLONGATION OF THE SOUTHERLY LINE OF LOT 6, BLOCK 21, SAID NORTH SUBURBS OF GREEN COVE SPRINGS; THENCE EASTERLY ALONG SAID PROLONGATION AND ALONG SAID SOUTHERLY LINE OF LOT 6, BLOCK 21 TO THE SOUTHEAST CORNER THEREOF; THENCE NORTHWESTERLY ALONG THE NORTHEASTERLY LINE OF SAID LOT 6, BLOCK 21 AND THE NORTHWESTERLY PROLONGATION THEREOF TO AN INTERSECTION WITH THE NORTHWESTERLY LINE OF THE SOUTHEASTERLY ONE-HALF OF LOT 4, BLOCK 22, SAID NORTH SUBURBS OF GREEN COVE SPRINGS; THENCE SOUTHWESTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE NORTHEASTERLY RIGHT-OF-WAY LINE OF NORTH PINE AVENUE; THENCE NORTHWESTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE SOUTHEASTERLY LINE OF THE NORTHWESTERLY ONE-HALF OF LOT 10, BLOCK 22, SAID NORTH SUBURBS OF GREEN COVE SPRINGS; THENCE NORTHEASTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE NORTHEASTERLY LINE OF SAID LOT 10, BLOCK 22; THENCE NORTHWESTERLY ALONG LAST SAID LINE AND THE NORTHWESTERLY PROLONGATION THEREOF TO AN INTERSECTION WITH THE NORTHWESTERLY RIGHT-OF-WAY LINE OF HOUSTON STREET; THENCE SOUTHWESTERLY ALONG LAST SAID LINE

TO AN INTERSECTION WITH THE NORTHEASTERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 4280, PAGE 977 OF SAID PUBLIC RECORDS; THENCE NORTHWESTERLY ALONG SAID LINE A DISTANCE OF 100 FEET; THENCE NORTHEASTERLY, PARALLEL WITH SAID NORTHWESTERLY RIGHT-OF-WAY LINE OF HOUSTON STREET, A DISTANCE OF 25 FEET; THENCE NORTHWESTERLY ALONG THE NORTHEASTERLY LINE OF LOT 2, BLOCK 23, NORTH SUBURB, IN THE CITY OF GREEN COVE SPRINGS, AS RECORDED IN PLAT BOOK 1, PAGE 40 OF SAID PUBLIC RECORDS AND THE NORTHWESTERLY PROLONGATION THEREOF TO AN INTERSECTION WITH THE SOUTHEASTERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 464, PAGE 103 OF SAID PUBLIC RECORDS, SAID POINT ALSO BEING THE NORTHEASTERLY CORNER OF LOT 10, BLOCK 52, SAID NORTH SUBURBS OF GREEN COVE SPRINGS AS RECORDED IN PLAT BOOK 2, PAGE 1; THENCE SOUTHWESTERLY ALONG THE NORTHWESTERLY LINE OF SAID LOT 10, BLOCK 52 TO AN INTERSECTION WITH THE NORTHEASTERLY RIGHT-OF-WAY LINE OF NORTH PINE AVENUE; THENCE NORTHWESTERLY ALONG LAST SAID LINE AND THE NORTHWESTERLY PROLONGATION THEREOF TO AN INTERSECTION WITH THE SOUTHEASTERLY PROLONGATION OF THE SOUTHWESTERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 4040, PAGE 911 OF SAID PUBLIC RECORDS; THENCE NORTHWESTERLY ALONG SAID PROLONGATION AND ALONG SAID SOUTHWESTERLY LINE OF OFFICIAL RECORDS BOOK 4040, PAGE 911 TO THE SHORELINE OF GOVERNOR'S CREEK AS DESCRIBED IN SAID OFFICIAL RECORDS BOOK 4040, PAGE 911; THENCE NORTHEASTERLY ALONG SAID SHORELINE OF GOVERNOR'S CREEK TO AN INTERSECTION WITH THE SOUTHWESTERLY RIGHT-OF-WAY LINE OF NORTH ORANGE AVENUE (U.S. HIGHWAY 17 / STATE ROAD 15); THENCE SOUTHEASTERLY ALONG SAID SOUTHWESTERLY RIGHT-OF-WAY LINE OF NORTH ORANGE AVENUE TO AN INTERSECTION WITH THE SOUTHEASTERLY RIGHT-OF-WAY LINE OF GOVERNOR STREET; THENCE NORTHEASTERLY, DEPARTING SAID SOUTHWESTERLY RIGHT-OF-WAY LINE, TO THE INTERSECTION OF THE NORTHEASTERLY RIGHT-OF-WAY LINE OF NORTH ORANGE AVENUE WITH THE SOUTHEASTERLY RIGHT-OF-WAY LINE OF GOVERNOR STREET; THENCE NORTHEASTERLY ALONG SAID SOUTHEASTERLY RIGHT-OF-WAY LINE OF GOVERNOR STREET TO AN INTERSECTION WITH THE NORTHEASTERLY LINE OF LOT 18, BLOCK 3, SAID NORTH SUBURBS OF GREEN COVE SPRINGS; THENCE SOUTHEASTERLY ALONG SAID NORTHEASTERLY LINE OF LOT 18, BLOCK 3 AND ALONG THE NORTHEASTERLY LINE OF LOT 16, SAID BLOCK 3, TO THE NORTHEASTERLY CORNER OF SAID LOT 16, BLOCK 3, ALSO BEING THE SOUTHEASTERLY CORNER OF SAID LOT 15, BLOCK 3, NORTH SUBURBS OF GREEN COVE SPRINGS; THENCE NORTHEASTERLY ALONG THE SOUTHEASTERLY LINE OF SAID LOT 15, BLOCK 3 TO AN INTERSECTION WITH THE SOUTHWESTERLY RIGHT-OF-WAY LINE OF ST. JOHNS AVENUE AND THE POINT OF BEGINNING.

07

POWERS OF A CRA

GREEN COVE Springs

VII. CHAPTER 163.370 POWERS

A. 163.370 POWERS; COUNTIES AND MUNICIPALITIES; COMMUNITY REDEVELOPMENT AGENCIES.

1. Counties and municipalities may not exercise the power of eminent domain for the purpose of preventing or eliminating a slum area or blighted area as defined in this part; however, counties and municipalities may acquire property by eminent domain within a community redevelopment area, subject to the limitations set forth in ss. 73.013 and 73.014 or other general law.

2. Every county and municipality shall have all the powers necessary or convenient to carry out and effectuate the purposes and provisions of this part, including the following powers in addition to others herein granted:

a. To make and execute contracts and other instruments necessary or convenient to the exercise of its powers under this part.

b. To disseminate slum clearance and community redevelopment information.

c. To undertake and carry out community redevelopment and related activities within the community redevelopment area, which may include:

1. Acquisition of property within a slum area or a blighted area by purchase, lease, option, gift, grant, bequest, devise, or other voluntary method of acquisition.

2. Demolition and removal of buildings and improvements.

3. Installation, construction, or reconstruction of streets, utilities, parks, playgrounds, public areas of major hotels that are constructed in support of convention centers, including meeting rooms, banquet facilities, parking garages, lobbies, and passageways, and other improvements necessary for carrying out in the community redevelopment area the community redevelopment objectives of this part in accordance with the community redevelopment plan.

4. Disposition of any property acquired in the community redevelopment area at its fair value as provided in s. 163.380 for uses in accordance with the community redevelopment plan.

5. Carrying out plans for a program of voluntary or compulsory repair and rehabilitation of buildings or other improvements in accordance with the community redevelopment plan.

6. Acquisition by purchase, lease, option, gift, grant, bequest, devise, or other voluntary method of acquisition of real property in the community redevelopment area which, under the community redevelopment plan, is to be repaired or rehabilitated for dwelling use or related facilities, repair or rehabilitation of the structures for guidance purposes, and resale of the property.

7. Acquisition by purchase, lease, option, gift, grant, bequest, devise, or other voluntary method of acquisition of any other real property in the community redevelopment area when necessary to eliminate unhealthful, unsanitary, or unsafe conditions; lessen density; eliminate obsolete or other uses detrimental to the public

welfare; or otherwise to remove or prevent the spread of blight or deterioration or to provide land for needed public facilities.

8. Acquisition, without regard to any requirement that the area be a slum or blighted area, of air rights in an area consisting principally of land in highways, railway or subway tracks, bridge or tunnel entrances, or other similar facilities which have a blighting influence on the surrounding area and over which air rights sites are to be developed for the elimination of such blighting influences and for the provision of housing (and related facilities and uses) designed specifically for, and limited to, families and individuals of low or moderate income.

9. Acquisition by purchase, lease, option, gift, grant, bequest, devise, or other voluntary method of acquisition of property in unincorporated enclaves surrounded by the boundaries of a community redevelopment area when it is determined necessary by the agency to accomplish the community redevelopment plan.

10. Construction of foundations and platforms necessary for the provision of air rights sites of housing (and related facilities and uses) designed specifically for, and limited to, families and individuals of low or moderate income.

d. To provide, or to arrange or contract for, the furnishing or repair by any person or agency, public or private, of services, privileges, works, streets, roads, public utilities, or other facilities for or in connection with a community redevelopment; to install, construct, and reconstruct streets, utilities, parks, playgrounds, and other public improvements; and to agree to any conditions that it deems reasonable and appropriate which are attached to federal financial assistance and imposed pursuant to federal law relating to the determination of prevailing salaries or wages or compliance with labor standards, in the undertaking or carrying out of a community redevelopment and related activities, and to include in any contract let in connection with such redevelopment and related activities provisions to fulfill such of the conditions as it deems reasonable and appropriate.

e. Within the community redevelopment area:

1. To enter into any building or property in any community redevelopment area in order to make inspections, surveys, appraisals, soundings, or test borings and to obtain an order for this purpose from a court of competent jurisdiction in the event entry is denied or resisted.

2. To acquire by purchase, lease, option, gift, grant, bequest, devise, or other voluntary method of acquisition any personal or real property, together with any improvements thereon.

3. To hold, improve, clear, or prepare for redevelopment any such property.

4. To mortgage, pledge, hypothecate, or otherwise encumber or dispose of any real property.

5. To insure or provide for the insurance of any real or personal property or operations of the county or municipality against any risks or hazards, including the power to pay premiums on any such insurance.

6. To enter into any contracts necessary to effectuate the purposes of this part.

7. To solicit requests for proposals for redevelopment of parcels of real property contemplated by a community redevelopment plan to be acquired for redevelopment purposes by a community redevelopment agency and, as a result of such requests for proposals, to advertise for the disposition of such real property to private persons pursuant to s. 163.380 prior to acquisition of such real property by the community redevelopment agency.

f. To invest any community redevelopment funds held in reserves or sinking funds or any such funds not required for immediate disbursement in property or securities in which savings banks may legally invest funds subject to their control and to redeem such bonds

as have been issued pursuant to s. 163.385 at the redemption price established therein or to purchase such bonds at less than redemption price, all such bonds so redeemed or purchased to be canceled.

g. To borrow money and to apply for and accept advances, loans, grants, contributions, and any other form of financial assistance from the Federal Government or the state, county, or other public body or from any sources, public or private, for the purposes of this part and to give such security as may be required and to enter into and carry out contracts or agreements in connection therewith; and to include in any contract for financial assistance with the Federal Government for or with respect to community redevelopment and related activities such conditions imposed pursuant to federal laws as the county or municipality deems reasonable and appropriate which are not inconsistent with the purposes of this part.

h. To make or have made all surveys and plans necessary to the carrying out of the purposes of this part; to contract with any person, public or private, in making and carrying out such plans; and to adopt or approve, modify, and amend such plans, which plans may include, but are not limited to:

1. Plans for carrying out a program of voluntary or compulsory repair and rehabilitation of buildings and improvements.

2. Plans for the enforcement of state and local laws, codes, and regulations relating to the use of land and the use and occupancy of buildings and improvements and to the compulsory repair, rehabilitation, demolition, or removal of buildings and improvements.

3. Appraisals, title searches, surveys, studies, and other plans and work necessary to prepare for the undertaking of community redevelopment and related activities.

i. To develop, test, and report methods and techniques, and carry out demonstrations and other activities, for the prevention and the elimination of slums and urban blight and developing and demonstrating new or improved means of providing housing for families and persons of low income.

j. To apply for, accept, and utilize grants of funds from the Federal Government for such purposes.

k. To prepare plans for and assist in the relocation of persons (including individuals, families, business concerns, nonprofit organizations, and others) displaced from a community redevelopment area and to make relocation payments to or with respect to such persons for moving expenses and losses of property for which reimbursement or compensation is not otherwise made, including the making of such payments financed by the Federal Government.

l. To appropriate such funds and make such expenditures as are necessary to carry out the purposes of this part; to zone or rezone any part of the county or municipality or make exceptions from building regulations; and to enter into agreements with a housing authority, which agreements may extend over any period, notwithstanding any provision or rule of law to the contrary, respecting action to be taken by such county or municipality pursuant to any of the powers granted by this part.

m. To close, vacate, plan, or replan streets, roads, sidewalks, ways, or other places and to plan or replan any part of the county or municipality.

n. To organize, coordinate, and direct the administration of the provisions of this part, as they may apply to such county or municipality, in order that the objective of remedying slum and blighted areas and preventing the causes thereof within such county or municipality may be most effectively promoted and achieved and to establish such new office or offices of the county or municipality or to reorganize existing offices in order to carry out such purpose most effectively.

o. To develop and implement community policing innovations.

3. The following projects may not be paid for or financed by increment revenues:

a. Construction or expansion of administrative buildings for public bodies or police and fire buildings, unless each taxing authority agrees to such method of financing for the construction or expansion, or unless the construction or expansion is contemplated as part of a community policing innovation.

b. Installation, construction, reconstruction, repair, or alteration of any publicly owned capital improvements or projects if such projects or improvements were scheduled to be installed, constructed, reconstructed, repaired, or altered within 3 years of the approval of the community redevelopment plan by the governing body pursuant to a previously approved public capital improvement or project schedule or plan of the governing body which approved the community redevelopment plan unless and until such projects or improvements have been removed from such schedule or plan of the governing body and 3 years have elapsed since such removal or such projects or improvements were identified in such schedule or plan to be funded, in whole or in part, with funds on deposit within the community redevelopment trust fund.

c. General government operating expenses unrelated to the planning and carrying out of a community redevelopment plan.

4. With the approval of the governing body, a community redevelopment agency may:

a. Prior to approval of a community redevelopment plan or approval of any modifications of the plan, acquire real property in a community redevelopment area by purchase, lease, option, gift, grant, bequest, devise, or other voluntary method of acquisition; demolish and remove any structures on the property; and pay all costs related to the acquisition, demolition, or removal, including any administrative or relocation expenses.

b. Assume the responsibility to bear any loss that may arise as the result of the exercise of authority under this subsection, in the event that the real property is not made part of the community redevelopment area.

5. A community redevelopment agency shall procure all commodities and services under the same purchasing processes and requirements that apply to the county or municipality that created the agency.

08

APPENDICES

GREEN COVE Springs

VIII. APPENDICES

City – County interlocal Agreement

City Finding of Necessity Resolution

County CRA Delegation Resolution

Green Cove Springs Downtown Master Plan

INTERLOCAL AGREEMENT
BETWEEN CLAY COUNTY AND CITY OF GREEN COVE SPRINGS

This Interlocal Agreement (hereinafter "Agreement") by and between Clay County, a charter county and political subdivision of the State of Florida by and through its Board of County Commissioners (hereinafter "County") and the City of Green Cove Springs, a Florida municipality, (hereinafter "City"), is made and entered into on the____day, of 2023, and shall be effective on the date of execution.

WHEREAS, on April 19, 2022, the City approved Resolution R-03-2022 finding the existence blight in an area of the City; making certain findings and determinations; finding a need for creating a Community Redevelopment Agency pursuant to Chapter 163 Part III, Florida Statutes; and

WHEREAS, the County, as a charter county, is vested with all of the powers under the Community Redevelopment Act of 1969; and

WHEREAS, the County may, in its discretion, delegate the exercise of powers to municipalities within the boundaries of the County; and

WHEREAS, Chapter 163, Florida Statutes, authorizes public agencies to enter into agreements to provide services and to exercise jointly any power, privilege, or authority they share in common and which each might exercise separately; and

WHEREAS, on August 9, 2022, the County approved Resolution R-2021/22 – 56 declaring and finding a need to create a Community Redevelopment Agency for a certain geographic area of the City; delegating the exercise of certain powers to create and adopt a Plan of Redevelopment; and

WHEREAS, on October 27, 2022, the newly created Community Redevelopment Agency had their initial meeting, with the composition of the Board members being two members chosen by the City Council, two chosen by the County Commission. The Board, subsequently voted on adding a voted on the 5th member as required by the County Resolution No.2021-2022-56.

WHEREAS, on November 29, 2022, the City Planning and Zoning Commission, as the Local Planning Agency, unanimously approved the CRA Redevelopment Plan and Interlocal Agreement.

WHEREAS, on January 10, 2023, the Community Redevelopment Agency approved the the CRA Redevelopment Plan and Interlocal Agreement.

WHEREAS, the City and the County wish to enter into an interlocal agreement as set forth in the statute; and

NOW THEREFORE, in consideration of the mutual covenants declared herein and other good and valuable consideration each Party agrees as follows:

Section 1. Intent of Parties.

It is the intent of the Parties that provisions in this Agreement which conflict with provisions of the Community Redevelopment Act of 1969, as amended, shall control. The County and City intend to bind themselves and any community redevelopment agency the City may establish (hereinafter "CRA") to the terms and obligations of this Agreement.

Section 2. Term of Agreement.

The Parties agree that:

1) Pursuant to the Community Redevelopment Act of 1969 and the terms of this Agreement, the City may adopt a Community Redevelopment Plan for 30 years beginning January 2023 (hereinafter "initial term").
2) The City may amend its plan to extend the Community Redevelopment Plan (hereinafter "Plan") only with an affirmative vote of the County Commission.
3) The "base year" taxable property assessment roll, used for the calculation in Sec. 163.387(1), Fla. Stat., shall be the values used for taxation in calendar year 2023.

Section 3. CRA, City and County Obligations.

The City and the CRA shall comply with all of the provisions of the Florida statute to establish the CRA trust fund as follows:

1) Redevelopment Plan:
    a. The CRA shall provide the Redevelopment Plan and any amendments to the Redevelopment Plan to the City and County for approval by an affirmative vote of the County Commission prior to the City's adoption of the Redevelopment Plan and any amendments.
    b. The Plan and all amendments to the Plan shall meet all the requirements of the applicable statutes, including the requirement that the plan contain a detailed statement of the projected costs of redevelopment, "including the amounts to be expended on publicly funded capital projects in the redevelopment area and any indebtedness of the community redevelopment agency... if such indebtedness is to be repaid with increment revenues." *See* Sec. 163.362(9), Fla. Stat.
    c. The City and County shall deposit 95% of an amount based on the calculation of increment using the City and County's millage in that year into the CRA Trust Fund.

d. The monies in the CRA trust fund shall be used to fund the CRA projects identified in the Redevelopment Plan without a plan amendment. Neither the City nor the CRA shall substantially deviate from the projects set forth in the Plan without a plan amendment.
e. The CRA shall review the plan annually and update it at least every five years.
f. Redevelopment activities and projects in the Redevelopment Plan shall be designed to mitigate the slum/blighted conditions of the redevelopment area that are the basis for the Finding of Necessity approved by the City.

2) The City and the CRA may sell bonds and execute notes, and enter other forms of debt or leveraging, as well as collateral documents, to finance capital improvements deemed necessary by the CRA for redevelopment purposes.

3) The City and the CRA shall abide by all provisions of the Community Redevelopment Act of 1969 (currently codified as Florida Statutes, Title IX, Chapter 163, Part III) and any implementing regulation, or its successor statutes or regulations, as amended from time to time, so long as those provisions are not inconsistent with this Agreement.

4) The Composition of the CRA Board shall consist of two (2) members appointed by the City, two (2) members appointed by the Board of County Commissioners and one (1) at-large member appointed by the other four (4) members,

Section 5. Entire Agreement. This Agreement constitutes the entire agreement, including all attachments, and supersedes all prior written or oral agreements, understandings or representations.

Section 6. Default and Termination. This Agreement shall be effective on the effective date above and remain in effect until terminated as follows:

A. If any Party fails to fulfill its obligations under this Agreement in a timely and satisfactory manner, or if any Party breaches any of the provisions, covenants or stipulations under this Agreement, another party may give a written notice to all Parties stating the failure or breach and provide a reasonable time period for correction of same. In the event the correction is not made in the allotted time, the Administrating Officials of all Parties, or their designee, shall meet to resolve the dispute.

B. If the Administrating Officials, or their designees, are unable to resolve the dispute, the parties agree to mediate any dispute. If mediation is unsuccessful, a non-breaching party may terminate this Agreement upon affirmative vote of the respective Commission for a material breach. The termination would then be effective at the time the next payment to the CRA trust fund by the non-breaching party is due. If at the time of a termination, caused by a material breach by the County that cannot be cured, the CRA has outstanding bonds or is in other ways in debt, the termination shall not take effect until after the terms of the indebtedness are fulfilled. If at the time of a termination, caused by a material breach by the City that cannot be cured, the County is relieved from its obligation to continue to pay on the CRA debt service.

C. If any unallocated funds remain in the CRA trust fund at the termination of the CRA, the funds shall be divided equally between the County and the City.

Section 7. Indemnification. Each Party hereby assumes responsibility for, and hereby agrees to indemnify and hold the other Parties harmless from any and all liability, claims or damages imposed on another Party up to the monetary limits provided in Sec. 768.28, Fla. Stat., arising out of or in connection with the negligent acts, omissions or misconduct of the Parties, and their agents or employees relating to the responsibilities of the Parties under this Agreement.

Section 8. Liability. Each Party shall be solely responsible for the negligent acts or omissions of its employees, volunteers and agents which in any way relate to or arise out of this Agreement. Nothing contained herein shall be construed as consent to be sued by third parties in any matter arising out of this Agreement or constitute a waiver by any Party of its sovereign immunity or

provisions of Sec. 768.28, Fla. Stat. This Agreement does not create any relationship with, or any rights in favor of any third party.

Section 9. Filing of Agreement. The County, upon execution of this Agreement, shall file the same with the Clerk of the Circuit Court in the Official Records of Clay County, as required by Sec. 163.01(11), Fla. Stat.

Section 10. Project Records. Each Party shall meet the requirements of Chapter **119**, Fla. Stat., for retaining public records and transfer, at no cost, to any other requesting Party, copies of all public records regarding the subject of this Agreement which are in the possession of the Party. All records stored electronically shall be provided to the requesting Party in a format that is compatible with the information technology systems of the requesting Party.

Section 11. Applicable Law. The laws of the State of Florida shall govern this Agreement, and the venue is Clay County, Florida, for any legal actions arising hereunder.

Section 12. Notices. Except as otherwise provided herein, any notice, acceptance, request or approval from any Party to any other Party shall be in writing and, sent by certified mail, return receipt requested, to all Parties and shall be deemed to have been received when either deposited in a United States Postal Service mailbox or personally delivered with signed proof of delivery. For the purposes of this Agreement, the Parties' representatives are:

COUNTY
County Manager
Clay County, Florida
PO Box 1366
Green Cove Springs, Fl 32043

With a copy to:
Clerk of the Court
825 N Orange Avenue
Green Cove Springs, Fl 32043

With a copy to:
County Attorney
PO Box 1366
Green Cove Springs, Fl 32043

CITY
City Manager
321 Walnut Street
Green Cove Springs, Florida 32043
City Attorney

321 Walnut Street
Green Cove Springs, Florida 32043

Development Services Director
321 Walnut Street
Green Cove Springs, Florida 32043

Section 13. Non-Waiver. Waiver or breach of any provision of this Agreement shall not be deemed to be a waiver of any other breach and shall not be construed to be a modification of the terms of this Agreement.

Section 14. Amendment. The Parties may amend this Agreement only by a mutual written agreement.

Section 15. Severability. If any provisions of this Agreement shall be declared illegal, void, or unenforceable the other provisions shall not be affected but shall remain in full force and effect.

IN WITNESS WHEREOF, the parties hereto have caused this agreement to be executed on the day and year first written above.

Clay County, Florida

By: _____
Chair, Board of County Commissioners

_____
Clay County Clerk

Approved as to form:

_____
Clay County Attorney

City of Green Cove Springs

By: _____
Daniel M Johnson, Mayor

_____
Erin West, City Clerk

Approved as to Form

_____
Jim Arnold, City of Green Cove Springs Attorney

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed on the day and year first written above.

Clay County, Florida

RESOLUTION NO. R-03-2022

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF GREEN COVE SPRINGS, FLORIDA, RELATING TO COMMUNITY REDEVELOPMENT; FINDING THE EXISTENCE OF BLIGHT IN AN AREA OF THE CITY OF GREEN COVE SPRINGS, FLORIDA; MAKING CERTAIN FINDINGS AND DETERMINATIONS; FINDING A NEED FOR CREATING A COMMUNITY REDEVELOPMENT AGENCY PURSUANT TO CHAPTER 163, PART III, FLORIDA STATUTES; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the City Council of the City of Green Cove Springs ("City Council") expressed its intention to consider the creation of a community redevelopment area, authorized a study to consider whether a finding of necessity resolution should be adopted, and defined a proposed redevelopment study area within the City of Green Cove Springs ("City); and

WHEREAS, a study has been done, and shall be identified as Exhibit B, supported by data and analysis, of the conditions in that part of the City, known and referred to as the Green Cove Springs Redevelopment Area, depicted in Exhibit "A" hereof (such area being referred to herein as the "Area" or the "Redevelopment Area"); and

WHEREAS, the results of the study have been presented to the City Council for its consideration and included in the public record; and

WHEREAS, after having considered the study's determinations and the facts and evidence of the conditions in the Area and having received and considered such other evidence of the conditions in the Area as have been presented to it, the City Council has determined that the conditions in the Area meet the criteria described in Chapter 163, Part III, Florida Statutes; and

WHEREAS, the City seeks approval from Clay County that the Area meets the criteria described in Chapter 163, Part III, Florida Statutes, and requests delegation of authority to create a Community Redevelopment Agency, adopt a Community Redevelopment Plan, and establish a Redevelopment Trust Fund.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF GREEN COVE SPRINGS, FLORIDA, AS FOLLOWS:

SECTION 1. FINDINGS OF CONDITIONS. Based upon the evidence, data, analysis, and facts presented to it, the City Council does hereby find that the following conditions are present in the Area of the City to be considered a "Blighted area" as specified in Section 163.340(7)©, Florida Statutes (2021):

(C) the existence of conditions that endanger life or property by fire or other causes. (Sec. 163.340(8)(a), F.S.);

SECTION 2. FINDINGS OF CONDITIONS. Based upon the evidence, data, analysis, and facts presented to it, the City Council does hereby find that the following conditions are present in the Area of the City to be considered a "Blighted area" as specified in Section 163.340(7)(c), Florida Statutes (2021):

A. Predominance of defective or inadequate street layout, parking facilities, roadways, bridges, or public transportation facilities.
B. Aggregate assessed values of real property in the area for ad valorem tax purposes have failed to show any appreciable increase over the 5 years prior to finding of such conditions (Sec. 163.340(8)(b), F.S.);
C. Deterioration of site or other improvements (Sec. 163.340(8)(e), F.S.);
D. Inadequate and outdated building density patterns (Sec. 163,340(8)(f), F.S.);
E. Residential and commercial vacancy rates higher in the area than in the remainder of the municipality (Sec. 163.340(8)(i), F.S.);

SECTION 3. FINDING OF NECESSITY. The City Council does hereby make a legislative finding that the conditions of the Area meet the criteria described in Section 163.340(8), Florida Statutes (2021) and the following:

A. One or more slum or blighted areas, or one or more areas in which there is a shortage of housing affordable to residents of low or moderate income, including the elderly, exist in the City; and,
B. The rehabilitation, conservation, or redevelopment, or combination thereof, of such area or areas, including, if appropriate, the development of housing which residents of low or moderate income, including the elderly, can afford, is necessary in the interest of the public health, safety, morals, or welfare of the residents of the City.

SECTION 4. COMMUNITY REDEVELOPMENT AREA. Based upon the facts presented and contained in the public record, the City does hereby find the Area contains conditions of blight as defined in Section 163.340, Florida Statutes (2021), and that such Area constitutes a Community Redevelopment Area as defined in Section 163.340(10), Florida Statutes (2021).

SECTION 5. COMMUNITY REDEVELOPMENT AGENCY. The City Council does hereby expressly find that it is necessary, appropriate, proper, and timely that a Community Redevelopment Agency be created to carry out the community redevelopment contemplated by Chapter 163, Part III, Florida Statutes (2021), to further cause, promote, and encourage rehabilitation, conservation, and redevelopment in the Area.

SECTION 6. DELEGATION OF AUTHORITY. The City Council seeks approval from Clay County that the Area meets the criteria described in Chapter 163, Part III, Florida Statutes (2021), and requests delegation of authority to create a Community Redevelopment Agency, adopt a Community Redevelopment Plan, and establish a Redevelopment Trust Fund.

SECTION 7. EFFECTIVE DATE. This Resolution shall take effect immediately upon its passage.

DONE AND RESOLVED BY THE CITY COUNCIL OF THE CITY OF GREEN COVE SPRINGS, FLORIDA, IN REGULAR SESSION THIS 19TH DAY OF APRIL, 2022.

CITY OF GREEN COVE SPRINGS, FLORIDA

Edward R. Gaw, Mayor

ATTEST:

Erin West, City Clerk

APPROVED AS TO FORM:

L. J. Arnold, III, City Attorney

Exhibit "A"

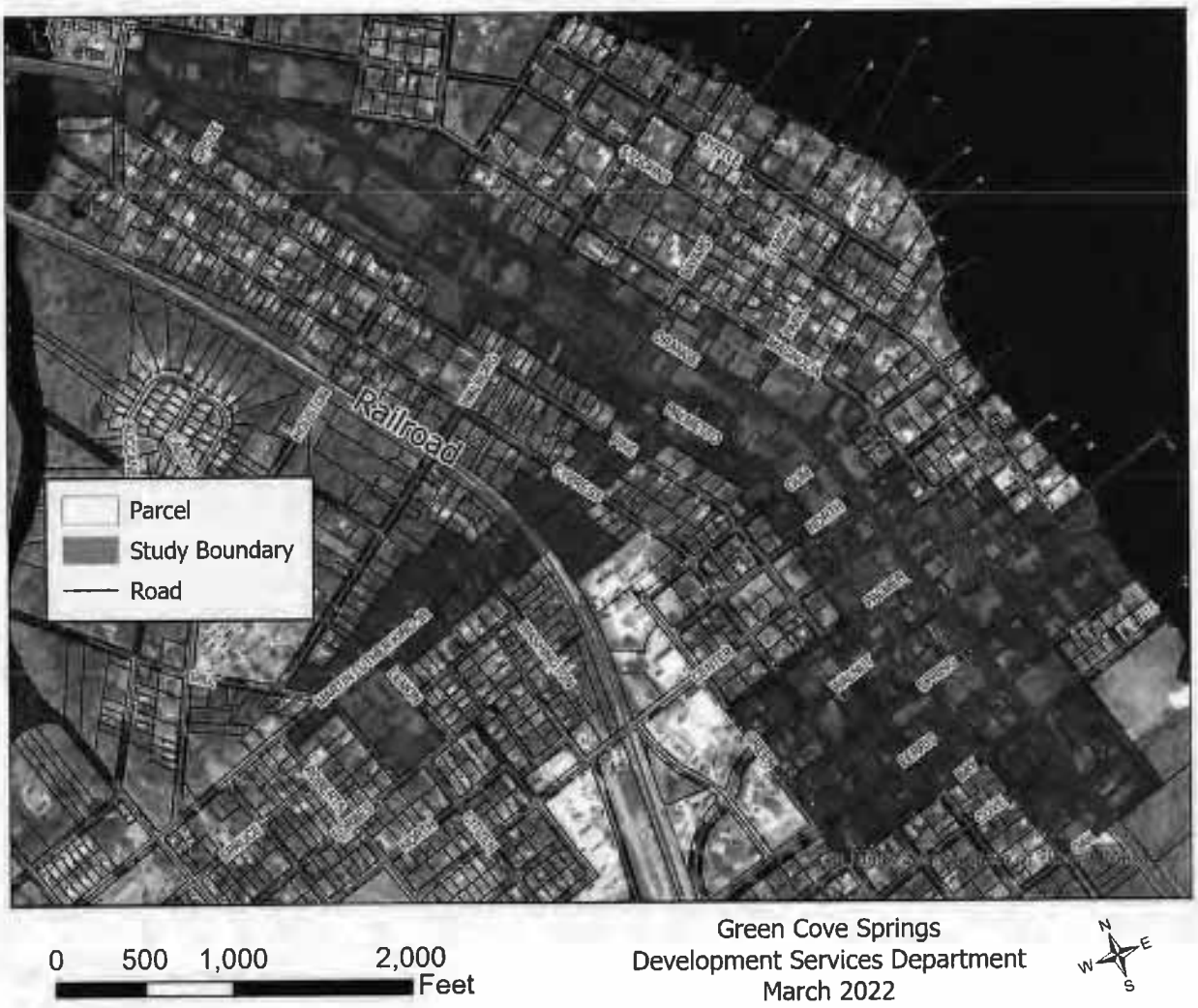

Railroad
Parcel
Study Boundary
Road
0 500 1,000 2,000
Feet
Green Cove Springs
Development Services Department
March 2022
N
E
W
S

Exhibit B

Through this, we encourage new development and redevelopment to improve quality of life, enhance economic conditions, increase vibrancy, and better realize the sense of place in key districts of the City.

Downtown / US 17 Finding of Necessity

City of Green Cove Springs, FL

Heather Glisson, Planning Technician

Table of Contents

1. Executive Summary 4
2. Introduction 5
2.1. Background 6
2.2. Study Purpose 7
2.3. Community Redevelopment Act Overview 7
2.3.1. Definitions of Slum Area 8
2.3.2. Definitions of Blighted Area 9
2.3.2. Assessment Process 10
2.4. Study Area 10
3. Slum and Blighted Area Analysis 12
3.1. Slum 12
3.2. Defective or inadequate public transportation facilities 13
3.3. Aggregate assessed values do not show appreciable increase over past 5 years 18
3.4. Faulty lot layout in relation to size, adequacy, accessibility, or usefulness 19
3.5. Unsanitary or unsafe conditions 20
3.6. Deterioration of site or other improvements 24
3.7. Inadequate and outdated building density patterns 25
3.8. Vacancy rates 26
4. Recommendations 28

Maps

Map 1. Study Area 11
Map 2. Study Area in Reference to the City 12
Map 3. Bus Route – Blue Line 17
Map 4. Bus Route – Green Line 18
Map 5. Faulty Lots 20
Map 6. Vacancy Rates 28

Figures

Figure 1. Sidewalk Cracking, Palmer St, near 14 N Magnolia Ave 14
Figure 2. Sidewalk Cracking & Loss, Martin Luther King Jr. Blvd 14
Figure 3. Deteriorating accessibility feature, Corner of Orange Ave & Center St 14
Figure 4. Deteriorating accessibility feature, Southwest Corner of Orange Ave & Palmer St 14
Figure 5. Road Disrepair, Walnut St 15
Figure 6. Road Disrepair, Intersection of Green St & Walnut St 15
Figure 7. Non-Fixed Obstruction, Martin Luther King Jr. Blvd 16

FIGURE 8. NON-FIXED OBSTRUCTION, MARTIN LUTHER KING JR. BLVD....16
FIGURE 9. SIDEWALK SPALLING, MARTIN LUTHER KING JR. BLVD....16
FIGURE 10. SIDEWALK – STANDING WATER, MARTIN LUTHER KING JR. BLVD....16
FIGURE 11. SIDEWALK UPLIFT & SPALLING, MARTIN LUTHER KING JR. BLVD....16
FIGURE 12. SIDEWALK LOSS, MARTIN LUTHER KING JR. BLVD....16
FIGURE 13. UNSAFE, DETERIORATING ROOF, 116 N MAGNOLIA AVE....21
FIGURE 14. UNSAFE, CONDEMNED BUILDING, 428 N ORANGE AVE....21
FIGURE 15. UNSAFE, BOARDED OPENINGS, 115 N MAGNOLIA AVE....21
FIGURE 16. UNSAFE AND UNSANITARY, OPENINGS / JUNK STORAGE, 115 N MAGNOLIA....21
FIGURE 17. UNSAFE, NO SIDEWALK, ROW USED FOR RV PARKING, 327 N ORANGE AVE....21
FIGURE 18. UNSAFE, NO SIDEWALK, ACROSS FROM FIGURE 5, 425 N ORANGE AVE....21
FIGURE 19. UNSANITARY, DISCONTINUED GAS PUMPS, 201 N ORANGE AVE....22
FIGURE 20. UNSAFE, COLLAPSED CANOPY, PETROLEUM CONTAMINATION SITE, 100 N ORANGE AVE....22
FIGURE 21. UNSAFE, LOW HANGING POWER LINES, CONCRETE DRIVE IN DISREPAIR, SOUTH OF 25 N ORANGE AV....22
FIGURE 22. UNSAFE, ROW IN DISREPAIR, BUSINSES PARKS IN ROW, 3 S PALMETTO AVE....22
FIGURE 23. UNSAFE, LACK OF SIGNAGE, MARKED PARKING SPACES, PEDESTRIAN SAFETY, 24 GREEN ST....22
FIGURE 24. UNSAFE AREA IN FRONT OF ACTIVE COMMERCIAL BUILDING, 1100 MARTIN LUTHER KING....23
FIGURE 25. UNSAFE STRUCTURE / ABANDONED, 1007 MARTIN LUTHER KING JR BLVD....23
FIGURE 26. UNSAFE / ABANDONED STRUCTURE, 1001 MARTIN LUTHER KING JR BLVD....23
FIGURE 27. UNSAFE / ABANDONED STRUCTURE, 713 MARTIN LUTHER KING JR BLVD....23
FIGURE 28. UNSAFE / ABANDONED STRUCTURE, 613 MARTIN LUTHER KING JR. BLVD....23
FIGURE 29. UNSAFE STRUCTURE, 612 MARTIN LUTHER KING JR. BLVD....23
FIGURE 30. DETERIORATING DRIVE / SIDEWALK, 220 PALMER....24
FIGURE 31. DETERIORATING DRIVE, 327 N ORANGE AVE....24
FIGURE 32. PARKING LOT DISREPAIR, BETWEEN 604 & 500 WALNUT ST....24
FIGURE 33. SIDEWALK DISREPAIR, BETWEEN 604 & 500 WALNUT ST....24
FIGURE 36. OUTDATED BUILDING PATTERN, 208 N ORANGE AVE, FOOD STORE....25
FIGURE 37. OUTDATED BUILDING PATTERN, 425 N ORANGE AVE, WELLS FARGO....25
FIGURE 38. OUTDATED BUILDING PATTERN, 327 N ORANGE AVE, RICK BAKER'S RV....25
FIGURE 39. LOW DENSITY DEVELOPMENT, 606 SPRING ST....26
FIGURE 40. LOW DENSITY DEVELOPMENT, 627 SPRING ST....26
FIGURE 41. LOW DENSITY DEVELOPMENT, NOT FRONTING STREET, 702 FERRIS ST / 709 SPRING ST....26
FIGURE 42. UNDEVELOPED, GUSTAFSON PROPERTY, PINE ST (BEHIND HOUSE ON WALNUT ST)....26
FIGURE 43. VACANT LOT, PREVIOUSLY 208 N ORANGE AVE....27
FIGURE 44. VACANT LOT, EAST OF 604 WALNUT ST....27
FIGURE 45. VACANT LOT, BROWNFIELD, SOUTH OF 535 N ORANGE AVE....27
FIGURE 46. VACANT LOT AT THE NORTHEAST CORNER OF ORANGE AVE &WALBURG ST....27
FIGURE 47. VACANT LOT AT THE NORTHWEST CORNER OF ORANGE AVE & GOVERNOR ST....27

Tables

TABLE 1. SLUM FACTORS....4
TABLE 2. BLIGHT FACTORS....4
TABLE 3. AGGREGATE ASSESSED VALUE COMPARISON....18

1. Executive Summary

This study has been prepared to fulfill the requirements for a Finding of Necessity (FON) in accordance with the Community Redevelopment Act of 1969, Chapter 163, Part III, Florida Statutes. This report has reviewed data from multiple sources including the Clay County Property Appraiser and field observations, which lead to analysis to determine if conditions of slum and / or blight exist within the study area. This report represents the first step in creating a Community Redevelopment Area (CRA) which will use Tax Increment Financing to invest in the area and improve its conditions. There are three statutory conditions that may be evaluated to determinate a slum condition and fourteen statutory conditions that may be evaluated to determine a blight condition. For a slum condition, only one of the three is required to be met to make a finding of slum. For a blight condition, only two of the fourteen are required to be met to make a finding of blight.

One of three factors of slum was identified as being met, and seven of fourteen factors of blight were determined as being met, satisfying the statutory requirements to determine the Study Area is a slum area as well as a blighted area. With the adoption of this FON, the City Council of Green Cove Springs may designate a Community Redevelopment Area.

Table 1. Slum Factors

Factor	Met?
(a) Inadequate provision for ventilation, light, air, sanitation, or open spaces;	No
(b) High density of population, compared to the population density of adjacent areas within the county or municipality; and overcrowding, as indicated by government-maintained statistics or other studies and the requirements of the Florida Building Code;	No
(c) The existence of conditions that endanger life or property by fire or other causes.	**Yes**

Table 2. Blight Factors

Factor	Met?
(a) Predominance of defective or inadequate street layout, parking facilities, roadways, bridges, or public transportation facilities.	**Yes**
(b) Aggregate assessed values of real property in the area for ad valorem tax purposes have failed to show any appreciable increase over the 5 years prior to the finding of such conditions.	**Yes**
(c) Faulty lot layout in relation to size, adequacy, accessibility, or usefulness.	**Yes**
(d) Unsanitary or unsafe conditions.	**Yes**
(e) Deterioration of site or other improvements.	**Yes**

(f) Inadequate and outdated building density patterns.	**Yes**
(g) Falling lease rates per square foot of office, commercial, or industrial space compared to the remainder of the county or municipality.	Data unavailable
(h) Tax or special assessment delinquency exceeding the fair value of the land.	Not analyzed
(i) Residential and commercial vacancy rates higher in the area than in the remainder of the county or municipality.	**Yes**
(j) Incidence of crime in the area higher than in the remainder of the county or municipality.	Not analyzed
(k) Fire and emergency medical service calls to the area proportionately higher than in the remainder of the county or municipality.	Not analyzed
(l) A greater number of violations of the Florida Building Code in the area than the number of violations recorded in the remainder of the county or municipality.	Not analyzed
(m) Diversity of ownership or defective or unusual conditions of title which prevent the free alienability of land within the deteriorated or hazardous area.	Not analyzed
(n) Governmentally owned property with adverse environmental conditions caused by a public or private entity.	N/A
(o) A substantial number or percentage of properties damaged by sinkhole activity which have not been adequately repaired or stabilized.	N/A

Recommendations

The Study Area meets the criteria established in Section 163.340, Florida Statutes. It is staff recommendation that the City of Green Cove Springs adopt this Finding of Necessity by resolution per F.S. 163.355 and create a Community Redevelopment Agency for the Study Area as defined herein.

2. Introduction

The City of Green Cove Springs seeks to determine the feasibility of designating the Downtown and US 17 Corridor as a Community Redevelopment Area through the development of a Finding of Necessity and would also like to implement redevelopment in this area through the adoption of a Redevelopment Area Plan.

2.1 Background

Green Cove Springs is a city located along the west bank of the historic St. Johns River and since 1971 has served as the County Seat of Government for Clay County. The 2020 Census identified the population count to be 9,786, a 41.66% increase from the 2010 Census.

The city's name originates from the three physical characteristics. "Green" refers to the perennially green vegetation characterized by its tree scape and foliage. "Cove" refers to a bend in the St. Johns River creating a safe area for mooring of boats during inclement weather periods. "Springs" refers to the natural spring (one of 600 in Florida), originating from the Floridan Aquifer with an estimated flow rate of approximately 2,200 gallons per minute. The spring water flows into the west side of the municipal swimming pool and then flows out the east side forming a stream eventually emptying into the St. Johns River.

The first inhabitants of the area were attracted to it because of the warm mineral spring, known as "The Boil." The medicinal qualities of the spring and its location along the St. Johns River served as major contributors to the community's development as a prominent attraction and destination for tourists during the 19th Century.

Green Cove Springs has had a storied history. It was home to Gustafson's Farm, a family dairy operation owned by Frank and Agnes Gustafson that began in 1908. In the 1930s, the federal government located Benjamin Lee Field within the City. The United States Department of the Navy opened a flight training facility. In the 1950s, major American automakers had dealerships in Green Cove Springs along US 17, which led to the City being known as "the Little Detroit."

The City grew economically and geographically, annexing land to include Magnolia Point Golf and Country Club and Magnolia West to the northwestern end, Cove Plaza on the southern end, and to the southeastern edge, FCT-granted land proposed to be the Ed Gustafson Regional Park as well as 560 acres intended to develop as a 2,100 unit residential subdivision.

In 2005, the City of Green Cove Springs adopted "Tomorrow's Vision" as the guiding vision document for the future of the city. This document established goals for the City such as: maintain the small-town character; provide affordable housing; promote redevelopment in the corridors (US 17 / SR 16); improve traffic circulation; expand recreational opportunities; promote a business-friendly environment; strengthen Code Enforcement. One implementation mechanism included in the visioning document was the potential for a Community Redevelopment Agency. In 2014, the City adopted a Finding of Necessity, but the Community Redevelopment Agency was unable to come to fruition at that time.

Since then, the City has experienced additional growth and undergone further planning activities. In February 2021, the City began the process of updating the comprehensive plan, which was adopted a year later in February 2022. The 2045 Comprehensive Plan is designed to prepare the City for upcoming growth. The Future Land Use Map was amended from 13 categories to 6 categories: Neighborhood (NBD), Downtown (DT), Mixed Use (MU), Mixed-Use Reynolds Park (MURP), Industrial (IND), and Public (PUB).

Further, the Future Land Use element established an objective to continue to redevelop and invest in blighted areas of the City, with Policy 1.6.1 directing the City to explore the creation of a Community Redevelopment Agency / Area.

Additionally, the Future Land Use elements directs the City in Policy 1.6.2 to develop a Downtown Master Plan and assess Walnut Street to determine how to increase safety and attractiveness of the streetscape. The Walnut Street assessment was completed in late 2021 and the Downtown Master Plan is underway, with a goal of adopting the plan by mid-April 2022.

2.2. Study Purpose

This Finding of Necessity will determine if the Study Area meetings the statutory criteria to be designated as a Community Redevelopment Area. With this, the City aims to establish said area in an attempt to halt and reverse the decline within it in order to encourage new development and redevelopment to improve the overall quality of the area, leading to improved economic conditions, increased vibrancy, and a more established sense of place in the area.

If the Study Area meets the statutory criteria, the City will adopt this Finding of Necessity and seek to move forward with adopting a Redevelopment Plan.

2.3. Community Redevelopment Act Overview[1]

The Florida Legislature enacted the Community Redevelopment Act (Act) in 1969. The legislature created the law to allow local governments to improve declining areas, as defined in the Act and detailed in subsections below. Such areas are detrimental to the health, safety, and welfare of residents as well as being a nuisance to growth and the provision of adequate infrastructure and housing; the Act provides a way for the local governments to create a Redevelopment Area and fund redevelopment within it.

The Statute defines *community redevelopment* as local government or community redevelopment agency lead projects in an established community redevelopment area "for the elimination and prevention of the development or spread of slums and blight, or for the reduction or prevention of crime, or for the provision of affordable housing." This may include slum clearance, redevelopment, rehabilitation, or conservation in a community redevelopment area, or any combination or part thereof, pursuant to the community redevelopment plan.

The Act establishes that powers granted by the Act are "for public uses and purposes" which involve the spending of public money and the potential exercise of police power, for which reason public interest, meaning a legitimate concern for general health, safety, and welfare within the area, is a requirement to implement the Act.

The Act further establishes the legitimacy of tax increment financing (TIF) as a method of successfully preserving and enhancing the tax base of an area, which will then serve to increase tax revenues for all taxing authorities for the area, enabling them to carry out

[1] The 2021 Florida Statutes, Title XI Chapter 163, Part III

their respective objectives more effectively. A redevelopment trust fund may be established by ordinance after the approval of a Community Redevelopment Plan to allow for the deposit of funds to be used by the agency to finance or refinance redevelopment. This fund must be established prior to receipt of any increment revenues. The statutes further state:

> "The annual funding of the redevelopment trust fund shall be in an amount not less than the increment in the income, proceeds, revenues, and funds of each taxing authority derived from or held in connection with the undertaking and carrying out of community redevelopment under this part. Such increment shall be determined annually and shall be that amount equal to 95% of the difference between:
>
> 1. The amount of ad valorem taxes levied each year by each taxing authority, exclusive of any amount from any debt service millage, on taxable real property contained within the geographic boundaries of a community redevelopment area; and
>
> 2. The amount of ad valorem taxes which would have been produced by the rate upon which the tax is levied each year by or for each taxing authority, exclusive of any debt service millage, upon the total of the assessed value of the taxable real property in the community redevelopment area as shown upon the most recent assessment roll used in connection with the taxation of such property by each taxing authority prior to the effective date of the ordinance providing for the funding of the trust fund."

Florida Statutes additionally require counties or municipalities seeking to exercise the power granted by the Act to adopt by a resolution "supported by data and analysis, which makes a legislative finding that the conditions in the area meet the criteria" of a slum or blighted area, detailed in 163.340(7) and 163.340(8) and defined below in subsections 2.3.1 and 2.3.2. To make this legislative finding, governing bodies draft a Finding of Necessity (FON), which supports this legislative finding through in-depth analysis of the study area. The analysis contained in this report evaluates the existing conditions and identifies the existence, if any, of a slum or blighted area. This FON will be used by the City in designating and creating the Community Redevelopment Area, if it is determined the area meets the statutory requirements to be classified as a slum or blighted area.

2.3.1. Definitions of Slum Area

According to the Florida Statute Section 163.340(7), "slum area" is an area having physical or economic conditions conducive to disease, infant mortality, juvenile delinquency, poverty, or crime because there is a predominance of buildings or improvements, whether residential or nonresidential, which are impaired by reason of dilapidation, deterioration, age, or obsolescence, and exhibiting one or more of the following factors:

(a) "Inadequate provision for ventilation, light, air, sanitation, or open spaces;

(b) High density of population, compared to the population density of adjacent areas within the county or municipality; and overcrowding, as indicated by government-maintained statistics or other studies and the requirements of the Florida Building Code;

or

(c) The existence of conditions that endanger life or property by fire or other causes."

2.3.2 Definitions of Blighted Area

According to the Florida Statute Section 163.340(8), "blighted area" means:

an "area in which there are a substantial number of deteriorated or deteriorating structures; in which conditions, as indicated by government-maintained statistics or other studies, endanger life or property or are leading to economic distress; and in which two or more of the following factors are present:

(a) Predominance of defective or inadequate street layout, parking facilities, roadways, bridges, or public transportation facilities.

(b) Aggregate assessed values of real property in the area for ad valorem tax purposes have failed to show any appreciable increase over the 5 years prior to the finding of such conditions.

(c) Faulty lot layout in relation to size, adequacy, accessibility, or usefulness.

(d) Unsanitary or unsafe conditions.

(e) Deterioration of site or other improvements.

(f) Inadequate and outdated building density patterns.

(g) Falling lease rates per square foot of office, commercial, or industrial space compared to the remainder of the county or municipality.

(h) Tax or special assessment delinquency exceeding the fair value of the land.

(i) Residential and commercial vacancy rates higher in the area than in the remainder of the county or municipality.

(j) Incidence of crime in the area higher than in the remainder of the county or municipality.

(k) Fire and emergency medical service calls to the area proportionately higher than in the remainder of the county or municipality.

(l) A greater number of violations of the Florida Building Code in the area than the number of violations recorded in the remainder of the county or municipality.

(m) Diversity of ownership or defective or unusual conditions of title which prevent the free alienability of land within the deteriorated or hazardous area.

(n) Governmentally owned property with adverse environmental conditions caused by a public or private entity.

(o) A substantial number or percentage of properties damaged by sinkhole activity which have not been adequately repaired or stabilized."

The term "blighted area" may also be used for any area in which at least one of the factors identified in paragraphs (a) through (o) is present and all taxing authorities subject to 163.387(2)(a) agree, by interlocal agreement or by resolution, that the area is blighted.

2.3.2. Assessment Process

City Staff assessed the Study Area through a multitude of resources, including but not limited to existing data, especially that included in the Green Cove Springs GeoHub; data collected from other departments, especially Public Works and Police; desktop reviews of the area; in person / walking review of the area. Staff assessed the area for many aspects of blight as defined in the Florida Statutes, and this report describes the existing conditions as they relate to these factors.

2.4. Study Area

The specified Study Area encompasses ±172.8 acres and is known as the Downtown and US 17 Corridor. The corridor spans Orange Avenue from Governor Street on the north end to Oak Street on the south end. The Corridor lies between St. Johns Avenue and Magnolia Avenue on its eastern edge and Pine Avenue on its western edge. The Downtown portion reaches slightly farther to the west and east. On the western side, it is bound by Palmer Street, Green Street, and Bay Street. On the eastern side, it expands diagonally eastward from Magnolia starting at Center Street, culminating at the river's edge with Spring Park property. The area is shown in Map 1.

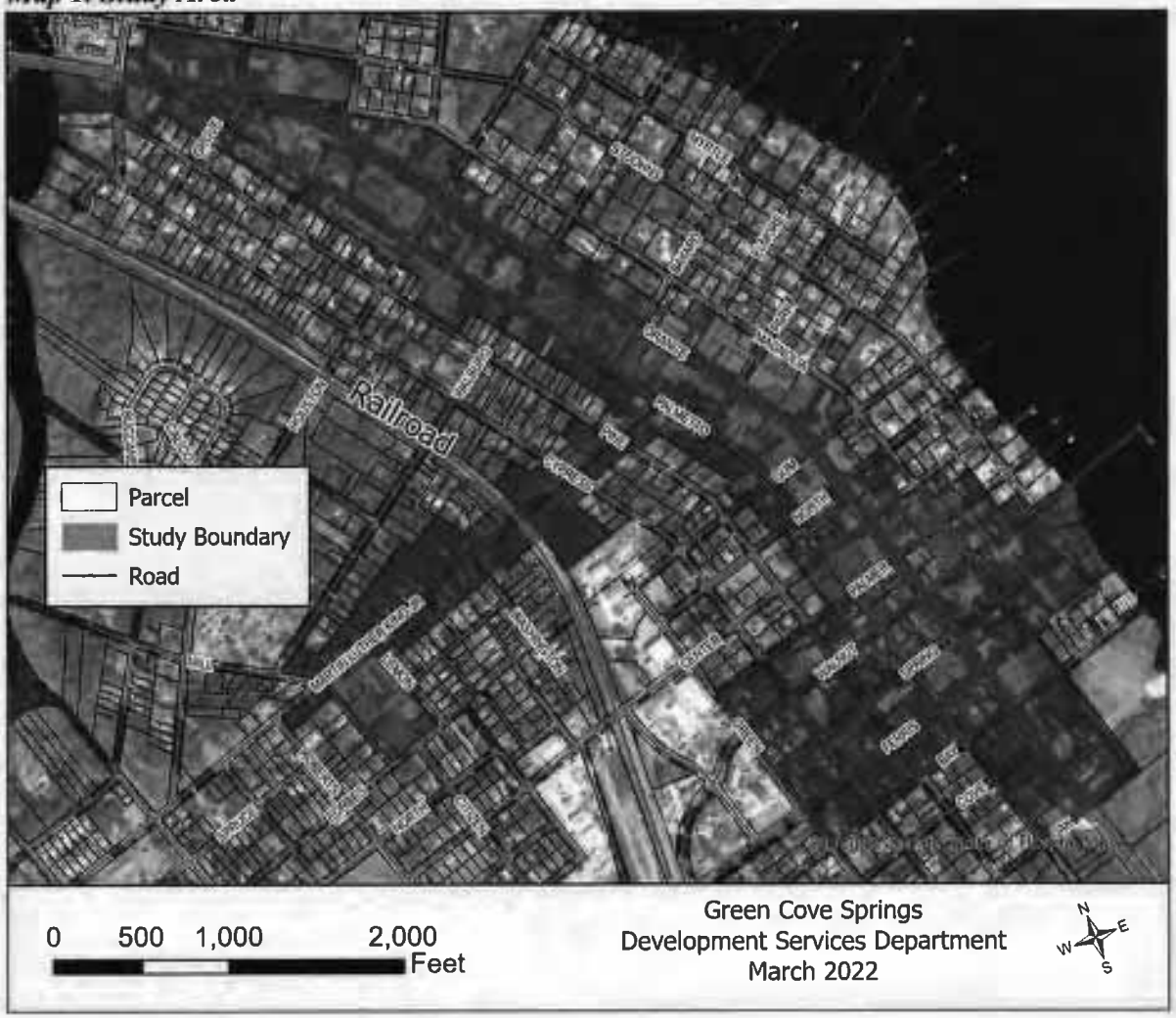
The Study Area contains primarily commercial and institutional uses. Well known locations within the Study Area include: churches such as Springs Baptist Church, First Presbyterian Church, Doxa Church, and United Methodist Church; County government buildings including the Courthouse, Jail, Supervisor of Elections, and Administration Building; food / beverage service businesses such as Spring Park Coffee, Dunkin' Donuts, Burger King, La Casita, and Sweet Sensations; financial institutions, including Wells Fargo and VyStar Credit Union; automobile sales lots such as Green Cove Auto and Good Guys Motors as well as service businesses like Jesse's Auto Services and Darren's Custom & Restorations; retail uses like CVS, The Treasure Box, Walgreens, SS Something Special, and Green Cove Liquors; office uses including Exit Magnolia Realty, Vallencourt Construction, and Action Medical Staffing; and an event venue, Clay Theatre. Additionally, there are numerous vacant properties, including the recently demolished 1050 N Orange Ave, which previously housed an abandoned automobile sales lot, as well as the corner of North Street and Orange Avenue, which once housed two buildings and businesses. The Study Area also contains Spring Park, a well-known and loved park featuring the natural spring, a public spring-fed pool, walking trails, swinging benches, play structures, and great views of the St. Johns River. The foregoing list is not meant to be exhaustive but instead meant to provide a feel of the activity within the Study Area.

The expanse around the Study Area is primarily residential in nature, with some exception specifically along Martin Luther King Jr Blvd, which features some commercial spaces, as well as east of Green Street, which features County School Board property and related uses.

Within the Study Area, there are some planned or potential improvements. These include a proposed freestanding emergency medical facility operated by St. Vincent's as well as

the Palmetto Trail project which will see an eight-foot multi-use path constructed along Palmetto Avenue from its southern end up to the Governors Creek Bridge. As part of the Walnut Street assessment, the City is also planning improvements to Walnut Street, particularly the block between Palmetto Avenue and Orange Avenue.

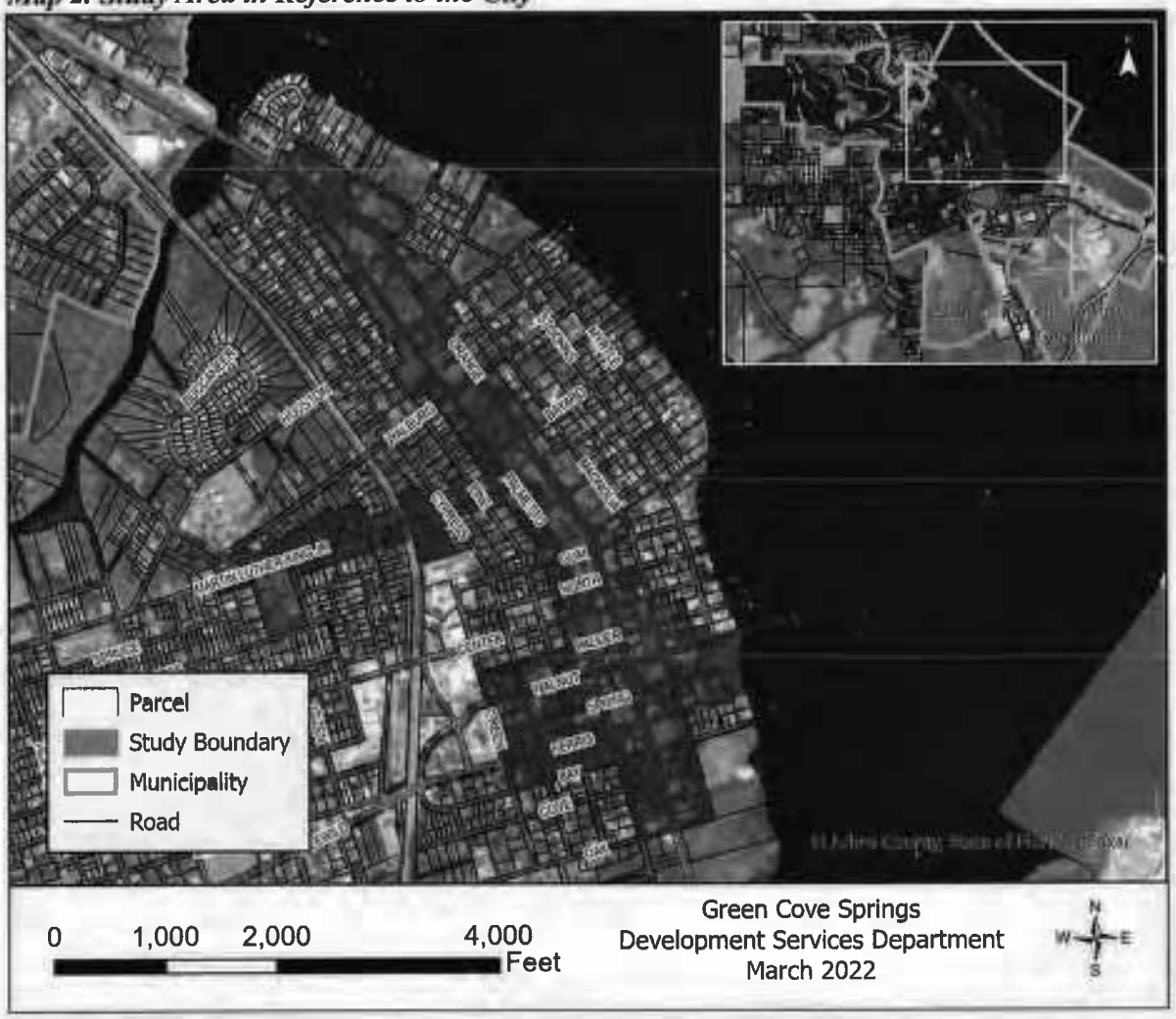
Map 1. Study Area



The Study Area is located somewhat centrally within the City, particularly for commercial development. Its location within the boundaries of the City can be viewed in Map 2. The northwest portion of the City consists of two subdivisions and the southeastern portion of the City consists of Reynolds Park / Clay Port – a future mixed-use development operating as an industrial site at present. The Study Area is contained within what is referred to as the Core City. The western portion of the Core City is dominated by residential development with a smattering of institutional development, namely School Board related properties. US 17 / Orange Avenue, Martin Luther King Blvd, and Palmetto

Avenue, all within the Study Are, feature commercial development with some residential development as well.

Map 2. Study Area in Reference to the City



3. Slum and Blighted Area Analysis

City Staff reviewed the Study Area in relation to the statutory requirements for an area to be determined a slum area or a blighted area.

3.1. Slum

The condition of slum in the Study Area is met under the following criteria:

(c) The existence of conditions that endanger life or property by fire or other causes.

Documentation of existing conditions provided in subsequent sections in this analysis indicates life and / or properties are endangered, specifically by dilapidation; unsecured inhabitable properties; deteriorating roadways, sidewalks, and accessibility features; abandoned homes; and overall deterioration of the Study Area.

3.2 Defective or inadequate public transportation facilities

The City of Green Cove Springs does not have locally operated public transportation facilities. Public transportation within Clay County, called Clay Community Transportation, is operated by the Jacksonville Transportation Authority[2]. Of 4 available lines, 2 lines travel through Green Cove Springs. These lines operate from 6am to 7pm Monday through Friday, excluding holidays. The lines do include a flex service option wherein customers can call a reservation line to schedule a pick-up from their location that will be accommodated *when time allows*. The deviation will go as far as a ¾ mile off the route.

The Blue Line (Map 3) has one stop within the Study Area, the Clay County Courthouse (825 N Orange Ave), and one other stop within City Limits, at the Clay County Health Department. There are two stops moderately close to City Limits – the Pier Station stop west of town on State Road 16 and the Challenge Enterprises stop on Enterprise Way just north of town. There is two to three hours between pickups at the local stops, excluding Challenge Enterprises which only has one pickup time and one drop-off time.

The Green Line (Map 4) has one stop within the Study Area (and the City at large), the Clayton and Mildred Revels Senior Center (604 Walnut St). There are three hours between pickups at this stop, and similarly three hours between drop-offs to the location.

There are no options for local transit from residential to commercial or recreational areas of town. Additionally, the sidewalk and roadway conditions through the Study Area are in a poor state. Many streets show deterioration, especially with top layers breaking down, revealing the older brick streets beneath, which creates uneven surfaces. Sidewalks show significant deterioration as well with the following conditions being regularly observed throughout the Study Area:

- **Cracking**: Locations where the paved surface of the sidewalk has cracked or crumbled
- **Uplift**: A vertical change in height along a sidewalk (generally where "panels" of the sidewalk meet or where cracking has occurred)
- **Fixed Obstructions**: Anchored objects (such as utility poles) that reduce sidewalk width
- **Non-Fixed Obstruction**: Vegetation, non-anchored objects, or uncleanliness that reduces sidewalk width or walkability
- **Spalling**: Surface deterioration that appears as small indentations in the surface
- **Standing Water**: Locations where there is or there is evidence of standing water on the sidewalk
- **Loss**: Locations where a piece or pieces of the sidewalk were removed, whether purposefully for work or through erosion.

Examples of the above defined items are provided in the figures below.

[2] Jacksonville Transit Authority, https://www.jtafla.com/ride-jta/regional-services/clay-community-transportation/ accessed 3/14/2022

Further, there are many places in the Study Area completely lacking sidewalks, primarily on local streets or only on one side of the street and often without excellent road crossing conditions to get from sidewalk to sidewalk as needed.

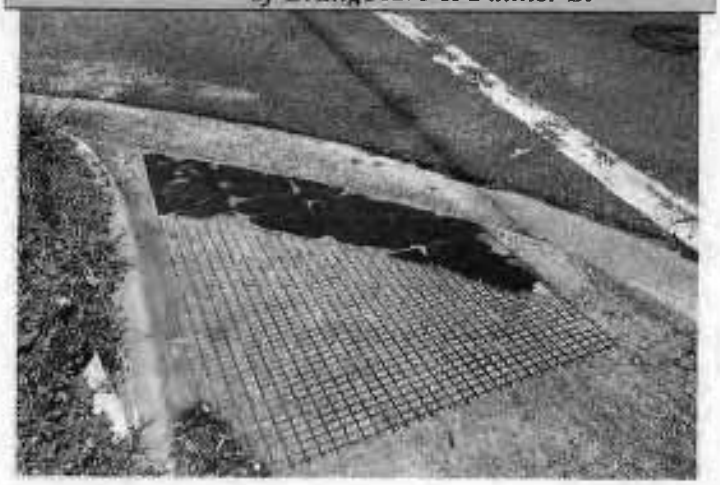
Such road and sidewalk conditions reduce the ability of the community to safely traverse the Study Area on foot, by micromobility[3] device (bicycle, scooter, skateboard, et cetera) or by motorized vehicle.

Figure 1. Sidewalk Cracking, Palmer St, near 14 N Magnolia Ave

Figure 2. Sidewalk Cracking & Loss, Martin Luther King Jr. Blvd

Figure 3. Deteriorating accessibility feature, Corner of Orange Ave & Center St

Figure 4. Deteriorating accessibility feature, Southwest Corner of Orange Ave & Palmer St



[3] Institute for Transportation & Development Policy, https://www.itdp.org/multimedia/defining-micromobility/ accessed 4/7/2022

Figure 5. Road Disrepair, Walnut St

Figure 6. Road Disrepair, Intersection of Green St & Walnut St

Figure 7. Non-Fixed Obstruction, Martin Luther King Jr. Blvd

Figure 8. Non-Fixed Obstruction, Martin Luther King Jr. Blvd

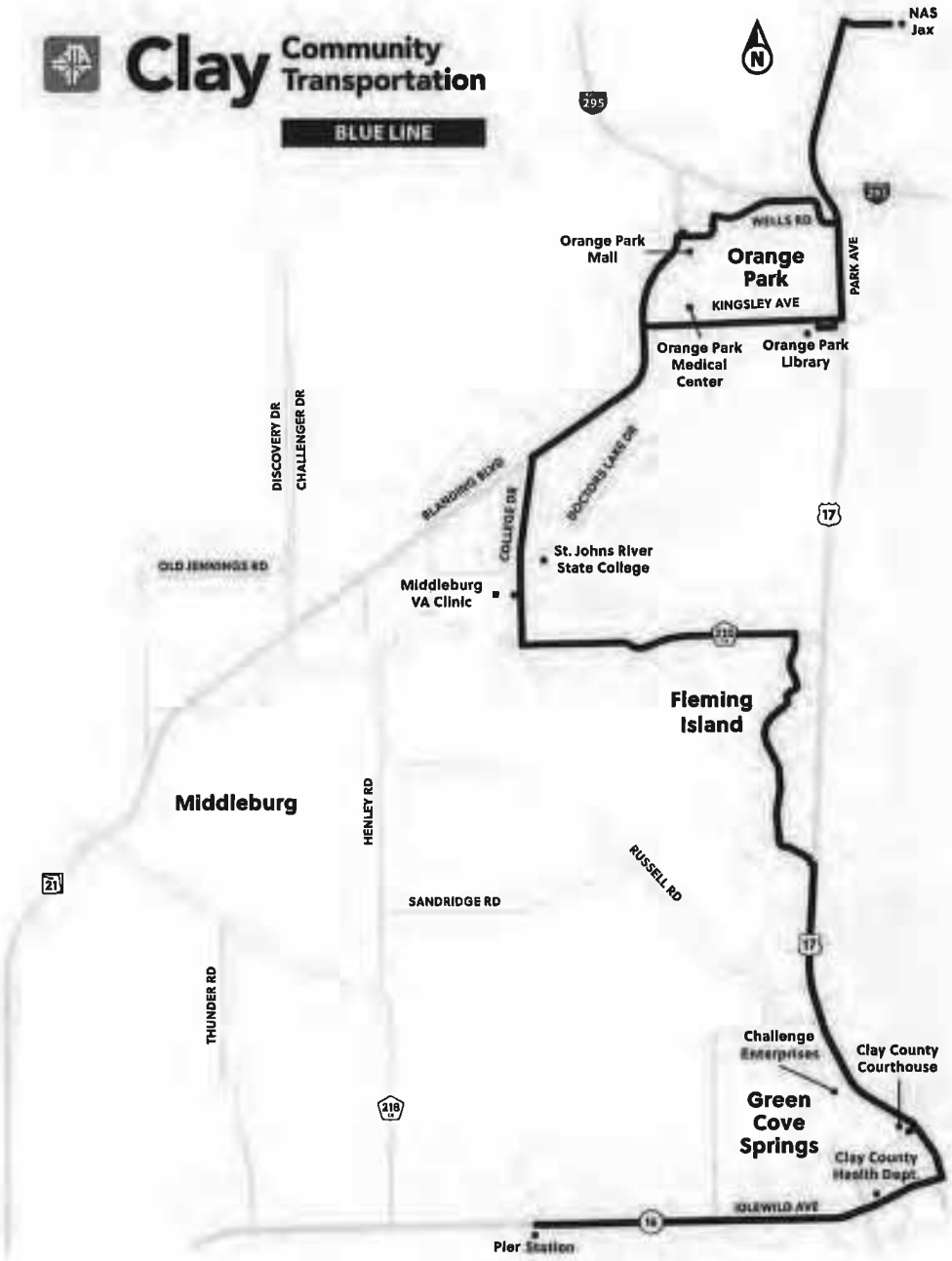
Figure 9. Sidewalk Spalling, Martin Luther King Jr. Blvd

Figure 10. Sidewalk – Standing Water, Martin Luther King Jr. Blvd.

Figure 11. Sidewalk Uplift & Spalling, Martin Luther King Jr. Blvd

Figure 12. Sidewalk Loss, Martin Luther King Jr. Blvd

Map 3. Bus Route – Blue Line[4]



[4] Jacksonville Transportation Authority, https://www.jtafla.com/ride-jta/regional-services/clay-community-transportation/clay-blue-line/

Map 4. Bus Route – Green Line[5]

3.3. Aggregate assessed values do not show appreciable increase over past 5 years

The Study Area has experienced some redevelopment in the past five years, but the deterioration present, as shown in later sections, has prevented the Study Area from seeing an appreciable increase in its aggregate assessed value (AAV) as compared to the City as a whole. In Table 1, it is demonstrated that the City as a whole has experienced an increased AAV of 50.71% while the Study Area has only seen an increase of 20.53%.

Table 3. Aggregate Assessed Value Comparison

Year	Study Area	City
2017	$ 85,088,819.00	$590,524,531.00
2018	$88,913,992.00	$642,232,893.00
2019	$95,646,152.00	$802,652,764.00
2020	$95,809,061.00	$802,652,764.00
2021	$102,557,978.00	$890,001,640.00
% Increase	20.53%	50.71%

[5] Jacksonville Transportation Authority, https://www.jtafla.com/ride-jta/regional-services/clay-community-transportation/clay-green-line/

3.4 Faulty lot layout in relation to size, adequacy, accessibility, or usefulness

Within the Study Area, approximately 25.6% of the lots could be considered faulty (Map 4). The criteria for this determination were as follows:

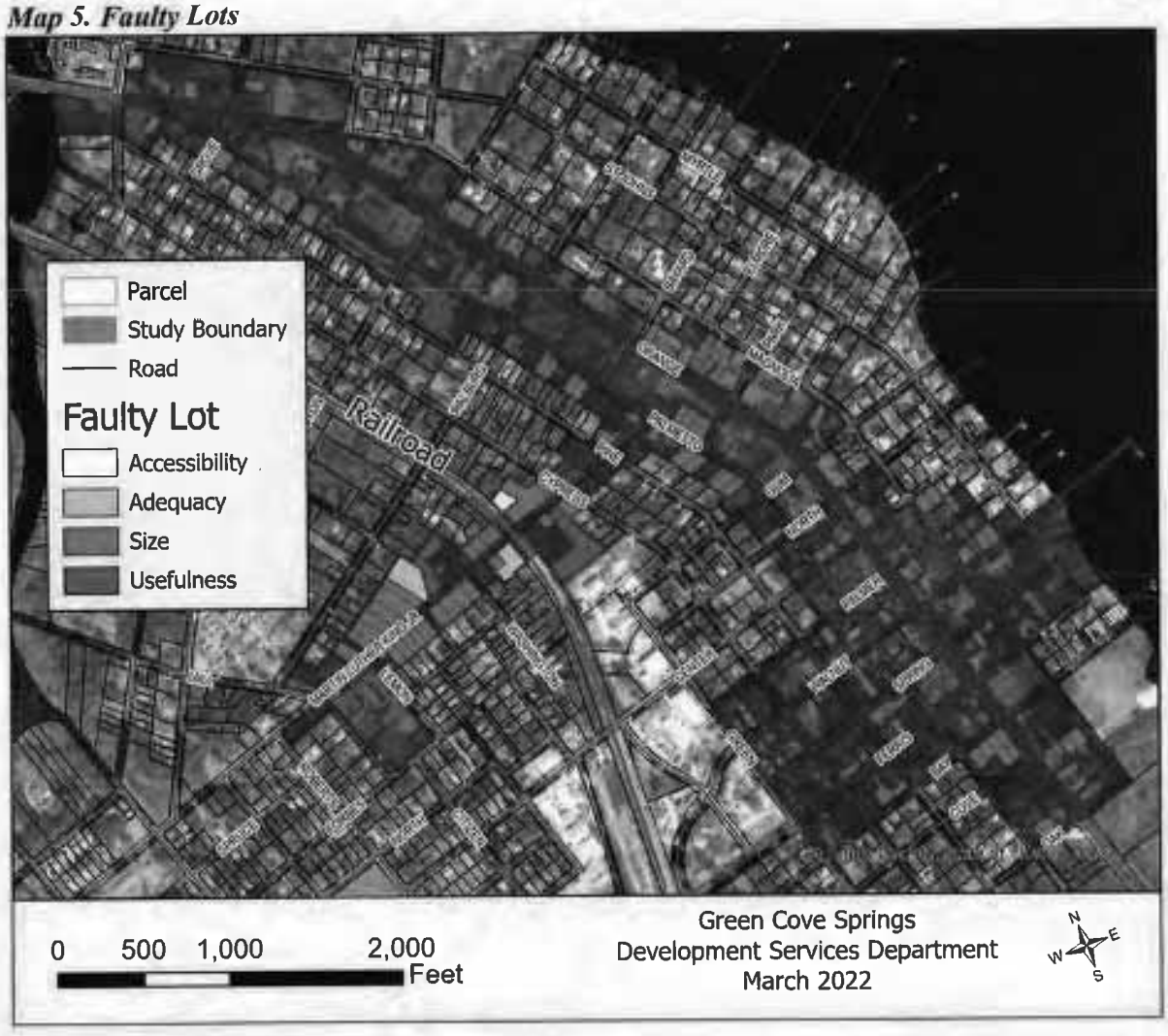
- **Size**: Commercially zoned lots with less than approximately 75 feet of frontage and approximately 100 feet of depth – despite the zoning code identifying no minimum lot requirements in commercial districts, the size of these lots is not suited for adequate commercial development, assuming they are developed individually given the diversity of ownership.
- **Adequacy**: Lots deemed inadequate are shaped in a manner which decreases their developability.
- **Usefulness**: Lots deemed less than useful are shaped in a manner which will likely completely prevent or deter their development or redevelopment.
- **Accessibility**: Lots deemed inaccessible are landlocked.

The City does permit residential development within many commercially zoned areas, and some of the identified lots have historically or recently been developed residentially as a consequence. Ideally, as identified in the Future Land Use Map, these lots would develop commercially or with a mix of uses to better support the neighborhood.

Recent development exemplifies the difficulties with developing commercially on narrow or otherwise small lots. Between 2019 and 2020, Dunkin Donuts constructed a new location within the Study Area – 610 N Orange Ave. The site is approximately 250ft along Orange Avenue (the primary roadway) by 125ft deep. The development received a variance from the City's Zoning Code requirements, which require parking to be to the side or back of a building in the Gateway Commercial Corridor. Due to the depth of the property and the type of development (drive-thru fast food), the lot layout was inadequate to permit development without a variance.

On the basis of the plight of Dunkin Donuts and the criteria identified above, additional lots are truly eligible to be considered faulty within the Study Area, but being that they are already commercially developed, at this time, they are not being considered faulty.

Map 5. Faulty Lots



3.5. Unsanitary or unsafe conditions

There are several sites with unsafe or unsanitary conditions located within the Study Area. Figures 13-29 (following) demonstrate the conditions for a portion of these properties.

Field inspection and Google StreetView inspection of the Study Area identified sites with deteriorating or damaged structures which pose a threat to building occupants, condemned or abandoned buildings, incomplete construction projects, lack of sidewalks or blocked rights-of-way (ROW[s]), as well as brownfield sites. There are unsafe commercial spaces where there is either a lack of defined pedestrian versus vehicular space or a lack of maintenance that would keep the area safe for traversing to and from a business.

These figures represent some of the many deteriorating, unsafe, and at times abandoned structures in the area.

Figure 13. Unsafe, Deteriorating Roof, 116 N Magnolia Ave

Figure 14. Unsafe, Condemned Building, 428 N Orange Ave

Figure 15. Unsafe, Boarded Openings, 115 N Magnolia Ave

Figure 16. Unsafe and unsanitary, Openings / Junk Storage, 115 N Magnolia

Figure 17. Unsafe, No Sidewalk, ROW used for RV Parking, 327 N Orange Ave

Figure 18. Unsafe, No Sidewalk, across from Figure 5, 425 N Orange Ave

Figure 19. Unsanitary, Discontinued Gas Pumps, 201 N Orange Ave

Figure 20. Unsafe, Collapsed Canopy, Petroleum Contamination Site[6], 100 N Orange Ave

Figure 21. Unsafe, Low hanging power lines, concrete drive in disrepair, south of 25 N Orange Av

Figure 22. Unsafe, ROW in disrepair, businses parks in ROW, 3 S Palmetto Ave

Figure 23. Unsafe, Lack of signage, marked parking spaces, pedestrian safety, 24 Green St

[6] FL Department of Environmental Protection's Contamination Locator Map, https://prodenv.dep.state.fl.us/DepClean

Figure 24. Unsafe area in front of active commercial building, 1100 Martin Luther King

Figure 25. Unsafe Structure / Abandoned, 1007 Martin Luther King Jr Blvd

Figure 26. Unsafe / Abandoned Structure, 1001 Martin Luther King Jr Blvd

Figure 27. Unsafe / Abandoned Structure, 713 Martin Luther King Jr Blvd

Figure 28. Unsafe / Abandoned Structure, 613 Martin Luther King Jr. Blvd

Figure 29. Unsafe Structure, 612 Martin Luther King Jr. Blvd

3.6. Deterioration of site or other improvements

In addition to the deterioration of site improvements shown in section 3.5, within the Study Area, there are multiple occurrences of deteriorating improvements, especially access points or paved areas in surrounding buildings. Paving is wearing away or cracking creating hazardous conditions for drivers using the lots to park or maneuver the site and pedestrians crossing the access points. Figures below provide examples of this type of wear and tear in the corridor.

Figure 30. Deteriorating Drive / Sidewalk, 220 Palmer

Figure 31. Deteriorating Drive, 327 N Orange Ave

Figure 32. Parking lot disrepair, between 604 & 500 Walnut St

Figure 33. Sidewalk disrepair, between 604 & 500 Walnut St

3.7. Inadequate and outdated building density patterns

The applicable zoning districts for the Study Area generally include: Central Business District, Gateway Corridor Commercial, Gateway Corridor Neighborhood, and C-1 Neighborhood Commercial. The heart of the Study Area is where the Central Business District is located – also known as the Downtown area. The Gateway districts are located along the "corridor" area, notably US 17 or Orange Ave. The Martin Luther King Blvd corridor is zoned as neighborhood commercial but features primarily low density residential development including active and abandoned residential structures, churches, vacant lots, concrete block commercial buildings lacking transparency and activation.

Figure 36. Outdated building pattern, 208 N Orange Ave, Food Store

Figure 37. Outdated building pattern, 425 N Orange Ave, Wells Fargo

Figure 38. Outdated Building Pattern, 327 N Orange Ave, Rick Baker's RV

Figure 39. Low Density Development, 606 Spring St

Figure 40. Low Density Development, 627 Spring St

Figure 41. Low Density Development, Not Fronting Street, 702 Ferris St / 709 Spring St

Figure 42. Undeveloped, Gustafson Property, Pine St (behind house on Walnut St)

3.8. Vacancy rates

17.1% of properties within the Study Area are classified as vacant by the Clay County Property Appraiser. This level of vacancy within the Study Area is 44.9% higher than that of the rest of the municipality, which has an 11.8% rate of vacancy.

Many of these lots, shown in the figures below, are prime locations that once housed a local business which has since been removed. The lots have yet to have been redeveloped despite their prime locations in the commercial areas of the City.

Figure 43. Vacant Lot, Previously 208 N Orange Ave

Figure 44. Vacant Lot, East of 604 Walnut St

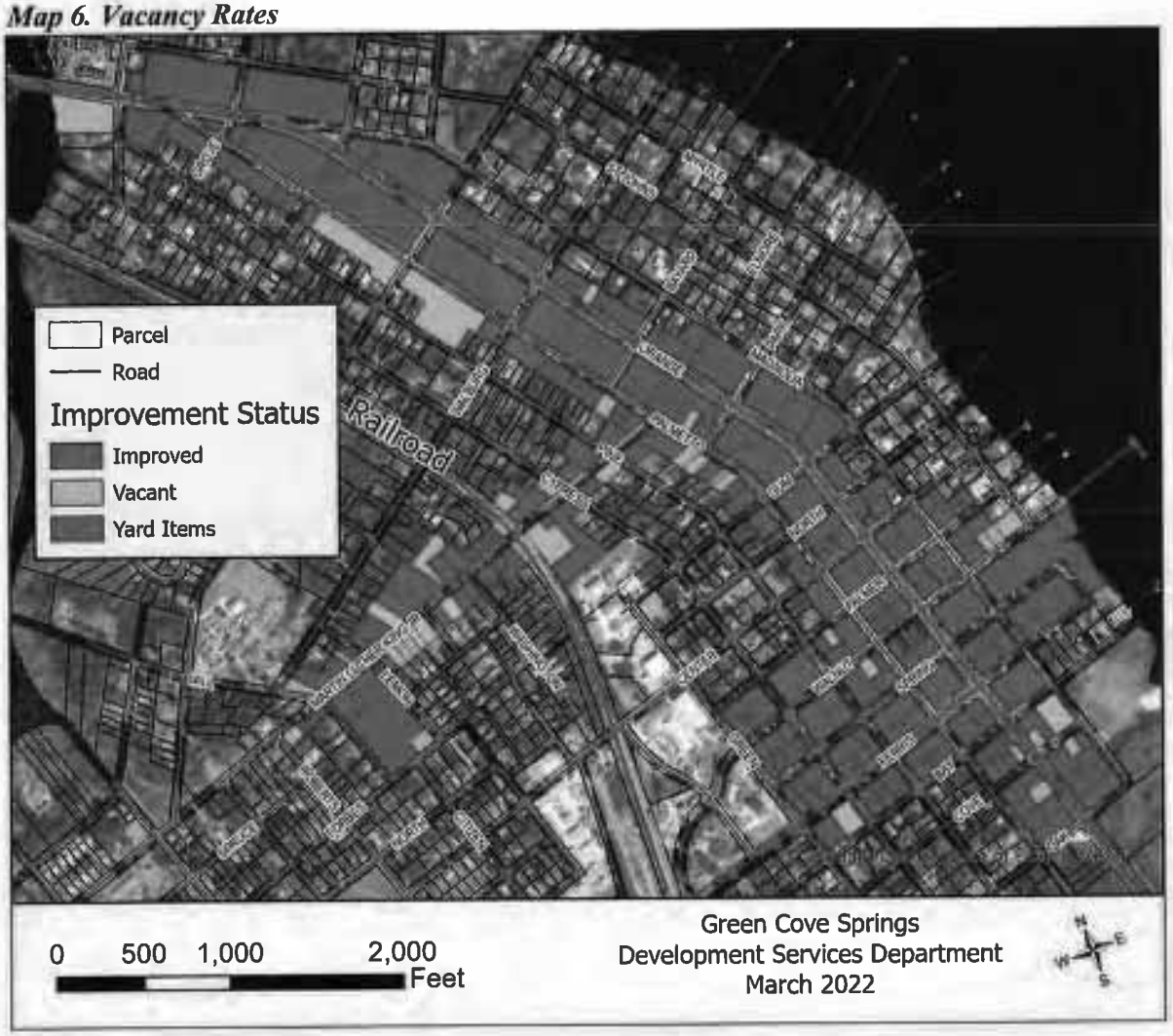
Figure 45. Vacant Lot, BROWNFIELD[7], south of 535 N Orange Ave

Figure 46. Vacant Lot at the northeast corner of Orange Ave &Walburg St

Figure 47. Vacant Lot at the northwest corner of Orange Ave & Governor St

[7] FL Department of Environmental Protection's Contamination Locator Map, https://prodenv.dep.state.fl.us/DepClnup

Map 6. Vacancy Rates



4. Recommendations

The Study Area meets the criteria established in Section 163.340, Florida Statutes (F.S.). It is staff recommendation that the City of Green Cove Springs adopt this Finding of Necessity by resolution per Section 163.355, F.S., and create a Community Redevelopment Agency for the Study Area as defined herein. This will enable redevelopment of the area which is necessary for the safety and economic welfare of the community.

RESOLUTION NO. 2021/2022-56

A RESOLUTION OF THE BOARD OF COUNTY COMMISSIONERS OF CLAY COUNTY, FLORIDA DECLARING AND FINDING A CERTAIN GEOGRAPHIC AREA IN THE CITY OF GREEN COVE SPRINGS, FLORIDA TO BE SLUM OR BLIGHTED; FINDING A NEED FOR THE CREATION OF A COMMUNITY REDEVELOPMENT AGENCY; DELEGATING THE EXERCISE OF CERTAIN POWERS TO CREATE A COMMUNITY REDEVELOPMENT AGENCY WITH THE POWER TO PREPARE AND ADOPT A PLAN OF REDEVELOPMENT AS CONFERRED UPON CLAY COUNTY REGARDING COMMUNITY REDEVELOPMENT WITHIN THE INCORPORATED LIMITS OF THE CITY OF GREEN COVE SPRINGS TO THE CITY OF GREEN COVE SPRINGS IN ACCORDANCE WITH CHAPTER 163, PART III, FLORIDA STATUTES; PROVIDING FOR NO SEVERABILITY; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the Florida Legislature during its 1969 Legislative Session enacted the Community Redevelopment Act of 1969 which is presently codified at Part III, Chapter 163, Florida Statutes, as amended (the "Act"); and

WHEREAS, section 163.410 of the Act provides, in part, "the governing body of any ... county which has adopted a home rule charter may, in its discretion, by resolution delegate the exercise of the powers conferred upon the county by [the Act] within the boundaries of a municipality to the governing body of such a municipality;" and

WHEREAS, the Act further provides that "[s]uch a delegation to a municipality shall confer only such powers upon a municipality as shall be specifically enumerated in the delegating resolution;" and

WHEREAS, the City Council of the City of Green Cove Springs adopted Resolution No. R-03-2022 (the "Resolution"), which is attached hereto as Attachment A and incorporated herein

by reference, and which, among other things, declared an area within the municipal boundaries of the City of Green Cove Springs (the "City"), generally described as the downtown and US 17 corridor and referred to as the Green Cove Springs Redevelopment Area (the "Area"), to be a "slum or blighted area"; and

WHEREAS, the City Council further made a finding of necessity as to the rehabilitation, conservation or redevelopment, or a combination of each, with respect to the Area; and

WHEREAS, this Board has considered the "Finding of Necessity" Study, which is attached to the City's Resolution as Exhibit B, concerning the existence of slum or blighted areas within the boundaries of the Area; and

WHEREAS, this Board agrees with the City Council's findings as set forth in the Study and finds that one or more slum or blighted areas, as defined in section 163.340(7) and (8), respectively, of the Act exist within the Area; and

WHEREAS, this Board finds that rehabilitation, conservation, or redevelopment, or a combination thereof, of said slum or blighted area is necessary in the interest of the public health, safety, morals, and welfare of the residents of the City and of Clay County; and

WHEREAS, accordingly this Board finds that there is a need for a community redevelopment agency to carry out the community redevelopment purposes of the Act; and

WHEREAS, the City, pursuant to section 163.410 of the Act, requested that the County delegate powers to the City to create a community redevelopment agency; and

WHEREAS, this Board finds that at this time the City has met its obligations as set forth in section 163.410 of the Act, including, but not limited to, submitting all documentation required by the County; and

WHEREAS, this Board desires to delegate certain limited community redevelopment powers as set forth herein to the City pursuant to the Act.

NOW THEREFORE, BE IT RESOLVED by the Board of County Commissioners of Clay County, Florida, as follows:

Section 1. The foregoing recitations are incorporated as a part of the Resolution by reference.

Section 2. Pursuant to Chapter 163, Part III, Florida Statutes (the "Act"), specifically, section 163.355, Florida Statutes, this Board finds and declares, that based on findings of the City and the Study a slum or blighted area, as defined by section 163.340(7) and (8), respectively, of the Act, exists in an area of the City described generally as the downtown and US 17 corridor, which is specifically described in the Study and is referred to as the Green Cove Springs Redevelopment Area (the "Area").

Section 3. This Board finds and declares that the rehabilitation, conservation and redevelopment, or a combination thereof, of the Area is necessary and in the best interest of the public health, safety, morals, and welfare of the residents of the City and of Clay County as a whole.

Section 4. This Board finds there is a need for a community redevelopment agency to function in the Area to carry out the community redevelopment purposes of the Act.

Section 5. This Board delegates to the City the limited power to create a community redevelopment agency pursuant to the Act, provided that (1) the composition of the community redevelopment agency shall consist of two members appointed by the City, two members appointed by the Board, and one at-large member appointed by the other four members, and (2) the sole power initially delegated to the community redevelopment agency is to prepare and adopt a plan of redevelopment for the Area, which plan shall then be submitted to the City and the County for review and upon the completion of their respective reviews, be submitted to the Council and thereafter the Board for approval after notice.

Section 6. This Board shall consider the delegation of additional community redevelopment powers to the community redevelopment agency in the form of an interlocal agreement by subsequent resolution of this Board.

Section 7. The community redevelopment agency created by the City shall cease to exist within 12 months from the adoption of this Resolution if: (1) the City has not approved a redevelopment plan and interlocal agreement acceptable to the County; and (2) the County has not approved same in accordance with the Act and this Resolution, and the delegation of powers hereunder shall be deemed to be void and to have no further force and effect.

Section 8. This Resolution and the delegation of the powers hereunder shall not be deemed or construed to create any obligation on the part of the Board or the County to enter into an agreement or adopt a resolution.

Section 9. The provisions of this Resolution are not severable. If any part of this Resolution is held invalid by a court of competent jurisdiction, this Resolution shall be deemed void and of no further effect.

Section 10. This Resolution shall become effective upon adoption.

DULY ADOPTED by the Board of County Commissioners of Clay County, Florida, this 9th day of August, 2022.

BOARD OF COUNTY COMMISSIONERS
CLAY COUNTY, FLORIDA

By: WFBolla (Aug 11, 2022 14:37 EDT)
Wayne Bolla, Its Chairman

ATTEST:

Tara S. Green
Clay County Clerk of Court and Comptroller
Ex Officio Clerk to the Board

F:\Ordinances\communityredevelopment\GCS 2022\Resolution CRA 8.5.22.docx

ATTACHMENT A

RESOLUTION NO. R-03-2022

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF GREEN COVE SPRINGS, FLORIDA, RELATING TO COMMUNITY REDEVELOPMENT; FINDING THE EXISTENCE OF BLIGHT IN AN AREA OF THE CITY OF GREEN COVE SPRINGS, FLORIDA; MAKING CERTAIN FINDINGS AND DETERMINATIONS; FINDING A NEED FOR CREATING A COMMUNITY REDEVELOPMENT AGENCY PURSUANT TO CHAPTER 163, PART III, FLORIDA STATUTES; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the City Council of the City of Green Cove Springs ("City Council") expressed its intention to consider the creation of a community redevelopment area, authorized a study to consider whether a finding of necessity resolution should be adopted, and defined a proposed redevelopment study area within the City of Green Cove Springs ("City); and

WHEREAS, a study has been done, and shall be identified as Exhibit B, supported by data and analysis, of the conditions in that part of the City, known and referred to as the Green Cove Springs Redevelopment Area, depicted in Exhibit "A" hereof (such area being referred to herein as the "Area" or the "Redevelopment Area"); and

WHEREAS, the results of the study have been presented to the City Council for its consideration and included in the public record; and

WHEREAS, after having considered the study's determinations and the facts and evidence of the conditions in the Area and having received and considered such other evidence of the conditions in the Area as have been presented to it, the City Council has determined that the conditions in the Area meet the criteria described in Chapter 163, Part III, Florida Statutes; and

WHEREAS, the City seeks approval from Clay County that the Area meets the criteria described in Chapter 163, Part III, Florida Statutes, and requests delegation of authority to create a Community Redevelopment Agency, adopt a Community Redevelopment Plan, and establish a Redevelopment Trust Fund.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF GREEN COVE SPRINGS, FLORIDA, AS FOLLOWS:

SECTION 1. FINDINGS OF CONDITIONS. Based upon the evidence, data, analysis, and facts presented to it, the City Council does hereby find that the following conditions are present in the Area of the City to be considered a "Blighted area" as specified in Section 163.340(7)©, Florida Statutes (2021):

(C) the existence of conditions that endanger life or property by fire or other causes. (Sec. 163.340(8)(a), F.S.);

SECTION 2. FINDINGS OF CONDITIONS. Based upon the evidence, data, analysis, and facts presented to it, the City Council does hereby find that the following conditions are present in the Area of the City to be considered a "Blighted area" as specified in Section 163.340(7)(c), Florida Statutes (2021):

A. Predominance of defective or inadequate street layout, parking facilities, roadways, bridges, or public transportation facilities.
B. *Aggregate assessed values of real property in the area for ad valorem tax purposes have failed to show any appreciable increase over the 5 years prior to finding of such conditions (Sec. 163.340(8)(b), F.S.);*
C. *Deterioration of site or other improvements (Sec. 163.340(8)(e), F.S.);*
D. *Inadequate and outdated building density patterns (Sec. 163,340(8)(f), F.S.);*
E. *Residential and commercial vacancy rates higher in the area than in the remainder of the municipality (Sec. 163.340(8)(i), F.S.);*

SECTION 3. FINDING OF NECESSITY. The City Council does hereby make a legislative finding that the conditions of the Area meet the criteria described in Section 163.340(8), Florida Statutes (2021) and the following:

A. *One or more slum or blighted areas, or one or more areas in which there is a shortage of housing affordable to residents of low or moderate income, including the elderly, exist in the City; and,*
B. *The rehabilitation, conservation, or redevelopment, or combination thereof, of such area or areas, including, if appropriate, the development of housing which residents of low or moderate income, including the elderly, can afford, is necessary in the interest of the public health, safety, morals, or welfare of the residents of the City.*

SECTION 4. COMMUNITY REDEVELOPMENT AREA. Based upon the facts presented and contained in the public record, the City does hereby find the Area contains conditions of blight as defined in Section 163.340, Florida Statutes (2021), and that such Area constitutes a Community Redevelopment Area as defined in Section 163.340(10), Florida Statutes (2021).

SECTION 5. COMMUNITY REDEVELOPMENT AGENCY. The City Council does hereby expressly find that it is necessary, appropriate, proper, and timely that a Community Redevelopment Agency be created to carry out the community redevelopment contemplated by Chapter 163, Part III, Florida Statutes (2021), to further cause, promote, and encourage rehabilitation, conservation, and redevelopment in the Area.

SECTION 6. DELEGATION OF AUTHORITY. The City Council seeks approval from Clay County that the Area meets the criteria described in Chapter 163, Part III, Florida Statutes (2021), and requests delegation of authority to create a Community Redevelopment Agency, adopt a Community Redevelopment Plan, and establish a Redevelopment Trust Fund.

SECTION 7. EFFECTIVE DATE. This Resolution shall take effect immediately upon its passage.

DONE AND RESOLVED BY THE CITY COUNCIL OF THE CITY OF GREEN COVE SPRINGS, FLORIDA, IN REGULAR SESSION THIS 19TH DAY OF APRIL, 2022.

CITY OF GREEN COVE SPRINGS, FLORIDA

Edward R. Gaw, Mayor

ATTEST:

Erin West, City Clerk

APPROVED AS TO FORM:

L. J. Arnold, III, City Attorney

Exhibit "A"

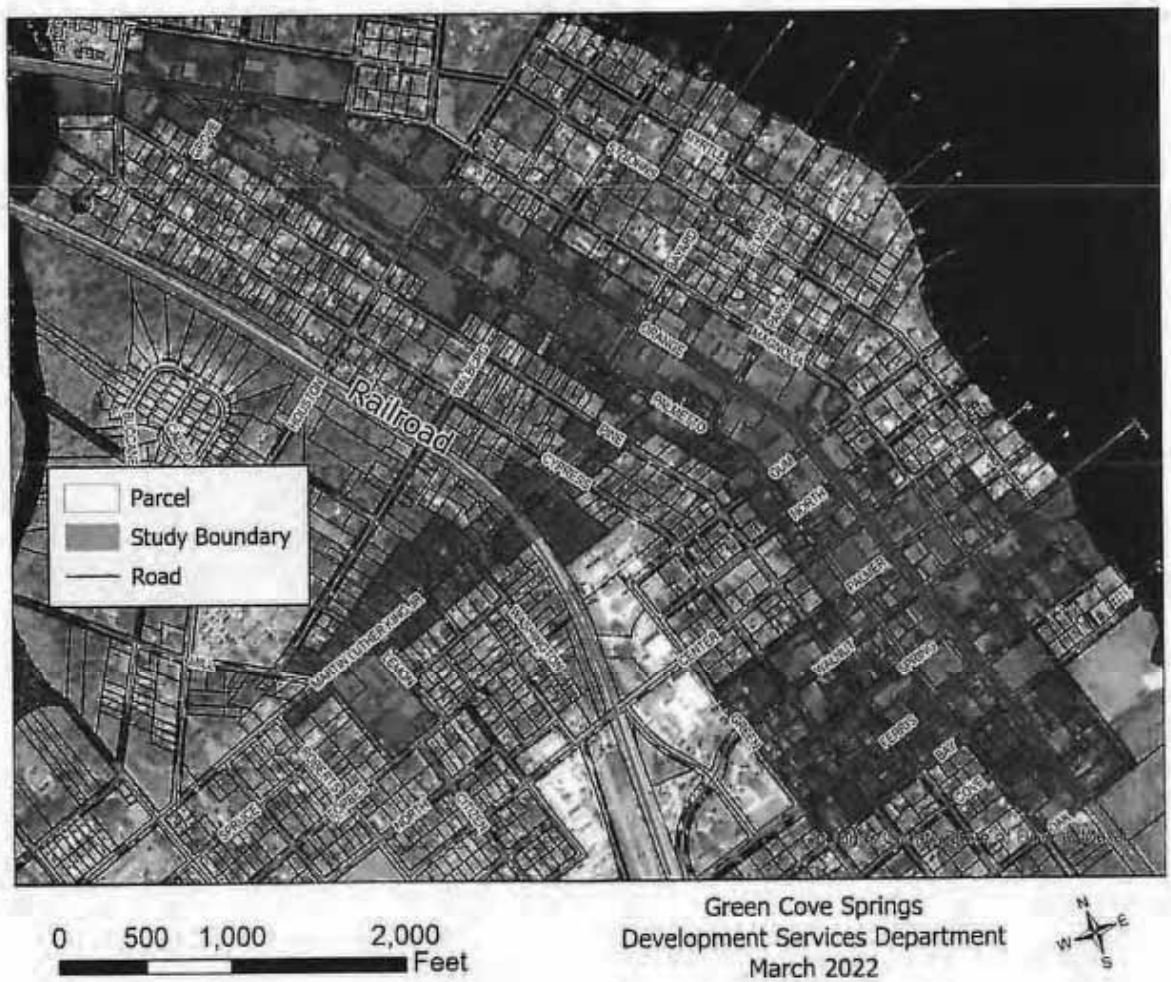

Railroad
Parcel
Study Boundary
Road
0 500 1,000 2,000
Feet
Green Cove Springs
Development Services Department
March 2022
N
E
W
S

Exhibit B

Through this, we encourage new development and redevelopment to improve quality of life, enhance economic conditions, increase vibrancy, and better realize the sense of place in key districts of the City.

Downtown / US 17 Finding of Necessity

City of Green Cove Springs, FL

Heather Glisson, Planning Technician

Table of Contents

1. Executive Summary 4
2. Introduction 5
2.1. Background 6
2.2. Study Purpose 7
2.3. Community Redevelopment Act Overview 7
2.3.1. Definitions of Slum Area 8
2.3.2. Definitions of Blighted Area 9
2.3.2. Assessment Process 10
2.4. Study Area 10
3. Slum and Blighted Area Analysis 12
3.1. Slum 12
3.2. Defective or inadequate public transportation facilities 13
3.3. Aggregate assessed values do not show appreciable increase over past 5 years 18
3.4. Faulty lot layout in relation to size, adequacy, accessibility, or usefulness 19
3.5. Unsanitary or unsafe conditions 20
3.6. Deterioration of site or other improvements 24
3.7. Inadequate and outdated building density patterns 25
3.8. Vacancy rates 26
4. Recommendations 28

Maps

Map 1. Study Area 11
Map 2. Study Area in Reference to the City 12
Map 3. Bus Route – Blue Line 17
Map 4. Bus Route – Green Line 18
Map 5. Faulty Lots 20
Map 6. Vacancy Rates 28

Figures

Figure 1. Sidewalk Cracking, Palmer St, near 14 N Magnolia Ave 14
Figure 2. Sidewalk Cracking & Loss, Martin Luther King Jr. Blvd 14
Figure 3. Deteriorating accessibility feature, Corner of Orange Ave & Center St 14
Figure 4. Deteriorating accessibility feature, Southwest Corner of Orange Ave & Palmer St 14
Figure 5. Road Disrepair, Walnut St 15
Figure 6. Road Disrepair, Intersection of Green St & Walnut St 15
Figure 7. Non-Fixed Obstruction, Martin Luther King Jr. Blvd 16

FIGURE 8. NON-FIXED OBSTRUCTION, MARTIN LUTHER KING JR. BLVD....16
FIGURE 9. SIDEWALK SPALLING, MARTIN LUTHER KING JR. BLVD....16
FIGURE 10. SIDEWALK – STANDING WATER, MARTIN LUTHER KING JR. BLVD....16
FIGURE 11. SIDEWALK UPLIFT & SPALLING, MARTIN LUTHER KING JR. BLVD....16
FIGURE 12. SIDEWALK LOSS, MARTIN LUTHER KING JR. BLVD....16
FIGURE 13. UNSAFE, DETERIORATING ROOF, 116 N MAGNOLIA AVE....21
FIGURE 14. UNSAFE, CONDEMNED BUILDING, 428 N ORANGE AVE....21
FIGURE 15. UNSAFE, BOARDED OPENINGS, 115 N MAGNOLIA AVE....21
FIGURE 16. UNSAFE AND UNSANITARY, OPENINGS / JUNK STORAGE, 115 N MAGNOLIA....21
FIGURE 17. UNSAFE, NO SIDEWALK, ROW USED FOR RV PARKING, 327 N ORANGE AVE....21
FIGURE 18. UNSAFE, NO SIDEWALK, ACROSS FROM FIGURE 5, 425 N ORANGE AVE....21
FIGURE 19. UNSANITARY, DISCONTINUED GAS PUMPS, 201 N ORANGE AVE....22
FIGURE 20. UNSAFE, COLLAPSED CANOPY, PETROLEUM CONTAMINATION SITE, 100 N ORANGE AVE....22
FIGURE 21. UNSAFE, LOW HANGING POWER LINES, CONCRETE DRIVE IN DISREPAIR, SOUTH OF 25 N ORANGE AV....22
FIGURE 22. UNSAFE, ROW IN DISREPAIR, BUSINSES PARKS IN ROW, 3 S PALMETTO AVE....22
FIGURE 23. UNSAFE, LACK OF SIGNAGE, MARKED PARKING SPACES, PEDESTRIAN SAFETY, 24 GREEN ST....22
FIGURE 24. UNSAFE AREA IN FRONT OF ACTIVE COMMERCIAL BUILDING, 1100 MARTIN LUTHER KING....23
FIGURE 25. UNSAFE STRUCTURE / ABANDONED, 1007 MARTIN LUTHER KING JR BLVD....23
FIGURE 26. UNSAFE / ABANDONED STRUCTURE, 1001 MARTIN LUTHER KING JR BLVD....23
FIGURE 27. UNSAFE / ABANDONED STRUCTURE, 713 MARTIN LUTHER KING JR BLVD....23
FIGURE 28. UNSAFE / ABANDONED STRUCTURE, 613 MARTIN LUTHER KING JR. BLVD....23
FIGURE 29. UNSAFE STRUCTURE, 612 MARTIN LUTHER KING JR. BLVD....23
FIGURE 30. DETERIORATING DRIVE / SIDEWALK, 220 PALMER....24
FIGURE 31. DETERIORATING DRIVE, 327 N ORANGE AVE....24
FIGURE 32. PARKING LOT DISREPAIR, BETWEEN 604 & 500 WALNUT ST....24
FIGURE 33. SIDEWALK DISREPAIR, BETWEEN 604 & 500 WALNUT ST....24
FIGURE 36. OUTDATED BUILDING PATTERN, 208 N ORANGE AVE, FOOD STORE....25
FIGURE 37. OUTDATED BUILDING PATTERN, 425 N ORANGE AVE, WELLS FARGO....25
FIGURE 38. OUTDATED BUILDING PATTERN, 327 N ORANGE AVE, RICK BAKER'S RV....25
FIGURE 39. LOW DENSITY DEVELOPMENT, 606 SPRING ST....26
FIGURE 40. LOW DENSITY DEVELOPMENT, 627 SPRING ST....26
FIGURE 41. LOW DENSITY DEVELOPMENT, NOT FRONTING STREET, 702 FERRIS ST / 709 SPRING ST....26
FIGURE 42. UNDEVELOPED, GUSTAFSON PROPERTY, PINE ST (BEHIND HOUSE ON WALNUT ST)....26
FIGURE 43. VACANT LOT, PREVIOUSLY 208 N ORANGE AVE....27
FIGURE 44. VACANT LOT, EAST OF 604 WALNUT ST....27
FIGURE 45. VACANT LOT, BROWNFIELD, SOUTH OF 535 N ORANGE AVE....27
FIGURE 46. VACANT LOT AT THE NORTHEAST CORNER OF ORANGE AVE &WALBURG ST....27
FIGURE 47. VACANT LOT AT THE NORTHWEST CORNER OF ORANGE AVE & GOVERNOR ST....27

Tables

TABLE 1. SLUM FACTORS....4
TABLE 2. BLIGHT FACTORS....4
TABLE 3. AGGREGATE ASSESSED VALUE COMPARISON....18

1. Executive Summary

This study has been prepared to fulfill the requirements for a Finding of Necessity (FON) in accordance with the Community Redevelopment Act of 1969, Chapter 163, Part III, Florida Statutes. This report has reviewed data from multiple sources including the Clay County Property Appraiser and field observations, which lead to analysis to determine if conditions of slum and / or blight exist within the study area. This report represents the first step in creating a Community Redevelopment Area (CRA) which will use Tax Increment Financing to invest in the area and improve its conditions. There are three statutory conditions that may be evaluated to determinate a slum condition and fourteen statutory conditions that may be evaluated to determine a blight condition. For a slum condition, only one of the three is required to be met to make a finding of slum. For a blight condition, only two of the fourteen are required to be met to make a finding of blight.

One of three factors of slum was identified as being met, and seven of fourteen factors of blight were determined as being met, satisfying the statutory requirements to determine the Study Area is a slum area as well as a blighted area. With the adoption of this FON, the City Council of Green Cove Springs may designate a Community Redevelopment Area.

Table 1. Slum Factors

Factor	Met?
(a) Inadequate provision for ventilation, light, air, sanitation, or open spaces;	No
(b) High density of population, compared to the population density of adjacent areas within the county or municipality; and overcrowding, as indicated by government-maintained statistics or other studies and the requirements of the Florida Building Code;	No
(c) The existence of conditions that endanger life or property by fire or other causes.	**Yes**

Table 2. Blight Factors

Factor	Met?
(a) Predominance of defective or inadequate street layout, parking facilities, roadways, bridges, or public transportation facilities.	**Yes**
(b) Aggregate assessed values of real property in the area for ad valorem tax purposes have failed to show any appreciable increase over the 5 years prior to the finding of such conditions.	**Yes**
(c) Faulty lot layout in relation to size, adequacy, accessibility, or usefulness.	**Yes**
(d) Unsanitary or unsafe conditions.	**Yes**
(e) Deterioration of site or other improvements.	**Yes**

(f) Inadequate and outdated building density patterns.	**Yes**
(g) Falling lease rates per square foot of office, commercial, or industrial space compared to the remainder of the county or municipality.	Data unavailable
(h) Tax or special assessment delinquency exceeding the fair value of the land.	Not analyzed
(i) Residential and commercial vacancy rates higher in the area than in the remainder of the county or municipality.	**Yes**
(j) Incidence of crime in the area higher than in the remainder of the county or municipality.	Not analyzed
(k) Fire and emergency medical service calls to the area proportionately higher than in the remainder of the county or municipality.	Not analyzed
(l) A greater number of violations of the Florida Building Code in the area than the number of violations recorded in the remainder of the county or municipality.	Not analyzed
(m) Diversity of ownership or defective or unusual conditions of title which prevent the free alienability of land within the deteriorated or hazardous area.	Not analyzed
(n) Governmentally owned property with adverse environmental conditions caused by a public or private entity.	N/A
(o) A substantial number or percentage of properties damaged by sinkhole activity which have not been adequately repaired or stabilized.	N/A

Recommendations

The Study Area meets the criteria established in Section 163.340, Florida Statutes. It is staff recommendation that the City of Green Cove Springs adopt this Finding of Necessity by resolution per F.S. 163.355 and create a Community Redevelopment Agency for the Study Area as defined herein.

2. Introduction

The City of Green Cove Springs seeks to determine the feasibility of designating the Downtown and US 17 Corridor as a Community Redevelopment Area through the development of a Finding of Necessity and would also like to implement redevelopment in this area through the adoption of a Redevelopment Area Plan.

2.1. Background

Green Cove Springs is a city located along the west bank of the historic St. Johns River and since 1971 has served as the County Seat of Government for Clay County. The 2020 Census identified the population count to be 9,786, a 41.66% increase from the 2010 Census.

The city's name originates from the three physical characteristics. "Green" refers to the perennially green vegetation characterized by its tree scape and foliage. "Cove" refers to a bend in the St. Johns River creating a safe area for mooring of boats during inclement weather periods. "Springs" refers to the natural spring (one of 600 in Florida), originating from the Floridan Aquifer with an estimated flow rate of approximately 2,200 gallons per minute. The spring water flows into the west side of the municipal swimming pool and then flows out the east side forming a stream eventually emptying into the St. Johns River.

The first inhabitants of the area were attracted to it because of the warm mineral spring, known as "The Boil." The medicinal qualities of the spring and its location along the St. Johns River served as major contributors to the community's development as a prominent attraction and destination for tourists during the 19th Century.

Green Cove Springs has had a storied history. It was home to Gustafson's Farm, a family dairy operation owned by Frank and Agnes Gustafson that began in 1908. In the 1930s, the federal government located Benjamin Lee Field within the City. The United States Department of the Navy opened a flight training facility. In the 1950s, major American automakers had dealerships in Green Cove Springs along US 17, which led to the City being known as "the Little Detroit."

The City grew economically and geographically, annexing land to include Magnolia Point Golf and Country Club and Magnolia West to the northwestern end, Cove Plaza on the southern end, and to the southeastern edge, FCT-granted land proposed to be the Ed Gustafson Regional Park as well as 560 acres intended to develop as a 2,100 unit residential subdivision.

In 2005, the City of Green Cove Springs adopted "Tomorrow's Vision" as the guiding vision document for the future of the city. This document established goals for the City such as: maintain the small-town character; provide affordable housing; promote redevelopment in the corridors (US 17 / SR 16); improve traffic circulation; expand recreational opportunities; promote a business-friendly environment; strengthen Code Enforcement. One implementation mechanism included in the visioning document was the potential for a Community Redevelopment Agency. In 2014, the City adopted a Finding of Necessity, but the Community Redevelopment Agency was unable to come to fruition at that time.

Since then, the City has experienced additional growth and undergone further planning activities. In February 2021, the City began the process of updating the comprehensive plan, which was adopted a year later in February 2022. The 2045 Comprehensive Plan is designed to prepare the City for upcoming growth. The Future Land Use Map was amended from 13 categories to 6 categories: Neighborhood (NBD), Downtown (DT), Mixed Use (MU), Mixed-Use Reynolds Park (MURP), Industrial (IND), and Public (PUB).

Further, the Future Land Use element established an objective to continue to redevelop and invest in blighted areas of the City, with Policy 1.6.1 directing the City to explore the creation of a Community Redevelopment Agency / Area.

Additionally, the Future Land Use elements directs the City in Policy 1.6.2 to develop a Downtown Master Plan and assess Walnut Street to determine how to increase safety and attractiveness of the streetscape. The Walnut Street assessment was completed in late 2021 and the Downtown Master Plan is underway, with a goal of adopting the plan by mid-April 2022.

2.2. Study Purpose

This Finding of Necessity will determine if the Study Area meetings the statutory criteria to be designated as a Community Redevelopment Area. With this, the City aims to establish said area in an attempt to halt and reverse the decline within it in order to encourage new development and redevelopment to improve the overall quality of the area, leading to improved economic conditions, increased vibrancy, and a more established sense of place in the area.

If the Study Area meets the statutory criteria, the City will adopt this Finding of Necessity and seek to move forward with adopting a Redevelopment Plan.

2.3. Community Redevelopment Act Overview[1]

The Florida Legislature enacted the Community Redevelopment Act (Act) in 1969. The legislature created the law to allow local governments to improve declining areas, as defined in the Act and detailed in subsections below. Such areas are detrimental to the health, safety, and welfare of residents as well as being a nuisance to growth and the provision of adequate infrastructure and housing; the Act provides a way for the local governments to create a Redevelopment Area and fund redevelopment within it.

The Statute defines *community redevelopment* as local government or community redevelopment agency lead projects in an established community redevelopment area "for the elimination and prevention of the development or spread of slums and blight, or for the reduction or prevention of crime, or for the provision of affordable housing." This may include slum clearance, redevelopment, rehabilitation, or conservation in a community redevelopment area, or any combination or part thereof, pursuant to the community redevelopment plan.

The Act establishes that powers granted by the Act are "for public uses and purposes" which involve the spending of public money and the potential exercise of police power, for which reason public interest, meaning a legitimate concern for general health, safety, and welfare within the area, is a requirement to implement the Act.

The Act further establishes the legitimacy of tax increment financing (TIF) as a method of successfully preserving and enhancing the tax base of an area, which will then serve to increase tax revenues for all taxing authorities for the area, enabling them to carry out

[1] The 2021 Florida Statutes, Title XI Chapter 163, Part III

their respective objectives more effectively. A redevelopment trust fund may be established by ordinance after the approval of a Community Redevelopment Plan to allow for the deposit of funds to be used by the agency to finance or refinance redevelopment. This fund must be established prior to receipt of any increment revenues. The statutes further state:

> "The annual funding of the redevelopment trust fund shall be in an amount not less than the increment in the income, proceeds, revenues, and funds of each taxing authority derived from or held in connection with the undertaking and carrying out of community redevelopment under this part. Such increment shall be determined annually and shall be that amount equal to 95% of the difference between:
>
> 1. The amount of ad valorem taxes levied each year by each taxing authority, exclusive of any amount from any debt service millage, on taxable real property contained within the geographic boundaries of a community redevelopment area; and
>
> 2. The amount of ad valorem taxes which would have been produced by the rate upon which the tax is levied each year by or for each taxing authority, exclusive of any debt service millage, upon the total of the assessed value of the taxable real property in the community redevelopment area as shown upon the most recent assessment roll used in connection with the taxation of such property by each taxing authority prior to the effective date of the ordinance providing for the funding of the trust fund."

Florida Statutes additionally require counties or municipalities seeking to exercise the power granted by the Act to adopt by a resolution "supported by data and analysis, which makes a legislative finding that the conditions in the area meet the criteria" of a slum or blighted area, detailed in 163.340(7) and 163.340(8) and defined below in subsections 2.3.1 and 2.3.2. To make this legislative finding, governing bodies draft a Finding of Necessity (FON), which supports this legislative finding through in-depth analysis of the study area. The analysis contained in this report evaluates the existing conditions and identifies the existence, if any, of a slum or blighted area. This FON will be used by the City in designating and creating the Community Redevelopment Area, if it is determined the area meets the statutory requirements to be classified as a slum or blighted area.

2.3.1. Definitions of Slum Area

According to the Florida Statute Section 163.340(7), "slum area" is an area having physical or economic conditions conducive to disease, infant mortality, juvenile delinquency, poverty, or crime because there is a predominance of buildings or improvements, whether residential or nonresidential, which are impaired by reason of dilapidation, deterioration, age, or obsolescence, and exhibiting one or more of the following factors:

(a) "Inadequate provision for ventilation, light, air, sanitation, or open spaces;

(b) High density of population, compared to the population density of adjacent areas within the county or municipality; and overcrowding, as indicated by government-maintained statistics or other studies and the requirements of the Florida Building Code;

or

(c) The existence of conditions that endanger life or property by fire or other causes."

2.3.2. Definitions of Blighted Area

According to the Florida Statute Section 163.340(8), "blighted area" means:

an "area in which there are a substantial number of deteriorated or deteriorating structures; in which conditions, as indicated by government-maintained statistics or other studies, endanger life or property or are leading to economic distress; and in which two or more of the following factors are present:

(a) Predominance of defective or inadequate street layout, parking facilities, roadways, bridges, or public transportation facilities.

(b) Aggregate assessed values of real property in the area for ad valorem tax purposes have failed to show any appreciable increase over the 5 years prior to the finding of such conditions.

(c) Faulty lot layout in relation to size, adequacy, accessibility, or usefulness.

(d) Unsanitary or unsafe conditions.

(e) Deterioration of site or other improvements.

(f) Inadequate and outdated building density patterns.

(g) Falling lease rates per square foot of office, commercial, or industrial space compared to the remainder of the county or municipality.

(h) Tax or special assessment delinquency exceeding the fair value of the land.

(i) Residential and commercial vacancy rates higher in the area than in the remainder of the county or municipality.

(j) Incidence of crime in the area higher than in the remainder of the county or municipality.

(k) Fire and emergency medical service calls to the area proportionately higher than in the remainder of the county or municipality.

(l) A greater number of violations of the Florida Building Code in the area than the number of violations recorded in the remainder of the county or municipality.

(m) Diversity of ownership or defective or unusual conditions of title which prevent the free alienability of land within the deteriorated or hazardous area.

(n) Governmentally owned property with adverse environmental conditions caused by a public or private entity.

(o) A substantial number or percentage of properties damaged by sinkhole activity which have not been adequately repaired or stabilized."

The term "blighted area" may also be used for any area in which at least one of the factors identified in paragraphs (a) through (o) is present and all taxing authorities subject to 163.387(2)(a) agree, by interlocal agreement or by resolution, that the area is blighted.

2.3.2. Assessment Process

City Staff assessed the Study Area through a multitude of resources, including but not limited to existing data, especially that included in the Green Cove Springs GeoHub; data collected from other departments, especially Public Works and Police; desktop reviews of the area; in person / walking review of the area. Staff assessed the area for many aspects of blight as defined in the Florida Statutes, and this report describes the existing conditions as they relate to these factors.

2.4. Study Area

The specified Study Area encompasses ±172.8 acres and is known as the Downtown and US 17 Corridor. The corridor spans Orange Avenue from Governor Street on the north end to Oak Street on the south end. The Corridor lies between St. Johns Avenue and Magnolia Avenue on its eastern edge and Pine Avenue on its western edge. The Downtown portion reaches slightly farther to the west and east. On the western side, it is bound by Palmer Street, Green Street, and Bay Street. On the eastern side, it expands diagonally eastward from Magnolia starting at Center Street, culminating at the river's edge with Spring Park property. The area is shown in Map 1.

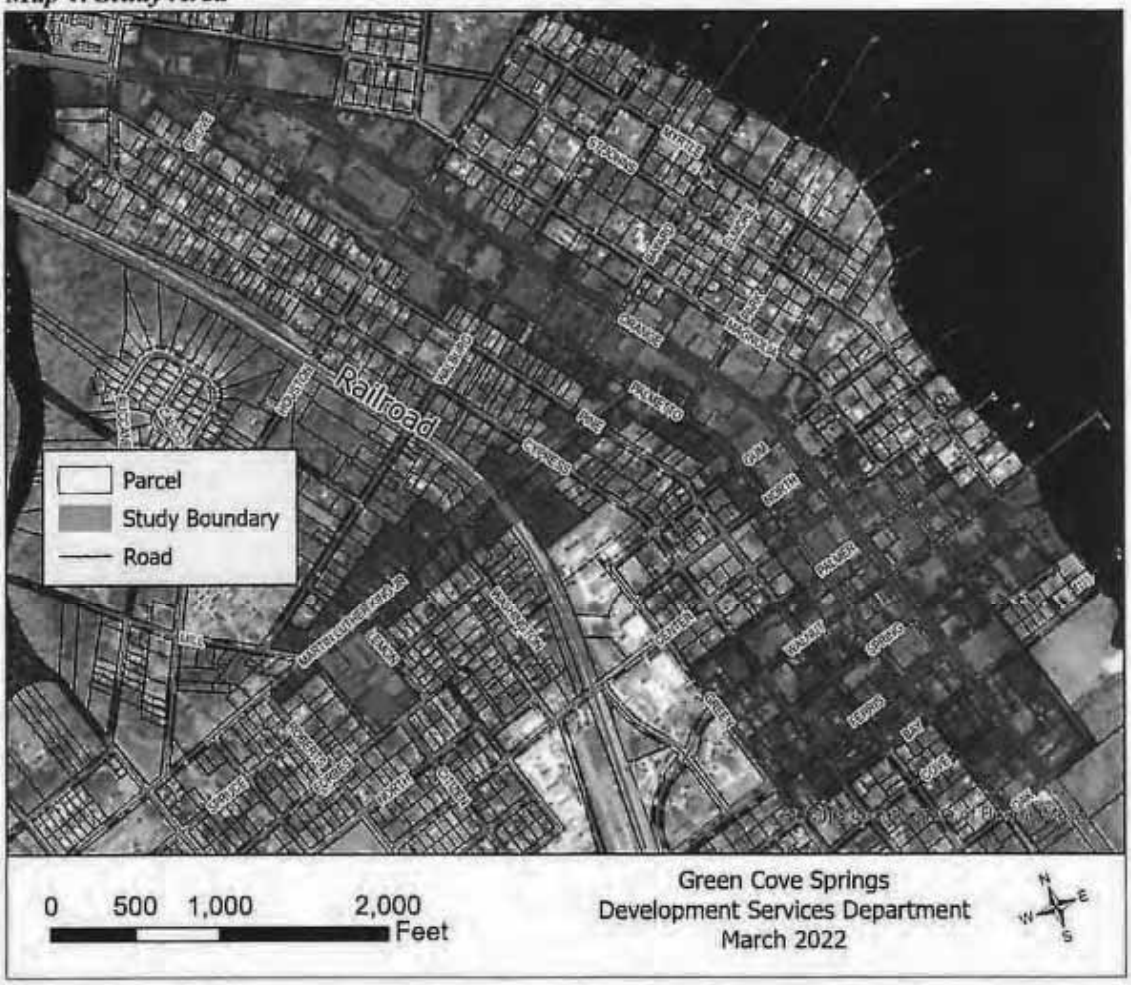
The Study Area contains primarily commercial and institutional uses. Well known locations within the Study Area include: churches such as Springs Baptist Church, First Presbyterian Church, Doxa Church, and United Methodist Church; County government buildings including the Courthouse, Jail, Supervisor of Elections, and Administration Building; food / beverage service businesses such as Spring Park Coffee, Dunkin' Donuts, Burger King, La Casita, and Sweet Sensations; financial institutions, including Wells Fargo and VyStar Credit Union; automobile sales lots such as Green Cove Auto and Good Guys Motors as well as service businesses like Jesse's Auto Services and Darren's Custom & Restorations; retail uses like CVS, The Treasure Box, Walgreens, SS Something Special, and Green Cove Liquors; office uses including Exit Magnolia Realty, Vallencourt Construction, and Action Medical Staffing; and an event venue, Clay Theatre. Additionally, there are numerous vacant properties, including the recently demolished 1050 N Orange Ave, which previously housed an abandoned automobile sales lot, as well as the corner of North Street and Orange Avenue, which once housed two buildings and businesses. The Study Area also contains Spring Park, a well-known and loved park featuring the natural spring, a public spring-fed pool, walking trails, swinging benches, play structures, and great views of the St. Johns River. The foregoing list is not meant to be exhaustive but instead meant to provide a feel of the activity within the Study Area.

The expanse around the Study Area is primarily residential in nature, with some exception specifically along Martin Luther King Jr Blvd, which features some commercial spaces, as well as east of Green Street, which features County School Board property and related uses.

Within the Study Area, there are some planned or potential improvements. These include a proposed freestanding emergency medical facility operated by St. Vincent's as well as

the Palmetto Trail project which will see an eight-foot multi-use path constructed along Palmetto Avenue from its southern end up to the Governors Creek Bridge. As part of the Walnut Street assessment, the City is also planning improvements to Walnut Street, particularly the block between Palmetto Avenue and Orange Avenue.

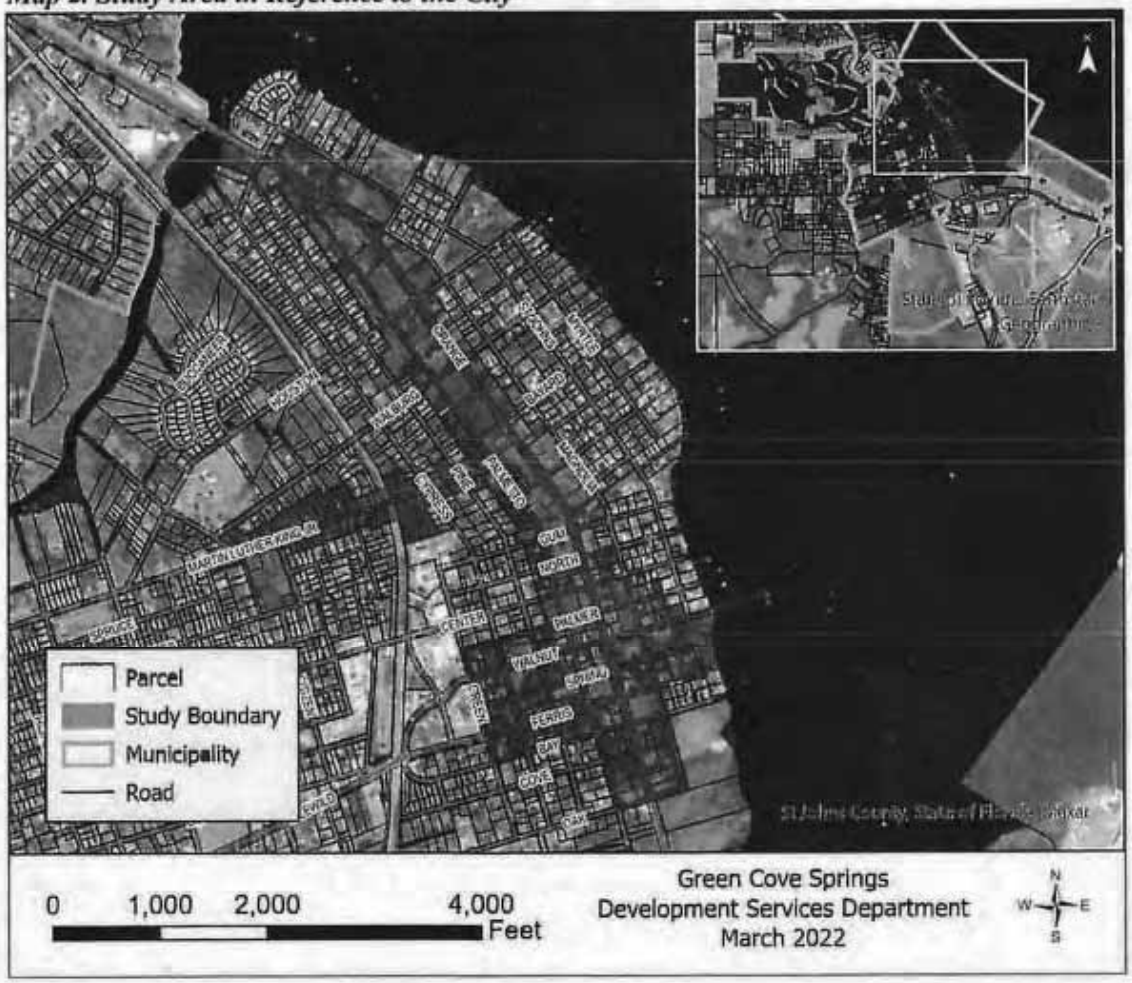
Map 1. Study Area



The Study Area is located somewhat centrally within the City, particularly for commercial development. Its location within the boundaries of the City can be viewed in Map 2. The northwest portion of the City consists of two subdivisions and the southeastern portion of the City consists of Reynolds Park / Clay Port – a future mixed-use development operating as an industrial site at present. The Study Area is contained within what is referred to as the Core City. The western portion of the Core City is dominated by residential development with a smattering of institutional development, namely School Board related properties. US 17 / Orange Avenue, Martin Luther King Blvd, and Palmetto

Avenue, all within the Study Are, feature commercial development with some residential development as well.

Map 2. Study Area in Reference to the City



3. Slum and Blighted Area Analysis

City Staff reviewed the Study Area in relation to the statutory requirements for an area to be determined a slum area or a blighted area.

3.1. Slum

The condition of slum in the Study Area is met under the following criteria:

(c) The existence of conditions that endanger life or property by fire or other causes.

Documentation of existing conditions provided in subsequent sections in this analysis indicates life and / or properties are endangered, specifically by dilapidation; unsecured inhabitable properties; deteriorating roadways, sidewalks, and accessibility features; abandoned homes; and overall deterioration of the Study Area.

3.2. Defective or inadequate public transportation facilities

The City of Green Cove Springs does not have locally operated public transportation facilities. Public transportation within Clay County, called Clay Community Transportation, is operated by the Jacksonville Transportation Authority[2]. Of 4 available lines, 2 lines travel through Green Cove Springs. These lines operate from 6am to 7pm Monday through Friday, excluding holidays. The lines do include a flex service option wherein customers can call a reservation line to schedule a pick-up from their location that will be accommodated *when time allows*. The deviation will go as far as a ¾ mile off the route.

The Blue Line (Map 3) has one stop within the Study Area, the Clay County Courthouse (825 N Orange Ave), and one other stop within City Limits, at the Clay County Health Department. There are two stops moderately close to City Limits – the Pier Station stop west of town on State Road 16 and the Challenge Enterprises stop on Enterprise Way just north of town. There is two to three hours between pickups at the local stops, excluding Challenge Enterprises which only has one pickup time and one drop-off time.

The Green Line (Map 4) has one stop within the Study Area (and the City at large), the Clayton and Mildred Revels Senior Center (604 Walnut St). There are three hours between pickups at this stop, and similarly three hours between drop-offs to the location.

There are no options for local transit from residential to commercial or recreational areas of town. Additionally, the sidewalk and roadway conditions through the Study Area are in a poor state. Many streets show deterioration, especially with top layers breaking down, revealing the older brick streets beneath, which creates uneven surfaces. Sidewalks show significant deterioration as well with the following conditions being regularly observed throughout the Study Area:

- **Cracking**: Locations where the paved surface of the sidewalk has cracked or crumbled
- **Uplift**: A vertical change in height along a sidewalk (generally where "panels" of the sidewalk meet or where cracking has occurred)
- **Fixed Obstructions**: Anchored objects (such as utility poles) that reduce sidewalk width
- **Non-Fixed Obstruction**: Vegetation, non-anchored objects, or uncleanliness that reduces sidewalk width or walkability
- **Spalling**: Surface deterioration that appears as small indentations in the surface
- **Standing Water**: Locations where there is or there is evidence of standing water on the sidewalk
- **Loss**: Locations where a piece or pieces of the sidewalk were removed, whether purposefully for work or through erosion.

Examples of the above defined items are provided in the figures below.

[2] Jacksonville Transit Authority, https://www.jtafla.com/ride-jta/regional-services/clay-community-transportation/ accessed 3/14/2022

Further, there are many places in the Study Area completely lacking sidewalks, primarily on local streets or only on one side of the street and often without excellent road crossing conditions to get from sidewalk to sidewalk as needed.

Such road and sidewalk conditions reduce the ability of the community to safely traverse the Study Area on foot, by micromobility[3] device (bicycle, scooter, skateboard, et cetera) or by motorized vehicle.

Figure 1. Sidewalk Cracking, Palmer St, near 14 N Magnolia Ave

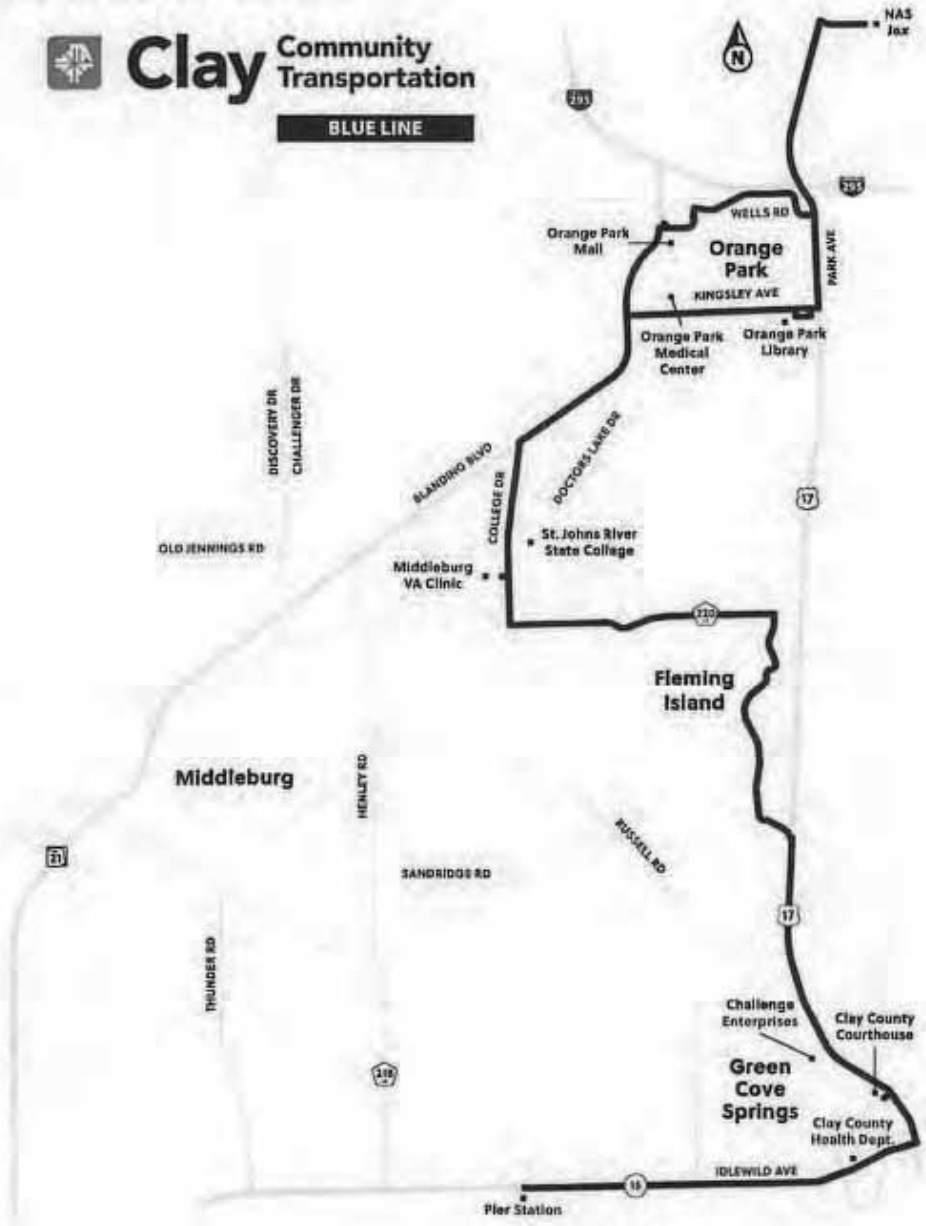
Figure 2. Sidewalk Cracking & Loss, Martin Luther King Jr. Blvd

Figure 3. Deteriorating accessibility feature, Corner of Orange Ave & Center St

Figure 4. Deteriorating accessibility feature, Southwest Corner of Orange Ave & Palmer St

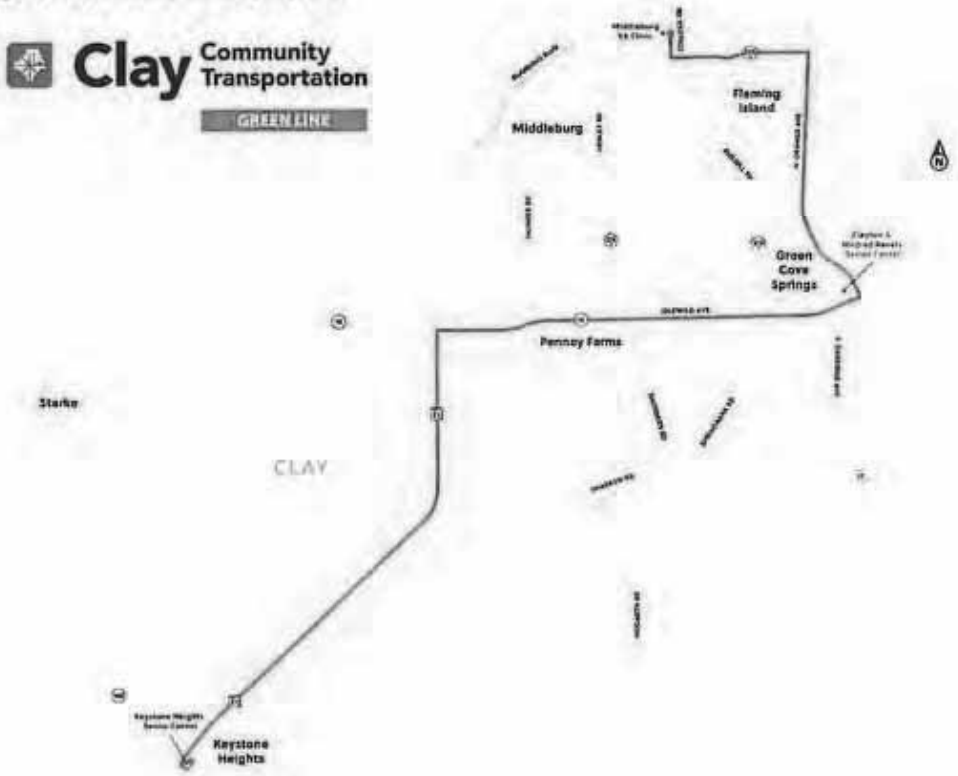
[3] Institute for Transportation & Development Policy, https://www.itdp.org/multimedia/defining-micromobility/ accessed 4/7/2022

Map 3. Bus Route – Blue Line[4]



[4] Jacksonville Transportation Authority, https://www.jtafla.com/ride-jta/regional-services/clay-community-transportation/clay-blue-line/

Map 4. Bus Route – Green Line[5]



3.3. Aggregate assessed values do not show appreciable increase over past 5 years

The Study Area has experienced some redevelopment in the past five years, but the deterioration present, as shown in later sections, has prevented the Study Area from seeing an appreciable increase in its aggregate assessed value (AAV) as compared to the City as a whole. In Table 1, it is demonstrated that the City as a whole has experienced an increased AAV of 50.71% while the Study Area has only seen an increase of 20.53%.

Table 3. Aggregate Assessed Value Comparison

Year	Study Area	City
2017	$ 85,088,819.00	$590,524,531.00
2018	$88,913,992.00	$642,232,893.00
2019	$95,646,152.00	$802,652,764.00
2020	$95,809,061.00	$802,652,764.00
2021	$102,557,978.00	$890,001,640.00
% Increase	20.53%	50.71%

[5] Jacksonville Transportation Authority. https://www.jtafla.com/ride-jta/regional-services/clay-community-transportation/clay-green-line/

3.4. Faulty lot layout in relation to size, adequacy, accessibility, or usefulness

Within the Study Area, approximately 25.6% of the lots could be considered faulty (Map 4). The criteria for this determination were as follows:

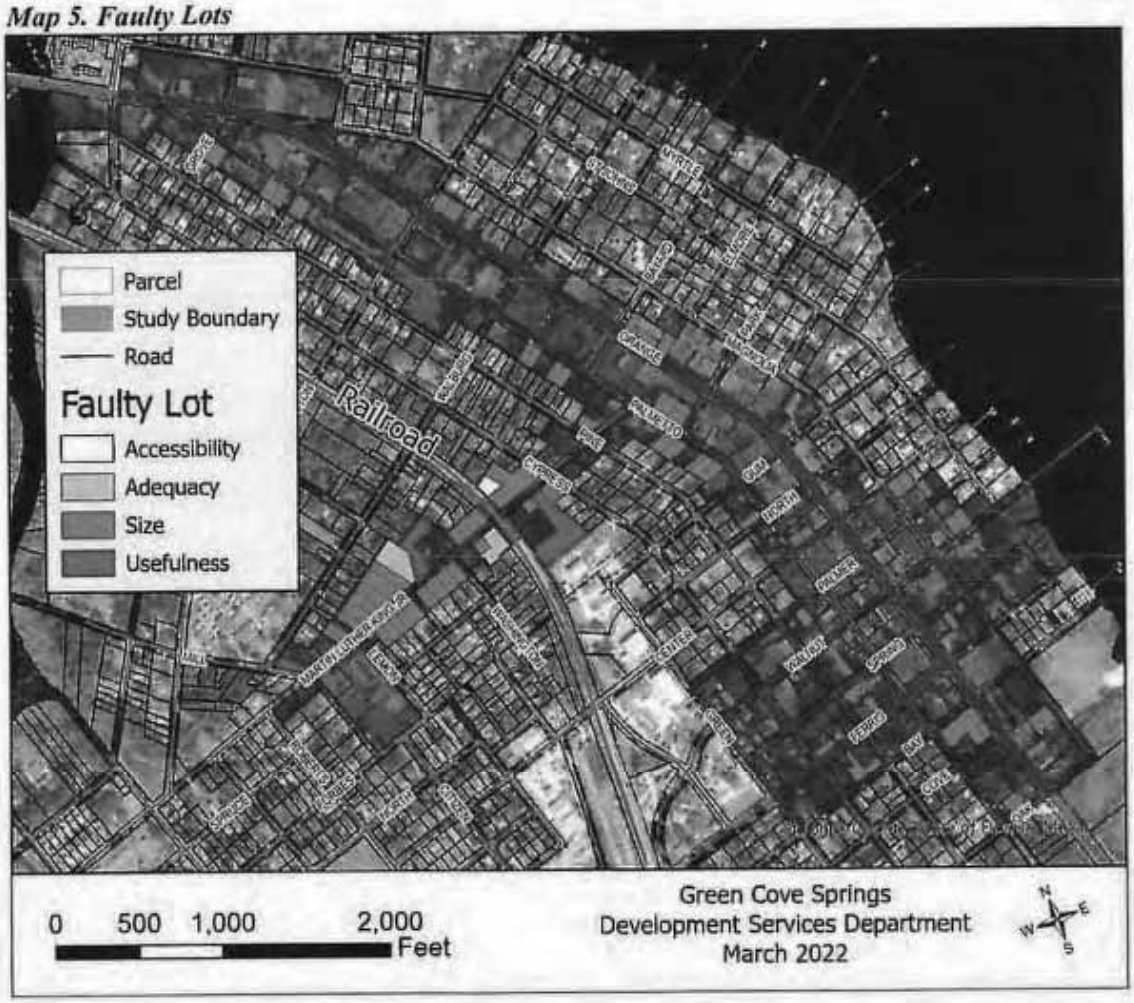
- **Size**: Commercially zoned lots with less than approximately 75 feet of frontage and approximately 100 feet of depth – despite the zoning code identifying no minimum lot requirements in commercial districts, the size of these lots is not suited for adequate commercial development, assuming they are developed individually given the diversity of ownership.
- **Adequacy**: Lots deemed inadequate are shaped in a manner which decreases their developability.
- **Usefulness**: Lots deemed less than useful are shaped in a manner which will likely completely prevent or deter their development or redevelopment.
- **Accessibility**: Lots deemed inaccessible are landlocked.

The City does permit residential development within many commercially zoned areas, and some of the identified lots have historically or recently been developed residentially as a consequence. Ideally, as identified in the Future Land Use Map, these lots would develop commercially or with a mix of uses to better support the neighborhood.

Recent development exemplifies the difficulties with developing commercially on narrow or otherwise small lots. Between 2019 and 2020, Dunkin Donuts constructed a new location within the Study Area – 610 N Orange Ave. The site is approximately 250ft along Orange Avenue (the primary roadway) by 125ft deep. The development received a variance from the City's Zoning Code requirements, which require parking to be to the side or back of a building in the Gateway Commercial Corridor. Due to the depth of the property and the type of development (drive-thru fast food), the lot layout was inadequate to permit development without a variance.

On the basis of the plight of Dunkin Donuts and the criteria identified above, additional lots are truly eligible to be considered faulty within the Study Area, but being that they are already commercially developed, at this time, they are not being considered faulty.

Map 5. Faulty Lots



3.5. Unsanitary or unsafe conditions

There are several sites with unsafe or unsanitary conditions located within the Study Area. Figures 13-29 (following) demonstrate the conditions for a portion of these properties.

Field inspection and Google StreetView inspection of the Study Area identified sites with deteriorating or damaged structures which pose a threat to building occupants, condemned or abandoned buildings, incomplete construction projects, lack of sidewalks or blocked rights-of-way (ROW[s]), as well as brownfield sites. There are unsafe commercial spaces where there is either a lack of defined pedestrian versus vehicular space or a lack of maintenance that would keep the area safe for traversing to and from a business.

3.6. Deterioration of site or other improvements

In addition to the deterioration of site improvements shown in section 3.5, within the Study Area, there are multiple occurrences of deteriorating improvements, especially access points or paved areas in surrounding buildings. Paving is wearing away or cracking creating hazardous conditions for drivers using the lots to park or maneuver the site and pedestrians crossing the access points. Figures below provide examples of this type of wear and tear in the corridor.

Figure 30. Deteriorating Drive / Sidewalk, 220 Palmer

Figure 31. Deteriorating Drive, 327 N Orange Ave

Figure 32. Parking lot disrepair, between 604 & 500 Walnut St

Figure 33. Sidewalk disrepair, between 604 & 500 Walnut St

3.7. Inadequate and outdated building density patterns

The applicable zoning districts for the Study Area generally include: Central Business District, Gateway Corridor Commercial, Gateway Corridor Neighborhood, and C-1 Neighborhood Commercial. The heart of the Study Area is where the Central Business District is located – also known as the Downtown area. The Gateway districts are located along the "corridor" area, notably US 17 or Orange Ave. The Martin Luther King Blvd corridor is zoned as neighborhood commercial but features primarily low density residential development including active and abandoned residential structures, churches, vacant lots, concrete block commercial buildings lacking transparency and activation.

Figure 36. Outdated building pattern, 208 N Orange Ave, Food Store

Figure 37. Outdated building pattern, 425 N Orange Ave, Wells Fargo

Figure 38. Outdated Building Pattern, 327 N Orange Ave, Rick Baker's RV

Figure 39. Low Density Development, 606 Spring St

Figure 40. Low Density Development, 627 Spring St

Figure 41. Low Density Development, Not Fronting Street, 702 Ferris St / 709 Spring St

Figure 42. Undeveloped, Gustafson Property, Pine St (behind house on Walnut St)

3.8. Vacancy rates

17.1% of properties within the Study Area are classified as vacant by the Clay County Property Appraiser. This level of vacancy within the Study Area is 44.9% higher than that of the rest of the municipality, which has an 11.8% rate of vacancy.

Many of these lots, shown in the figures below, are prime locations that once housed a local business which has since been removed. The lots have yet to have been redeveloped despite their prime locations in the commercial areas of the City.

2021-2022-56 Resolution- Declaring the Need - Creation of the Green Cove Springs CRA BCC #11

Final Audit Report 2022-08-11

Created:	2022-08-10
By:	Lisa Osha (Lisa.Osha@claycountygov.com)
Status:	Signed
Transaction ID:	CBJCHBCAABAA8PWW_XD4tkpTa4FDtxoh5Zna-D_pFdVw

"2021-2022-56 Resolution- Declaring the Need - Creation of the Green Cove Springs CRA BCC #11" History

Document created by Lisa Osha (Lisa.Osha@claycountygov.com)
2022-08-10 - 6:58:47 PM GMT

Document emailed to clayesign@claycountygov.com for signature
2022-08-10 - 7:00:01 PM GMT

Email viewed by clayesign@claycountygov.com
2022-08-11 - 6:36:40 PM GMT

Signer clayesign@claycountygov.com entered name at signing as WFBolla
2022-08-11 - 6:37:18 PM GMT

Document e-signed by WFBolla (clayesign@claycountygov.com)
Signature Date: 2022-08-11 - 6:37:19 PM GMT - Time Source: server

Document emailed to bccdocs@clayclerk.com for signature
2022-08-11 - 6:37:24 PM GMT

Email viewed by bccdocs@clayclerk.com
2022-08-11 - 9:03:10 PM GMT

Signer bccdocs@clayclerk.com entered name at signing as Tara S. Green
2022-08-11 - 9:03:57 PM GMT

Document e-signed by Tara S. Green (bccdocs@clayclerk.com)
Signature Date: 2022-08-11 - 9:03:58 PM GMT - Time Source: server

RESOLUTION NO. 2022/2023 - 39

A RESOLUTION OF THE BOARD OF COUNTY COMMISSIONERS OF CLAY COUNTY, FLORIDA, APPROVING THE COMMUNITY REDEVELOPMENT PLAN RELATED TO THAT CERTAIN GEOGRAPHIC AREA OF THE CITY OF GREEN COVE SPRINGS KNOWN AS THE GREEN COVE SPRINGS COMMUNITY REDEVELOPMENT AREA, WHICH IS GENERALLY DESCRIBED AS THE DOWNTOWN AND U.S. 17 CORRIDOR, APPROVING THE INTERLOCAL AGREEMENT BETWEEN THE COUNTY, THE CITY, AND THE GREEN COVE SPRINGS COMMUNITY REDEVELOPMENT AGENCY, AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, during its 1969 Legislative Session, the Florida Legislature enacted the Community Redevelopment Act of 1969, which is presently codified at Part III, Chapter 163, Florida Statutes, as amended (the "Act"); and

WHEREAS, the Act confers certain powers upon counties with home rule charters, which include, but are not limited to, the power to delegate certain of the county's powers to a community redevelopment agency created pursuant to the Act; and

WHEREAS, on August 9, 2022, this Board adopted Resolution No. 2021/2022-56 which declared a certain geographic area referred to as the Green Cove Springs Redevelopment Area, which is generally described as the downtown and U.S. 17 corridor (the "Redevelopment Area"), to be a slum or blighted area, declared the rehabilitation, conservation and redevelopment, or a combination thereof to be necessary in the interest of the public health, safety, morals and welfare of the residents of the City of Green Cove Springs ("City") and the County, and found the need for the creation of a community redevelopment agency; and

WHEREAS, this Board through Resolution No. 2021/2022-56 also delegated the power to create a community redevelopment agency to the City; and

WHEREAS, this Board through Resolution No. 2021/2022-56 also delegated the power for the community redevelopment agency to prepare and adopt a redevelopment plan for the Redevelopment Area, subject to approval by the City and this Board; and

WHEREAS, on December 13, 2022, the City adopted Ordinance O-24-2022 which created the Green Cove Springs Community Redevelopment Agency (the "Agency") and identified the five members of the board of commissioners of the Agency; and

WHEREAS, on January 12, 2023, the Agency approved the Community Redevelopment Plan ("Plan"), a copy of which is attached as Exhibit "A" and incorporated herein by reference; and

WHEREAS, the City, on behalf of the Agency, has submitted for this Board's approval, the Plan; and

WHEREAS, this Board understands the needs of the Redevelopment Area to reverse the slum or blight that has occurred in such Redevelopment Area and, therefore, wishes to approve the Plan; and

WHEREAS, the City, the County and the Agency now desire to enter into an Interlocal Agreement to further define the powers, authority and obligations of each entity ("Interlocal Agreement"), which is attached hereto as Exhibit "B" and incorporated herein by reference, which has been submitted to this Board for its approval; and

WHEREAS, this Board desires to approve the terms of the Interlocal Agreement in order to delegate additional community redevelopment powers to the Agency and further define obligations of the City, the Agency and the County.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF CLAY COUNTY, FLORIDA, AS FOLLOWS:

1. The foregoing recitals are incorporated as a part of this Resolution by reference.

2. In accordance with Section 163.360, Florida Statutes, this Board accepts the submittal by the City of the Green Cove Springs Community Redevelopment Plan in the form attached hereto as Exhibit "A" and incorporated herein by reference.

3. This Board relies on the review, findings and adoption to be made by the City that the Plan complies with Section 163.360 and 163.362, Florida Statutes.

4. This Board approves and adopts the Plan attached hereto as Exhibit "A" for the Redevelopment Area in accordance with the Act, except that to the extent the Plan may conflict with the Interlocal Agreement, the Interlocal Agreement controls. The Plan is designated as the official Redevelopment Plan for the Redevelopment Area and it is the purpose and intent of the Board that the Plan, as the same may be amended and supplemented by the Agency, with approval by the City and this Board, be implemented in the Redevelopment Area.

5. This Board further approves the Interlocal Agreement, between the County, the City, and Agency in the form attached hereto as Exhibit "B".

6. This Resolution shall become effective upon adoption.

[Remainder of page left intentionally blank]

DULY ADOPTED, by the Board of County Commissioners of Clay County, Florida this 25 day of April, 2023.

BOARD OF COUNTY COMMISSIONERS OF CLAY COUNTY, FLORIDA

Betsy Condon (May 3, 2023 13:51 EDT)

Betsy Condon, Its Chairman

ATTEST:

Tara S. Green
Clay County Clerk of Court and Comptroller
Ex Officio Clerk to the Board

Ordinances/Communityredevelopment/GCS 2022/BCC Resolution-Draft 04.20.23

Exhibit “A”

EXHIBIT A

GREEN COVE Springs

CRA REDEVELOPMENT PLAN

January 11, 2023

Contents

I. EXECUTIVE SUMMARY / FINDING OF NECESSITY I-1

A. EXECUTIVE SUMMARY I-1

1. Plan Funding I-2

B. FINDING OF NECESSITY OBSERVED CONDITIONS I-3

1. Recommendations I-5

C. FINDING OF NECESSITY STUDY I-5

1. Background I-5

2. Study Purpose I-6

3. Community Redevelopment Act Overview I-7

4. Definitions of Slum Area I-8

5. Definitions of Blighted Area I-8

6. Assessment Process I-9

7. Study Area I-9

D. SLUM AND BLIGHTED AREA ANALYSIS I-12

1. Slum I-12

2. Defective or inadequate public transportation facilities I-13

3. Aggregate assessed values do not show appreciable increase over past 5 years I-21

4. Faulty lot layout in relation to size, adequacy, accessibility, or usefulness I-22

5. Unsanitary or unsafe conditions I-23

6. Deterioration of site or other improvements I-29

7. Inadequate and outdated building density patterns I-31

8. Vacancy rates I-34

E. RECOMMENDATIONS I-38

II. AUTHORITY TO UNDERTAKE COMMUNITY REDEVELOPMENT II-1

A. AUTHORITY TO UNDERTAKE COMMUNITY REDEVLOPMENT, CREATION, POWERS II-1

1. Creation of the Community Redevelopment Agency II-1

2. Powers of the Community Redevelopment Agency II-1

3. Community Redevelopment Area II-1

4. The Community Redevelopment Plan II-2

III. INTERLOCAL AGREEMENT WITH CLAY COUNTY III-1

IV. REDEVELOPMENT VISION, OBJECTIVES AND STRATEGIES IV-1

A. APPROACH IV-1
B. VISION FOR THE COMMUNITY REDEVELOPMENT AREA IV-1
C. REDEVELOPMENT OBJECTIVES AND STRATEGIES IV-3
1. Objectives and Strategies IV-3

V. FINANCIAL INFORMATION V-1
A. BASE-YEAR PROPERTY VALUES V-1

VI. LEGAL DESCRIPTION VI-1

VII. CHAPTER 163.370 POWERS VII-1
A. 163.370 POWERS; COUNTIES AND MUNICIPALITIES; COMMUNITY REDEVELOPMENT AGENCIES. VII-1

VIII. APPENDICES VIII-1

List of Figures

Figure I-1. Sidewalk Cracking, Palmer St, near 14 N Magnolia Ave I-14
Figure I-2. Sidewalk Cracking & Loss, Martin Luther King Jr. Blvd I-14
Figure I-3. Deteriorating accessibility feature, Corner of Orange Ave & Center St I-14
Figure I-4. Deteriorating accessibility feature, Southwest Corner of Orange Ave & Palmer St I-15
Figure I-5. Road Disrepair, Walnut St I-15
Figure I-6. Intersection of Green St & Walnut St I-16
Figure I-7. Non-Fixed Obstruction, Martin Luther King Jr. Blvd I-17
Figure I-8. Non-Fixed Obstruction, Martin Luther King Jr. Blvd I-17
Figure I-9. Sidewalk Spalling, Martin Luther King Jr. Blvd I-18
Figure I-10. Sidewalk – Standing Water, Martin Luther King Jr. Blvd. I-18
Figure I-11. Sidewalk Uplift & Spalling, Martin Luther King Jr. Blvd I-19
Figure I-12. Sidewalk Loss, Martin Luther King Jr. Blvd I-19
Figure I-13. Unsafe, Deteriorating Roof, 116 N Magnolia Ave I-24
Figure I-14. Unsafe, Condemned Building, 428 N Orange Ave I-24
Figure I-15. Unsafe, Boarded Openings, 115 N Magnolia Ave I-24
Figure I-16. Unsafe and unsanitary, Openings / Junk Storage, 115 N Magnolia I-25
Figure I-17. Unsafe, No Sidewalk, ROW used for RV Parking, 327 N Orange Ave I-25
Figure I-18. Unsafe, No Sidewalk, across from Figure 5, 425 N Orange Ave I-25
Figure I-19. Unsanitary, Discontinued Gas Pumps, 201 N Orange Ave I-25
Figure I-20. Unsafe, Collapsed Canopy, Petroleum Contamination Site, 100 N Orange Ave I-26
Figure I-21. Unsafe, Low hanging power lines, concrete drive in disrepair, south of 25 N Orange Ave I-26
Figure I-22. Unsafe, ROW in disrepair, business parks in ROW, 3 S Palmetto Ave I-27
Figure I-23. Unsafe, Lack of signage, marked parking spaces, pedestrian safety, 24 Green St I-27
Figure I-24. Unsafe area in front of active commercial building, 1100 Martin Luther King I-28
Figure I-25. Unsafe Structure / Abandoned, 1007 Martin Luther King Jr Blvd I-28
Figure I-26. Unsafe Structure / Abandoned Structure, 1001 Martin Luther King Jr Blvd I-28
Figure I-27. Unsafe Structure / Abandoned Structure, 713 Martin Luther King Jr Blvd I-29

Figure I-28. Unsafe Structure / Abandoned Structure, 613 Martin Luther King Jr. Blvd I-29
Figure I-29. Unsafe Structure / Abandoned Structure, 612 Martin Luther King Jr. Blvd I-29
Figure I-30. Deteriorating Drive / Sidewalk, 220 Palmer I-30
Figure I-31. Deteriorating Drive, 327 N Orange Ave I-30
Figure I-32. Parking lot disrepair, between 604 & 500 Walnut St I-31
Figure I-33. Sidewalk disrepair, between 604 & 500 Walnut St I-31
Figure I-34. Outdated building pattern, 208 N Orange Ave, Food Store I-32
Figure I-35. Outdated building pattern, 425 N Orange Ave, Wells Fargo I-32
Figure I-36. Outdated building pattern, 327 N Orange Ave, Rick Baker's RV I-33
Figure I-37. Low Density Development, 606 Spring St I-33
Figure I-38. Low Density Development, 627 Spring St I-34
Figure I-39. Low Density Development, Not Fronting Street, 702 Ferris St / 709 Spring St I-34
Figure I-40. Undeveloped, Gustafson Property, Pine St (behind house on Walnut St) I-34
Figure I-41. Vacant Lot, Previously 208 N Orange Ave I-35
Figure I-42. Vacant Lot, East of 604 Walnut St I-35
Figure I-43. Vacant Lot, BROWNFIELD, south of 535 N Orange Ave I-36
Figure I-44. Vacant Lot at the northeast corner of Orange Ave &Walburg St I-36
Figure I-45. Vacant Lot at the northwest corner of Orange Ave & Governor St I-37

List of Maps

Map I-1. Green Cove Springs I-1
Map I-2. Study Area I-11
Map I-3. Study Area in Reference to the City I-12
Map I-4. Bus Route – Blue Line I-20
Map I-5. Bus Route – Green Line I-21
Map I-6. Faulty Lots I-23
Map I-7. Vacancy Rates I-38
Map II-1 ..... II-2
Map IV-1. Study Area IV-2

List of Tables

Table I-1. Slum Factors I-4
Table V-1. Project Green Cove Springs CRA TIF Revenues (3% Growth Rate) V-1

01 EXECUTIVE SUMMARY / FINDING OF NECESSITY

GREEN COVE Springs

I. EXECUTIVE SUMMARY / FINDING OF NECESSITY

A. EXECUTIVE SUMMARY

The Green Cove Springs CRA is located within the city limits of Clay County's most populous city, and it encompasses the City's historic downtown. Green Cove Springs is a welcoming city with a "small-town" atmosphere and urban amenities that make it an increasingly desirable place to live and raise a family, as evidenced by sustained population growth. Green Cove Springs is in the southeastern quadrant of Clay County.

Map I-1. Green Cove Springs

Just 27 miles south of downtown Jacksonville, Florida, and 27 miles northwest of St. Augustine, Green Cove Springs lines the middle bend of the St. Johns River. Originally inhabited by native aboriginals thousands of years ago, the City first began to take shape in 1816 when George I.F. Clarke established the area's first large-scale lumbering operation.

In the 1850s, the area was often referred to as White Sulfur Springs before being renamed to Green Cove Springs in 1866. 'Green' refers to the lush, green vegetation in the area and the natural spring in the City, while 'Cove' refers to the bend of the St. Johns River on which the City was established. Continuing the timber legacy of George Clarke, Green Cove Springs' economy was sustained and amplified by the live oak harvesting industry. Moreover, livestock and hunting activities were increasingly prevalent within the area during the in mid-1800s. However, the area's main attractor of early settlers and tourists was the area's warm springs, which quickly grew in popularity with both Florida residents and traveling northerners in late 19th century. As a testament to the area's early tourism industry, several historic full-service hotels from this era continue to line the St. Johns River.

Shortly after this period, a third industry grew into significance: dairy farming. Gustafson's Farm opened in 1908, eventually becoming one of the largest privately-owned dairies in the southeast region of the United States. In 2004, the operation was purchased by Southeast Milk and changes in consumer taste forced the company to close its centurion Green Cove Springs doors in 2013, which caused a significant loss of local jobs and revenue. Dairy farming was not the only economic stronghold to suffer. The great winter freeze of 1894-1895 inspired railroad owner Henry Flagler to extend his tracks further south towards what is now known as the City of Miami. After Henry Flagler's Florida East Coast (FEC) Railway offered northern Americans access to south Florida locations, such as Palm Beach and Miami, tourism activity greatly declined within Green Cove Springs.

Even with the success of the Gustafson Farm, Green Cover Springs suffered greatly from the American Great Depression of the early 1930s. Fortunately, the military installations, Benjamin Lee Field (renamed Naval Air Station Green Cove Springs) and Camp Blanding, encouraged economic recovery towards the end of the 1930s. The Naval Air Station was purchased by the City after its 1961 decommission but was eventually sold to Louis Reynolds for the construction of the Reynolds Industrial Park with hopes for substantial job creation. The Park remains an important part of the City's future growth.

Green Cove Springs has served as the County Seat of Government for Clay County, Florida since1871, preceding its incorporation as a town on November 2, 1874. Green Cove's last Comprehensive Plan update was in 2011. In 2020, the Census-recorded population was just under 10,000 residents and has grown nearly 16% through 2020. Activity and population increases are anticipated with the completion of the First Coast Expressway (Florida 23) - estimated to begin its final construction phase in 2023. Phase 2, which runs through Clay County, is currently under construction.

As with many small towns across the country, Green Cove Springs's downtown area has witnessed a decline over the years as new developments began to spring up outside of the urban core. This slow decline is true for both commercial and residential areas. As a result, the increase over time of taxable values has not kept up with "newer" areas of town. As shown in table 1 below, the CRA area has shown some redevelopment in the past five years but overall has failed to appreciably increase its aggregate assessed value (AAV) as compared to the City as a whole.

1. Plan Funding

The redevelopment of the Green Cove Springs Community Redevelopment Area will require a substantial financial investment on the part of the CRA. As provided for by Florida's Community Redevelopment

Act, Florida Statutes Chapter 163, Part III, the principal source of funding for the CRA will be through Tax Increment Revenue from the City of Green Cove Springs and Clay County. Additionally, the CRA and the City may utilize other City, County, State, and Federal funding sources, as appropriate and available, to carry out the provisions of the Redevelopment Plan.

As required by F.S. 163.362(10), the Green Cove Springs Redevelopment Plan provides a time certain for completing all redevelopment financed by increment revenues. F.S. 163.362(10)(a) allows the Green Cove Springs CRA to use increment revenue for up to 40 total years after the year the initial Redevelopment Plan was adopted. The initial Green Cove Springs CRA Redevelopment Plan shall be adopted in 2022, therefore the maximum life permitted by statute would be until December 13, 2062.

This Redevelopment Plan contains Goals and Initiatives designed to address slum/blight conditions in the CRA district and attract private sector investment back into the urban core of the City. The projected total increment over the 30-year time horizon of the CRA is between $18,995,996 to $36,171,916.

a. Organization of the Plan

This Redevelopment Plan Amendment is organized into several sections, briefly described as follows:

Section 1 – Executive Summary / Finding of Necessity (Need for a Community Redevelopment Agency) - a Finding of Necessity (FON) in accordance with the Community Redevelopment Act of 1969, Chapter 163, Part III, Florida Statutes is required to determine if slum and / or blight exist within the Study Area

Section 2 – Authority to Undertake Community Redevelopment - provides a summary of certain statutory requirements of the Community Redevelopment Act, as provided for in Florida Statutes 163, Part III

Section 3 – Interlocal Agreement with Clay County - provides the framework for creation of the Green Cove Springs CRA.

Section 4 – Redevelopment Vision, Objectives & Strategies - introduces ten (10) Objectives for Redevelopment with Corresponding strategies for each Objective

Section 5 – Financial Information - contains financial projections, plan cost and timeline

Section 6 – Legal Description - outlines the boundaries of the Green Cove Springs CRA

Section 7 – Powers of a CRA - identifies the powers of the CRA in regards of utilization of funding

Section 8 – Appendices

B. FINDING OF NECESSITY OBSERVED CONDITIONS

This study has been prepared to fulfill the requirements for a Finding of Necessity (FON) in accordance with the Community Redevelopment Act of 1969, Chapter 163, Part III, Florida Statutes. This report has reviewed data from multiple sources including the Clay County Property Appraiser and field observations, which lead to analysis to determine if conditions of slum and / or blight exist within the study area. This report represents the first step in creating a Community Redevelopment Area (CRA) which will use Tax Increment Financing to invest in the area and improve its conditions. There are three statutory conditions that may be evaluated to

determinate a slum condition and fourteen statutory conditions that may be evaluated to determine a blight condition. For a slum condition, only one of the three is required to be met to make a finding of slum. For a blight condition, only two of the fourteen are required to be met to make a finding of blight.

One of three factors of slum was identified as being met, and seven of fourteen factors of blight were determined as being met, satisfying the statutory requirements to determine the Study Area is a slum area as well as a blighted area. With the adoption of this FON, the City Council of Green Cove Springs may designate a Community Redevelopment Area.

Table I-1. Slum Factors

Factor	Met?
(a) Inadequate provision for ventilation, light, air, sanitation, or open spaces;	No
(b) High density of population, compared to the population density of adjacent areas within the county or municipality; and overcrowding, as indicated by government-maintained statistics or other studies and the requirements of the Florida Building Code;	No
(c) The existence of conditions that endanger life or property by fire or other causes.	Yes

Table I-2. Blight Factors

Factor	Met?
(a) Predominance of defective or inadequate street layout, parking facilities, roadways, bridges, or public transportation facilities.	Yes
(b) Aggregate assessed values of real property in the area for ad valorem tax purposes have failed to show any appreciable increase over the 5 years prior to the finding of such conditions.	Yes
(c) Faulty lot layout in relation to size, adequacy, accessibility, or usefulness.	Yes
(d) Unsanitary or unsafe conditions.	Yes
(e) Deterioration of site or other improvements.	Yes
(f) Inadequate and outdated building density patterns.	Yes
(g) Falling lease rates per square foot of office, commercial, or industrial space compared to the remainder of the county or municipality.	Data unavailable

(h) Tax or special assessment delinquency exceeding the fair value of the land.	Not analyzed
(i) Residential and commercial vacancy rates higher in the area than in the remainder of the county or municipality.	Yes
(j) Incidence of crime in the area higher than in the remainder of the county or municipality.	Not analyzed
(k) Fire and emergency medical service calls to the area proportionately higher than in the remainder of the county or municipality.	Not analyzed
(l) A greater number of violations of the Florida Building Code in the area than the number of violations recorded in the remainder of the county or municipality.	Not analyzed
(m) Diversity of ownership or defective or unusual conditions of title which prevent the free alienability of land within the deteriorated or hazardous area.	Not analyzed
(n) Governmentally owned property with adverse environmental conditions caused by a public or private entity.	N/A
(o) A substantial number or percentage of properties damaged by sinkhole activity which have not been adequately repaired or stabilized.	N/A

1. Recommendations

The Study Area meets the criteria established in Section 163.340, Florida Statutes. It is staff recommendation that the City of Green Cove Springs adopt this Finding of Necessity by resolution per F.S. 163.355 and create a Community Redevelopment Agency for the Study Area as defined herein.

C. FINDING OF NECESSITY STUDY

The City of Green Cove Springs seeks to determine the feasibility of designating the Downtown and US 17 Corridor as a Community Redevelopment Area through the development of a Finding of Necessity and would also like to implement redevelopment in this area through the adoption of a Redevelopment Area Plan.

1. Background

Green Cove Springs is a city located along the west bank of the historic St. Johns River and since 1971 has served as the County Seat of Government for Clay County. The 2020 Census identified the population count to be 9,786, a 41.66% increase from the 2010 Census.

The city's name originates from the three physical characteristics. "Green" refers to the perennially green vegetation characterized by its tree scape and foliage. "Cove" refers to a bend in the St. Johns River creating a safe area for mooring of boats during inclement weather periods. "Springs" refers to the natural spring (one of 600 in Florida), originating from the Floridan Aquifer with an estimated flow rate of approximately 2,200 gallons per minute. The spring water flows into the west side of the municipal

swimming pool and then flows out the east side forming a stream eventually emptying into the St. Johns River.

The first inhabitants of the area were attracted to it because of the warm mineral spring, known as "The Boil." The medicinal qualities of the spring and its location along the St. Johns River served as major contributors to the community's development as a prominent attraction and destination for tourists during the 19th Century.

Green Cove Springs has a storied history. It was home to Gustafson's Farm, a family dairy operation owned by Frank and Agnes Gustafson that began in 1908. In the 1930s, the federal government located Benjamin Lee Field within the City. The United States Department of the Navy opened a flight training facility. In the 1950s, major American automakers had dealerships in Green Cove Springs along US 17, which led to the City being known as "the Little Detroit."

The City grew economically and geographically, annexing land to include Magnolia Point Golf and Country Club and Magnolia West to the northwestern end, Cove Plaza on the southern end, and to the southeastern edge, FCT-granted land proposed to be the Ed Gustafson Regional Park as well as 560 acres intended to develop as a 2,100 unit residential subdivision.

In 2005, the City of Green Cove Springs adopted "Tomorrow's Vision" as the guiding vision document for the future of the city. This document established goals for the City such as: maintain the small-town character; provide affordable housing; promote redevelopment in the corridors (US 17 / SR 16); improve traffic circulation; expand recreational opportunities; promote a business-friendly environment; strengthen Code Enforcement. One implementation mechanism included in the visioning document was the potential for a Community Redevelopment Agency. In 2014, the City adopted a Finding of Necessity, but the Community Redevelopment Agency was unable to come to fruition at that time.

Since then, the City has experienced additional growth and undergone further planning activities. In February 2021, the City began the process of updating the comprehensive plan, which was adopted a year later in February 2022. The 2045 Comprehensive Plan is designed to prepare the City for upcoming growth. The Future Land Use Map was amended from 13 categories to 6 categories: Neighborhood (NBD), Downtown (DT), Mixed Use (MU), Mixed-Use Reynolds Park (MURP), Industrial (IND), and Public (PUB). Further, the Future Land Use element established an objective to continue to redevelop and invest in blighted areas of the City, with Policy 1.6.1 directing the City to explore the creation of a Community Redevelopment Agency / Area.

Additionally, the Future Land Use elements directs the City in Policy 1.6.2 to develop a Downtown Master Plan and assess Walnut Street to determine how to increase safety and attractiveness of the streetscape. The Walnut Street assessment was completed in late 2021 and the Downtown Master Plan is underway, with a goal of adopting the plan by mid-April 2022.

2. Study Purpose

This Finding of Necessity will determine if the Study Area meetings the statutory criteria to be designated as a Community Redevelopment Area. With this, the City aims to establish said area in an attempt to halt and reverse the decline within it in order to encourage new development and redevelopment to

improve the overall quality of the area, leading to improved economic conditions, increased vibrancy, and a more established sense of place in the area.

If the Study Area meets the statutory criteria, the City will adopt this Finding of Necessity and seek to move forward with adopting a Redevelopment Plan.

3. Community Redevelopment Act Overview[1]

The Florida Legislature enacted the Community Redevelopment Act (Act) in 1969. The legislature created the law to allow local governments to improve declining areas, as defined in the Act and detailed in subsections below. Such areas are detrimental to the health, safety, and welfare of residents as well as being a nuisance to growth and the provision of adequate infrastructure and housing; the Act provides a way for the local governments to create a Redevelopment Area and fund redevelopment within it.

The Statute defines community redevelopment as local government or community redevelopment agency lead projects in an established community redevelopment area "for the elimination and prevention of the development or spread of slums and blight, or for the reduction or prevention of crime, or for the provision of affordable housing." This may include slum clearance, redevelopment, rehabilitation, or conservation in a community redevelopment area, or any combination or part thereof, pursuant to the community redevelopment plan.

The Act establishes that powers granted by the Act are "for public uses and purposes" which involve the spending of public money and the potential exercise of police power, for which reason public interest, meaning a legitimate concern for general health, safety, and welfare within the area, is a requirement to implement the Act.

The Act further establishes the legitimacy of tax increment financing (TIF) as a method of successfully preserving and enhancing the tax base of an area, which will then serve to increase tax revenues for all taxing authorities for the area, enabling them to carry out their respective objectives more effectively. A redevelopment trust fund may be established by ordinance after the approval of a Community Redevelopment Plan to allow for the deposit of funds to be used by the agency to finance or refinance redevelopment. This fund must be established prior to receipt of any increment revenues. The statutes further state:

> "The annual funding of the redevelopment trust fund shall be in an amount not less than the increment in the income, proceeds, revenues, and funds of each taxing authority derived from or held in connection with the undertaking and carrying out of community redevelopment under this part. Such increment shall be determined annually and shall be that amount equal to 95% of the difference between:
>
> 1. The amount of ad valorem taxes levied each year by each taxing authority, exclusive of any amount from any debt service millage, on taxable real property contained within the geographic boundaries of a community redevelopment area; and
>
> 2. The amount of ad valorem taxes which would have been produced by the rate upon which the tax is levied each year by or for each taxing authority, exclusive of any debt service millage, upon the

[1] The 2022 Florida Statutes, Title XI Chapter 163, Part III

total of the assessed value of the taxable real property in the community redevelopment area as shown upon the most recent assessment roll used in connection with the taxation of such property by each taxing authority prior to the effective date of the ordinance providing for the funding of the trust fund."

Florida Statutes additionally require counties or municipalities seeking to exercise the power granted by the Act to adopt by a resolution "supported by data and analysis, which makes a legislative finding that the conditions in the area meet the criteria" of a slum or blighted area, detailed in 163.340(7) and 163.340(8) and defined below in subsections 2.3.1 and 2.3.2. To make this legislative finding, governing bodies draft a Finding of Necessity (FON), which supports this legislative finding through in-depth analysis of the study area. The analysis contained in this report evaluates the existing conditions and identifies the existence, if any, of a slum or blighted area. This FON will be used by the City in designating and creating the Community Redevelopment Area, if it is determined the area meets the statutory requirements to be classified as a slum or blighted area.

4. Definitions of Slum Area

According to the Florida Statute Section 163.340(7), "slum area" is an area having physical or economic conditions conducive to disease, infant mortality, juvenile delinquency, poverty, or crime because there is a predominance of buildings or improvements, whether residential or nonresidential, which are impaired by reason of dilapidation, deterioration, age, or obsolescence, and exhibiting one or more of the following factors:

(a) "Inadequate provision for ventilation, light, air, sanitation, or open spaces;

(b) High density of population, compared to the population density of adjacent areas within the county or municipality; and overcrowding, as indicated by government-maintained statistics or other studies and the requirements of the Florida Building Code;

or

(c) The existence of conditions that endanger life or property by fire or other causes."

5. Definitions of Blighted Area

According to the Florida Statute Section 163.340(8), "blighted area" means:

an "area in which there are a substantial number of deteriorated or deteriorating structures; in which conditions, as indicated by government-maintained statistics or other studies, endanger life or property or are leading to economic distress; and in which two or more of the following factors are present:

(a) Predominance of defective or inadequate street layout, parking facilities, roadways, bridges, or public transportation facilities.

(b) Aggregate assessed values of real property in the area for ad valorem tax purposes have failed to show any appreciable increase over the 5 years prior to the finding of such conditions.

(c) Faulty lot layout in relation to size, adequacy, accessibility, or usefulness.

(d) Unsanitary or unsafe conditions.

(e) Deterioration of site or other improvements.

(f) Inadequate and outdated building density patterns.

(g) Falling lease rates per square foot of office, commercial, or industrial space compared to the remainder of the county or municipality.

(h) Tax or special assessment delinquency exceeding the fair value of the land.

(i) Residential and commercial vacancy rates higher in the area than in the remainder of the county or municipality.

(j) Incidence of crime in the area higher than in the remainder of the county or municipality.

(k) Fire and emergency medical service calls to the area proportionately higher than in the remainder of the county or municipality.

(l) A greater number of violations of the Florida Building Code in the area than the number of violations recorded in the remainder of the county or municipality.

(m) Diversity of ownership or defective or unusual conditions of title which prevent the free alienability of land within the deteriorated or hazardous area.

(n) Governmentally owned property with adverse environmental conditions caused by a public or private entity.

(o) A substantial number or percentage of properties damaged by sinkhole activity which have not been adequately repaired or stabilized."

The term "blighted area" may also be used for any area in which at least one of the factors identified in paragraphs (a) through (o) is present and all taxing authorities subject to 163.387(2)(a) agree, by interlocal agreement or by resolution, that the area is blighted.

6. Assessment Process

City Staff assessed the Study Area through a multitude of resources, including but not limited to existing data, especially that included in the Green Cove Springs GeoHub; data collected from other departments, especially Public Works and Police; desktop reviews of the area; in person / walking review of the area. Staff assessed the area for many aspects of blight as defined in the Florida Statutes, and this report describes the existing conditions as they relate to these factors.

7. Study Area

The specified Study Area encompasses ±172.8 acres and is known as the Downtown and US 17 Corridor. The corridor spans Orange Avenue from Governor Street on the north end to Oak Street on the south end. The Corridor lies between St. Johns Avenue and Magnolia Avenue on its eastern edge and Pine Avenue on its western edge. The Downtown portion reaches slightly farther to the west and east. On the western side, it is bound by Palmer Street, Green Street, and Bay Street. On the eastern side, it expands diagonally eastward from Magnolia starting at Center Street, culminating at the river's edge with Spring Park property. The area is shown in Map 1.

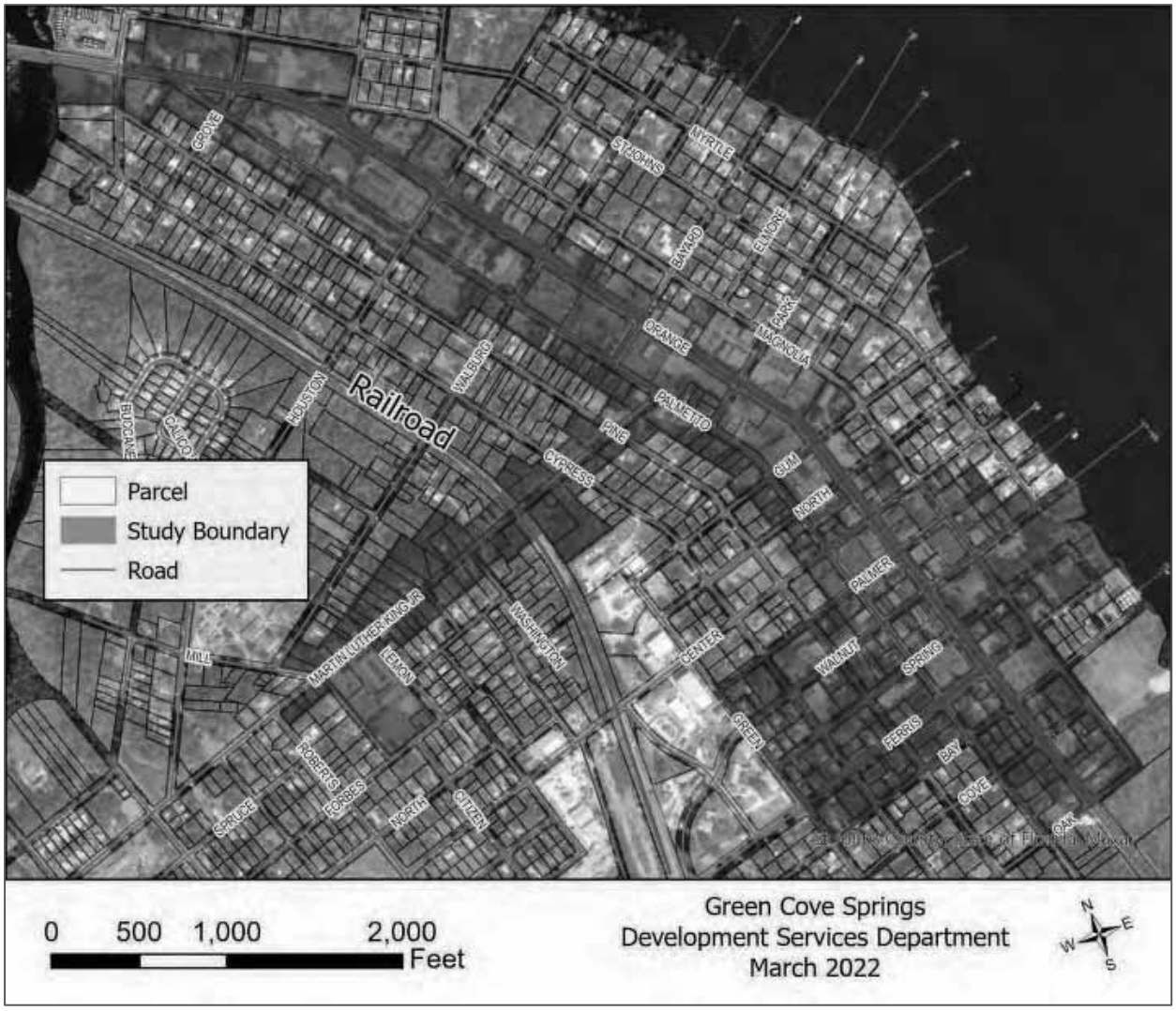
The Study Area contains primarily commercial and institutional uses. Well known locations within the Study Area include: churches such as Springs Baptist Church, First Presbyterian Church, Doxa Church, and United Methodist Church; County government buildings including the Courthouse, Jail, Supervisor

of Elections, and Administration Building; food / beverage service businesses such as Spring Park Coffee, Dunkin' Donuts, Burger King, La Casita, and Sweet Sensations; financial institutions, including Wells Fargo and VyStar Credit Union; automobile sales lots such as Green Cove Auto and Good Guys Motors as well as service businesses like Jesse's Auto Services and Darren's Custom & Restorations; retail uses like CVS, The Treasure Box, Walgreens, SS Something Special, and Green Cove Liquors; office uses including Exit Magnolia Realty, Vallencourt Construction, and Action Medical Staffing; and an event venue, Clay Theatre. Additionally, there are numerous vacant properties, including the recently demolished 1050 N Orange Ave, which previously housed an abandoned automobile sales lot, as well as the corner of North Street and Orange Avenue, which once housed two buildings and businesses. The Study Area also contains Spring Park, a well-known and loved park featuring the natural spring, a public spring-fed pool, walking trails, swinging benches, play structures, and great views of the St. Johns River. The foregoing list is not meant to be exhaustive but instead meant to provide a feel of the activity within the Study Area.

The expanse around the Study Area is primarily residential in nature, with some exception specifically along Martin Luther King Jr Blvd, which features some commercial spaces, as well as east of Green Street, which features County School Board property and related uses.

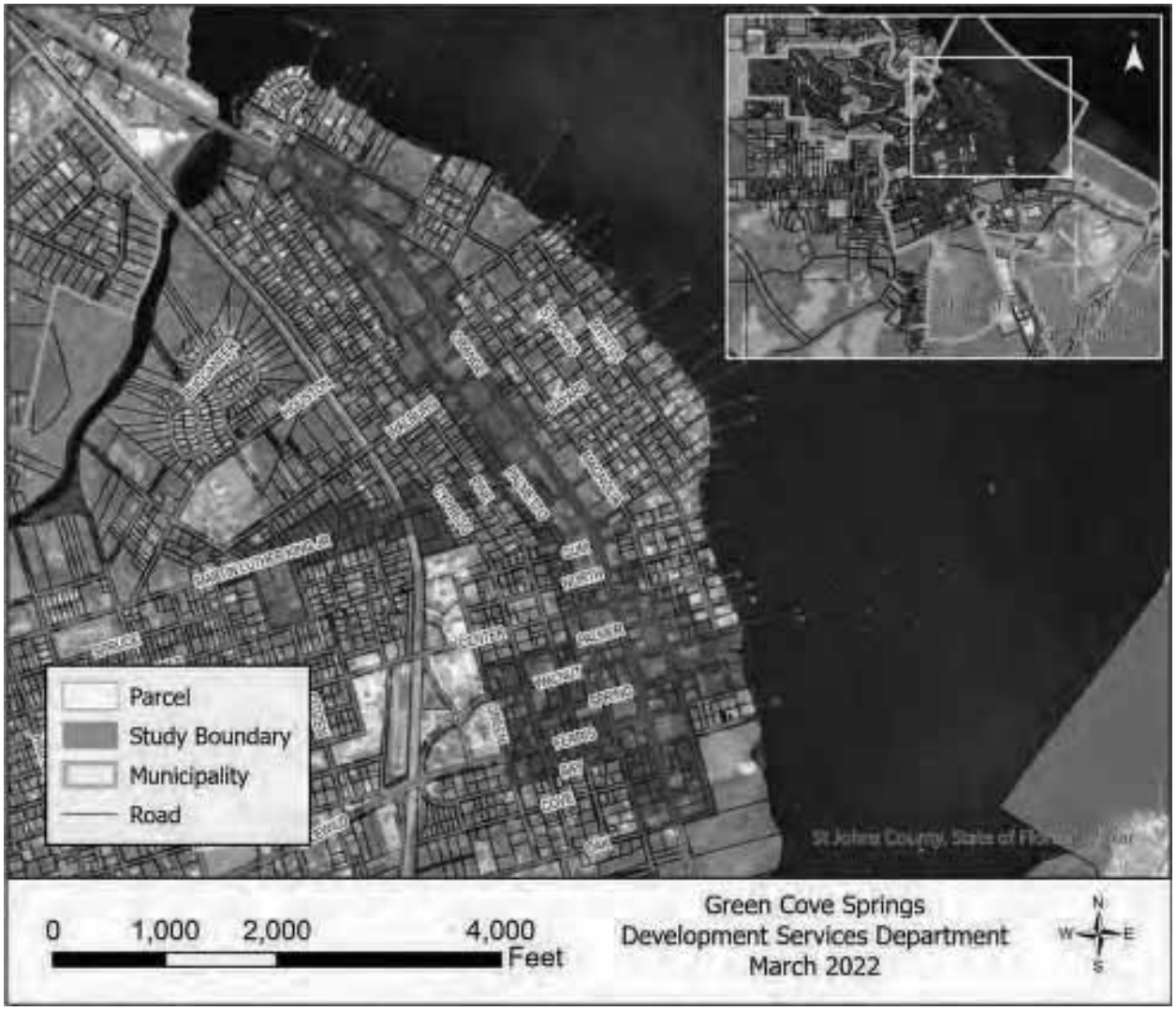
Within the Study Area, there are some planned or potential improvements. These include a proposed freestanding emergency medical facility operated by St. Vincent's as well as the Palmetto Trail project which will see an eight-foot multi-use path constructed along Palmetto Avenue from its southern end up to the Governors Creek Bridge. As part of the Walnut Street assessment, the City is also planning improvements to Walnut Street, particularly the block between Palmetto Avenue and Orange Avenue.

Map I-2. Study Area



The Study Area is located somewhat centrally within the City, particularly for commercial development. Its location within the boundaries of the City can be viewed in Map 2. The northwest portion of the City consists of two subdivisions and the southeastern portion of the City consists of Reynolds Park / Clay Port – a future mixed-use development operating as an industrial site at present. The Study Area is contained within what is referred to as the Core City. The western portion of the Core City is dominated by residential development with a smattering of institutional development, namely School Board related properties. US 17 / Orange Avenue, Martin Luther King Blvd, and Palmetto Avenue, all within the Study Are, feature commercial development with some residential development as well.

Map I-3. Study Area in Reference to the City



D. SLUM AND BLIGHTED AREA ANALYSIS

City Staff reviewed the Study Area in relation to the statutory requirements for an area to be determined a slum area or a blighted area.

1. Slum

The condition of slum in the Study Area is met under the following criteria:

(c) The existence of conditions that endanger life or property by fire or other causes.

Documentation of existing conditions provided in subsequent sections in this analysis indicates life and / or properties are endangered, specifically by dilapidation; unsecured inhabitable properties; deteriorating roadways, sidewalks, and accessibility features; abandoned homes; and overall deterioration of the Study Area.

2. Defective or inadequate public transportation facilities

The City of Green Cove Springs does not have locally operated public transportation facilities. Public transportation within Clay County, called Clay Community Transportation, is operated by the Jacksonville Transportation Authority.[2] Of 4 available lines, 2 lines travel through Green Cove Springs. These lines operate from 6am to 7pm Monday through Friday, excluding holidays. The lines do include a flex service option wherein customers can call a reservation line to schedule a pick-up from their location that will be accommodated when time allows. The deviation will go as far as a ¾ mile off the route.

The Blue Line (Map 3) has one stop within the Study Area, the Clay County Courthouse (825 N Orange Ave), and one other stop within City Limits, at the Clay County Health Department. There are two stops moderately close to City Limits – the Pier Station stop west of town on State Road 16 and the Challenge Enterprises stop on Enterprise Way just north of town. There is two to three hours between pickups at the local stops, excluding Challenge Enterprises which only has one pickup time and one drop-off time.

The Green Line (Map 4) has one stop within the Study Area (and the City at large), the Clayton and Mildred Revels Senior Center (604 Walnut St). There are three hours between pickups at this stop, and similarly three hours between drop-offs to the location.

There are no options for local transit from residential to commercial or recreational areas of town. Additionally, the sidewalk and roadway conditions through the Study Area are in a poor state. Many streets show deterioration, especially with top layers breaking down, revealing the older brick streets beneath, which creates uneven surfaces. Sidewalks show significant deterioration as well with the following conditions being regularly observed throughout the Study Area:

- Cracking: Locations where the paved surface of the sidewalk has cracked or crumbled

- Uplift: A vertical change in height along a sidewalk (generally where "panels" of the sidewalk meet or where cracking has occurred)

- Fixed Obstructions: Anchored objects (such as utility poles) that reduce sidewalk width

- Non-Fixed Obstruction: Vegetation, non-anchored objects, or uncleanliness that reduces sidewalk width or walkability

- Spalling: Surface deterioration that appears as small indentations in the surface

- Standing Water: Locations where there is or there is evidence of standing water on the sidewalk

- Loss: Locations where a piece or pieces of the sidewalk were removed, whether purposefully for work or through erosion.

Examples of the above defined items are provided in the figures below.

Further, there are many places in the Study Area completely lacking sidewalks, primarily on local streets or only on one side of the street and often without excellent road crossing conditions to get from sidewalk to sidewalk as needed.

[2] Jacksonville Transit Authority, https://www.jtafla.com/ride-jta/regional-services/clay-community-transportation/ accessed 3/14/2022

Such road and sidewalk conditions reduce the ability of the community to safely traverse the Study Area on foot, by micromobility[3] device (bicycle, scooter, skateboard, et cetera) or by motorized vehicle.

Figure I-1. Sidewalk Cracking, Palmer St, near 14 N Magnolia Ave

Figure I-2. Sidewalk Cracking & Loss, Martin Luther King Jr. Blvd

Figure I-3. Deteriorating accessibility feature, Corner of Orange Ave & Center St

[3] Institute for Transportation & Development Policy, https://www.itdp.org/multimedia/defining-micromobility/ accessed 4/7/2022

Figure I-4. Deteriorating accessibility feature, Southwest Corner of Orange Ave & Palmer St

Figure I-5. Road Disrepair, Walnut St

Figure I-6. Intersection of Green St & Walnut St

Figure I-7. Non-Fixed Obstruction, Martin Luther King Jr. Blvd

Figure I-8. Non-Fixed Obstruction, Martin Luther King Jr. Blvd

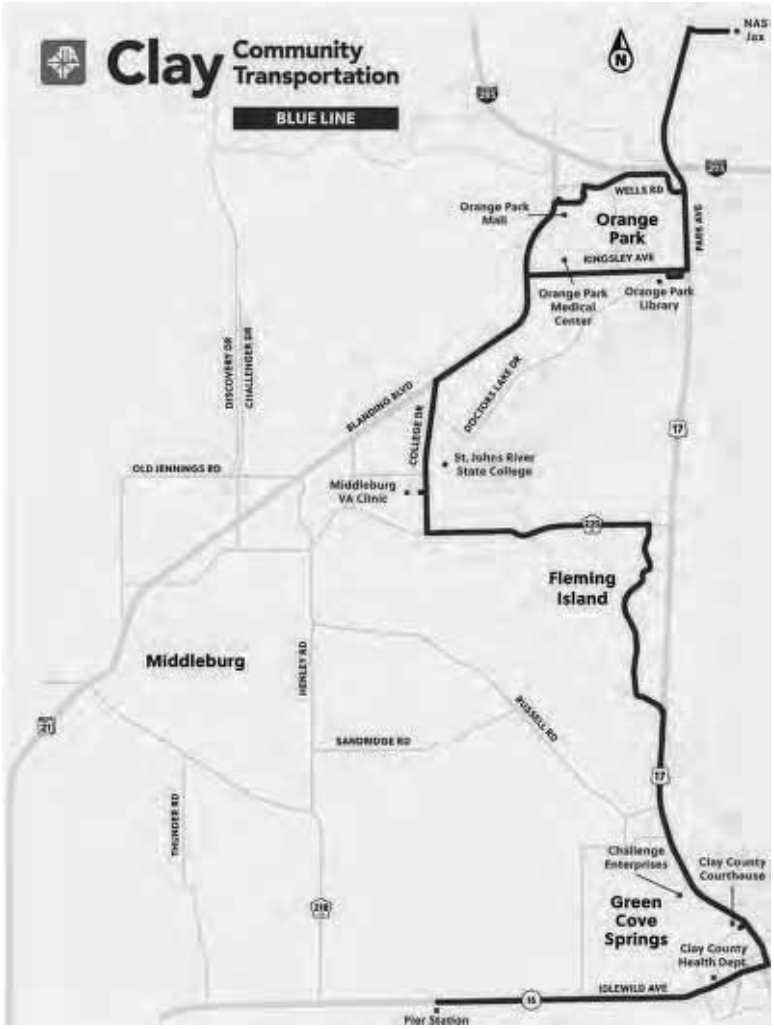
Figure I-9. Sidewalk Spalling, Martin Luther King Jr. Blvd

Figure I-10. Sidewalk – Standing Water, Martin Luther King Jr. Blvd.

Figure I-11. Sidewalk Uplift & Spalling, Martin Luther King Jr. Blvd

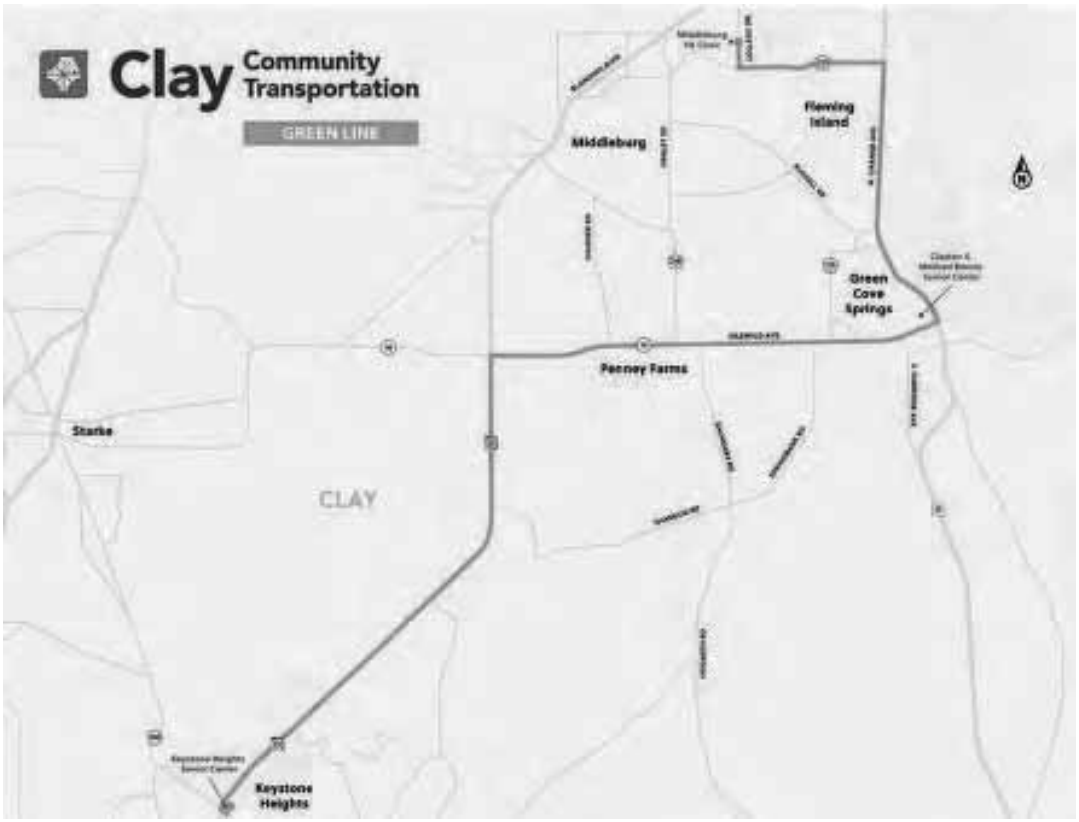
Figure I-12. Sidewalk Loss, Martin Luther King Jr. Blvd

Map I-4. Bus Route – Blue Line[4]



[4] Jacksonville Transportation Authority, https://www.jtafla.com/ride-jta/regional-services/clay-community-transportation/clay-blue-line/

Map I-5. Bus Route – Green Line[5]



3. Aggregate assessed values do not show appreciable increase over past 5 years

The Study Area has experienced some redevelopment in the past five years, but the deterioration present, as shown in later sections, has prevented the Study Area from seeing an appreciable increase in its aggregate assessed value (AAV) as compared to the City as a whole. In Table 1, it is demonstrated that the City as a whole has experienced an increased AAV of 50.71% while the Study Area has only seen an increase of 20.53%.

Table I-3. Aggregate Assessed Value Comparison

Year	Study Area	City
2017	$ 85,088,819.00	$590,524,531.00
2018	$88,913,992.00	$642,232,893.00
2019	$95,646,152.00	$802,652,764.00
2020	$95,809,061.00	$802,652,764.00
2021	$102,557,978.00	$890,001,640.00
% Increase	20.53%	50.71%

[5] Jacksonville Transportation Authority, https://www.jtafla.com/ride-jta/regional-services/clay-community-transportation/clay-green-line/

4. Faulty lot layout in relation to size, adequacy, accessibility, or usefulness

Within the Study Area, approximately 25.6% of the lots could be considered faulty (Map 4). The criteria for this determination were as follows:

- Size: Commercially zoned lots with less than approximately 75 feet of frontage and approximately 100 feet of depth – despite the zoning code identifying no minimum lot requirements in commercial districts, the size of these lots is not suited for adequate commercial development, assuming they are developed individually given the diversity of ownership.

- Adequacy: Lots deemed inadequate are shaped in a manner which decreases their developability.

- Usefulness: Lots deemed less than useful are shaped in a manner which will likely completely prevent or deter their development or redevelopment.

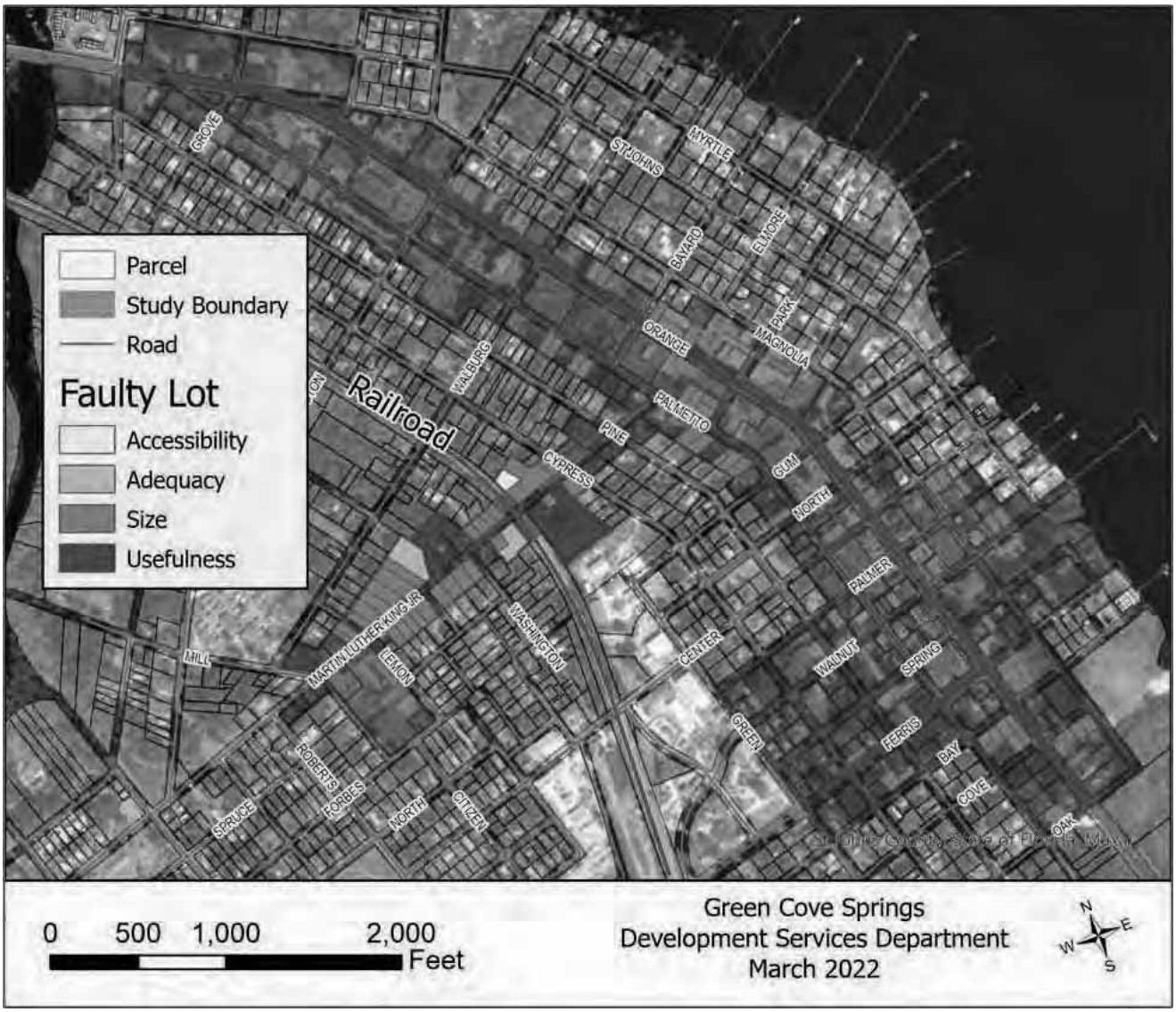
- Accessibility: Lots deemed inaccessible are landlocked.

The City does permit residential development within many commercially zoned areas, and some of the identified lots have historically or recently been developed residentially as a consequence. Ideally, as identified in the Future Land Use Map, these lots would develop commercially or with a mix of uses to better support the neighborhood.

Recent development exemplifies the difficulties with developing commercially on narrow or otherwise small lots. Between 2019 and 2020, Dunkin Donuts constructed a new location within the Study Area – 610 N Orange Ave. The site is approximately 250ft along Orange Avenue (the primary roadway) by 125ft deep. The development received a variance from the City's Zoning Code requirements, which require parking to be to the side or back of a building in the Gateway Commercial Corridor. Due to the depth of the property and the type of development (drive-thru fast food), the lot layout was inadequate to permit development without a variance.

On the basis of the plight of Dunkin Donuts and the criteria identified above, additional lots are truly eligible to be considered faulty within the Study Area, but being that they are already commercially developed, at this time, they are not being considered faulty.

Map I-6. Faulty Lots



5. Unsanitary or unsafe conditions

There are several sites with unsafe or unsanitary conditions located within the Study Area. Figures 13-29 (following) demonstrate the conditions for a portion of these properties.

Field inspection and Google StreetView inspection of the Study Area identified sites with deteriorating or damaged structures which pose a threat to building occupants, condemned or abandoned buildings, incomplete construction projects, lack of sidewalks or blocked rights-of-way (ROW[s]), as well as brownfield sites. There are unsafe commercial spaces where there is either a lack of defined pedestrian versus vehicular space or a lack of maintenance that would keep the area safe for traversing to and from a business.

These figures represent some of the many deteriorating, unsafe, and at times abandoned structures in the area.

Figure I-13. Unsafe, Deteriorating Roof, 116 N Magnolia Ave

Figure I-14. Unsafe, Condemned Building, 428 N Orange Ave

Figure I-15. Unsafe, Boarded Openings, 115 N Magnolia Ave

Figure I-16. Unsafe and unsanitary, Openings / Junk Storage, 115 N Magnolia

Figure I-17. Unsafe, No Sidewalk, ROW used for RV Parking, 327 N Orange Ave

Figure I-18. Unsafe, No Sidewalk, across from Figure 5, 425 N Orange Ave

Figure I-19. Unsanitary, Discontinued Gas Pumps, 201 N Orange Ave

Figure I-20. Unsafe, Collapsed Canopy, Petroleum Contamination Site[6], 100 N Orange Ave

Figure I-21. Unsafe, Low hanging power lines, concrete drive in disrepair, south of 25 N Orange Ave

[6] FL Department of Environmental Protection's Contamination Locator Map, https://prodenv.dep.state.fl.us/DepClnup

Figure I-22. Unsafe, ROW in disrepair, business parks in ROW, 3 S Palmetto Ave

Figure I-23. Unsafe, Lack of signage, marked parking spaces, pedestrian safety, 24 Green St

Figure I-24. Unsafe area in front of active commercial building, 1100 Martin Luther King

Figure I-25. Unsafe Structure / Abandoned, 1007 Martin Luther King Jr Blvd

Figure I-26. Unsafe Structure / Abandoned Structure, 1001 Martin Luther King Jr Blvd

Figure I-27. Unsafe Structure / Abandoned Structure, 713 Martin Luther King Jr Blvd

Figure I-28. Unsafe Structure / Abandoned Structure, 613 Martin Luther King Jr. Blvd

Figure I-29. Unsafe Structure / Abandoned Structure, 612 Martin Luther King Jr. Blvd

6. Deterioration of site or other improvements

In addition to the deterioration of site improvements shown in section 3.5, within the Study Area, there are multiple occurrences of deteriorating improvements, especially access points or paved areas in surrounding buildings. Paving is wearing away or cracking creating hazardous conditions for drivers using the lots to park

or maneuver the site and pedestrians crossing the access points. Figures below provide examples of this type of wear and tear in the corridor.

Figure I-30. Deteriorating Drive / Sidewalk, 220 Palmer

Figure I-31. Deteriorating Drive, 327 N Orange Ave

Figure I-32. Parking lot disrepair, between 604 & 500 Walnut St

Figure I-33. Sidewalk disrepair, between 604 & 500 Walnut St

7. Inadequate and outdated building density patterns

The applicable zoning districts for the Study Area generally include: Central Business District, Gateway Corridor Commercial, Gateway Corridor Neighborhood, and C-1 Neighborhood Commercial. The heart of the Study Area is where the Central Business District is located – also known as the Downtown area. The Gateway districts are located along the "corridor" area, notably US 17 or Orange Ave. The Martin Luther King Blvd corridor is zoned as neighborhood commercial but features primarily low density residential development including active and abandoned residential structures, churches, vacant lots, concrete block commercial buildings lacking transparency and activation.

Figure I-34. Outdated building pattern, 208 N Orange Ave, Food Store

Figure I-35. Outdated building pattern, 425 N Orange Ave, Wells Fargo

Figure I-36. Outdated building pattern, 327 N Orange Ave, Rick Baker's RV

Figure I-37. Low Density Development, 606 Spring St

Figure I-38. Low Density Development, 627 Spring St

Figure I-39. Low Density Development, Not Fronting Street, 702 Ferris St / 709 Spring St

Figure I-40. Undeveloped, Gustafson Property, Pine St (behind house on Walnut St)

8. Vacancy rates

17.1% of properties within the Study Area are classified as vacant by the Clay County Property Appraiser. This level of vacancy within the Study Area is 44.9% higher than that of the rest of the municipality, which has an 11.8% rate of vacancy.

Many of these lots, shown in the figures below, are prime locations that once housed a local business which has since been removed. The lots have yet to have been redeveloped despite their prime locations in the commercial areas of the City.

Figure I-41. Vacant Lot, Previously 208 N Orange Ave

Figure I-42. Vacant Lot, East of 604 Walnut St

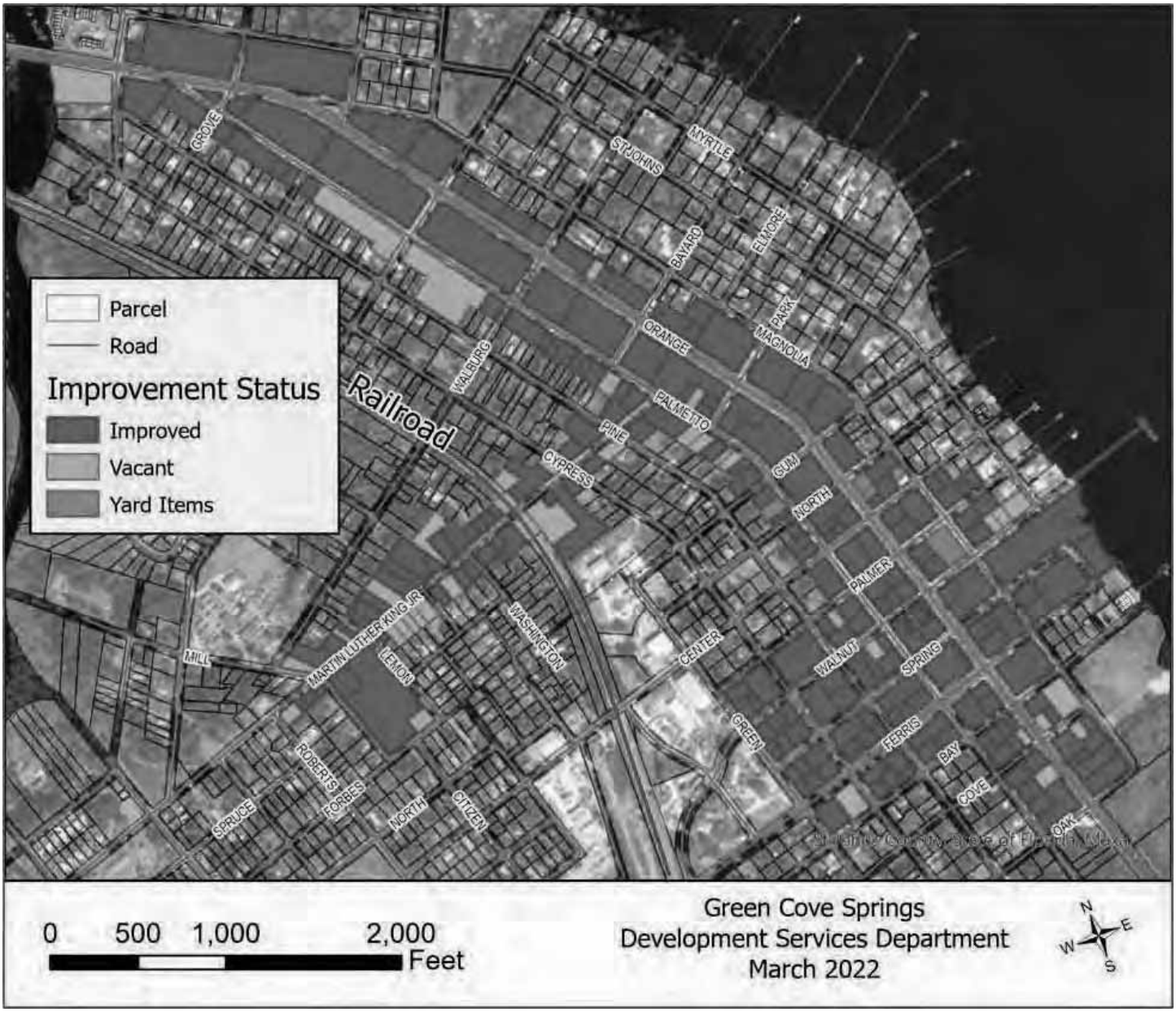
Figure I-43. Vacant Lot, BROWNFIELD[7], south of 535 N Orange Ave

Figure I-44. Vacant Lot at the northeast corner of Orange Ave &Walburg St

[7] FL Department of Environmental Protection's Contamination Locator Map, https://prodenv.dep.state.fl.us/DepClnup

Figure I-45. Vacant Lot at the northwest corner of Orange Ave & Governor St

Map I-7. Vacancy Rates



E. RECOMMENDATIONS

The Study Area meets the criteria established in Section 163.340, Florida Statutes (F.S.). It is staff recommendation that the City of Green Cove Springs adopt this Finding of Necessity by resolution per Section 163.355, F.S., and create a Community Redevelopment Agency for the Study Area as defined herein. This will enable redevelopment of the area which is necessary for the safety and economic welfare of the community

.

02

AUTHORITY TO UNDERTAKE COMMUNITY REDEVELOPMENT

GREEN COVE Springs

II. AUTHORITY TO UNDERTAKE COMMUNITY REDEVELOPMENT

A. AUTHORITY TO UNDERTAKE COMMUNITY REDEVLOPMENT, CREATION, POWERS

This document has been prepared under the direction of the Green Cove Springs Community Redevelopment Agency in accordance with the Community Redevelopment Act of 1969, F.S. 163, Part III. In recognition of the need to prevent and eliminate slum and blighted conditions within the community, the Act confers upon counties and municipalities the authority and powers to carry out "Community Redevelopment". For the purposes of this Community Redevelopment Plan, the following definition, taken from the Florida State Statutes, Section 163.340, shall apply:

"Community redevelopment" or "redevelopment" means undertakings, activities, or projects of a county, municipality, or community redevelopment agency in a community redevelopment area for the elimination and prevention of the development or spread of slums and blight, or for the reduction or prevention of crime, or for the provision of affordable housing, whether for rent or for sale, to residents

of low or moderate income, including the elderly, and may include slum clearance and redevelopment in a community redevelopment area or rehabilitation and revitalization of coastal resort and tourist areas that are deteriorating and economically distressed, or rehabilitation or conservation in a community redevelopment area, or any combination or part thereof, in accordance with a community redevelopment plan and may include the preparation of such a plan.

The ability of a county or municipality to utilize the authority granted under the Act is predicated upon the adoption of a "Finding of Necessity" by the governing body which was approved by Resolution R-03-2022 on April 14, 2022.

1. Creation of the Community Redevelopment Agency

Upon the adoption of a "Finding of Necessity" by the governing body and upon further finding that there is a need for a Community Redevelopment Agency to function in the county or municipality to carry out community redevelopment purposes, any county or municipality may create a public body corporate and politic to be known as a "Community Redevelopment Agency". The Agency shall be constituted as a public instrumentality, and the exercise by the Agency of the powers conferred by Chapter 163, Part III, Florida Statutes shall be deemed and held to be the performance of an essential public function (Section 163.356(1) Florida Statutes).

2. Powers of the Community Redevelopment Agency

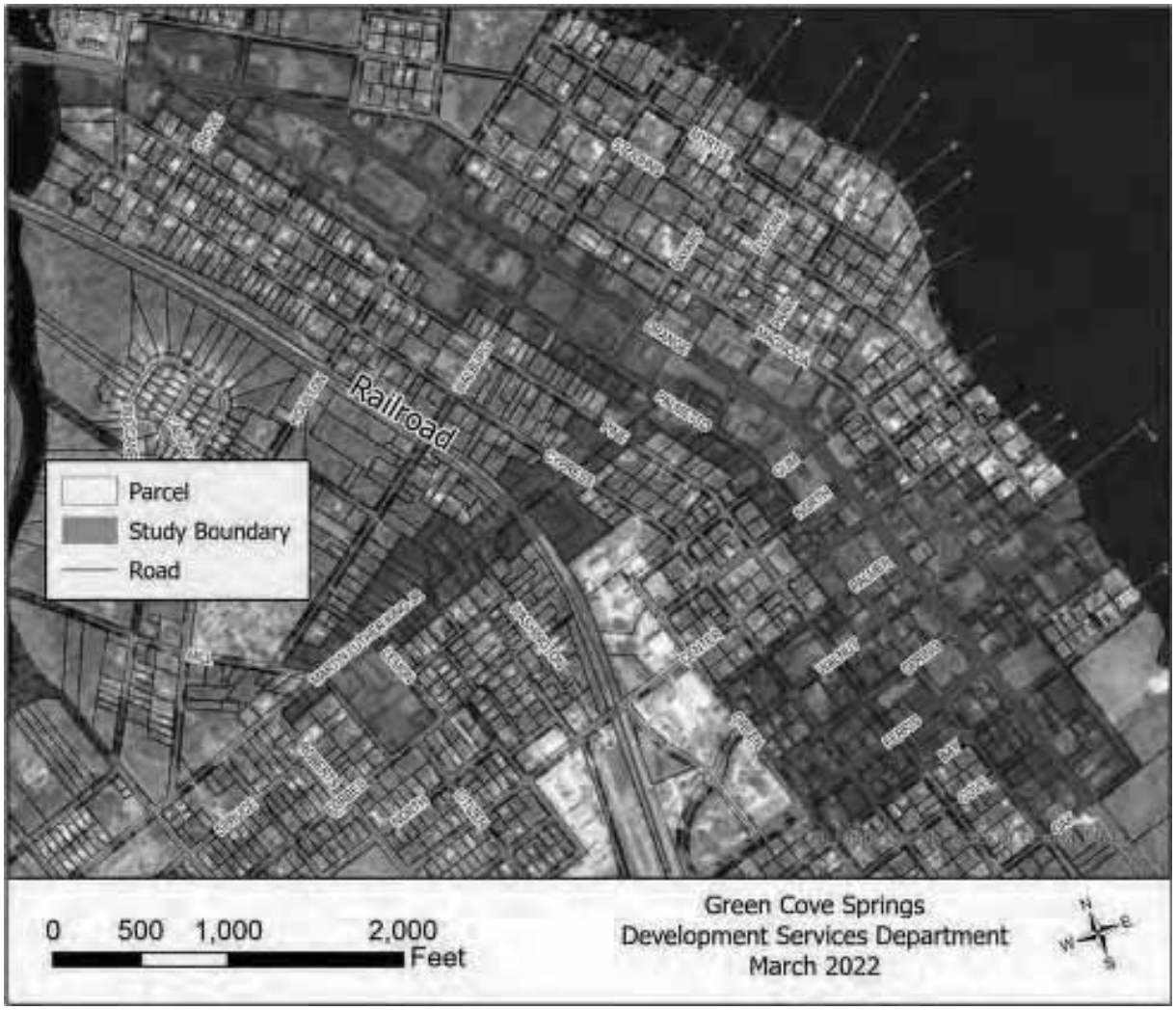
The Community Redevelopment Act confers a wide array of redevelopment powers to counties and municipalities with home rule charters, as specified in Florida Statute 163.410. As a charter county, Clay County has retained those powers, except as delegated (the "conveyed powers") to the City of Green Cove Springs through incorporation in an Interlocal Agreement to carry out redevelopment activities. The City then, has delegated the conveyed powers to the Community Redevelopment Agency (CRA).

3. Community Redevelopment Area

Pursuant to Statutes, a community redevelopment area must be a slum area, a blighted area, or an area in which there is a shortage of housing that is affordable to residents of low or moderate income, including the elderly.

The Green Cove Springs Community Redevelopment Area generally consists of the older central core of the City and surrounding neighborhoods, which have become deteriorated due to age, obsolescence, and the lack of investment. Unfortunately, a deteriorating area is self- propagating, and as conditions worsen, residents and private businesses become less willing to put their financial resources into the area. This cycle severely limits the ability of private enterprise to stop the spread of slum and blight without public assistance.

Map II-1.



4. The Community Redevelopment Plan

All redevelopment activities expressly authorized by the Community Redevelopment Act and funded by tax increment revenue must be in accordance with a Redevelopment Plan, which shall be approved by the CRA Board, the City of Green Cove Springs and the Clay County Commission. Like the City's Comprehensive Plan, the Community Redevelopment Plan is an evolving document, which may be evaluated and amended on a regular basis to accurately reflect changing conditions and community objectives.

The CRA Plan provides for effective implementation of redevelopment Goals and Initiatives to remove slum and blighted conditions within the CRA district as provided by Florida Statutes.

03

INTERLOCAL AGREEMENT WITH CLAY COUNTY

GREEN COVE Springs

III. INTERLOCAL AGREEMENT WITH CLAY COUNTY

The Green Cove Springs CRA, Green Cove Springs City Council and the Clay County Commission entered into a negotiated Interlocal Agreement that established the terms under which the City of Green Cove Springs could establish a Community Redevelopment Agency. A summary of the terms of the agreement are as follows (see full copy of the Agreement in Section 9, Appendix):

1) The initial term of the Green Cove Springs CRA shall begin on January 1, 2023 and continue for 30 years from that date;

2) The City may extend the CRA Plan based on an affirmative vote of the City of Green Cove Springs and County Commission;

3) The "base year taxable property assessment roll, used to calculate the tax increment to be deposited into the CRA trust fund, shall be 2023;

4) The CRA Redevelopment Plan must be approved by affirmative vote of the County Commission and City Council;

a. The Redevelopment Plan and any amendments shall meet all requirements of state statutes, and contain a detailed statement of the projected costs of redevelopment;

b. Funds shall be used to fund all CRA projects included in the Redevelopment Plan;

c. Redevelopment activities and projects in the Plan must be designed to mitigate slum/blight conditions which were the basis of the Finding of Necessity;

5) The City shall deposit 95% of an amount based on the calculation of increment using the City's millage in that year into the CRA trust fund, unless otherwise provided by the Agreement. The remaining 5% is an administration fee for the City.

6) The CRA may sell bonds and execute notes, and enter other forms of debt or leveraging, as well as collateral documents, to finance capital improvements deemed necessary by the CRA for redevelopment purposes. However, no debts my extend beyond the expiration date of the CRA Plan;

7) The CRA shall abide by all provisions of the Community Redevelopment Act;

8) The County shall, by resolution, delegate to the City all the powers for redevelopment in the Community Redevelopment Act;

9) If the City chooses to establish a CRA and complies with all of the provisions of statute and this agreement to establish the CRA trust fund, the County shall deposit 95% of an amount based on the calculation of increment using the City's millage in that year into the CRA trust fund;

10) The County shall abide by all provisions of the Community Redevelopment Act.

Once the Redevelopment Plan is approved by the CRA, it will be required to be ratified by the City of Green Cove Springs and the Clay County Commission. In addition to the approval of the Redevelopment Plan, the City and County shall also be required to ratify an interlocal agreement pursuant to Section 163.410, Florida Statutes, the Clay County Commission delegated the authority to exercised community redevelopment powers to the City of Green Cove Springs via Resolution 2021/22-56, subject to the conditions in the interlocal agreement- see copy of Resolution 2021/22-56 in Sections 5,6,7 and 8, in Appendix.

04

REDEVLOPMENT VISION, OBJECTIVES & STRATEGIES

GREEN COVE Springs

IV. REDEVELOPMENT VISION, OBJECTIVES AND STRATEGIES

A. APPROACH

This Chapter presents the vision for the Redevelopment Area. In addition, this Chapter identifies potential objectives and strategies, and lays a foundation for the programs and projects to be considered by the City of Green Cove Springs, Clay County, the CRA, and private enterprise in implementing this vision.

Projects, costs, or budgets provided in the Redevelopment Plan are estimated, and will be refined as additional research, plans, and documents are prepared to implement the particular objectives, strategies, resulting programs, and projects. The costs given for budgeting purposes establish the framework for the financial planning analysis.

Costs or budgets should not be construed as exclusively the burden of the public sector. Costs or budgets are intended to be total costs with potential allocations to the public and private sectors assigned on the basis of the encouragement of private enterprise as a tool to carry out a significant portion of this Plan and apparent benefit, value, revenues, or other relevant factors.

B. VISION FOR THE COMMUNITY REDEVELOPMENT AREA

The vision for the Redevelopment Area focuses on creating a vibrant multimodal mixed-use corridor that offer residents and visitors a high-quality destination featuring active uses, pedestrian connections, a safe transportation network, and inviting public spaces in a manner that promotes and accommodates growth while continuing to honor the City's rich small-town charm and history. At the same time, redevelopment efforts shall be complimented with maintaining affordable housing options for residents of low or moderate income, including the elderly. The CRA will support infrastructure and not impact the City's ability to provide an adequate level of service within the Redevelopment Area.

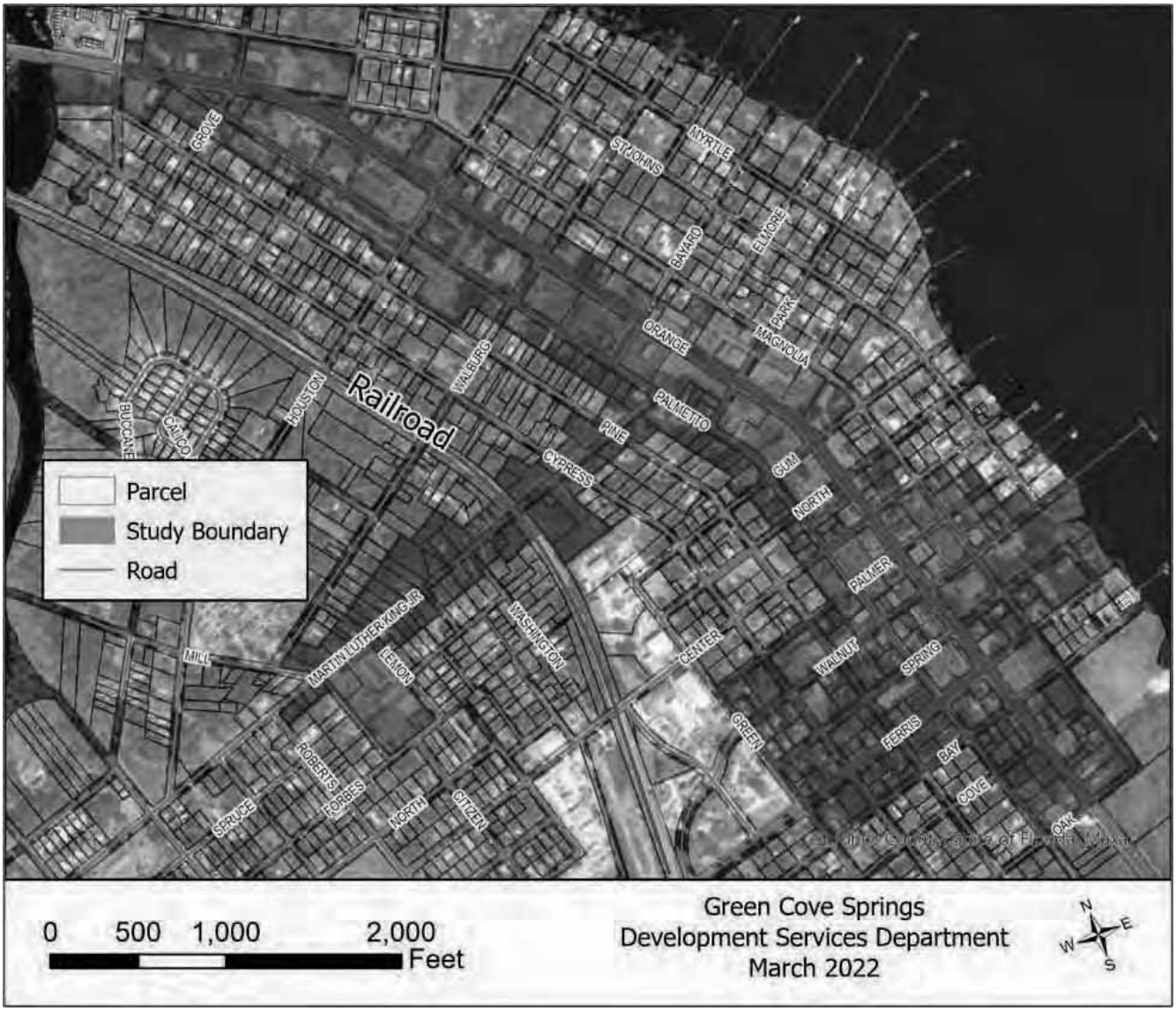
The development of certain segments of the subject corridors will lead to the conversion of the existing, non-sustainable, haphazard development pattern that has occurred along the corridors. The CRA will be treated with improved infrastructure intended to promote area rehabilitation and ultimately the highest and best use of structures. Gateways and wayfinding signage will be developed at key locations as identified in the Downtown Master Plan to identify entry to serve as focal points for the Community Redevelopment Area. Linear features will be beautified with landscape improvements and hardscapes.

The intent of this Plan is to serve as a framework for guiding development and redevelopment in the Redevelopment Area. This Plan identifies redevelopment objectives and lays the foundation for programs and capital projects to be undertaken, which will reverse and remove blight documented in the Findings of Necessity. This Plan addresses implementation strategies that were adopted as part of the Downtown Master Plan. These programs, projects, funding, and administrative opportunities will continue to be refined as they are implemented. It is clearly understood that grants and other revenues (impact fees, general revenue, grants etc.) need to be used in conjunction with available increment revenues to achieve these stated goals. While based on the most accurate data available, the various strategies and costs identified in this Plan will require additional study as specific programs and projects are initiated, refined, and implemented.

The focus of the Plan is the mitigation or correction of the various blighted area conditions documented in the adopted Finding of Necessity Report and the implementation strategies identified in the 2022 Downtown Master Plan. Changing social, physical, and economic conditions could warrant the modification of this Plan. If the Plan is modified, the CRA must comply with Section 163.361, Florida Statutes and applicable County Resolutions.

As the redevelopment process unfolds, a Conceptual Diagram will be generated to illustrate specific improvements planned. The elements shown in the Conceptual Diagram may be relocated or realigned as part of future planning initiatives, so long as modifications are generally consistent with the vision articulated in this Plan. The City Land Development Code (LDC) shall address the redevelopment area's urban design framework.

Map IV-1. Study Area



C. REDEVELOPMENT OBJECTIVES AND STRATEGIES

In partnership with private enterprise and the County, the redevelopment initiative embodied in this Plan will reverse and remove the observed blighted conditions within the Redevelopment Area by leveraging public assets to improve the overall economic condition and the physical condition of the Redevelopment Area. Creating safe, vibrant and pedestrian friendly corridors along US 17 and downtown roadways / featuring more attractive mixed use and commercial opportunity will greatly enhance the quality of life not only for the residents but the population of the City and County at large.

Strategic initiatives are to be identified and placed into action to address, reverse, and remove the blighted area conditions, which have substantially impaired reinvestment activity within the Redevelopment Area; and ultimately will be substantially redeveloped and revitalized as a community focal point to the benefit of City and County residents, businesses, property owners, and visitors through the implementation of this Redevelopment Plan.

Objectives have been identified and placed into action to address, reverse, and remove the blighted area conditions, which have substantially impaired reinvestment activity within the Redevelopment Area; and ultimately will be redeveloped and revitalized as a community focal point for the benefit of City and County residents, businesses, property owners and visitors through the implementation of the plan.

1. Objectives and Strategies

Objective 1: Improve transportation facilities within the Redevelopment Area including sidewalks, crosswalks, bike paths, and other multi-modal options to enhance regional connection. These strategies will correct the blighted conditions of defective or inadequate public transportation facilities (Figures 1-12 and Map 3 & 4 of the Finding of Necessity Report).

1. Sidewalk Repair and obstruction relocation as set forth along Magnolia Avenue, Martin Luther King Jr. Blvd, Orange, Palmer and Center Streets as shown in figures 1-4 , and 7-8,

2. Repair the deterioration of Walnut Street between Green Street and Pine Avenue as shown in figures 5-6 of the Finding of Necessity Report. This will improve safety, traffic flow and access.

3. Provide for updated surveys of downtown roadways to determine right of way widths and obstructions to determine where additional multimodal improvements are viable such as:

a. roadway, sidewalk, and lighting improvements on appropriate streets, and provide safe pedestrian routes.

b. roadway and streetscape improvements based on a phasing plan which emphasizes visual impact in addition to improved access and circulation.

c. Provide the ability for vehicles, pedestrians, and bicyclists to access an enhanced internal transportation network which connects, if applicable, the neighborhoods to services and commercial corridors.

d. Develop and incorporate landscape and lighting design standards to create a safe and inviting environment.

e. Integrate traffic calming techniques throughout the internal roadway system to enhance safety and facilitate a pedestrian/bicycle friendly environment. Traffic calming techniques may include the use of pavers or decorative concrete, raised pavement, roundabouts, change of landscape treatment, and the creation of pedestrian nodes at major intersection, mid-block crossings and other locations where potential conflicts exist between vehicles, pedestrians and bicyclists.

f. Traffic lights, crosswalks, and regulatory/wayfinding signage will be used to enhance the safety of vehicles, pedestrians, and bicyclists in key locations throughout the Redevelopment Area

4. Add curb extensions, and narrow travel lanes and add decorative pedestrian crossings to reduce the pedestrian crossing distance across Orange Avenue at the intersection with Walnut Street. This will improve pedestrian safety and provide a clear sense of arrival into the Downtown and serve to effectively bridge the eastern and western portions of the downtown.

5. Coordinate with the Florida Department of Transportation to reduce travel lane widths, provide and expand landscape buffers, install street trees, and widen sidewalks along the US 17 Corridor to enhance pedestrian comfort, safety and a greater sense of arrival to Green Cove Springs as set forth as implementation phase 1, #11 in the GCS Downtown Master Plan.

6. Promote the Redevelopment Area through designing and implementing a signage and wayfinding system directing traffic to and from the major connectors, and destinations in the region, as set forth in implementation phase 1, #3 of the GCS Downtown Master Plan.

Objective 2: Create a vibrant Downtown area with a mixed-use, multimodal development pattern. These strategies will correct the blighted conditions of faulty lot layout (Figures of the Finding of Necessity Report); unsafe conditions (Pgs. 19 and 21 - 25 of the Finding of Necessity Report); and deterioration of site or other improvements (Pgs. 16, 17, 20 and 24 of the Finding of Necessity Report). In addition, this objective addresses the implementation strategies set forth in the Downtown Master Plan.

1. Implement a Form Based Code with mixed use urban design/development standards for the Downtown Core as set forth in implementation step phase 1, # 4 in the GCS Downtown Master Plan.

The standards will address the incorporation of parking lot layout, building design, landscaping, signage, pedestrian connections, and linkages between land uses through a functional cross access system.

2. Implement the branding and wayfinding plan set forth in the GCS Downtown Master Plan Implementation Phase 1, Step #3. The wayfinding plan will help to establish he unique place the downtown area has within the City and region.

3. Reposition the Green Cove Springs downtown through marketing initiatives to attract targeted uses/industries retain existing businesses and improve the quality of life within the CRA.

4. Provide public art along Walnut Street and Spring Park in coordination with the Clay County Tourism Strategic Plan.

5. Provide the following incentive programs to encourage and support private sector investment and encourage targeted retail development:

a. Anchor Tenant Incentive Program

The Anchor Tenant Incentive Program provides loan-to-grant funding to commercial property owners and/or commercial tenants to assist with interior building improvements and business start-up costs. The goal of the program is primarily to incentivize anchor restaurants and breweries (food and drink establishments), and hotels to establish in Downtown, which in turn will help stimulate the local economy and improve the quality of life for Green Cove Springs residents and visitors. Eligible participants may receive loan-to-grant funding for 35% of the total interior building improvement and business start-up costs, up to a maximum of $75,000. Loan-to-grant funding may exceed $75,000 and be made available to businesses outside the food and drink category if the City is presented with a unique 'catalyst' project. A catalyst project is generally defined as a business that is first-to-market and anticipated to have a catalytic impact that will promote the City of Green Cove Springs Downtown Master Plan vision for a thriving Downtown where people can live, work and play. The term of the loan will be five years from the issuance of a Certificate of Occupancy. For each year the business is open and operating, 20% of the loan will be forgiven. If after five years the business is open and operating, the loan will be forgiven entirely and converted into a grant. Properties that pay no Ad-valorem taxes or are otherwise tax exempt are not eligible. In cases where a portion of a property is tax-exempt, funding may be made only to the taxable portion/percentage of the property. Loan-to-grant funds maybe disbursed to a program participant on a reimbursement basis. The City and program

participant would create a payment schedule based on project milestones. The Incentive Program can also be used for payment of mobility and impact fees.

b. Rental Subsidy Program

The proposed Rental Subsidy Program would provide an 18-month partial rental subsidy (up to $25,000) to qualifying targeted businesses. The funding award would be administered over an 18 consecutive month period. The award recipient would be paid the rent subsidy as agreed upon in an executed performance agreement between the applicant and the City. The applicant must have an executed multi-year lease (two-year minimum) with the owner. A copy of the lease, or binding or proposed multi-year commercial lease agreement must be provided to the city.

c. Business Façade Grant

The Business Façade Grant Program provides a matching grant to commercial property owners and/or commercial tenants, located in the targeted area, to assist with eligible exterior building and site improvements. Eligible applicants include both commercial property owners and business lessees with written authorization of the property owner. Eligible businesses must be from a small business industry sector targeted by the City and may be an individually owned franchise as long as it meets all other criteria. The façade grant award would be a 50% reimbursement of total projects costs with a maximum award of $15,000. Up to $4,000 of the total available may be spent on outdoor furniture and dining fixtures. The grant award amount will decline over time rewarding projects completed in a timely manner. If an awarded project is not started within one year of award, the award will be withdrawn.

d. Tax Increment Fund Rebate

Refunding a portion of City tax revenue generated by on-site/building improvements or new construction (increment) could be another potential incentive to encourage targeted retail development in Downtown Green Cove Springs. The refunded amount would be paid out over a five (5) year period with a declining scale of refunds to be determined by the City. The applicant would enter into a Performance Agreement with the City detailing the proposed capital investment and improvements to be made and the proposed increment rebate amounts and periods. The grant is a reimbursement of a portion of City Ad-Valorem taxes paid by the applicant. The CRA shall utilize the Tax Increment Fund of the Community Redevelopment Agency to provide the tax increment rebate proposed in addition to other

incentives and CRA programming and redevelopment powers as authorized by F.S. 163.360, Part III.

6. When feasible, the City should encourage acquisition and subsequent redevelopment by the private market. Other related activities that may be undertaken by the City include:

a. Map and index all commercial properties in the Redevelopment Area to provide detailed information on parcel boundaries, sizes, and ownership.

b. Identify and inventory all relevant substandard properties.

c. Document and analyze parking demands and infrastructure constraints throughout the Redevelopment Area.

d. Document site criteria for modern mixed-use developments by business type to facilitate the understanding of contemporary developer site and parking requirements.

e. The City may facilitate aggregation and redevelopment of "problem" or constrained parcels or groups of parcels.

f. The City may assist in the purchase, sale, negotiation, and coordination of land assembly. However, the City shall not use eminent domain to acquire land that will be ultimately used or transferred for private development.

g. Identify catalyst sites such as the City property at Walnut and St Johns Avenue to serve as important strategic assets to cause an early and precedent-setting change in the community redevelopment area and to spur other growth.

Objective 3: Increase the Downtown Parking Supply

1. Provide additional parking spaces within City owned property at the Palmetto Avenue and Spring Street intersection, GCS Downtown Master Plan Implementation Phase 1, #7C.

2. Provide Festival Street Parking along Magnolia Avenue between Walnut and Spring Street, GCS Downtown Master Plan Implementation Phase 1, #7D.

3. Provide on-street parking on Magnolia Avenue between Spring and Ferris Street, GCS Downtown Master Plan Implementation Phase 1, #7E.

4. Provide on-street parking along Magnolia Avenue between Oak Street and Ferris Street. (GCS Parking Study Recommendation).

Objective 4: Incorporate housing revitalization through housing maintenance programs and rehabilitation services. These strategies funded through the SHIP and CDBG programs will help correct the blighted conditions of unsanitary or unsafe conditions Unsanitary or unsafe conditions (Figures 13-29 of the Finding of Necessity Report), associated with residential uses; and deterioration of site or other improvements (Figures 30-33 of the Finding of Necessity Report.

1. By addressing the problems associated with substandard and dilapidated housing, the City/CRA will mitigate contributing blight conditions within the Redevelopment Area.

2. In the same manner, redevelopment efforts shall be complimented with efforts to provide affordable/workforce housing to residents of low to moderate income, including the elderly.

3. Promote programs for homeowners to rehabilitate their homes. Such programs include zero interest loans or information on other funding sources for the repair of single and multi-family homes depending on the applicant's income.

4. Assist low-income households through the SHIP program with down payment and closing costs assistance. The assistance may be for the purchase of an existing structure.

5. Infrastructure improvements such as roadway improvements, stormwater, wastewater, and potable water make properties more conducive for development. The City may undertake infrastructure improvements in partnership with private entities. If determined improving the infrastructure of certain properties is beneficial to the City for housing revitalization and blight mitigation within the Redevelopment Area, the CRA may undertake capital improvements on these individual properties.

6. Work with the private sector and Non-Government Organizations to create programs that improve the availability of affordable workforce housing for low to moderate income residents

7. Work with the City of Green Cove Springs and Clay County to encourage development and renovation of Mixed-Use, Affordable, Workforce, and Mixed-Income Housing.

Objective 5: Establish a creative, equitable, efficient and practical funding and financing mechanism to properly implement this Plan. These strategies will correct the blighted conditions of identified in the Finding of Necessity Report and the Implementation steps identified in the Downtown Master Plan.

1. It is important the City/CRA identify and secure all effective sources of funding including, but not necessarily limited to, increment revenues, non-ad valorem assessments, and grant funding revenue.

2. The City/CRA shall be willing to contemplate the issuance of bonds, secure other financial instruments, seek and utilize grants, and seek out other sources and alternatives to aid in implementing this Plan.

Objective 6: Ensure the Redevelopment Area is safe and clean over a period of time. These strategies will correct the blighted conditions of unsanitary or unsafe conditions Unsanitary or unsafe conditions (Figures 13-29 of the Finding of Necessity Report), associated with residential uses; and deterioration of site or other improvements (Figures 30-33 of the Finding of Necessity Report.

1. The City will identify, execute, and coordinate special maintenance standards and programs for public facilities, roadways, open space areas, entries, and commercial uses along the three corridors.

2. The Community Redevelopment Act encourages "community policing innovations." This concept is defined as policing techniques or strategies designed to decrease crime by reducing opportunities for, and increasing the perceived risks of engaging in, criminal activity through visible presence of law enforcement in the community, including, but not limited to, community mobilization, neighborhood watch programs, citizen patrol, foot patrol, or intensified motorized patrol. The City will review these programs to improve the actual and perceived security, building safety, and appearance of the Redevelopment Area.

Objective 7: The City may plan, design, and deliver additional infrastructure improvements or services within the Redevelopment Area, if deemed those improvements enhance the quality or attractiveness of the Redevelopment Area especially with regard to public amenities. These strategies will correct the blighted conditions of unsanitary or unsafe conditions (Pgs. 18, 23 and 24 of the Finding of Necessity Report); and deterioration of site or other improvements (Pgs. 18, 23 and 24 of the Finding of Necessity Report).

1. Such additional infrastructure may include undergrounding utilities in certain areas to achieve a desired visual impact, upgrading technology, and telecommunications availability to attract businesses or the enhancement of landscape areas. Such additional improvements will complement the redevelopment plans for the Redevelopment Area.

2. Additional services may include extraordinary right-of-way or other public area maintenance, planning, and implementing cultural, charitable or place-making activities, events and related services which showcase the Redevelopment Area.

3. The CRA shall acquire land and create / expand regional stormwater retention areas and conveyance systems as needed to accommodate proposed growth

Objective 8: Historic Preservation

1. Support programs that contribute to the renovation and preservation of historic structures and the downtown historic district.

2. Restoration of the Rivers House located at Spring Street and Magnolia Avenue. Provide additional funding to upgrade the Rivers House to address site and building code violations and to approve the visual appeal of a vital community landmark.

Objective 9: Parks/Public Spaces

1. Provide support, including funding, for construction of facilities for Spring Park that will draw visitors to the CRA commercial district while simultaneously building a sense of, "Place," in the downtown area.

2. Work to improve pedestrian access from in the downtown area to Spring Park.

3. Design and construct City Hall Park between City Hall and US 17 (Implementation step #12, Downtown Master Plan).

Objective 10: Redevelopment Administration

As provided for in Florida Statute 163, Part III, the Green Cove Springs Community Redevelopment Agency will utilize Incremental Tax Revenues to fund administration, overhead or any other expenses encumbered to achieve the Redevelopment Goals identified within this CRA Plan, including:

1. Redevelopment planning, surveys, and financial analysis.

2. Acquisition of real property in the CRA District.

3. Clearance and preparation of areas for redevelopment.

4. Repayment of borrowed funds.

5. All expenses related to bonds and other indebtedness.

6. Development of affordable and workforce housing.

7. Provide funding for legal and professional services as needed.

05

FINANCIAL INFORMATION

GREEN COVE Springs

V. FINANCIAL INFORMATION

A. BASE-YEAR PROPERTY VALUES

The base-year for the Green Cove Springs CRA is 2023, as defined in the interlocal agreement between the Green Cove Springs CRA, the City of Green Cove Springs and the Clay County Commission, and the first contributions to the Green Cove Springs CRA Trust Fund will begin after January 1, 2024. Implementation of the CRA Plan is projected to generate approximately $9.7 million in net new property taxes between FY 2023 and 2053. The distribution of these net new taxes is provided in the following estimates. This estimate assumes an annual average growth of TIF of 1.5%.

Table V-1. Project Green Cove Springs CRA TIF Revenues (3% Growth Rate)

	City TIF	County TIF	Total TIF
2024	5,798	9,508	15,306
2025	11,770	19,302	31,072
2026	17,921	29,389	47,310
2027	24,256	39,779	64,036
2028	30,782	50,481	81,263
2029	37,503	61,504	99,007
2030	44,427	72,857	117,284
2031	51,557	84,551	136,109
2032	58,902	96,596	155,498
2033	66,467	109,002	175,469
2034	74,259	121,781	196,040
2035	82,285	134,942	217,227
2036	90,551	148,499	239,050
2037	99,066	162,462	261,528
2038	107,835	176,845	284,680
2039	116,869	191,658	308,527
2040	126,173	206,916	333,089
2041	135,756	222,632	358,388
2042	145,626	238,819	384,446
2043	155,793	255,492	411,285
2044	166,265	272,665	438,930
2045	177,051	290,354	467,404
2046	188,160	308,573	496,733
2047	199,603	327,338	526,941
2048	211,389	346,667	558,055
2049	223,528	366,575	590,103
2050	236,032	387,080	623,113
2051	248,911	408,201	657,112
2052	262,176	429,956	692,132
2053	275,840	452,363	728,202
Total	**$ 3,672,550**	**$ 6,022,789**	**$ 9,695,338**

06

LEGAL DESCRIPTION

GREEN COVE Springs

VI. LEGAL DESCRIPTION

GREEN COVE SPRINGS CRA DESCRIPTION

A PORTION OF SECTION 38, TOWNSHIP 6 SOUTH, RANGE 26 EAST, CLAY COUNTY, FLORIDA TOGETHER WITH PORTIONS OF THE NORTH SUBURBS OF GREEN COVE SPRINGS, AS SHOWN ON MAP RECORDED IN PLAT BOOK 2, PAGE 1 OF THE PUBLIC RECORDS OF SAID COUNTY AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

FOR A POINT OF REFERENCE, COMMENCE AT THE INTERSECTION OF THE SOUTHEASTERLY RIGHT-OF-WAY LINE OF GOVERNOR STREET (A 60 FOOT RIGHT-OF-WAY) WITH THE SOUTHWESTERLY RIGHT-OF-WAY LINE OF ST. JOHNS AVENUE (A 60 FOOT RIGHT-OF-WAY) AND THENCE RUN SOUTHEASTERLY ALONG SAID SOUTHWESTERLY RIGHT-OF-WAY LINE OF ST. JOHNS AVENUE TO AN INTERSECTION WITH THE SOUTHEASTERLY LINE OF LOT 15, BLOCK 3, AFORESAID NORTH SUBURBS OF GREEN COVE SPRINGS AND THE POINT OF BEGINNING; THENCE CONTINUE SOUTHEASTERLY ALONG SAID SOUTHWESTERLY RIGHT-OF-WAY LINE TO AN INTERSECTION WITH THE NORTHWESTERLY RIGHT-OF-WAY LINE OF LAMONT STREET; THENCE SOUTHWESTERLY ALONG SAID NORTHWESTERLY RIGHT-OF-WAY LINE TO AN INTERSECTION WITH THE SOUTHWESTERLY RIGHT-OF-WAY LINE OF NORTH MAGNOLIA AVENUE; THENCE SOUTHEASTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE NORTHWESTERLY RIGHT-OF-WAY LINE OF HOUSTON STREET; THENCE SOUTHWESTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE NORTHWESTERLY PROLONGATION OF THE NORTHEASTERLY LINE OF LOT 22, BLOCK 13, SAID NORTH SUBURBS OF GREEN COVE SPRINGS; THENCE SOUTHEASTERLY ALONG SAID PROLONGATION AND ALONG SAID NORTHEASTERLY LINE OF SAID LOT 22 BLOCK 13 AND THE SOUTHEASTERLY PROLONGATION THEREOF TO AN INTERSECTION WITH THE SOUTHEASTERLY LINE OF THE NORTHWESTERLY 30 FEET OF LOT 6, BLOCK 11, BORDEN PLACE, AS RECORDED IN PLAT BOOK 2, PAGE 57 OF AFORESAID PUBLIC RECORDS. ALSO BEING THE MOST SOUTHERLY CORNER OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 1576, PAGE 2016 OF SAID PUBLIC RECORDS; THENCE NORTHEASTERLY ALONG THE SOUTHEASTERLY LINE OF LAST SAID LANDS TO THE SOUTHWESTERLY RIGHT-OF-WAY LINE OF NORTH MAGNOLIA AVENUE; THENCE SOUTHEASTERLY ALONG LAST SAID LINE TO AN ANGLE POINT; THENCE SOUTHERLY ALONG THE WESTERLY RIGHT-OF-WAY LINE OF SAID NORTH MAGNOLIA AVENUE TO AN INTERSECTION WITH THE NORTHERLY RIGHT-OF-WAY LINE OF GUM STREET; THENCE WESTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE NORTHERLY PROLONGATION OF THE EASTERLY LINE OF LOT 2, BLOCK 35, GREEN COVE SPRINGS, AS RECORDED IN PLAT BOOK 1, PAGES 9 AND 10 AND ALSO IN SAID PLAT BOOK 2, PAGE 1; THENCE SOUTHERLY ALONG LAST SAID LINE AND ALONG THE EASTERLY LINE OF LOTS 2 AND 3, SAID BLOCK 35 TO AN INTERSECTION WITH THE NORTHERLY RIGHT-OF-WAY LINE OF NORTH STREET; THENCE EASTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH SAID WESTERLY RIGHT-OF-WAY LINE OF NORTH MAGNOLIA AVENUE; THENCE SOUTHERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE SOUTHERLY LINE OF LOT 1, BLOCK 32, SAID NORTH SUBURBS OF GREEN COVE SPRINGS; THENCE WESTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE WESTERLY LINE OF THE EASTERLY 80 FEET OF LOT 4, SAID BLOCK 32; THENCE SOUTHERLY ALONG LAST SAID LINE AND THE SOUTHERLY PROLONGATION THEREOF TO AN INTERSECTION WITH THE SOUTHERLY RIGHT-OF-WAY LINE OF CENTER STREET; THENCE EASTERLY ALONG SAID SOUTHERLY RIGHT-OF-WAY LINE OF CENTER STREET TO AN INTERSECTION WITH THE EASTERLY LINE OF LOT 3, BLOCK 8, SAID NORTH SUBURBS OF GREEN COVE SPRINGS; THE SOUTHERLY ALONG LAST SAID LINE TO THE SOUTHEASTERLY CORNER OF SAID LOT 3; THENCE EASTERLY ALONG THE NORTHERLY LINE OF LOT 5, SAID BLOCK 8 TO THE NORTHEASTERLY CORNER

OF SAID LOT 5; THENCE SOUTHERLY ALONG THE EASTERLY LINE OF SAID LOT 5, BLOCK 8 AND THE SOUTHERLY PROLONGATION THEREOF TO THE SOUTHWESTERLY CORNER OF LOT 1, BLOCK 7, SAID NORTH SUBURBS OF GREEN COVE SPRINGS; THENCE EASTERLY ALONG THE SOUTHERLY LINE OF SAID LOT 1, BLOCK 7 TO AN INTERSECTION WITH THE WESTERLY RIGHT-OF-WAY LINE OF ST. JOHNS AVENUE; THENCE SOUTHERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE NORTHERLY RIGHT-OF-WAY LINE OF WALNUT STREET; THENCE EASTERLY ALONG SAID NORTHERLY RIGHT-OF-WAY LINE OF WALNUT STREET TO THE WATERS OF THE ST. JOHNS RIVER; THENCE SOUTHERLY ALONG THE MEAN HIGH WATER LINE OF THE ST. JOHNS RIVER TO THE SUBMERGED LANDS OF THE STATE OF FLORIDA SURROUNDING THE CITY OF GREEN COVE SPRINGS PIER; THENCE EASTERLY, NORTHERLY, EASTERLY, SOUTHERLY, WESTERLY, NORTHERLY AND WESTERLY ALONG SAID SUBMERGED LANDS FOR GREEN COVE SPRINGS PIER TO SAID MEAN HIGH WATER LINE; THENCE SOUTHERLY ALONG SAID WATERS OF THE ST. JOHNS RIVER TO AN INTERSECTION WITH THE SOUTHERLY LINE OF WATER LOT "A", AS PER PLAT RECORDED IN PLAT BOOK 1, PAGE 40 OF THE PUBLIC RECORDS OF SAID COUNTY; THENCE WESTERLY ALONG SAID SOUTHERLY LINE OF LOT "A" AND ALONG THE NORTHERLY RIGHT-OF-WAY LINE OF FERRIS STREET TO AN INTERSECTION WITH THE EASTERLY RIGHT-OF-WAY LINE OF SOUTH MAGNOLIA AVENUE; THENCE SOUTHERLY ALONG SAID EASTERLY RIGHT-OF-WAY LINE OF SOUTH MAGNOLIA AVENUE TO AN INTERSECTION WITH THE SOUTHERLY RIGHT-OF-WAY LINE OF OAK STREET; THENCE WESTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE WESTERLY RIGHT-OF-WAY LINE OF SOUTH PALMETTO AVENUE; THENCE NORTHERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE SOUTHERLY RIGHT-OF-WAY LINE OF BAY STREET; THENCE WESTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE WESTERLY RIGHT-OF-WAY LINE OF GREEN STREET; THENCE NORTHERLY ALONG SAID WESTERLY RIGHT-OF-WAY LINE OF GREEN STREET TO AN INTERSECTION WITH THE NORTHERLY RIGHT-OF-WAY LINE OF PALMER STREET; THENCE EASTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE EASTERLY LINE OF LOT 3, BLOCK 11, SAID NORTH SUBURBS OF GREEN COVE SPRINGS; THENCE NORTHERLY ALONG SAID EASTERLY LINE OF LOT 3, BLOCK 11 AND THE NORTHERLY PROLONGATION THEREOF TO AN INTERSECTION WITH THE NORTHERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 2540, PAGE 267 OF SAID PUBLIC RECORDS; THENCE EASTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE EASTERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 2465, PAGE 1852 OF SAID PUBLIC RECORDS; THENCE NORTHERLY ALONG LAST SAID LINE AND THE NORTHERLY PROLONGATION THEREOF TO AN INTERSECTION WITH THE NORTHERLY RIGHT-OF-WAY LINE OF NORTH STREET; THENCE WESTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE WESTERLY LINE OF LOT 4, BLOCK 37, SAID NORTH SUBURBS OF GREEN COVE SPRINGS; THENCE NORTHERLY ALONG LAST SAID LINE AND THE NORTHERLY PROLONGATION THEREOF TO AN INTERSECTION WITH THE NORTHERLY RIGHT-OF-WAY LINE OF GUM STREET; THENCE WESTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE EASTERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 3291, PAGE 1137 OF SAID PUBLIC RECORDS; THENCE NORTHERLY ALONG SAID EASTERLY LINE OF OFFICIAL RECORDS BOOK 3291, PAGE 1137 TO THE NORTHEASTERLY CORNER THEREOF; THENCE EASTERLY ALONG THE SOUTHERLY LINE OF LOT 1, BLOCK 20, SAID NORTH SUBURBS OF GREEN COVE SPRINGS, TO AN INTERSECTION WITH THE EASTERLY LINE OF THE WEST ONE-HALF OF SAID BLOCK 20; THENCE NORTHWESTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE NORTHERLY LINE OF LOT 4, BLOCK 20, SAID NORTH SUBURBS OF GREEN COVE SPRINGS; THENCE WESTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE NORTHEASTERLY RIGHT-OF-WAY LINE OF PINE AVENUE; THENCE NORTHWESTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE EASTERLY PROLONGATION OF THE SOUTHERLY LINE OF LOT 4, ANNIE JONES SUBDIVISION, AS RECORDED IN PLAT BOOK 1, PAGE 25 OF SAID PUBLIC RECORDS; THENCE WESTERLY ALONG SAID PROLONGATION AND ALONG THE SOUTHERLY LINE OF LOTS 4 AND 5, ANNIE JONES SUBDIVISION TO AN INTERSECTION WITH THE NORTHEASTERLY RIGHT-OF-WAY LINE OF NORTH CYPRESS AVENUE; THENCE NORTHWESTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE EASTERLY PROLONGATION OF THE SOUTHERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 3330, PAGE 916 OF SAID PUBLIC RECORDS; THENCE WESTERLY ALONG SAID PROLONGATION AND ALONG SAID SOUTHERLY LINE OF OFFICIAL RECORDS

BOOK 3330, PAGE 916 TO THE SOUTHWEST CORNER THEREOF; THENCE SOUTHEASTERLY ALONG THE NORTHEASTERLY LINE OF THOSE LANDS RECORDED IN OFFICIAL RECORDS BOOK 337, PAGE 131 OF SAID PUBLIC RECORDS TO AN INTERSECTION WITH THE NORTHERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 1247, PAGE 283 OF SAID PUBLIC RECORDS; THENCE WESTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE NORTHEASTERLY RIGHT-OF-WAY LINE OF A.C.L. RAILROAD; THENCE NORTHWESTERLY ALONG LAST SAID LINE BEING THE ARC OF A CURVE CONCAVE SOUTHWESTERLY TO AN INTERSECTION WITH THE EASTERLY PROLONGATION OF THE SOUTHERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 3243, PAGE 1356 OF SAID PUBLIC RECORDS; THENCE WESTERLY ALONG SAID PROLONGATION AND ALONG SAID SOUTHERLY LINE OF OFFICIAL RECORDS BOOK 3243, PAGE 1356 TO THE SOUTHWESTERLY CORNER THEREOF; THENCE NORTHWESTERLY ALONG THE SOUTHWESTERLY LINE OF LAST SAID LANDS TO AN INTERSECTION WITH THE NORTHERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 3243, PAGE 1356 OF SAID PUBLIC RECORDS; THENCE WESTERLY ALONG LAST SAID LINE AND THE WESTERLY PROLONGATION THEREOF TO AN INTERSECTION WITH THE WESTERLY RIGHT-OF-WAY LINE OF WASHINGTON LANE; THENCE SOUTHERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE SOUTHERLY LINE OF LOT 1, BLOCK 3, OF S.G. BERRIAN'S SUBDIVISION OF LOT 2, BLOCK 28, SAID NORTH SUBURBS OF GREEN COVE SPRINGS; THENCE WESTERLY ALONG THE SOUTHERLY LINE OF LOTS 1, 3, 5 AND 7, SAID BLOCK 3 OF S.G. BERRIAN'S SUBDIVISION TO AN INTERSECTION WITH THE EASTERLY RIGHT-OF-WAY LINE OF FRANKLIN STREET; THENCE SOUTHERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE EASTERLY PROLONGATION OF THE NORTHERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 717, PAGE 19 OF SAID PUBLIC RECORDS; THENCE WESTERLY ALONG LAST SAID LINE AND THE WESTERLY PROLONGATION THEREOF TO AN INTERSECTION WITH THE WESTERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 1383, PAGE 908 OF SAID PUBLIC RECORDS; THENCE NORTHERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE SOUTHERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 3687, PAGE 622 OF SAID PUBLIC RECORDS; THENCE WESTERLY ALONG LAST SAID LINE AND THE WESTERLY PROLONGATION THEREOF TO AN INTERSECTION WITH THE WESTERLY RIGHT-OF-WAY LINE OF LEMON STREET; THENCE SOUTHERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE NORTHERLY RIGHT-OF-WAY LINE OF FORBES STREET; THENCE WESTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE EASTERLY RIGHT-OF-WAY LINE OF BELLE AVENUE; THENCE NORTHERLY ALONG SAID EASTERLY RIGHT-OF-WAY LINE OF BELLE AVENUE TO AN INTERSECTION WITH THE EASTERLY PROLONGATION OF THE SOUTHERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL BOOK 4242, PAGE 2055 OF SAID PUBLIC RECORDS; THENCE WESTERLY ALONG SAID PROLONGATION AND ALONG SAID SOUTHERLY LINE OF OFFICIAL RECORDS BOOK 4242, PAGE 2055 AND THE WESTERLY PROLONGATION THEREOF TO AN INTERSECTION WITH THE EASTERLY RIGHT-OF-WAY LINE OF NORTH ROBERTS STREET; THENCE NORTHERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE SOUTHERLY RIGHT-OF-WAY LINE OF MARTIN LUTHER KING JR BOULEVARD; THENCE EASTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE SOUTHEASTERLY PROLONGATION OF THE NORTHEASTERLY RIGHT-OF-WAY LINE OF MILL STREET; THENCE NORTHWESTERLY ALONG SAID PROLONGATION AND ALONG SAID NORTHEASTERLY RIGHT-OF-WAY LINE OF MILL STREET TO AN INTERSECTION WITH THE SOUTHEASTERLY RIGHT-OF-WAY LINE OF WALBURG STREET; THENCE NORTHEASTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE EASTERLY LINE OF LOT 4 OF L.E. CARTER SUBDIVISION OF LOT 12, BLOCK 29, GREEN COVE SPRINGS, AS RECORDED IN PLAT BOOK 1, PAGE 41 OF SAID PUBLIC RECORDS; THENCE SOUTHEASTERLY ALONG SAID EASTERLY LINE OF LOT 4 TO AN INTERSECTION WITH THE SOUTHERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 1415, PAGE 1724 OF SAID PUBLIC RECORDS; THENCE NORTHEASTERLY ALONG LAST SAID LINE TO THE NORTHEASTERLY CORNER THEREOF, SAID POINT LYING ON THE WESTERLY LINE OF LOT 2 OF SAID L.E. CARTER SUBDIVISION OF LOT 12, BLOCK 29; THENCE NORTHERLY ALONG SAID WESTERLY LINE OF LOT 2 TO THE NORTHWEST CORNER THEREOF; THENCE NORTHEASTERLY ALONG THE NORTHWESTERLY LINE OF SAID LOT 2 AND THE NORTHEASTERLY PROLONGATION THEREOF TO AN INTERSECTION WITH THE NORTHEASTERLY

RIGHT-OF-WAY LINE OF LEMON STREET; THENCE SOUTHEASTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE SOUTHEASTERLY LINE OF LOT D OF LOT 11, BLOCK 29 OF SAID NORTH SUBURBS OF GREEN COVE SPRINGS; THENCE NORTHEASTERLY ALONG THE SOUTHEASTERLY LINE OF LOTS A, B, C AND D OF SAID LOT 11, BLOCK 29 TO THE SOUTHEASTERLY CORNER OF SAID LOT A; THENCE NORTHEASTERLY ALONG THE SOUTHEASTERLY LINE OF LOT 9, SAID BLOCK 29 AND THE NORTHEASTERLY PROLONGATION THEREOF TO AN INTERSECTION WITH THE NORTHEASTERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 1077, PAGE 22 OF SAID PUBLIC RECORDS; THENCE SOUTHEASTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE SOUTHEASTERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 1374, PAGE 366 OF SAID PUBLIC RECORDS; THENCE NORTHEASTERLY ALONG LAST SAID LINE AND ALONG THE SOUTHEASTERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 4690, PAGE 1488 OF SAID PUBLIC RECORDS TO THE SOUTHEASTERLY CORNER THEREOF; THENCE SOUTHEASTERLY ALONG THE SOUTHWESTERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL BOOK 4459, PAGE 356 OF SAID PUBLIC RECORDS TO THE SOUTHWESTERLY CORNER THEREOF; THENCE SOUTHEASTERLY ALONG THE SOUTHWESTERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL BOOK 1213, PAGE 320 OF SAID PUBLIC RECORDS TO THE SOUTHWESTERLY CORNER THEREOF; THENCE EASTERLY ALONG THE SOUTHERLY LINE OF SAID LANDS RECORDED IN OFFICIAL RECORDS BOOK 1213, PAGE 320 TO THE SOUTHEASTERLY CORNER THEREOF; THENCE CONTINUE EASTERLY ALONG THE SOUTHERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 186, PAGE 273 OF SAID PUBLIC RECORDS AND THE EASTERLY PROLONGATION THEREOF TO AN INTERSECTION WITH SAID NORTHEASTERLY RIGHT-OF-WAY LINE OF A.C.L. RAILROAD; THENCE NORTHWESTERLY ALONG LAST SAID LINE BEING THE ARC OF A CURVE CONCAVE SOUTHWESTERLY TO AN INTERSECTION WITH THE NORTHWESTERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 475, PAGE 665 OF SAID PUBLIC RECORDS; THENCE NORTHEASTERLY ALONG LAST SAID LINE AND ALSO ALONG THE NORTHWESTERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 1712, PAGE 188 TO THE MOST NORTHERLY CORNER THEREOF; THENCE SOUTHEASTERLY ALONG THE NORTHEASTERLY LINE OF LAST SAID LANDS TO THE SOUTHWESTERLY CORNER OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 4571, PAGE 1586 OF SAID PUBLIC RECORDS; THENCE EASTERLY ALONG THE SOUTHERLY LINE OF LAST SAID LANDS AND THE EASTERLY PROLONGATION THEREOF TO AN INTERSECTION WITH THE NORTHEASTERLY RIGHT-OF-WAY LINE OF NORTH CYPRESS AVENUE; THENCE SOUTHEASTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE SOUTHERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 1767, PAGE 740 OF SAID PUBLIC RECORDS; THENCE EASTERLY ALONG LAST SAID LINE TO THE SOUTHEASTERLY CORNER THEREOF; THENCE NORTHWESTERLY ALONG THE SOUTHWESTERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 3770, PAGE 1809 OF SAID PUBLIC RECORDS TO THE NORTHWESTERLY CORNER THEREOF; THENCE NORTHEASTERLY ALONG THE NORTHWESTERLY LINE OF LAST SAID LANDS TO AN INTERSECTION WITH THE SOUTHWESTERLY RIGHT-OF-WAY LINE OF NORTH PINE AVENUE; THENCE SOUTHEASTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE WESTERLY PROLONGATION OF THE SOUTHERLY LINE OF LOT 6, BLOCK 21, SAID NORTH SUBURBS OF GREEN COVE SPRINGS; THENCE EASTERLY ALONG SAID PROLONGATION AND ALONG SAID SOUTHERLY LINE OF LOT 6, BLOCK 21 TO THE SOUTHEAST CORNER THEREOF; THENCE NORTHWESTERLY ALONG THE NORTHEASTERLY LINE OF SAID LOT 6, BLOCK 21 AND THE NORTHWESTERLY PROLONGATION THEREOF TO AN INTERSECTION WITH THE NORTHWESTERLY LINE OF THE SOUTHEASTERLY ONE-HALF OF LOT 4, BLOCK 22, SAID NORTH SUBURBS OF GREEN COVE SPRINGS; THENCE SOUTHWESTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE NORTHEASTERLY RIGHT-OF-WAY LINE OF NORTH PINE AVENUE; THENCE NORTHWESTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE SOUTHEASTERLY LINE OF THE NORTHWESTERLY ONE-HALF OF LOT 10, BLOCK 22, SAID NORTH SUBURBS OF GREEN COVE SPRINGS; THENCE NORTHEASTERLY ALONG LAST SAID LINE TO AN INTERSECTION WITH THE NORTHEASTERLY LINE OF SAID LOT 10, BLOCK 22; THENCE NORTHWESTERLY ALONG LAST SAID LINE AND THE NORTHWESTERLY PROLONGATION THEREOF TO AN INTERSECTION WITH THE NORTHWESTERLY RIGHT-OF-WAY LINE OF HOUSTON STREET; THENCE SOUTHWESTERLY ALONG LAST SAID LINE

TO AN INTERSECTION WITH THE NORTHEASTERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 4280, PAGE 977 OF SAID PUBLIC RECORDS; THENCE NORTHWESTERLY ALONG SAID LINE A DISTANCE OF 100 FEET; THENCE NORTHEASTERLY, PARALLEL WITH SAID NORTHWESTERLY RIGHT-OF-WAY LINE OF HOUSTON STREET, A DISTANCE OF 25 FEET; THENCE NORTHWESTERLY ALONG THE NORTHEASTERLY LINE OF LOT 2, BLOCK 23, NORTH SUBURB, IN THE CITY OF GREEN COVE SPRINGS, AS RECORDED IN PLAT BOOK 1, PAGE 40 OF SAID PUBLIC RECORDS AND THE NORTHWESTERLY PROLONGATION THEREOF TO AN INTERSECTION WITH THE SOUTHEASTERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 464, PAGE 103 OF SAID PUBLIC RECORDS, SAID POINT ALSO BEING THE NORTHEASTERLY CORNER OF LOT 10, BLOCK 52, SAID NORTH SUBURBS OF GREEN COVE SPRINGS AS RECORDED IN PLAT BOOK 2, PAGE 1; THENCE SOUTHWESTERLY ALONG THE NORTHWESTERLY LINE OF SAID LOT 10, BLOCK 52 TO AN INTERSECTION WITH THE NORTHEASTERLY RIGHT-OF-WAY LINE OF NORTH PINE AVENUE; THENCE NORTHWESTERLY ALONG LAST SAID LINE AND THE NORTHWESTERLY PROLONGATION THEREOF TO AN INTERSECTION WITH THE SOUTHEASTERLY PROLONGATION OF THE SOUTHWESTERLY LINE OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 4040, PAGE 911 OF SAID PUBLIC RECORDS; THENCE NORTHWESTERLY ALONG SAID PROLONGATION AND ALONG SAID SOUTHWESTERLY LINE OF OFFICIAL RECORDS BOOK 4040, PAGE 911 TO THE SHORELINE OF GOVERNOR'S CREEK AS DESCRIBED IN SAID OFFICIAL RECORDS BOOK 4040, PAGE 911; THENCE NORTHEASTERLY ALONG SAID SHORELINE OF GOVERNOR'S CREEK TO AN INTERSECTION WITH THE SOUTHWESTERLY RIGHT-OF-WAY LINE OF NORTH ORANGE AVENUE (U.S. HIGHWAY 17 / STATE ROAD 15); THENCE SOUTHEASTERLY ALONG SAID SOUTHWESTERLY RIGHT-OF-WAY LINE OF NORTH ORANGE AVENUE TO AN INTERSECTION WITH THE SOUTHEASTERLY RIGHT-OF-WAY LINE OF GOVERNOR STREET; THENCE NORTHEASTERLY, DEPARTING SAID SOUTHWESTERLY RIGHT-OF-WAY LINE, TO THE INTERSECTION OF THE NORTHEASTERLY RIGHT-OF-WAY LINE OF NORTH ORANGE AVENUE WITH THE SOUTHEASTERLY RIGHT-OF-WAY LINE OF GOVERNOR STREET; THENCE NORTHEASTERLY ALONG SAID SOUTHEASTERLY RIGHT-OF-WAY LINE OF GOVERNOR STREET TO AN INTERSECTION WITH THE NORTHEASTERLY LINE OF LOT 18, BLOCK 3, SAID NORTH SUBURBS OF GREEN COVE SPRINGS; THENCE SOUTHEASTERLY ALONG SAID NORTHEASTERLY LINE OF LOT 18, BLOCK 3 AND ALONG THE NORTHEASTERLY LINE OF LOT 16, SAID BLOCK 3, TO THE NORTHEASTERLY CORNER OF SAID LOT 16, BLOCK 3, ALSO BEING THE SOUTHEASTERLY CORNER OF SAID LOT 15, BLOCK 3, NORTH SUBURBS OF GREEN COVE SPRINGS; THENCE NORTHEASTERLY ALONG THE SOUTHEASTERLY LINE OF SAID LOT 15, BLOCK 3 TO AN INTERSECTION WITH THE SOUTHWESTERLY RIGHT-OF-WAY LINE OF ST. JOHNS AVENUE AND THE POINT OF BEGINNING.

07

POWERS OF A CRA

GREEN COVE Springs

VII. CHAPTER 163.370 POWERS

A. 163.370 POWERS; COUNTIES AND MUNICIPALITIES; COMMUNITY REDEVELOPMENT AGENCIES.

1. Counties and municipalities may not exercise the power of eminent domain for the purpose of preventing or eliminating a slum area or blighted area as defined in this part; however, counties and municipalities may acquire property by eminent domain within a community redevelopment area, subject to the limitations set forth in ss. 73.013 and 73.014 or other general law.

2. Every county and municipality shall have all the powers necessary or convenient to carry out and effectuate the purposes and provisions of this part, including the following powers in addition to others herein granted:

a. To make and execute contracts and other instruments necessary or convenient to the exercise of its powers under this part.

b. To disseminate slum clearance and community redevelopment information.

c. To undertake and carry out community redevelopment and related activities within the community redevelopment area, which may include:

1. Acquisition of property within a slum area or a blighted area by purchase, lease, option, gift, grant, bequest, devise, or other voluntary method of acquisition.

2. Demolition and removal of buildings and improvements.

3. Installation, construction, or reconstruction of streets, utilities, parks, playgrounds, public areas of major hotels that are constructed in support of convention centers, including meeting rooms, banquet facilities, parking garages, lobbies, and passageways, and other improvements necessary for carrying out in the community redevelopment area the community redevelopment objectives of this part in accordance with the community redevelopment plan.

4. Disposition of any property acquired in the community redevelopment area at its fair value as provided in s. 163.380 for uses in accordance with the community redevelopment plan.

5. Carrying out plans for a program of voluntary or compulsory repair and rehabilitation of buildings or other improvements in accordance with the community redevelopment plan.

6. Acquisition by purchase, lease, option, gift, grant, bequest, devise, or other voluntary method of acquisition of real property in the community redevelopment area which, under the community redevelopment plan, is to be repaired or rehabilitated for dwelling use or related facilities, repair or rehabilitation of the structures for guidance purposes, and resale of the property.

7. Acquisition by purchase, lease, option, gift, grant, bequest, devise, or other voluntary method of acquisition of any other real property in the community redevelopment area when necessary to eliminate unhealthful, unsanitary, or unsafe conditions; lessen density; eliminate obsolete or other uses detrimental to the public

welfare; or otherwise to remove or prevent the spread of blight or deterioration or to provide land for needed public facilities.

8. Acquisition, without regard to any requirement that the area be a slum or blighted area, of air rights in an area consisting principally of land in highways, railway or subway tracks, bridge or tunnel entrances, or other similar facilities which have a blighting influence on the surrounding area and over which air rights sites are to be developed for the elimination of such blighting influences and for the provision of housing (and related facilities and uses) designed specifically for, and limited to, families and individuals of low or moderate income.

9. Acquisition by purchase, lease, option, gift, grant, bequest, devise, or other voluntary method of acquisition of property in unincorporated enclaves surrounded by the boundaries of a community redevelopment area when it is determined necessary by the agency to accomplish the community redevelopment plan.

10. Construction of foundations and platforms necessary for the provision of air rights sites of housing (and related facilities and uses) designed specifically for, and limited to, families and individuals of low or moderate income.

d. To provide, or to arrange or contract for, the furnishing or repair by any person or agency, public or private, of services, privileges, works, streets, roads, public utilities, or other facilities for or in connection with a community redevelopment; to install, construct, and reconstruct streets, utilities, parks, playgrounds, and other public improvements; and to agree to any conditions that it deems reasonable and appropriate which are attached to federal financial assistance and imposed pursuant to federal law relating to the determination of prevailing salaries or wages or compliance with labor standards, in the undertaking or carrying out of a community redevelopment and related activities, and to include in any contract let in connection with such redevelopment and related activities provisions to fulfill such of the conditions as it deems reasonable and appropriate.

e. Within the community redevelopment area:

1. To enter into any building or property in any community redevelopment area in order to make inspections, surveys, appraisals, soundings, or test borings and to obtain an order for this purpose from a court of competent jurisdiction in the event entry is denied or resisted.

2. To acquire by purchase, lease, option, gift, grant, bequest, devise, or other voluntary method of acquisition any personal or real property, together with any improvements thereon.

3. To hold, improve, clear, or prepare for redevelopment any such property.

4. To mortgage, pledge, hypothecate, or otherwise encumber or dispose of any real property.

5. To insure or provide for the insurance of any real or personal property or operations of the county or municipality against any risks or hazards, including the power to pay premiums on any such insurance.

6. To enter into any contracts necessary to effectuate the purposes of this part.

7. To solicit requests for proposals for redevelopment of parcels of real property contemplated by a community redevelopment plan to be acquired for redevelopment purposes by a community redevelopment agency and, as a result of such requests for proposals, to advertise for the disposition of such real property to private persons pursuant to s. 163.380 prior to acquisition of such real property by the community redevelopment agency.

f. To invest any community redevelopment funds held in reserves or sinking funds or any such funds not required for immediate disbursement in property or securities in which savings banks may legally invest funds subject to their control and to redeem such bonds

as have been issued pursuant to s. 163.385 at the redemption price established therein or to purchase such bonds at less than redemption price, all such bonds so redeemed or purchased to be canceled.

g. To borrow money and to apply for and accept advances, loans, grants, contributions, and any other form of financial assistance from the Federal Government or the state, county, or other public body or from any sources, public or private, for the purposes of this part and to give such security as may be required and to enter into and carry out contracts or agreements in connection therewith; and to include in any contract for financial assistance with the Federal Government for or with respect to community redevelopment and related activities such conditions imposed pursuant to federal laws as the county or municipality deems reasonable and appropriate which are not inconsistent with the purposes of this part.

h. To make or have made all surveys and plans necessary to the carrying out of the purposes of this part; to contract with any person, public or private, in making and carrying out such plans; and to adopt or approve, modify, and amend such plans, which plans may include, but are not limited to:

1. Plans for carrying out a program of voluntary or compulsory repair and rehabilitation of buildings and improvements.

2. Plans for the enforcement of state and local laws, codes, and regulations relating to the use of land and the use and occupancy of buildings and improvements and to the compulsory repair, rehabilitation, demolition, or removal of buildings and improvements.

3. Appraisals, title searches, surveys, studies, and other plans and work necessary to prepare for the undertaking of community redevelopment and related activities.

i. To develop, test, and report methods and techniques, and carry out demonstrations and other activities, for the prevention and the elimination of slums and urban blight and developing and demonstrating new or improved means of providing housing for families and persons of low income.

j. To apply for, accept, and utilize grants of funds from the Federal Government for such purposes.

k. To prepare plans for and assist in the relocation of persons (including individuals, families, business concerns, nonprofit organizations, and others) displaced from a community redevelopment area and to make relocation payments to or with respect to such persons for moving expenses and losses of property for which reimbursement or compensation is not otherwise made, including the making of such payments financed by the Federal Government.

l. To appropriate such funds and make such expenditures as are necessary to carry out the purposes of this part; to zone or rezone any part of the county or municipality or make exceptions from building regulations; and to enter into agreements with a housing authority, which agreements may extend over any period, notwithstanding any provision or rule of law to the contrary, respecting action to be taken by such county or municipality pursuant to any of the powers granted by this part.

m. To close, vacate, plan, or replan streets, roads, sidewalks, ways, or other places and to plan or replan any part of the county or municipality.

n. To organize, coordinate, and direct the administration of the provisions of this part, as they may apply to such county or municipality, in order that the objective of remedying slum and blighted areas and preventing the causes thereof within such county or municipality may be most effectively promoted and achieved and to establish such new office or offices of the county or municipality or to reorganize existing offices in order to carry out such purpose most effectively.

o. To develop and implement community policing innovations.

3. The following projects may not be paid for or financed by increment revenues:

a. Construction or expansion of administrative buildings for public bodies or police and fire buildings, unless each taxing authority agrees to such method of financing for the construction or expansion, or unless the construction or expansion is contemplated as part of a community policing innovation.

b. Installation, construction, reconstruction, repair, or alteration of any publicly owned capital improvements or projects if such projects or improvements were scheduled to be installed, constructed, reconstructed, repaired, or altered within 3 years of the approval of the community redevelopment plan by the governing body pursuant to a previously approved public capital improvement or project schedule or plan of the governing body which approved the community redevelopment plan unless and until such projects or improvements have been removed from such schedule or plan of the governing body and 3 years have elapsed since such removal or such projects or improvements were identified in such schedule or plan to be funded, in whole or in part, with funds on deposit within the community redevelopment trust fund.

c. General government operating expenses unrelated to the planning and carrying out of a community redevelopment plan.

4. With the approval of the governing body, a community redevelopment agency may:

a. Prior to approval of a community redevelopment plan or approval of any modifications of the plan, acquire real property in a community redevelopment area by purchase, lease, option, gift, grant, bequest, devise, or other voluntary method of acquisition; demolish and remove any structures on the property; and pay all costs related to the acquisition, demolition, or removal, including any administrative or relocation expenses.

b. Assume the responsibility to bear any loss that may arise as the result of the exercise of authority under this subsection, in the event that the real property is not made part of the community redevelopment area.

5. A community redevelopment agency shall procure all commodities and services under the same purchasing processes and requirements that apply to the county or municipality that created the agency.

08

APPENDICES

GREEN COVE Springs

VIII. APPENDICES

City – County interlocal Agreement

City Finding of Necessity Resolution

County CRA Delegation Resolution

Green Cove Springs Downtown Master Plan

INTERLOCAL AGREEMENT
BETWEEN CLAY COUNTY AND CITY OF GREEN COVE SPRINGS

This Interlocal Agreement (hereinafter "Agreement") by and between Clay County, a charter county and political subdivision of the State of Florida by and through its Board of County Commissioners (hereinafter "County") and the City of Green Cove Springs, a Florida municipality, (hereinafter "City"), is made and entered into on the____day, of 2023, and shall be effective on the date of execution.

WHEREAS, on April 19, 2022, the City approved Resolution R-03-2022 finding the existence blight in an area of the City; making certain findings and determinations; finding a need for creating a Community Redevelopment Agency pursuant to Chapter 163 Part III, Florida Statutes; and

WHEREAS, the County, as a charter county, is vested with all of the powers under the Community Redevelopment Act of 1969; and

WHEREAS, the County may, in its discretion, delegate the exercise of powers to municipalities within the boundaries of the County; and

WHEREAS, Chapter 163, Florida Statutes, authorizes public agencies to enter into agreements to provide services and to exercise jointly any power, privilege, or authority they share in common and which each might exercise separately; and

WHEREAS, on August 9, 2022, the County approved Resolution R-2021/22 – 56 declaring and finding a need to create a Community Redevelopment Agency for a certain geographic area of the City; delegating the exercise of certain powers to create and adopt a Plan of Redevelopment; and

WHEREAS, on October 27, 2022, the newly created Community Redevelopment Agency had their initial meeting, with the composition of the Board members being two members chosen by the City Council, two chosen by the County Commission. The Board, subsequently voted on adding a voted on the 5th member as required by the County Resolution No.2021-2022-56.

WHEREAS, on November 29, 2022, the City Planning and Zoning Commission, as the Local Planning Agency, unanimously approved the CRA Redevelopment Plan and Interlocal Agreement.

WHEREAS, on January 10, 2023, the Community Redevelopment Agency approved the the CRA Redevelopment Plan and Interlocal Agreement.

WHEREAS, the City and the County wish to enter into an interlocal agreement as set forth in the statute; and

NOW THEREFORE, in consideration of the mutual covenants declared herein and other good and valuable consideration each Party agrees as follows:

Section 1. Intent of Parties.

It is the intent of the Parties that provisions in this Agreement which conflict with provisions of the Community Redevelopment Act of 1969, as amended, shall control. The County and City intend to bind themselves and any community redevelopment agency the City may establish (hereinafter "CRA") to the terms and obligations of this Agreement.

Section 2. Term of Agreement.

The Parties agree that:

1) Pursuant to the Community Redevelopment Act of 1969 and the terms of this Agreement, the City may adopt a Community Redevelopment Plan for 30 years beginning January 2023 (hereinafter "initial term").
2) The City may amend its plan to extend the Community Redevelopment Plan (hereinafter "Plan") only with an affirmative vote of the County Commission.
3) The "base year" taxable property assessment roll, used for the calculation in Sec. 163.387(1), Fla. Stat., shall be the values used for taxation in calendar year 2023.

Section 3. CRA, City and County Obligations.

The City and the CRA shall comply with all of the provisions of the Florida statute to establish the CRA trust fund as follows:

1) Redevelopment Plan:
    a. The CRA shall provide the Redevelopment Plan and any amendments to the Redevelopment Plan to the City and County for approval by an affirmative vote of the County Commission prior to the City's adoption of the Redevelopment Plan and any amendments.
    b. The Plan and all amendments to the Plan shall meet all the requirements of the applicable statutes, including the requirement that the plan contain a detailed statement of the projected costs of redevelopment, "including the amounts to be expended on publicly funded capital projects in the redevelopment area and any indebtedness of the community redevelopment agency... if such indebtedness is to be repaid with increment revenues." *See* Sec. 163.362(9), Fla. Stat.
    c. The City and County shall deposit 95% of an amount based on the calculation of increment using the City and County's millage in that year into the CRA Trust Fund.

d. The monies in the CRA trust fund shall be used to fund the CRA projects identified in the Redevelopment Plan without a plan amendment. Neither the City nor the CRA shall substantially deviate from the projects set forth in the Plan without a plan amendment.
e. The CRA shall review the plan annually and update it at least every five years.
f. Redevelopment activities and projects in the Redevelopment Plan shall be designed to mitigate the slum/blighted conditions of the redevelopment area that are the basis for the Finding of Necessity approved by the City.

2) The City and the CRA may sell bonds and execute notes, and enter other forms of debt or leveraging, as well as collateral documents, to finance capital improvements deemed necessary by the CRA for redevelopment purposes.

3) The City and the CRA shall abide by all provisions of the Community Redevelopment Act of 1969 (currently codified as Florida Statutes, Title IX, Chapter 163, Part III) and any implementing regulation, or its successor statutes or regulations, as amended from time to time, so long as those provisions are not inconsistent with this Agreement.

4) The Composition of the CRA Board shall consist of two (2) members appointed by the City, two (2) members appointed by the Board of County Commissioners and one (1) at-large member appointed by the other four (4) members,

Section 5. Entire Agreement. This Agreement constitutes the entire agreement, including all attachments, and supersedes all prior written or oral agreements, understandings or representations.

Section 6. Default and Termination. This Agreement shall be effective on the effective date above and remain in effect until terminated as follows:

A. If any Party fails to fulfill its obligations under this Agreement in a timely and satisfactory manner, or if any Party breaches any of the provisions, covenants or stipulations under this Agreement, another party may give a written notice to all Parties stating the failure or breach and provide a reasonable time period for correction of same. In the event the correction is not made in the allotted time, the Administrating Officials of all Parties, or their designee, shall meet to resolve the dispute.

B. If the Administrating Officials, or their designees, are unable to resolve the dispute, the parties agree to mediate any dispute. If mediation is unsuccessful, a non-breaching party may terminate this Agreement upon affirmative vote of the respective Commission for a material breach. The termination would then be effective at the time the next payment to the CRA trust fund by the non-breaching party is due. If at the time of a termination, caused by a material breach by the County that cannot be cured, the CRA has outstanding bonds or is in other ways in debt, the termination shall not take effect until after the terms of the indebtedness are fulfilled. If at the time of a termination, caused by a material breach by the City that cannot be cured, the County is relieved from its obligation to continue to pay on the CRA debt service.

C. If any unallocated funds remain in the CRA trust fund at the termination of the CRA, the funds shall be divided equally between the County and the City.

Section 7. Indemnification. Each Party hereby assumes responsibility for, and hereby agrees to indemnify and hold the other Parties harmless from any and all liability, claims or damages imposed on another Party up to the monetary limits provided in Sec. 768.28, Fla. Stat., arising out of or in connection with the negligent acts, omissions or misconduct of the Parties, and their agents or employees relating to the responsibilities of the Parties under this Agreement.

Section 8. Liability. Each Party shall be solely responsible for the negligent acts or omissions of its employees, volunteers and agents which in any way relate to or arise out of this Agreement. Nothing contained herein shall be construed as consent to be sued by third parties in any matter arising out of this Agreement or constitute a waiver by any Party of its sovereign immunity or

provisions of Sec. 768.28, Fla. Stat. This Agreement does not create any relationship with, or any rights in favor of any third party.

Section 9. Filing of Agreement. The County, upon execution of this Agreement, shall file the same with the Clerk of the Circuit Court in the Official Records of Clay County, as required by Sec. 163.01(11), Fla. Stat.

Section 10. Project Records. Each Party shall meet the requirements of Chapter **119**, Fla. Stat., for retaining public records and transfer, at no cost, to any other requesting Party, copies of all public records regarding the subject of this Agreement which are in the possession of the Party. All records stored electronically shall be provided to the requesting Party in a format that is compatible with the information technology systems of the requesting Party.

Section 11. Applicable Law. The laws of the State of Florida shall govern this Agreement, and the venue is Clay County, Florida, for any legal actions arising hereunder.

Section 12. Notices. Except as otherwise provided herein, any notice, acceptance, request or approval from any Party to any other Party shall be in writing and, sent by certified mail, return receipt requested, to all Parties and shall be deemed to have been received when either deposited in a United States Postal Service mailbox or personally delivered with signed proof of delivery. For the purposes of this Agreement, the Parties' representatives are:

COUNTY
County Manager
Clay County, Florida
PO Box 1366
Green Cove Springs, Fl 32043

With a copy to:
Clerk of the Court
825 N Orange Avenue
Green Cove Springs, Fl 32043

With a copy to:
County Attorney
PO Box 1366
Green Cove Springs, Fl 32043

CITY
City Manager
321 Walnut Street
Green Cove Springs, Florida 32043
City Attorney

321 Walnut Street
Green Cove Springs, Florida 32043

Development Services Director
321 Walnut Street
Green Cove Springs, Florida 32043

Section 13. Non-Waiver. Waiver or breach of any provision of this Agreement shall not be deemed to be a waiver of any other breach and shall not be construed to be a modification of the terms of this Agreement.

Section 14. Amendment. The Parties may amend this Agreement only by a mutual written agreement.

Section 15. Severability. If any provisions of this Agreement shall be declared illegal, void, or unenforceable the other provisions shall not be affected but shall remain in full force and effect.

IN WITNESS WHEREOF, the parties hereto have caused this agreement to be executed on the day and year first written above.

Clay County, Florida

By: _____
Chair, Board of County Commissioners

_____
Clay County Clerk

Approved as to form:

_____
Clay County Attorney

City of Green Cove Springs

By: _____
Daniel M Johnson, Mayor

_____
Erin West, City Clerk

Approved as to Form

_____
Jim Arnold, City of Green Cove Springs Attorney

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed on the day and year first written above.

Clay County, Florida

RESOLUTION NO. R-03-2022

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF GREEN COVE SPRINGS, FLORIDA, RELATING TO COMMUNITY REDEVELOPMENT; FINDING THE EXISTENCE OF BLIGHT IN AN AREA OF THE CITY OF GREEN COVE SPRINGS, FLORIDA; MAKING CERTAIN FINDINGS AND DETERMINATIONS; FINDING A NEED FOR CREATING A COMMUNITY REDEVELOPMENT AGENCY PURSUANT TO CHAPTER 163, PART III, FLORIDA STATUTES; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the City Council of the City of Green Cove Springs ("City Council") expressed its intention to consider the creation of a community redevelopment area, authorized a study to consider whether a finding of necessity resolution should be adopted, and defined a proposed redevelopment study area within the City of Green Cove Springs ("City); and

WHEREAS, a study has been done, and shall be identified as Exhibit B, supported by data and analysis, of the conditions in that part of the City, known and referred to as the Green Cove Springs Redevelopment Area, depicted in Exhibit "A" hereof (such area being referred to herein as the "Area" or the "Redevelopment Area"); and

WHEREAS, the results of the study have been presented to the City Council for its consideration and included in the public record; and

WHEREAS, after having considered the study's determinations and the facts and evidence of the conditions in the Area and having received and considered such other evidence of the conditions in the Area as have been presented to it, the City Council has determined that the conditions in the Area meet the criteria described in Chapter 163, Part III, Florida Statutes; and

WHEREAS, the City seeks approval from Clay County that the Area meets the criteria described in Chapter 163, Part III, Florida Statutes, and requests delegation of authority to create a Community Redevelopment Agency, adopt a Community Redevelopment Plan, and establish a Redevelopment Trust Fund.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF GREEN COVE SPRINGS, FLORIDA, AS FOLLOWS:

SECTION 1. FINDINGS OF CONDITIONS. Based upon the evidence, data, analysis, and facts presented to it, the City Council does hereby find that the following conditions are present in the Area of the City to be considered a "Blighted area" as specified in Section 163.340(7)©, Florida Statutes (2021):

(C) the existence of conditions that endanger life or property by fire or other causes. (Sec. 163.340(8)(a), F.S.);

SECTION 2. FINDINGS OF CONDITIONS. Based upon the evidence, data, analysis, and facts presented to it, the City Council does hereby find that the following conditions are present in the Area of the City to be considered a "Blighted area" as specified in Section 163.340(7)(c), Florida Statutes (2021):

A. Predominance of defective or inadequate street layout, parking facilities, roadways, bridges, or public transportation facilities.
B. Aggregate assessed values of real property in the area for ad valorem tax purposes have failed to show any appreciable increase over the 5 years prior to finding of such conditions (Sec. 163.340(8)(b), F.S.);
C. Deterioration of site or other improvements (Sec. 163.340(8)(e), F.S.);
D. Inadequate and outdated building density patterns (Sec. 163,340(8)(f), F.S.);
E. Residential and commercial vacancy rates higher in the area than in the remainder of the municipality (Sec. 163.340(8)(i), F.S.);

SECTION 3. FINDING OF NECESSITY. The City Council does hereby make a legislative finding that the conditions of the Area meet the criteria described in Section 163.340(8), Florida Statutes (2021) and the following:

A. One or more slum or blighted areas, or one or more areas in which there is a shortage of housing affordable to residents of low or moderate income, including the elderly, exist in the City; and,
B. The rehabilitation, conservation, or redevelopment, or combination thereof, of such area or areas, including, if appropriate, the development of housing which residents of low or moderate income, including the elderly, can afford, is necessary in the interest of the public health, safety, morals, or welfare of the residents of the City.

SECTION 4. COMMUNITY REDEVELOPMENT AREA. Based upon the facts presented and contained in the public record, the City does hereby find the Area contains conditions of blight as defined in Section 163.340, Florida Statutes (2021), and that such Area constitutes a Community Redevelopment Area as defined in Section 163.340(10), Florida Statutes (2021).

SECTION 5. COMMUNITY REDEVELOPMENT AGENCY. The City Council does hereby expressly find that it is necessary, appropriate, proper, and timely that a Community Redevelopment Agency be created to carry out the community redevelopment contemplated by Chapter 163, Part III, Florida Statutes (2021), to further cause, promote, and encourage rehabilitation, conservation, and redevelopment in the Area.

SECTION 6. DELEGATION OF AUTHORITY. The City Council seeks approval from Clay County that the Area meets the criteria described in Chapter 163, Part III, Florida Statutes (2021), and requests delegation of authority to create a Community Redevelopment Agency, adopt a Community Redevelopment Plan, and establish a Redevelopment Trust Fund.

SECTION 7. EFFECTIVE DATE. This Resolution shall take effect immediately upon its passage.

DONE AND RESOLVED BY THE CITY COUNCIL OF THE CITY OF GREEN COVE SPRINGS, FLORIDA, IN REGULAR SESSION THIS 19TH DAY OF APRIL, 2022.

CITY OF GREEN COVE SPRINGS, FLORIDA

Edward R. Gaw, Mayor

ATTEST:

Erin West, City Clerk

APPROVED AS TO FORM:

L. J. Arnold, III, City Attorney

Exhibit "A"

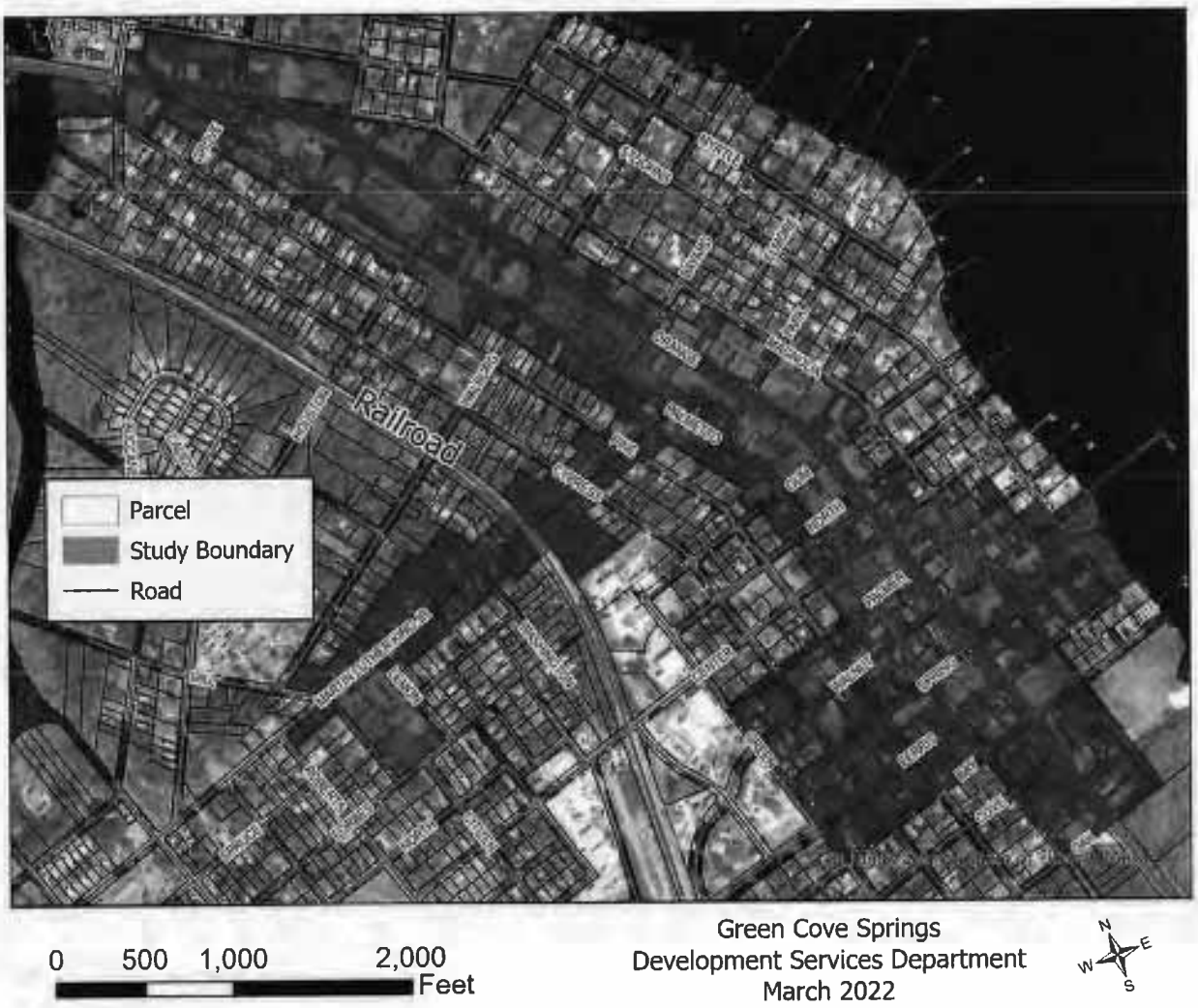

Railroad
Parcel
Study Boundary
Road
0 500 1,000 2,000
Feet
Green Cove Springs
Development Services Department
March 2022
N
E
W
S

Exhibit B

Through this, we encourage new development and redevelopment to improve quality of life, enhance economic conditions, increase vibrancy, and better realize the sense of place in key districts of the City.

Downtown / US 17 Finding of Necessity

City of Green Cove Springs, FL

Heather Glisson, Planning Technician

Table of Contents

1. Executive Summary 4
2. Introduction 5
2.1. Background 6
2.2. Study Purpose 7
2.3. Community Redevelopment Act Overview 7
2.3.1. Definitions of Slum Area 8
2.3.2. Definitions of Blighted Area 9
2.3.2. Assessment Process 10
2.4. Study Area 10
3. Slum and Blighted Area Analysis 12
3.1. Slum 12
3.2. Defective or inadequate public transportation facilities 13
3.3. Aggregate assessed values do not show appreciable increase over past 5 years 18
3.4. Faulty lot layout in relation to size, adequacy, accessibility, or usefulness 19
3.5. Unsanitary or unsafe conditions 20
3.6. Deterioration of site or other improvements 24
3.7. Inadequate and outdated building density patterns 25
3.8. Vacancy rates 26
4. Recommendations 28

Maps

Map 1. Study Area 11
Map 2. Study Area in Reference to the City 12
Map 3. Bus Route – Blue Line 17
Map 4. Bus Route – Green Line 18
Map 5. Faulty Lots 20
Map 6. Vacancy Rates 28

Figures

Figure 1. Sidewalk Cracking, Palmer St, near 14 N Magnolia Ave 14
Figure 2. Sidewalk Cracking & Loss, Martin Luther King Jr. Blvd 14
Figure 3. Deteriorating accessibility feature, Corner of Orange Ave & Center St 14
Figure 4. Deteriorating accessibility feature, Southwest Corner of Orange Ave & Palmer St 14
Figure 5. Road Disrepair, Walnut St 15
Figure 6. Road Disrepair, Intersection of Green St & Walnut St 15
Figure 7. Non-Fixed Obstruction, Martin Luther King Jr. Blvd 16

FIGURE 8. NON-FIXED OBSTRUCTION, MARTIN LUTHER KING JR. BLVD....16
FIGURE 9. SIDEWALK SPALLING, MARTIN LUTHER KING JR. BLVD....16
FIGURE 10. SIDEWALK – STANDING WATER, MARTIN LUTHER KING JR. BLVD....16
FIGURE 11. SIDEWALK UPLIFT & SPALLING, MARTIN LUTHER KING JR. BLVD....16
FIGURE 12. SIDEWALK LOSS, MARTIN LUTHER KING JR. BLVD....16
FIGURE 13. UNSAFE, DETERIORATING ROOF, 116 N MAGNOLIA AVE....21
FIGURE 14. UNSAFE, CONDEMNED BUILDING, 428 N ORANGE AVE....21
FIGURE 15. UNSAFE, BOARDED OPENINGS, 115 N MAGNOLIA AVE....21
FIGURE 16. UNSAFE AND UNSANITARY, OPENINGS / JUNK STORAGE, 115 N MAGNOLIA....21
FIGURE 17. UNSAFE, NO SIDEWALK, ROW USED FOR RV PARKING, 327 N ORANGE AVE....21
FIGURE 18. UNSAFE, NO SIDEWALK, ACROSS FROM FIGURE 5, 425 N ORANGE AVE....21
FIGURE 19. UNSANITARY, DISCONTINUED GAS PUMPS, 201 N ORANGE AVE....22
FIGURE 20. UNSAFE, COLLAPSED CANOPY, PETROLEUM CONTAMINATION SITE, 100 N ORANGE AVE....22
FIGURE 21. UNSAFE, LOW HANGING POWER LINES, CONCRETE DRIVE IN DISREPAIR, SOUTH OF 25 N ORANGE AV....22
FIGURE 22. UNSAFE, ROW IN DISREPAIR, BUSINSES PARKS IN ROW, 3 S PALMETTO AVE....22
FIGURE 23. UNSAFE, LACK OF SIGNAGE, MARKED PARKING SPACES, PEDESTRIAN SAFETY, 24 GREEN ST....22
FIGURE 24. UNSAFE AREA IN FRONT OF ACTIVE COMMERCIAL BUILDING, 1100 MARTIN LUTHER KING....23
FIGURE 25. UNSAFE STRUCTURE / ABANDONED, 1007 MARTIN LUTHER KING JR BLVD....23
FIGURE 26. UNSAFE / ABANDONED STRUCTURE, 1001 MARTIN LUTHER KING JR BLVD....23
FIGURE 27. UNSAFE / ABANDONED STRUCTURE, 713 MARTIN LUTHER KING JR BLVD....23
FIGURE 28. UNSAFE / ABANDONED STRUCTURE, 613 MARTIN LUTHER KING JR. BLVD....23
FIGURE 29. UNSAFE STRUCTURE, 612 MARTIN LUTHER KING JR. BLVD....23
FIGURE 30. DETERIORATING DRIVE / SIDEWALK, 220 PALMER....24
FIGURE 31. DETERIORATING DRIVE, 327 N ORANGE AVE....24
FIGURE 32. PARKING LOT DISREPAIR, BETWEEN 604 & 500 WALNUT ST....24
FIGURE 33. SIDEWALK DISREPAIR, BETWEEN 604 & 500 WALNUT ST....24
FIGURE 36. OUTDATED BUILDING PATTERN, 208 N ORANGE AVE, FOOD STORE....25
FIGURE 37. OUTDATED BUILDING PATTERN, 425 N ORANGE AVE, WELLS FARGO....25
FIGURE 38. OUTDATED BUILDING PATTERN, 327 N ORANGE AVE, RICK BAKER'S RV....25
FIGURE 39. LOW DENSITY DEVELOPMENT, 606 SPRING ST....26
FIGURE 40. LOW DENSITY DEVELOPMENT, 627 SPRING ST....26
FIGURE 41. LOW DENSITY DEVELOPMENT, NOT FRONTING STREET, 702 FERRIS ST / 709 SPRING ST....26
FIGURE 42. UNDEVELOPED, GUSTAFSON PROPERTY, PINE ST (BEHIND HOUSE ON WALNUT ST)....26
FIGURE 43. VACANT LOT, PREVIOUSLY 208 N ORANGE AVE....27
FIGURE 44. VACANT LOT, EAST OF 604 WALNUT ST....27
FIGURE 45. VACANT LOT, BROWNFIELD, SOUTH OF 535 N ORANGE AVE....27
FIGURE 46. VACANT LOT AT THE NORTHEAST CORNER OF ORANGE AVE &WALBURG ST....27
FIGURE 47. VACANT LOT AT THE NORTHWEST CORNER OF ORANGE AVE & GOVERNOR ST....27

Tables

TABLE 1. SLUM FACTORS....4
TABLE 2. BLIGHT FACTORS....4
TABLE 3. AGGREGATE ASSESSED VALUE COMPARISON....18

1. Executive Summary

This study has been prepared to fulfill the requirements for a Finding of Necessity (FON) in accordance with the Community Redevelopment Act of 1969, Chapter 163, Part III, Florida Statutes. This report has reviewed data from multiple sources including the Clay County Property Appraiser and field observations, which lead to analysis to determine if conditions of slum and / or blight exist within the study area. This report represents the first step in creating a Community Redevelopment Area (CRA) which will use Tax Increment Financing to invest in the area and improve its conditions. There are three statutory conditions that may be evaluated to determinate a slum condition and fourteen statutory conditions that may be evaluated to determine a blight condition. For a slum condition, only one of the three is required to be met to make a finding of slum. For a blight condition, only two of the fourteen are required to be met to make a finding of blight.

One of three factors of slum was identified as being met, and seven of fourteen factors of blight were determined as being met, satisfying the statutory requirements to determine the Study Area is a slum area as well as a blighted area. With the adoption of this FON, the City Council of Green Cove Springs may designate a Community Redevelopment Area.

Table 1. Slum Factors

Factor	Met?
(a) Inadequate provision for ventilation, light, air, sanitation, or open spaces;	No
(b) High density of population, compared to the population density of adjacent areas within the county or municipality; and overcrowding, as indicated by government-maintained statistics or other studies and the requirements of the Florida Building Code;	No
(c) The existence of conditions that endanger life or property by fire or other causes.	**Yes**

Table 2. Blight Factors

Factor	Met?
(a) Predominance of defective or inadequate street layout, parking facilities, roadways, bridges, or public transportation facilities.	**Yes**
(b) Aggregate assessed values of real property in the area for ad valorem tax purposes have failed to show any appreciable increase over the 5 years prior to the finding of such conditions.	**Yes**
(c) Faulty lot layout in relation to size, adequacy, accessibility, or usefulness.	**Yes**
(d) Unsanitary or unsafe conditions.	**Yes**
(e) Deterioration of site or other improvements.	**Yes**

(f) Inadequate and outdated building density patterns.	**Yes**
(g) Falling lease rates per square foot of office, commercial, or industrial space compared to the remainder of the county or municipality.	Data unavailable
(h) Tax or special assessment delinquency exceeding the fair value of the land.	Not analyzed
(i) Residential and commercial vacancy rates higher in the area than in the remainder of the county or municipality.	**Yes**
(j) Incidence of crime in the area higher than in the remainder of the county or municipality.	Not analyzed
(k) Fire and emergency medical service calls to the area proportionately higher than in the remainder of the county or municipality.	Not analyzed
(l) A greater number of violations of the Florida Building Code in the area than the number of violations recorded in the remainder of the county or municipality.	Not analyzed
(m) Diversity of ownership or defective or unusual conditions of title which prevent the free alienability of land within the deteriorated or hazardous area.	Not analyzed
(n) Governmentally owned property with adverse environmental conditions caused by a public or private entity.	N/A
(o) A substantial number or percentage of properties damaged by sinkhole activity which have not been adequately repaired or stabilized.	N/A

Recommendations

The Study Area meets the criteria established in Section 163.340, Florida Statutes. It is staff recommendation that the City of Green Cove Springs adopt this Finding of Necessity by resolution per F.S. 163.355 and create a Community Redevelopment Agency for the Study Area as defined herein.

2. Introduction

The City of Green Cove Springs seeks to determine the feasibility of designating the Downtown and US 17 Corridor as a Community Redevelopment Area through the development of a Finding of Necessity and would also like to implement redevelopment in this area through the adoption of a Redevelopment Area Plan.

2.1 Background

Green Cove Springs is a city located along the west bank of the historic St. Johns River and since 1971 has served as the County Seat of Government for Clay County. The 2020 Census identified the population count to be 9,786, a 41.66% increase from the 2010 Census.

The city's name originates from the three physical characteristics. "Green" refers to the perennially green vegetation characterized by its tree scape and foliage. "Cove" refers to a bend in the St. Johns River creating a safe area for mooring of boats during inclement weather periods. "Springs" refers to the natural spring (one of 600 in Florida), originating from the Floridan Aquifer with an estimated flow rate of approximately 2,200 gallons per minute. The spring water flows into the west side of the municipal swimming pool and then flows out the east side forming a stream eventually emptying into the St. Johns River.

The first inhabitants of the area were attracted to it because of the warm mineral spring, known as "The Boil." The medicinal qualities of the spring and its location along the St. Johns River served as major contributors to the community's development as a prominent attraction and destination for tourists during the 19th Century.

Green Cove Springs has had a storied history. It was home to Gustafson's Farm, a family dairy operation owned by Frank and Agnes Gustafson that began in 1908. In the 1930s, the federal government located Benjamin Lee Field within the City. The United States Department of the Navy opened a flight training facility. In the 1950s, major American automakers had dealerships in Green Cove Springs along US 17, which led to the City being known as "the Little Detroit."

The City grew economically and geographically, annexing land to include Magnolia Point Golf and Country Club and Magnolia West to the northwestern end, Cove Plaza on the southern end, and to the southeastern edge, FCT-granted land proposed to be the Ed Gustafson Regional Park as well as 560 acres intended to develop as a 2,100 unit residential subdivision.

In 2005, the City of Green Cove Springs adopted "Tomorrow's Vision" as the guiding vision document for the future of the city. This document established goals for the City such as: maintain the small-town character; provide affordable housing; promote redevelopment in the corridors (US 17 / SR 16); improve traffic circulation; expand recreational opportunities; promote a business-friendly environment; strengthen Code Enforcement. One implementation mechanism included in the visioning document was the potential for a Community Redevelopment Agency. In 2014, the City adopted a Finding of Necessity, but the Community Redevelopment Agency was unable to come to fruition at that time.

Since then, the City has experienced additional growth and undergone further planning activities. In February 2021, the City began the process of updating the comprehensive plan, which was adopted a year later in February 2022. The 2045 Comprehensive Plan is designed to prepare the City for upcoming growth. The Future Land Use Map was amended from 13 categories to 6 categories: Neighborhood (NBD), Downtown (DT), Mixed Use (MU), Mixed-Use Reynolds Park (MURP), Industrial (IND), and Public (PUB).

Further, the Future Land Use element established an objective to continue to redevelop and invest in blighted areas of the City, with Policy 1.6.1 directing the City to explore the creation of a Community Redevelopment Agency / Area.

Additionally, the Future Land Use elements directs the City in Policy 1.6.2 to develop a Downtown Master Plan and assess Walnut Street to determine how to increase safety and attractiveness of the streetscape. The Walnut Street assessment was completed in late 2021 and the Downtown Master Plan is underway, with a goal of adopting the plan by mid-April 2022.

2.2. Study Purpose

This Finding of Necessity will determine if the Study Area meetings the statutory criteria to be designated as a Community Redevelopment Area. With this, the City aims to establish said area in an attempt to halt and reverse the decline within it in order to encourage new development and redevelopment to improve the overall quality of the area, leading to improved economic conditions, increased vibrancy, and a more established sense of place in the area.

If the Study Area meets the statutory criteria, the City will adopt this Finding of Necessity and seek to move forward with adopting a Redevelopment Plan.

2.3. Community Redevelopment Act Overview[1]

The Florida Legislature enacted the Community Redevelopment Act (Act) in 1969. The legislature created the law to allow local governments to improve declining areas, as defined in the Act and detailed in subsections below. Such areas are detrimental to the health, safety, and welfare of residents as well as being a nuisance to growth and the provision of adequate infrastructure and housing; the Act provides a way for the local governments to create a Redevelopment Area and fund redevelopment within it.

The Statute defines *community redevelopment* as local government or community redevelopment agency lead projects in an established community redevelopment area "for the elimination and prevention of the development or spread of slums and blight, or for the reduction or prevention of crime, or for the provision of affordable housing." This may include slum clearance, redevelopment, rehabilitation, or conservation in a community redevelopment area, or any combination or part thereof, pursuant to the community redevelopment plan.

The Act establishes that powers granted by the Act are "for public uses and purposes" which involve the spending of public money and the potential exercise of police power, for which reason public interest, meaning a legitimate concern for general health, safety, and welfare within the area, is a requirement to implement the Act.

The Act further establishes the legitimacy of tax increment financing (TIF) as a method of successfully preserving and enhancing the tax base of an area, which will then serve to increase tax revenues for all taxing authorities for the area, enabling them to carry out

[1] The 2021 Florida Statutes, Title XI Chapter 163, Part III

their respective objectives more effectively. A redevelopment trust fund may be established by ordinance after the approval of a Community Redevelopment Plan to allow for the deposit of funds to be used by the agency to finance or refinance redevelopment. This fund must be established prior to receipt of any increment revenues. The statutes further state:

> "The annual funding of the redevelopment trust fund shall be in an amount not less than the increment in the income, proceeds, revenues, and funds of each taxing authority derived from or held in connection with the undertaking and carrying out of community redevelopment under this part. Such increment shall be determined annually and shall be that amount equal to 95% of the difference between:
>
> 1. The amount of ad valorem taxes levied each year by each taxing authority, exclusive of any amount from any debt service millage, on taxable real property contained within the geographic boundaries of a community redevelopment area; and
>
> 2. The amount of ad valorem taxes which would have been produced by the rate upon which the tax is levied each year by or for each taxing authority, exclusive of any debt service millage, upon the total of the assessed value of the taxable real property in the community redevelopment area as shown upon the most recent assessment roll used in connection with the taxation of such property by each taxing authority prior to the effective date of the ordinance providing for the funding of the trust fund."

Florida Statutes additionally require counties or municipalities seeking to exercise the power granted by the Act to adopt by a resolution "supported by data and analysis, which makes a legislative finding that the conditions in the area meet the criteria" of a slum or blighted area, detailed in 163.340(7) and 163.340(8) and defined below in subsections 2.3.1 and 2.3.2. To make this legislative finding, governing bodies draft a Finding of Necessity (FON), which supports this legislative finding through in-depth analysis of the study area. The analysis contained in this report evaluates the existing conditions and identifies the existence, if any, of a slum or blighted area. This FON will be used by the City in designating and creating the Community Redevelopment Area, if it is determined the area meets the statutory requirements to be classified as a slum or blighted area.

2.3.1. Definitions of Slum Area

According to the Florida Statute Section 163.340(7), "slum area" is an area having physical or economic conditions conducive to disease, infant mortality, juvenile delinquency, poverty, or crime because there is a predominance of buildings or improvements, whether residential or nonresidential, which are impaired by reason of dilapidation, deterioration, age, or obsolescence, and exhibiting one or more of the following factors:

(a) "Inadequate provision for ventilation, light, air, sanitation, or open spaces;

(b) High density of population, compared to the population density of adjacent areas within the county or municipality; and overcrowding, as indicated by government-maintained statistics or other studies and the requirements of the Florida Building Code;

or

(c) The existence of conditions that endanger life or property by fire or other causes."

2.3.2 Definitions of Blighted Area

According to the Florida Statute Section 163.340(8), "blighted area" means:

an "area in which there are a substantial number of deteriorated or deteriorating structures; in which conditions, as indicated by government-maintained statistics or other studies, endanger life or property or are leading to economic distress; and in which two or more of the following factors are present:

(a) Predominance of defective or inadequate street layout, parking facilities, roadways, bridges, or public transportation facilities.

(b) Aggregate assessed values of real property in the area for ad valorem tax purposes have failed to show any appreciable increase over the 5 years prior to the finding of such conditions.

(c) Faulty lot layout in relation to size, adequacy, accessibility, or usefulness.

(d) Unsanitary or unsafe conditions.

(e) Deterioration of site or other improvements.

(f) Inadequate and outdated building density patterns.

(g) Falling lease rates per square foot of office, commercial, or industrial space compared to the remainder of the county or municipality.

(h) Tax or special assessment delinquency exceeding the fair value of the land.

(i) Residential and commercial vacancy rates higher in the area than in the remainder of the county or municipality.

(j) Incidence of crime in the area higher than in the remainder of the county or municipality.

(k) Fire and emergency medical service calls to the area proportionately higher than in the remainder of the county or municipality.

(l) A greater number of violations of the Florida Building Code in the area than the number of violations recorded in the remainder of the county or municipality.

(m) Diversity of ownership or defective or unusual conditions of title which prevent the free alienability of land within the deteriorated or hazardous area.

(n) Governmentally owned property with adverse environmental conditions caused by a public or private entity.

(o) A substantial number or percentage of properties damaged by sinkhole activity which have not been adequately repaired or stabilized."

The term "blighted area" may also be used for any area in which at least one of the factors identified in paragraphs (a) through (o) is present and all taxing authorities subject to 163.387(2)(a) agree, by interlocal agreement or by resolution, that the area is blighted.

2.3.2. Assessment Process

City Staff assessed the Study Area through a multitude of resources, including but not limited to existing data, especially that included in the Green Cove Springs GeoHub; data collected from other departments, especially Public Works and Police; desktop reviews of the area; in person / walking review of the area. Staff assessed the area for many aspects of blight as defined in the Florida Statutes, and this report describes the existing conditions as they relate to these factors.

2.4. Study Area

The specified Study Area encompasses ±172.8 acres and is known as the Downtown and US 17 Corridor. The corridor spans Orange Avenue from Governor Street on the north end to Oak Street on the south end. The Corridor lies between St. Johns Avenue and Magnolia Avenue on its eastern edge and Pine Avenue on its western edge. The Downtown portion reaches slightly farther to the west and east. On the western side, it is bound by Palmer Street, Green Street, and Bay Street. On the eastern side, it expands diagonally eastward from Magnolia starting at Center Street, culminating at the river's edge with Spring Park property. The area is shown in Map 1.

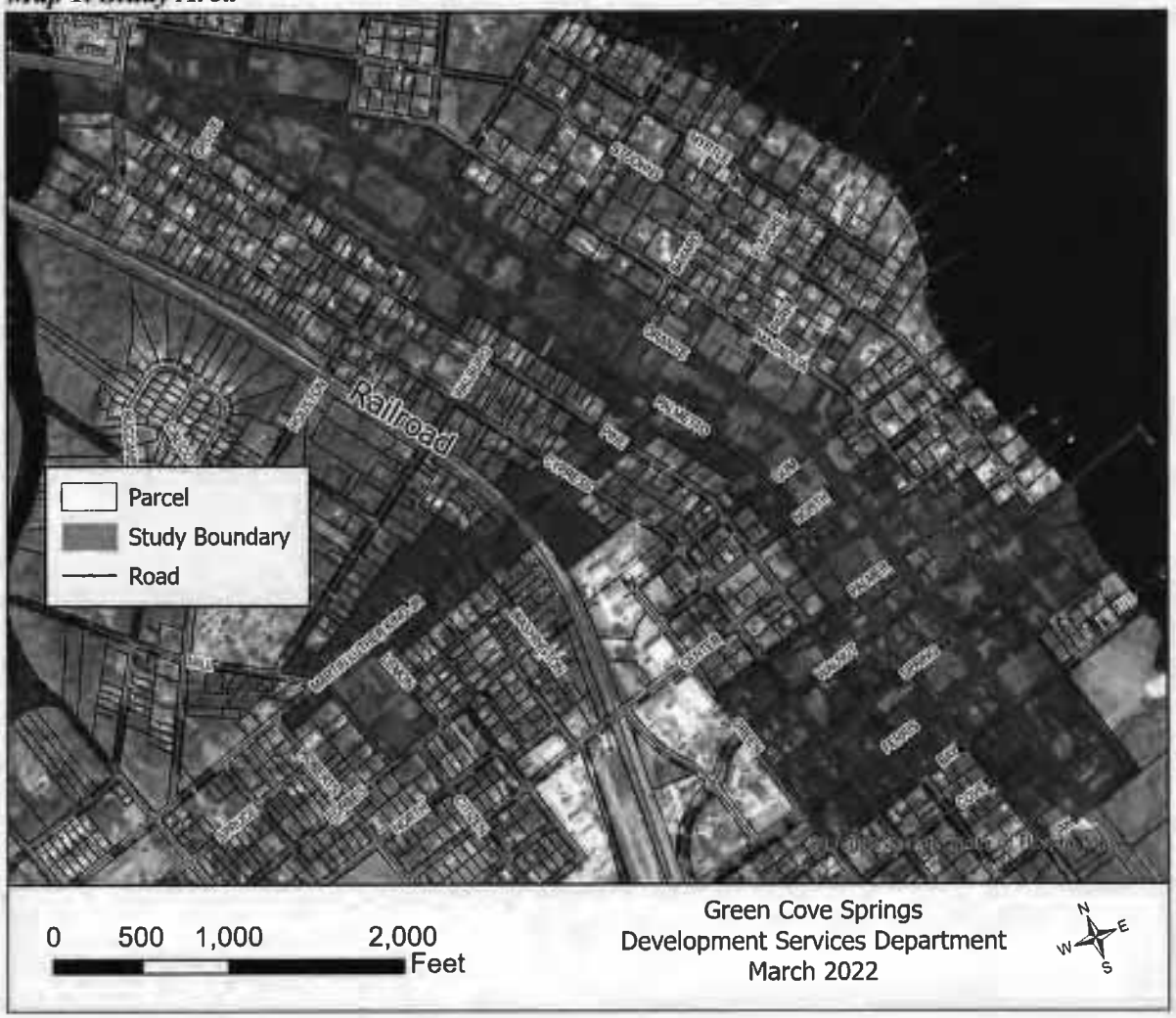
The Study Area contains primarily commercial and institutional uses. Well known locations within the Study Area include: churches such as Springs Baptist Church, First Presbyterian Church, Doxa Church, and United Methodist Church; County government buildings including the Courthouse, Jail, Supervisor of Elections, and Administration Building; food / beverage service businesses such as Spring Park Coffee, Dunkin' Donuts, Burger King, La Casita, and Sweet Sensations; financial institutions, including Wells Fargo and VyStar Credit Union; automobile sales lots such as Green Cove Auto and Good Guys Motors as well as service businesses like Jesse's Auto Services and Darren's Custom & Restorations; retail uses like CVS, The Treasure Box, Walgreens, SS Something Special, and Green Cove Liquors; office uses including Exit Magnolia Realty, Vallencourt Construction, and Action Medical Staffing; and an event venue, Clay Theatre. Additionally, there are numerous vacant properties, including the recently demolished 1050 N Orange Ave, which previously housed an abandoned automobile sales lot, as well as the corner of North Street and Orange Avenue, which once housed two buildings and businesses. The Study Area also contains Spring Park, a well-known and loved park featuring the natural spring, a public spring-fed pool, walking trails, swinging benches, play structures, and great views of the St. Johns River. The foregoing list is not meant to be exhaustive but instead meant to provide a feel of the activity within the Study Area.

The expanse around the Study Area is primarily residential in nature, with some exception specifically along Martin Luther King Jr Blvd, which features some commercial spaces, as well as east of Green Street, which features County School Board property and related uses.

Within the Study Area, there are some planned or potential improvements. These include a proposed freestanding emergency medical facility operated by St. Vincent's as well as

the Palmetto Trail project which will see an eight-foot multi-use path constructed along Palmetto Avenue from its southern end up to the Governors Creek Bridge. As part of the Walnut Street assessment, the City is also planning improvements to Walnut Street, particularly the block between Palmetto Avenue and Orange Avenue.

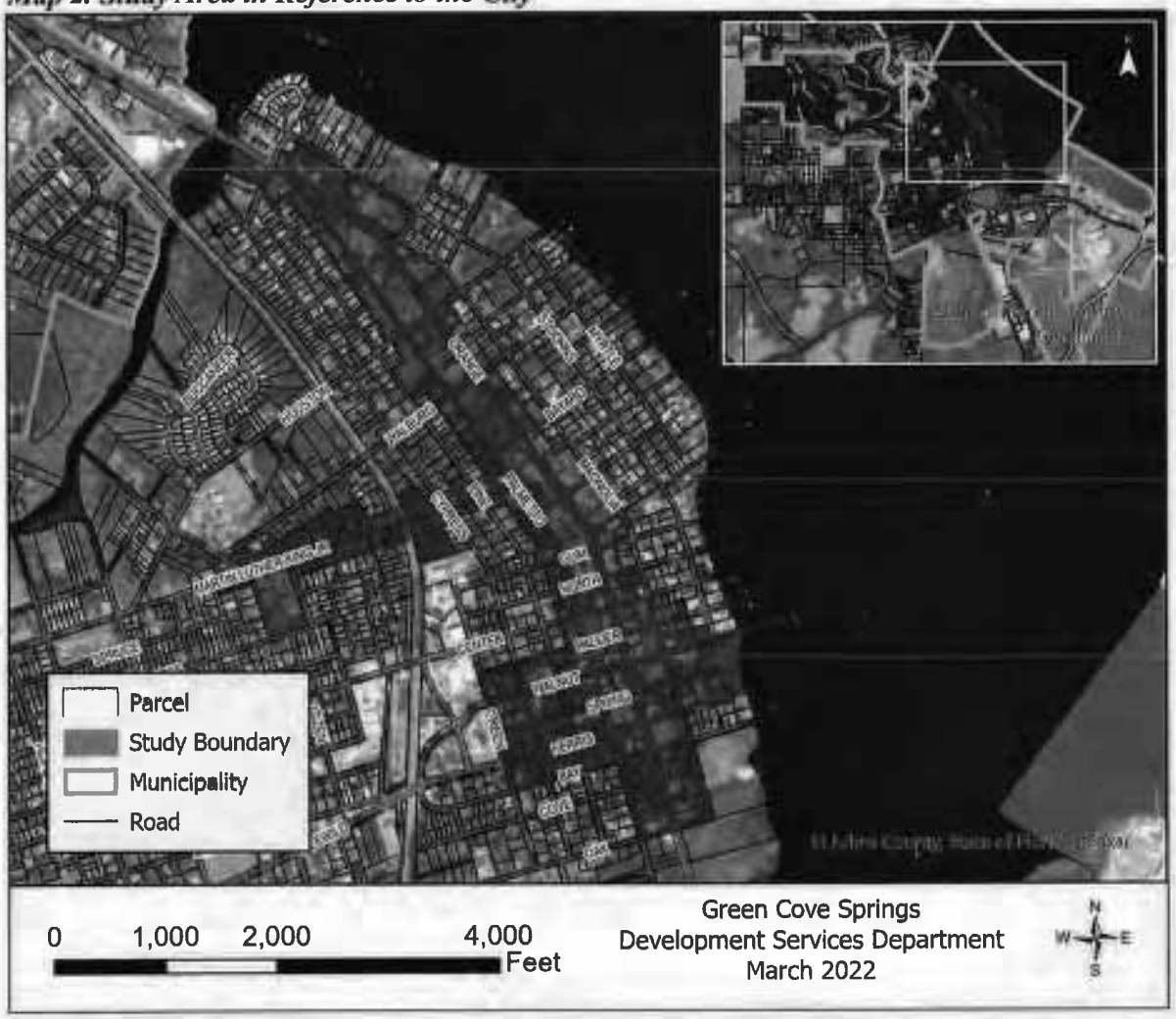
Map 1. Study Area



The Study Area is located somewhat centrally within the City, particularly for commercial development. Its location within the boundaries of the City can be viewed in Map 2. The northwest portion of the City consists of two subdivisions and the southeastern portion of the City consists of Reynolds Park / Clay Port – a future mixed-use development operating as an industrial site at present. The Study Area is contained within what is referred to as the Core City. The western portion of the Core City is dominated by residential development with a smattering of institutional development, namely School Board related properties. US 17 / Orange Avenue, Martin Luther King Blvd, and Palmetto

Avenue, all within the Study Are, feature commercial development with some residential development as well.

Map 2. Study Area in Reference to the City



3. Slum and Blighted Area Analysis

City Staff reviewed the Study Area in relation to the statutory requirements for an area to be determined a slum area or a blighted area.

3.1. Slum

The condition of slum in the Study Area is met under the following criteria:

(c) The existence of conditions that endanger life or property by fire or other causes.

Documentation of existing conditions provided in subsequent sections in this analysis indicates life and / or properties are endangered, specifically by dilapidation; unsecured inhabitable properties; deteriorating roadways, sidewalks, and accessibility features; abandoned homes; and overall deterioration of the Study Area.

3.2 Defective or inadequate public transportation facilities

The City of Green Cove Springs does not have locally operated public transportation facilities. Public transportation within Clay County, called Clay Community Transportation, is operated by the Jacksonville Transportation Authority[2]. Of 4 available lines, 2 lines travel through Green Cove Springs. These lines operate from 6am to 7pm Monday through Friday, excluding holidays. The lines do include a flex service option wherein customers can call a reservation line to schedule a pick-up from their location that will be accommodated *when time allows*. The deviation will go as far as a ¾ mile off the route.

The Blue Line (Map 3) has one stop within the Study Area, the Clay County Courthouse (825 N Orange Ave), and one other stop within City Limits, at the Clay County Health Department. There are two stops moderately close to City Limits – the Pier Station stop west of town on State Road 16 and the Challenge Enterprises stop on Enterprise Way just north of town. There is two to three hours between pickups at the local stops, excluding Challenge Enterprises which only has one pickup time and one drop-off time.

The Green Line (Map 4) has one stop within the Study Area (and the City at large), the Clayton and Mildred Revels Senior Center (604 Walnut St). There are three hours between pickups at this stop, and similarly three hours between drop-offs to the location.

There are no options for local transit from residential to commercial or recreational areas of town. Additionally, the sidewalk and roadway conditions through the Study Area are in a poor state. Many streets show deterioration, especially with top layers breaking down, revealing the older brick streets beneath, which creates uneven surfaces. Sidewalks show significant deterioration as well with the following conditions being regularly observed throughout the Study Area:

- **Cracking**: Locations where the paved surface of the sidewalk has cracked or crumbled
- **Uplift**: A vertical change in height along a sidewalk (generally where "panels" of the sidewalk meet or where cracking has occurred)
- **Fixed Obstructions**: Anchored objects (such as utility poles) that reduce sidewalk width
- **Non-Fixed Obstruction**: Vegetation, non-anchored objects, or uncleanliness that reduces sidewalk width or walkability
- **Spalling**: Surface deterioration that appears as small indentations in the surface
- **Standing Water**: Locations where there is or there is evidence of standing water on the sidewalk
- **Loss**: Locations where a piece or pieces of the sidewalk were removed, whether purposefully for work or through erosion.

Examples of the above defined items are provided in the figures below.

[2] Jacksonville Transit Authority, https://www.jtafla.com/ride-jta/regional-services/clay-community-transportation/ accessed 3/14/2022

Further, there are many places in the Study Area completely lacking sidewalks, primarily on local streets or only on one side of the street and often without excellent road crossing conditions to get from sidewalk to sidewalk as needed.

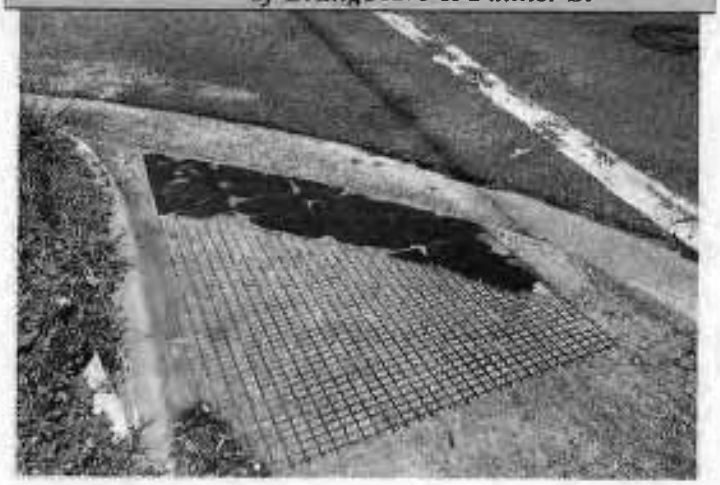
Such road and sidewalk conditions reduce the ability of the community to safely traverse the Study Area on foot, by micromobility[3] device (bicycle, scooter, skateboard, et cetera) or by motorized vehicle.

Figure 1. Sidewalk Cracking, Palmer St, near 14 N Magnolia Ave

Figure 2. Sidewalk Cracking & Loss, Martin Luther King Jr. Blvd

Figure 3. Deteriorating accessibility feature, Corner of Orange Ave & Center St

Figure 4. Deteriorating accessibility feature, Southwest Corner of Orange Ave & Palmer St



[3] Institute for Transportation & Development Policy, https://www.itdp.org/multimedia/defining-micromobility/ accessed 4/7/2022

Figure 5. Road Disrepair, Walnut St

Figure 6. Road Disrepair, Intersection of Green St & Walnut St

Figure 7. Non-Fixed Obstruction, Martin Luther King Jr. Blvd

Figure 8. Non-Fixed Obstruction, Martin Luther King Jr. Blvd

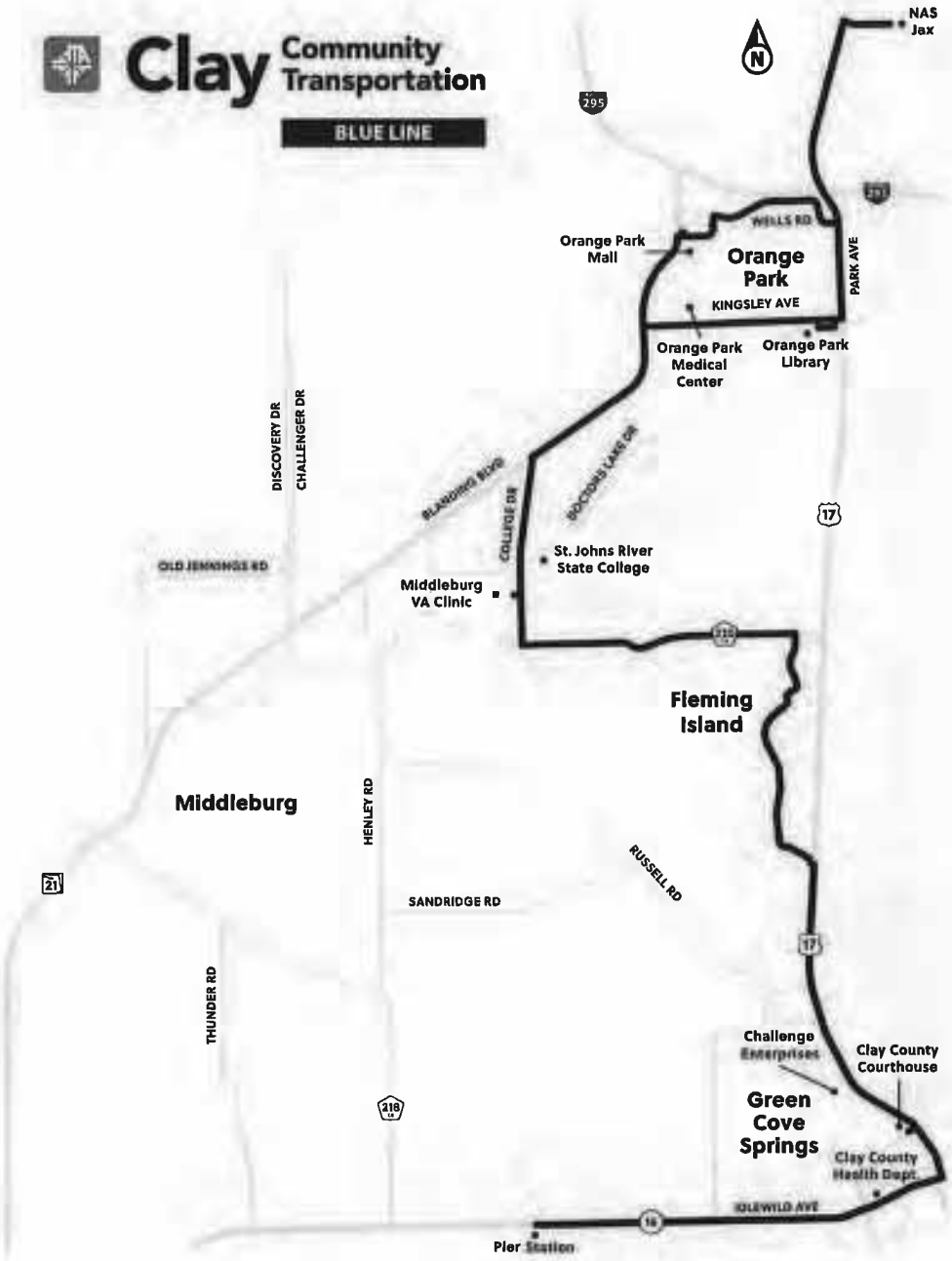
Figure 9. Sidewalk Spalling, Martin Luther King Jr. Blvd

Figure 10. Sidewalk – Standing Water, Martin Luther King Jr. Blvd.

Figure 11. Sidewalk Uplift & Spalling, Martin Luther King Jr. Blvd

Figure 12. Sidewalk Loss, Martin Luther King Jr. Blvd

Map 3. Bus Route – Blue Line[4]



[4] Jacksonville Transportation Authority, https://www.jtafla.com/ride-jta/regional-services/clay-community-transportation/clay-blue-line/

Map 4. Bus Route – Green Line[5]

3.3. Aggregate assessed values do not show appreciable increase over past 5 years

The Study Area has experienced some redevelopment in the past five years, but the deterioration present, as shown in later sections, has prevented the Study Area from seeing an appreciable increase in its aggregate assessed value (AAV) as compared to the City as a whole. In Table 1, it is demonstrated that the City as a whole has experienced an increased AAV of 50.71% while the Study Area has only seen an increase of 20.53%.

Table 3. Aggregate Assessed Value Comparison

Year	Study Area	City
2017	$ 85,088,819.00	$590,524,531.00
2018	$88,913,992.00	$642,232,893.00
2019	$95,646,152.00	$802,652,764.00
2020	$95,809,061.00	$802,652,764.00
2021	$102,557,978.00	$890,001,640.00
% Increase	20.53%	50.71%

[5] Jacksonville Transportation Authority, https://www.jtafla.com/ride-jta/regional-services/clay-community-transportation/clay-green-line/

3.4 Faulty lot layout in relation to size, adequacy, accessibility, or usefulness

Within the Study Area, approximately 25.6% of the lots could be considered faulty (Map 4). The criteria for this determination were as follows:

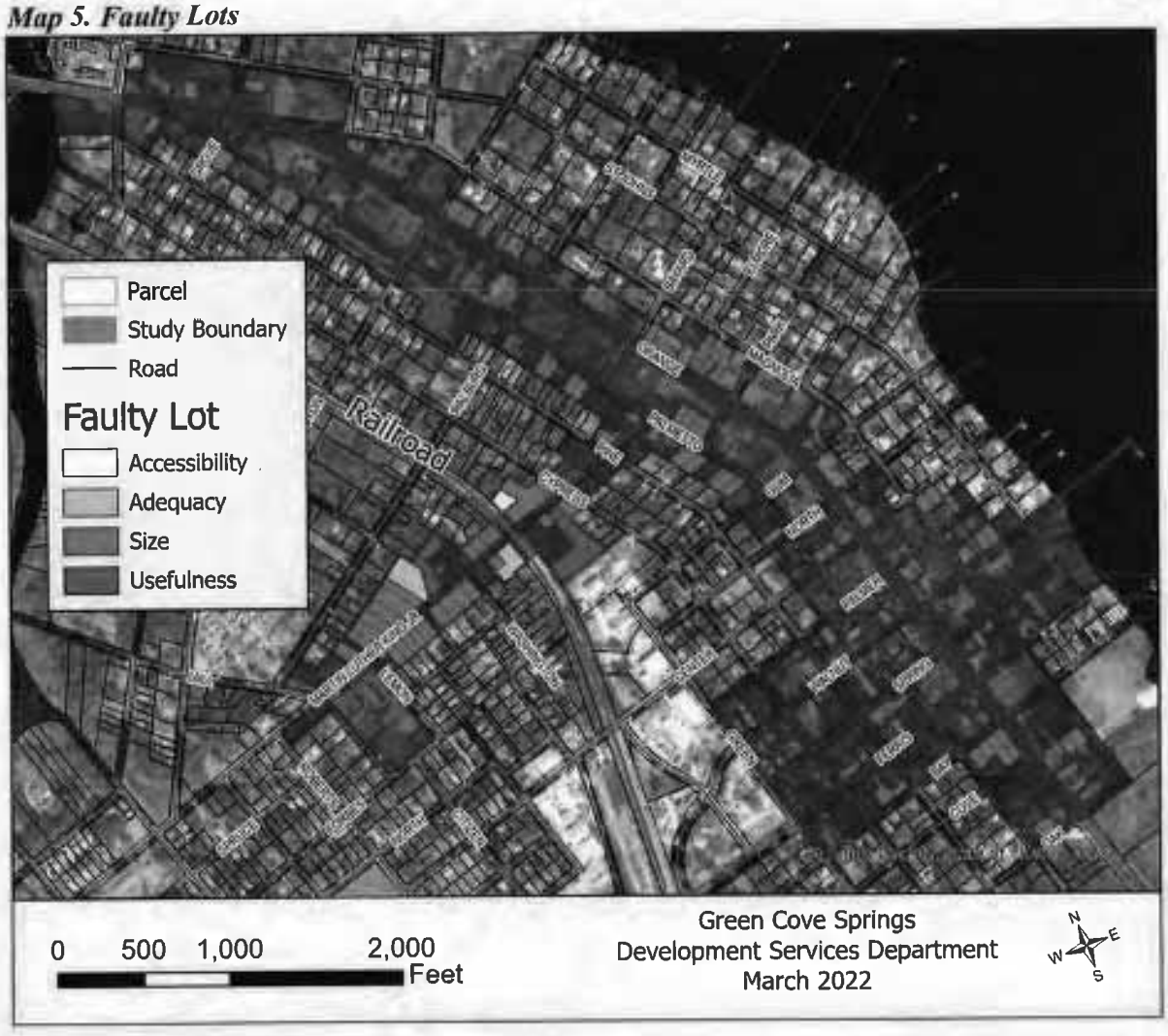
- **Size**: Commercially zoned lots with less than approximately 75 feet of frontage and approximately 100 feet of depth – despite the zoning code identifying no minimum lot requirements in commercial districts, the size of these lots is not suited for adequate commercial development, assuming they are developed individually given the diversity of ownership.
- **Adequacy**: Lots deemed inadequate are shaped in a manner which decreases their developability.
- **Usefulness**: Lots deemed less than useful are shaped in a manner which will likely completely prevent or deter their development or redevelopment.
- **Accessibility**: Lots deemed inaccessible are landlocked.

The City does permit residential development within many commercially zoned areas, and some of the identified lots have historically or recently been developed residentially as a consequence. Ideally, as identified in the Future Land Use Map, these lots would develop commercially or with a mix of uses to better support the neighborhood.

Recent development exemplifies the difficulties with developing commercially on narrow or otherwise small lots. Between 2019 and 2020, Dunkin Donuts constructed a new location within the Study Area – 610 N Orange Ave. The site is approximately 250ft along Orange Avenue (the primary roadway) by 125ft deep. The development received a variance from the City's Zoning Code requirements, which require parking to be to the side or back of a building in the Gateway Commercial Corridor. Due to the depth of the property and the type of development (drive-thru fast food), the lot layout was inadequate to permit development without a variance.

On the basis of the plight of Dunkin Donuts and the criteria identified above, additional lots are truly eligible to be considered faulty within the Study Area, but being that they are already commercially developed, at this time, they are not being considered faulty.

Map 5. Faulty Lots



3.5. Unsanitary or unsafe conditions

There are several sites with unsafe or unsanitary conditions located within the Study Area. Figures 13-29 (following) demonstrate the conditions for a portion of these properties.

Field inspection and Google StreetView inspection of the Study Area identified sites with deteriorating or damaged structures which pose a threat to building occupants, condemned or abandoned buildings, incomplete construction projects, lack of sidewalks or blocked rights-of-way (ROW[s]), as well as brownfield sites. There are unsafe commercial spaces where there is either a lack of defined pedestrian versus vehicular space or a lack of maintenance that would keep the area safe for traversing to and from a business.

These figures represent some of the many deteriorating, unsafe, and at times abandoned structures in the area.

Figure 13. Unsafe, Deteriorating Roof, 116 N Magnolia Ave

Figure 14. Unsafe, Condemned Building, 428 N Orange Ave

Figure 15. Unsafe, Boarded Openings, 115 N Magnolia Ave

Figure 16. Unsafe and unsanitary, Openings / Junk Storage, 115 N Magnolia

Figure 17. Unsafe, No Sidewalk, ROW used for RV Parking, 327 N Orange Ave

Figure 18. Unsafe, No Sidewalk, across from Figure 5, 425 N Orange Ave

Figure 19. Unsanitary, Discontinued Gas Pumps, 201 N Orange Ave

Figure 20. Unsafe, Collapsed Canopy, Petroleum Contamination Site[6], 100 N Orange Ave

Figure 21. Unsafe, Low hanging power lines, concrete drive in disrepair, south of 25 N Orange Av

Figure 22. Unsafe, ROW in disrepair, businses parks in ROW, 3 S Palmetto Ave

Figure 23. Unsafe, Lack of signage, marked parking spaces, pedestrian safety, 24 Green St

[6] FL Department of Environmental Protection's Contamination Locator Map, https://prodenv.dep.state.fl.us/DepClean

Figure 24. Unsafe area in front of active commercial building, 1100 Martin Luther King

Figure 25. Unsafe Structure / Abandoned, 1007 Martin Luther King Jr Blvd

Figure 26. Unsafe / Abandoned Structure, 1001 Martin Luther King Jr Blvd

Figure 27. Unsafe / Abandoned Structure, 713 Martin Luther King Jr Blvd

Figure 28. Unsafe / Abandoned Structure, 613 Martin Luther King Jr. Blvd

Figure 29. Unsafe Structure, 612 Martin Luther King Jr. Blvd

3.6. Deterioration of site or other improvements

In addition to the deterioration of site improvements shown in section 3.5, within the Study Area, there are multiple occurrences of deteriorating improvements, especially access points or paved areas in surrounding buildings. Paving is wearing away or cracking creating hazardous conditions for drivers using the lots to park or maneuver the site and pedestrians crossing the access points. Figures below provide examples of this type of wear and tear in the corridor.

Figure 30. Deteriorating Drive / Sidewalk, 220 Palmer

Figure 31. Deteriorating Drive, 327 N Orange Ave

Figure 32. Parking lot disrepair, between 604 & 500 Walnut St

Figure 33. Sidewalk disrepair, between 604 & 500 Walnut St

3.7. Inadequate and outdated building density patterns

The applicable zoning districts for the Study Area generally include: Central Business District, Gateway Corridor Commercial, Gateway Corridor Neighborhood, and C-1 Neighborhood Commercial. The heart of the Study Area is where the Central Business District is located – also known as the Downtown area. The Gateway districts are located along the "corridor" area, notably US 17 or Orange Ave. The Martin Luther King Blvd corridor is zoned as neighborhood commercial but features primarily low density residential development including active and abandoned residential structures, churches, vacant lots, concrete block commercial buildings lacking transparency and activation.

Figure 36. Outdated building pattern, 208 N Orange Ave, Food Store

Figure 37. Outdated building pattern, 425 N Orange Ave, Wells Fargo

Figure 38. Outdated Building Pattern, 327 N Orange Ave, Rick Baker's RV

Figure 39. Low Density Development, 606 Spring St

Figure 40. Low Density Development, 627 Spring St

Figure 41. Low Density Development, Not Fronting Street, 702 Ferris St / 709 Spring St

Figure 42. Undeveloped, Gustafson Property, Pine St (behind house on Walnut St)

3.8. Vacancy rates

17.1% of properties within the Study Area are classified as vacant by the Clay County Property Appraiser. This level of vacancy within the Study Area is 44.9% higher than that of the rest of the municipality, which has an 11.8% rate of vacancy.

Many of these lots, shown in the figures below, are prime locations that once housed a local business which has since been removed. The lots have yet to have been redeveloped despite their prime locations in the commercial areas of the City.

Figure 43. Vacant Lot, Previously 208 N Orange Ave

Figure 44. Vacant Lot, East of 604 Walnut St

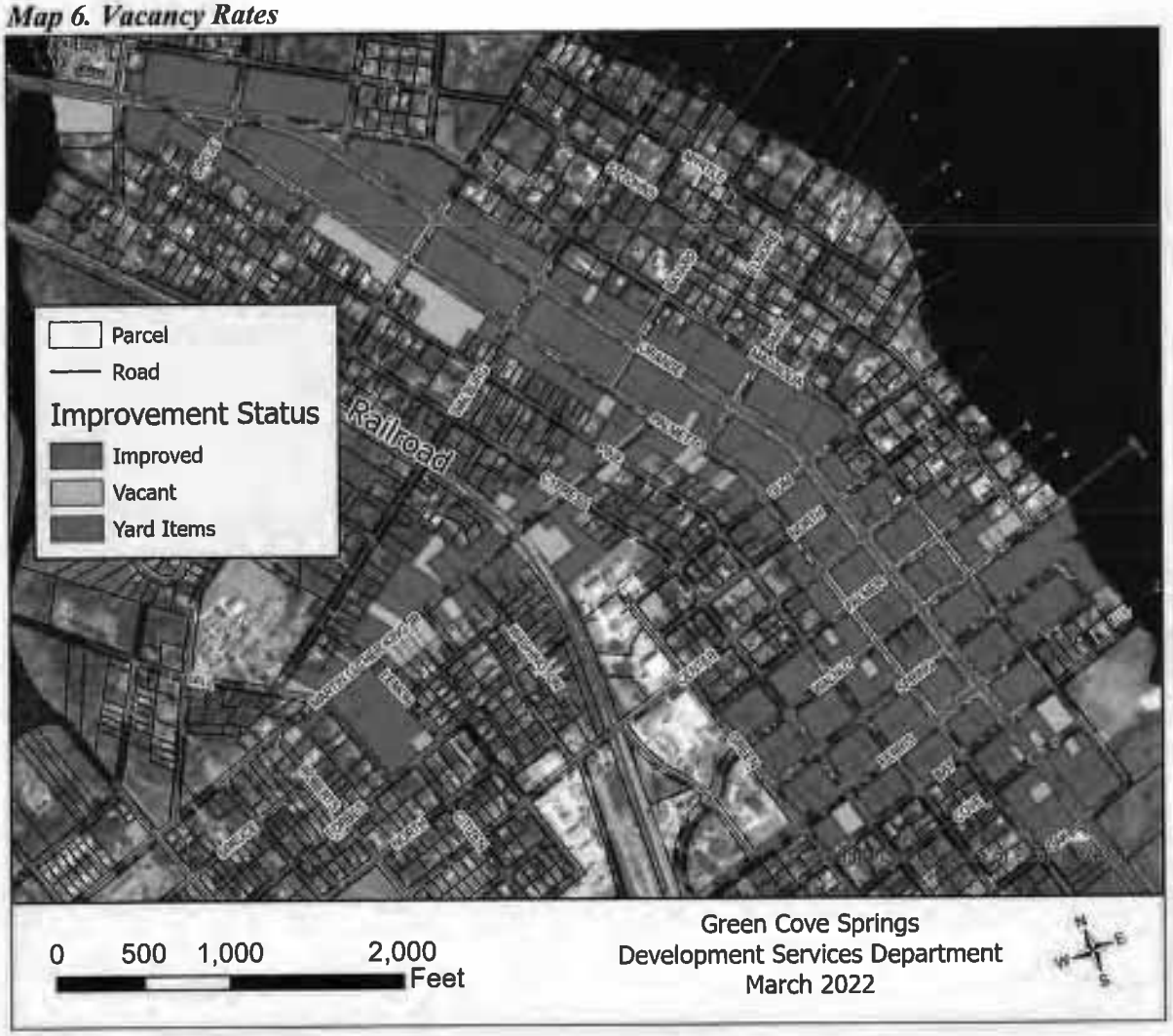
Figure 45. Vacant Lot, BROWNFIELD[7], south of 535 N Orange Ave

Figure 46. Vacant Lot at the northeast corner of Orange Ave &Walburg St

Figure 47. Vacant Lot at the northwest corner of Orange Ave & Governor St

[7] FL Department of Environmental Protection's Contamination Locator Map, https://prodenv.dep.state.fl.us/DepClnup

Map 6. Vacancy Rates



4. Recommendations

The Study Area meets the criteria established in Section 163.340, Florida Statutes (F.S.). It is staff recommendation that the City of Green Cove Springs adopt this Finding of Necessity by resolution per Section 163.355, F.S., and create a Community Redevelopment Agency for the Study Area as defined herein. This will enable redevelopment of the area which is necessary for the safety and economic welfare of the community.

RESOLUTION NO. 2021/2022-56

A RESOLUTION OF THE BOARD OF COUNTY COMMISSIONERS OF CLAY COUNTY, FLORIDA DECLARING AND FINDING A CERTAIN GEOGRAPHIC AREA IN THE CITY OF GREEN COVE SPRINGS, FLORIDA TO BE SLUM OR BLIGHTED; FINDING A NEED FOR THE CREATION OF A COMMUNITY REDEVELOPMENT AGENCY; DELEGATING THE EXERCISE OF CERTAIN POWERS TO CREATE A COMMUNITY REDEVELOPMENT AGENCY WITH THE POWER TO PREPARE AND ADOPT A PLAN OF REDEVELOPMENT AS CONFERRED UPON CLAY COUNTY REGARDING COMMUNITY REDEVELOPMENT WITHIN THE INCORPORATED LIMITS OF THE CITY OF GREEN COVE SPRINGS TO THE CITY OF GREEN COVE SPRINGS IN ACCORDANCE WITH CHAPTER 163, PART III, FLORIDA STATUTES; PROVIDING FOR NO SEVERABILITY; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the Florida Legislature during its 1969 Legislative Session enacted the Community Redevelopment Act of 1969 which is presently codified at Part III, Chapter 163, Florida Statutes, as amended (the "Act"); and

WHEREAS, section 163.410 of the Act provides, in part, "the governing body of any ... county which has adopted a home rule charter may, in its discretion, by resolution delegate the exercise of the powers conferred upon the county by [the Act] within the boundaries of a municipality to the governing body of such a municipality;" and

WHEREAS, the Act further provides that "[s]uch a delegation to a municipality shall confer only such powers upon a municipality as shall be specifically enumerated in the delegating resolution;" and

WHEREAS, the City Council of the City of Green Cove Springs adopted Resolution No. R-03-2022 (the "Resolution"), which is attached hereto as Attachment A and incorporated herein

by reference, and which, among other things, declared an area within the municipal boundaries of the City of Green Cove Springs (the "City"), generally described as the downtown and US 17 corridor and referred to as the Green Cove Springs Redevelopment Area (the "Area"), to be a "slum or blighted area"; and

WHEREAS, the City Council further made a finding of necessity as to the rehabilitation, conservation or redevelopment, or a combination of each, with respect to the Area; and

WHEREAS, this Board has considered the "Finding of Necessity" Study, which is attached to the City's Resolution as Exhibit B, concerning the existence of slum or blighted areas within the boundaries of the Area; and

WHEREAS, this Board agrees with the City Council's findings as set forth in the Study and finds that one or more slum or blighted areas, as defined in section 163.340(7) and (8), respectively, of the Act exist within the Area; and

WHEREAS, this Board finds that rehabilitation, conservation, or redevelopment, or a combination thereof, of said slum or blighted area is necessary in the interest of the public health, safety, morals, and welfare of the residents of the City and of Clay County; and

WHEREAS, accordingly this Board finds that there is a need for a community redevelopment agency to carry out the community redevelopment purposes of the Act; and

WHEREAS, the City, pursuant to section 163.410 of the Act, requested that the County delegate powers to the City to create a community redevelopment agency; and

WHEREAS, this Board finds that at this time the City has met its obligations as set forth in section 163.410 of the Act, including, but not limited to, submitting all documentation required by the County; and

WHEREAS, this Board desires to delegate certain limited community redevelopment powers as set forth herein to the City pursuant to the Act.

NOW THEREFORE, BE IT RESOLVED by the Board of County Commissioners of Clay County, Florida, as follows:

Section 1. The foregoing recitations are incorporated as a part of the Resolution by reference.

Section 2. Pursuant to Chapter 163, Part III, Florida Statutes (the "Act"), specifically, section 163.355, Florida Statutes, this Board finds and declares, that based on findings of the City and the Study a slum or blighted area, as defined by section 163.340(7) and (8), respectively, of the Act, exists in an area of the City described generally as the downtown and US 17 corridor, which is specifically described in the Study and is referred to as the Green Cove Springs Redevelopment Area (the "Area").

Section 3. This Board finds and declares that the rehabilitation, conservation and redevelopment, or a combination thereof, of the Area is necessary and in the best interest of the public health, safety, morals, and welfare of the residents of the City and of Clay County as a whole.

Section 4. This Board finds there is a need for a community redevelopment agency to function in the Area to carry out the community redevelopment purposes of the Act.

Section 5. This Board delegates to the City the limited power to create a community redevelopment agency pursuant to the Act, provided that (1) the composition of the community redevelopment agency shall consist of two members appointed by the City, two members appointed by the Board, and one at-large member appointed by the other four members, and (2) the sole power initially delegated to the community redevelopment agency is to prepare and adopt a plan of redevelopment for the Area, which plan shall then be submitted to the City and the County for review and upon the completion of their respective reviews, be submitted to the Council and thereafter the Board for approval after notice.

Section 6. This Board shall consider the delegation of additional community redevelopment powers to the community redevelopment agency in the form of an interlocal agreement by subsequent resolution of this Board.

Section 7. The community redevelopment agency created by the City shall cease to exist within 12 months from the adoption of this Resolution if: (1) the City has not approved a redevelopment plan and interlocal agreement acceptable to the County; and (2) the County has not approved same in accordance with the Act and this Resolution, and the delegation of powers hereunder shall be deemed to be void and to have no further force and effect.

Section 8. This Resolution and the delegation of the powers hereunder shall not be deemed or construed to create any obligation on the part of the Board or the County to enter into an agreement or adopt a resolution.

Section 9. The provisions of this Resolution are not severable. If any part of this Resolution is held invalid by a court of competent jurisdiction, this Resolution shall be deemed void and of no further effect.

Section 10. This Resolution shall become effective upon adoption.

DULY ADOPTED by the Board of County Commissioners of Clay County, Florida, this 9th day of August, 2022.

BOARD OF COUNTY COMMISSIONERS
CLAY COUNTY, FLORIDA

By: WFBolla (Aug 11, 2022 14:37 EDT)
Wayne Bolla, Its Chairman

ATTEST:

Tara S. Green
Clay County Clerk of Court and Comptroller
Ex Officio Clerk to the Board

F:\Ordinances\communityredevelopment\GCS 2022\Resolution CRA 8.5.22.docx

ATTACHMENT A

RESOLUTION NO. R-03-2022

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF GREEN COVE SPRINGS, FLORIDA, RELATING TO COMMUNITY REDEVELOPMENT; FINDING THE EXISTENCE OF BLIGHT IN AN AREA OF THE CITY OF GREEN COVE SPRINGS, FLORIDA; MAKING CERTAIN FINDINGS AND DETERMINATIONS; FINDING A NEED FOR CREATING A COMMUNITY REDEVELOPMENT AGENCY PURSUANT TO CHAPTER 163, PART III, FLORIDA STATUTES; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the City Council of the City of Green Cove Springs ("City Council") expressed its intention to consider the creation of a community redevelopment area, authorized a study to consider whether a finding of necessity resolution should be adopted, and defined a proposed redevelopment study area within the City of Green Cove Springs ("City); and

WHEREAS, a study has been done, and shall be identified as Exhibit B, supported by data and analysis, of the conditions in that part of the City, known and referred to as the Green Cove Springs Redevelopment Area, depicted in Exhibit "A" hereof (such area being referred to herein as the "Area" or the "Redevelopment Area"); and

WHEREAS, the results of the study have been presented to the City Council for its consideration and included in the public record; and

WHEREAS, after having considered the study's determinations and the facts and evidence of the conditions in the Area and having received and considered such other evidence of the conditions in the Area as have been presented to it, the City Council has determined that the conditions in the Area meet the criteria described in Chapter 163, Part III, Florida Statutes; and

WHEREAS, the City seeks approval from Clay County that the Area meets the criteria described in Chapter 163, Part III, Florida Statutes, and requests delegation of authority to create a Community Redevelopment Agency, adopt a Community Redevelopment Plan, and establish a Redevelopment Trust Fund.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF GREEN COVE SPRINGS, FLORIDA, AS FOLLOWS:

SECTION 1. FINDINGS OF CONDITIONS. Based upon the evidence, data, analysis, and facts presented to it, the City Council does hereby find that the following conditions are present in the Area of the City to be considered a "Blighted area" as specified in Section 163.340(7)©, Florida Statutes (2021):

(C) the existence of conditions that endanger life or property by fire or other causes. (Sec. 163.340(8)(a), F.S.);

SECTION 2. FINDINGS OF CONDITIONS. Based upon the evidence, data, analysis, and facts presented to it, the City Council does hereby find that the following conditions are present in the Area of the City to be considered a "Blighted area" as specified in Section 163.340(7)(c), Florida Statutes (2021):

A. Predominance of defective or inadequate street layout, parking facilities, roadways, bridges, or public transportation facilities.
B. *Aggregate assessed values of real property in the area for ad valorem tax purposes have failed to show any appreciable increase over the 5 years prior to finding of such conditions (Sec. 163.340(8)(b), F.S.);*
C. *Deterioration of site or other improvements (Sec. 163.340(8)(e), F.S.);*
D. *Inadequate and outdated building density patterns (Sec. 163,340(8)(f), F.S.);*
E. *Residential and commercial vacancy rates higher in the area than in the remainder of the municipality (Sec. 163.340(8)(i), F.S.);*

SECTION 3. FINDING OF NECESSITY. The City Council does hereby make a legislative finding that the conditions of the Area meet the criteria described in Section 163.340(8), Florida Statutes (2021) and the following:

A. *One or more slum or blighted areas, or one or more areas in which there is a shortage of housing affordable to residents of low or moderate income, including the elderly, exist in the City; and,*
B. *The rehabilitation, conservation, or redevelopment, or combination thereof, of such area or areas, including, if appropriate, the development of housing which residents of low or moderate income, including the elderly, can afford, is necessary in the interest of the public health, safety, morals, or welfare of the residents of the City.*

SECTION 4. COMMUNITY REDEVELOPMENT AREA. Based upon the facts presented and contained in the public record, the City does hereby find the Area contains conditions of blight as defined in Section 163.340, Florida Statutes (2021), and that such Area constitutes a Community Redevelopment Area as defined in Section 163.340(10), Florida Statutes (2021).

SECTION 5. COMMUNITY REDEVELOPMENT AGENCY. The City Council does hereby expressly find that it is necessary, appropriate, proper, and timely that a Community Redevelopment Agency be created to carry out the community redevelopment contemplated by Chapter 163, Part III, Florida Statutes (2021), to further cause, promote, and encourage rehabilitation, conservation, and redevelopment in the Area.

SECTION 6. DELEGATION OF AUTHORITY. The City Council seeks approval from Clay County that the Area meets the criteria described in Chapter 163, Part III, Florida Statutes (2021), and requests delegation of authority to create a Community Redevelopment Agency, adopt a Community Redevelopment Plan, and establish a Redevelopment Trust Fund.

SECTION 7. EFFECTIVE DATE. This Resolution shall take effect immediately upon its passage.

DONE AND RESOLVED BY THE CITY COUNCIL OF THE CITY OF GREEN COVE SPRINGS, FLORIDA, IN REGULAR SESSION THIS 19TH DAY OF APRIL, 2022.

CITY OF GREEN COVE SPRINGS, FLORIDA

Edward R. Gaw, Mayor

ATTEST:

Erin West, City Clerk

APPROVED AS TO FORM:

L. J. Arnold, III, City Attorney

Exhibit "A"

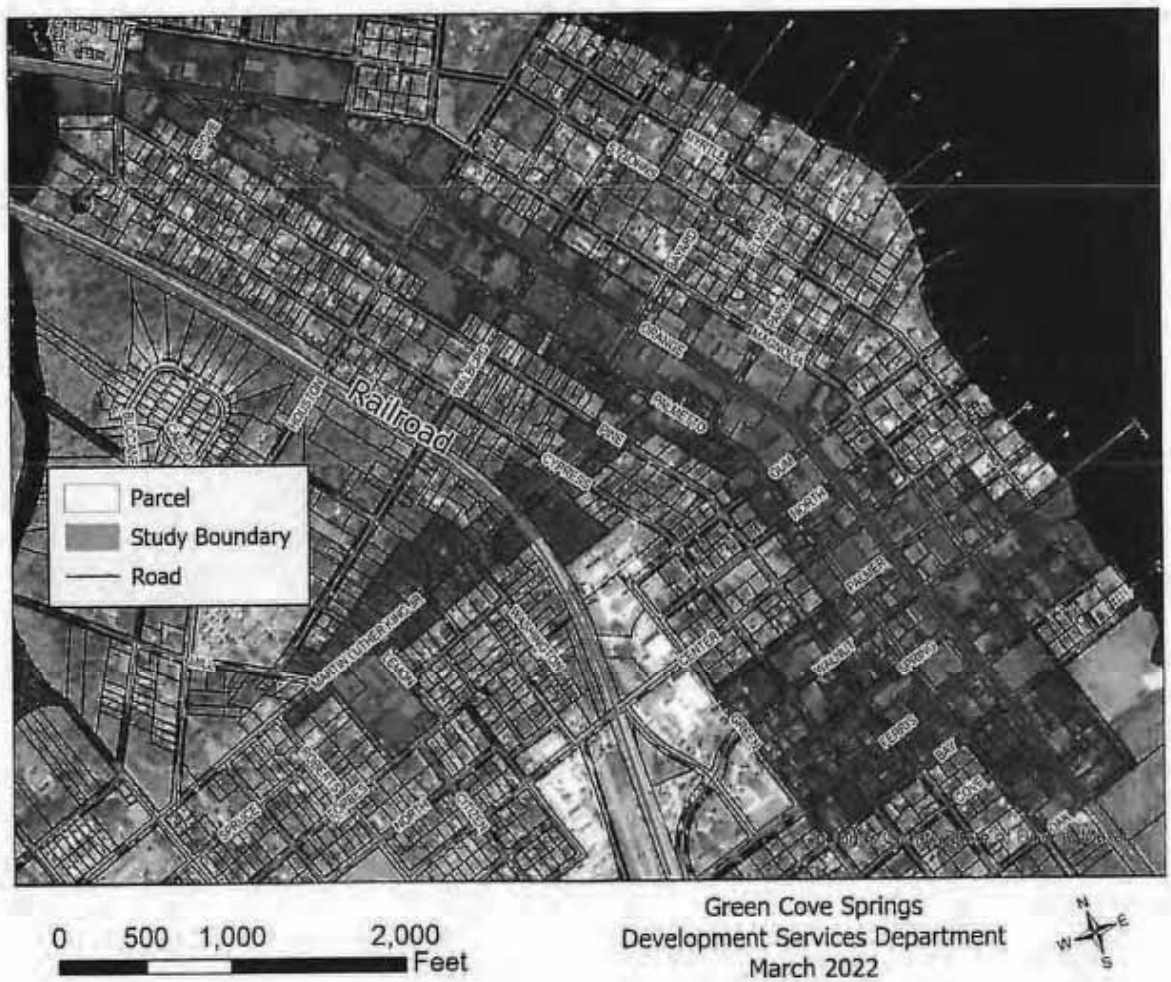

Railroad
Parcel
Study Boundary
Road
0 500 1,000 2,000
Feet
Green Cove Springs
Development Services Department
March 2022
N
E
W
S

Exhibit B

Through this, we encourage new development and redevelopment to improve quality of life, enhance economic conditions, increase vibrancy, and better realize the sense of place in key districts of the City.

Downtown / US 17 Finding of Necessity

City of Green Cove Springs, FL

Heather Glisson, Planning Technician

Table of Contents

1. Executive Summary 4
2. Introduction 5
2.1. Background 6
2.2. Study Purpose 7
2.3. Community Redevelopment Act Overview 7
2.3.1. Definitions of Slum Area 8
2.3.2. Definitions of Blighted Area 9
2.3.2. Assessment Process 10
2.4. Study Area 10
3. Slum and Blighted Area Analysis 12
3.1. Slum 12
3.2. Defective or inadequate public transportation facilities 13
3.3. Aggregate assessed values do not show appreciable increase over past 5 years 18
3.4. Faulty lot layout in relation to size, adequacy, accessibility, or usefulness 19
3.5. Unsanitary or unsafe conditions 20
3.6. Deterioration of site or other improvements 24
3.7. Inadequate and outdated building density patterns 25
3.8. Vacancy rates 26
4. Recommendations 28

Maps

Map 1. Study Area 11
Map 2. Study Area in Reference to the City 12
Map 3. Bus Route – Blue Line 17
Map 4. Bus Route – Green Line 18
Map 5. Faulty Lots 20
Map 6. Vacancy Rates 28

Figures

Figure 1. Sidewalk Cracking, Palmer St, near 14 N Magnolia Ave 14
Figure 2. Sidewalk Cracking & Loss, Martin Luther King Jr. Blvd 14
Figure 3. Deteriorating accessibility feature, Corner of Orange Ave & Center St 14
Figure 4. Deteriorating accessibility feature, Southwest Corner of Orange Ave & Palmer St 14
Figure 5. Road Disrepair, Walnut St 15
Figure 6. Road Disrepair, Intersection of Green St & Walnut St 15
Figure 7. Non-Fixed Obstruction, Martin Luther King Jr. Blvd 16

Figure 8. Non-Fixed Obstruction, Martin Luther King Jr. Blvd....16
Figure 9. Sidewalk Spalling, Martin Luther King Jr. Blvd....16
Figure 10. Sidewalk – Standing Water, Martin Luther King Jr. Blvd....16
Figure 11. Sidewalk Uplift & Spalling, Martin Luther King Jr. Blvd....16
Figure 12. Sidewalk Loss, Martin Luther King Jr. Blvd....16
Figure 13. Unsafe, Deteriorating Roof, 116 N Magnolia Ave....21
Figure 14. Unsafe, Condemned Building, 428 N Orange Ave....21
Figure 15. Unsafe, Boarded Openings, 115 N Magnolia Ave....21
Figure 16. Unsafe and unsanitary, Openings / Junk Storage, 115 N Magnolia....21
Figure 17. Unsafe, No Sidewalk, ROW used for RV Parking, 327 N Orange Ave....21
Figure 18. Unsafe, No Sidewalk, across from Figure 5, 425 N Orange Ave....21
Figure 19. Unsanitary, Discontinued Gas Pumps, 201 N Orange Ave....22
Figure 20. Unsafe, Collapsed Canopy, Petroleum Contamination Site, 100 N Orange Ave....22
Figure 21. Unsafe, Low hanging power lines, concrete drive in disrepair, south of 25 N Orange Av....22
Figure 22. Unsafe, ROW in disrepair, businses parks in ROW, 3 S Palmetto Ave....22
Figure 23. Unsafe, Lack of signage, marked parking spaces, pedestrian safety, 24 Green St....22
Figure 24. Unsafe area in front of active commercial building, 1100 Martin Luther King....23
Figure 25. Unsafe Structure / Abandoned, 1007 Martin Luther King Jr Blvd....23
Figure 26. Unsafe / Abandoned Structure, 1001 Martin Luther King Jr Blvd....23
Figure 27. Unsafe / Abandoned Structure, 713 Martin Luther King Jr Blvd....23
Figure 28. Unsafe / Abandoned Structure, 613 Martin Luther King Jr. Blvd....23
Figure 29. Unsafe Structure, 612 Martin Luther King Jr. Blvd....23
Figure 30. Deteriorating Drive / Sidewalk, 220 Palmer....24
Figure 31. Deteriorating Drive, 327 N Orange Ave....24
Figure 32. Parking lot disrepair, between 604 & 500 Walnut St....24
Figure 33. Sidewalk disrepair, between 604 & 500 Walnut St....24
Figure 36. Outdated building pattern, 208 N Orange Ave, Food Store....25
Figure 37. Outdated building pattern, 425 N Orange Ave, Wells Fargo....25
Figure 38. Outdated Building Pattern, 327 N Orange Ave, Rick Baker's RV....25
Figure 39. Low Density Development, 606 Spring St....26
Figure 40. Low Density Development, 627 Spring St....26
Figure 41. Low Density Development, Not Fronting Street, 702 Ferris St / 709 Spring St....26
Figure 42. Undeveloped, Gustafson Property, Pine St (behind house on Walnut St)....26
Figure 43. Vacant Lot, Previously 208 N Orange Ave....27
Figure 44. Vacant Lot, East of 604 Walnut St....27
Figure 45. Vacant Lot, BROWNFIELD, south of 535 N Orange Ave....27
Figure 46. Vacant Lot at the northeast corner of Orange Ave &Walburg St....27
Figure 47. Vacant Lot at the northwest corner of Orange Ave & Governor St....27

Tables

Table 1. Slum Factors....4
Table 2. Blight Factors....4
Table 3. Aggregate Assessed Value Comparison....18

1. Executive Summary

This study has been prepared to fulfill the requirements for a Finding of Necessity (FON) in accordance with the Community Redevelopment Act of 1969, Chapter 163, Part III, Florida Statutes. This report has reviewed data from multiple sources including the Clay County Property Appraiser and field observations, which lead to analysis to determine if conditions of slum and / or blight exist within the study area. This report represents the first step in creating a Community Redevelopment Area (CRA) which will use Tax Increment Financing to invest in the area and improve its conditions. There are three statutory conditions that may be evaluated to determinate a slum condition and fourteen statutory conditions that may be evaluated to determine a blight condition. For a slum condition, only one of the three is required to be met to make a finding of slum. For a blight condition, only two of the fourteen are required to be met to make a finding of blight.

One of three factors of slum was identified as being met, and seven of fourteen factors of blight were determined as being met, satisfying the statutory requirements to determine the Study Area is a slum area as well as a blighted area. With the adoption of this FON, the City Council of Green Cove Springs may designate a Community Redevelopment Area.

Table 1. Slum Factors

Factor	Met?
(a) Inadequate provision for ventilation, light, air, sanitation, or open spaces;	No
(b) High density of population, compared to the population density of adjacent areas within the county or municipality; and overcrowding, as indicated by government-maintained statistics or other studies and the requirements of the Florida Building Code;	No
(c) The existence of conditions that endanger life or property by fire or other causes.	**Yes**

Table 2. Blight Factors

Factor	Met?
(a) Predominance of defective or inadequate street layout, parking facilities, roadways, bridges, or public transportation facilities.	**Yes**
(b) Aggregate assessed values of real property in the area for ad valorem tax purposes have failed to show any appreciable increase over the 5 years prior to the finding of such conditions.	**Yes**
(c) Faulty lot layout in relation to size, adequacy, accessibility, or usefulness.	**Yes**
(d) Unsanitary or unsafe conditions.	**Yes**
(e) Deterioration of site or other improvements.	**Yes**

(f) Inadequate and outdated building density patterns.	**Yes**
(g) Falling lease rates per square foot of office, commercial, or industrial space compared to the remainder of the county or municipality.	Data unavailable
(h) Tax or special assessment delinquency exceeding the fair value of the land.	Not analyzed
(i) Residential and commercial vacancy rates higher in the area than in the remainder of the county or municipality.	**Yes**
(j) Incidence of crime in the area higher than in the remainder of the county or municipality.	Not analyzed
(k) Fire and emergency medical service calls to the area proportionately higher than in the remainder of the county or municipality.	Not analyzed
(l) A greater number of violations of the Florida Building Code in the area than the number of violations recorded in the remainder of the county or municipality.	Not analyzed
(m) Diversity of ownership or defective or unusual conditions of title which prevent the free alienability of land within the deteriorated or hazardous area.	Not analyzed
(n) Governmentally owned property with adverse environmental conditions caused by a public or private entity.	N/A
(o) A substantial number or percentage of properties damaged by sinkhole activity which have not been adequately repaired or stabilized.	N/A

Recommendations

The Study Area meets the criteria established in Section 163.340, Florida Statutes. It is staff recommendation that the City of Green Cove Springs adopt this Finding of Necessity by resolution per F.S. 163.355 and create a Community Redevelopment Agency for the Study Area as defined herein.

2. Introduction

The City of Green Cove Springs seeks to determine the feasibility of designating the Downtown and US 17 Corridor as a Community Redevelopment Area through the development of a Finding of Necessity and would also like to implement redevelopment in this area through the adoption of a Redevelopment Area Plan.

2.1. Background

Green Cove Springs is a city located along the west bank of the historic St. Johns River and since 1971 has served as the County Seat of Government for Clay County. The 2020 Census identified the population count to be 9,786, a 41.66% increase from the 2010 Census.

The city's name originates from the three physical characteristics. "Green" refers to the perennially green vegetation characterized by its tree scape and foliage. "Cove" refers to a bend in the St. Johns River creating a safe area for mooring of boats during inclement weather periods. "Springs" refers to the natural spring (one of 600 in Florida), originating from the Floridan Aquifer with an estimated flow rate of approximately 2,200 gallons per minute. The spring water flows into the west side of the municipal swimming pool and then flows out the east side forming a stream eventually emptying into the St. Johns River.

The first inhabitants of the area were attracted to it because of the warm mineral spring, known as "The Boil." The medicinal qualities of the spring and its location along the St. Johns River served as major contributors to the community's development as a prominent attraction and destination for tourists during the 19th Century.

Green Cove Springs has had a storied history. It was home to Gustafson's Farm, a family dairy operation owned by Frank and Agnes Gustafson that began in 1908. In the 1930s, the federal government located Benjamin Lee Field within the City. The United States Department of the Navy opened a flight training facility. In the 1950s, major American automakers had dealerships in Green Cove Springs along US 17, which led to the City being known as "the Little Detroit."

The City grew economically and geographically, annexing land to include Magnolia Point Golf and Country Club and Magnolia West to the northwestern end, Cove Plaza on the southern end, and to the southeastern edge, FCT-granted land proposed to be the Ed Gustafson Regional Park as well as 560 acres intended to develop as a 2,100 unit residential subdivision.

In 2005, the City of Green Cove Springs adopted "Tomorrow's Vision" as the guiding vision document for the future of the city. This document established goals for the City such as: maintain the small-town character; provide affordable housing; promote redevelopment in the corridors (US 17 / SR 16); improve traffic circulation; expand recreational opportunities; promote a business-friendly environment; strengthen Code Enforcement. One implementation mechanism included in the visioning document was the potential for a Community Redevelopment Agency. In 2014, the City adopted a Finding of Necessity, but the Community Redevelopment Agency was unable to come to fruition at that time.

Since then, the City has experienced additional growth and undergone further planning activities. In February 2021, the City began the process of updating the comprehensive plan, which was adopted a year later in February 2022. The 2045 Comprehensive Plan is designed to prepare the City for upcoming growth. The Future Land Use Map was amended from 13 categories to 6 categories: Neighborhood (NBD), Downtown (DT), Mixed Use (MU), Mixed-Use Reynolds Park (MURP), Industrial (IND), and Public (PUB).

Further, the Future Land Use element established an objective to continue to redevelop and invest in blighted areas of the City, with Policy 1.6.1 directing the City to explore the creation of a Community Redevelopment Agency / Area.

Additionally, the Future Land Use elements directs the City in Policy 1.6.2 to develop a Downtown Master Plan and assess Walnut Street to determine how to increase safety and attractiveness of the streetscape. The Walnut Street assessment was completed in late 2021 and the Downtown Master Plan is underway, with a goal of adopting the plan by mid-April 2022.

2.2. Study Purpose

This Finding of Necessity will determine if the Study Area meetings the statutory criteria to be designated as a Community Redevelopment Area. With this, the City aims to establish said area in an attempt to halt and reverse the decline within it in order to encourage new development and redevelopment to improve the overall quality of the area, leading to improved economic conditions, increased vibrancy, and a more established sense of place in the area.

If the Study Area meets the statutory criteria, the City will adopt this Finding of Necessity and seek to move forward with adopting a Redevelopment Plan.

2.3. Community Redevelopment Act Overview[1]

The Florida Legislature enacted the Community Redevelopment Act (Act) in 1969. The legislature created the law to allow local governments to improve declining areas, as defined in the Act and detailed in subsections below. Such areas are detrimental to the health, safety, and welfare of residents as well as being a nuisance to growth and the provision of adequate infrastructure and housing; the Act provides a way for the local governments to create a Redevelopment Area and fund redevelopment within it.

The Statute defines *community redevelopment* as local government or community redevelopment agency lead projects in an established community redevelopment area "for the elimination and prevention of the development or spread of slums and blight, or for the reduction or prevention of crime, or for the provision of affordable housing." This may include slum clearance, redevelopment, rehabilitation, or conservation in a community redevelopment area, or any combination or part thereof, pursuant to the community redevelopment plan.

The Act establishes that powers granted by the Act are "for public uses and purposes" which involve the spending of public money and the potential exercise of police power, for which reason public interest, meaning a legitimate concern for general health, safety, and welfare within the area, is a requirement to implement the Act.

The Act further establishes the legitimacy of tax increment financing (TIF) as a method of successfully preserving and enhancing the tax base of an area, which will then serve to increase tax revenues for all taxing authorities for the area, enabling them to carry out

[1] The 2021 Florida Statutes, Title XI Chapter 163, Part III

their respective objectives more effectively. A redevelopment trust fund may be established by ordinance after the approval of a Community Redevelopment Plan to allow for the deposit of funds to be used by the agency to finance or refinance redevelopment. This fund must be established prior to receipt of any increment revenues. The statutes further state:

> "The annual funding of the redevelopment trust fund shall be in an amount not less than the increment in the income, proceeds, revenues, and funds of each taxing authority derived from or held in connection with the undertaking and carrying out of community redevelopment under this part. Such increment shall be determined annually and shall be that amount equal to 95% of the difference between:
>
> 1. The amount of ad valorem taxes levied each year by each taxing authority, exclusive of any amount from any debt service millage, on taxable real property contained within the geographic boundaries of a community redevelopment area; and
>
> 2. The amount of ad valorem taxes which would have been produced by the rate upon which the tax is levied each year by or for each taxing authority, exclusive of any debt service millage, upon the total of the assessed value of the taxable real property in the community redevelopment area as shown upon the most recent assessment roll used in connection with the taxation of such property by each taxing authority prior to the effective date of the ordinance providing for the funding of the trust fund."

Florida Statutes additionally require counties or municipalities seeking to exercise the power granted by the Act to adopt by a resolution "supported by data and analysis, which makes a legislative finding that the conditions in the area meet the criteria" of a slum or blighted area, detailed in 163.340(7) and 163.340(8) and defined below in subsections 2.3.1 and 2.3.2. To make this legislative finding, governing bodies draft a Finding of Necessity (FON), which supports this legislative finding through in-depth analysis of the study area. The analysis contained in this report evaluates the existing conditions and identifies the existence, if any, of a slum or blighted area. This FON will be used by the City in designating and creating the Community Redevelopment Area, if it is determined the area meets the statutory requirements to be classified as a slum or blighted area.

2.3.1. Definitions of Slum Area

According to the Florida Statute Section 163.340(7), "slum area" is an area having physical or economic conditions conducive to disease, infant mortality, juvenile delinquency, poverty, or crime because there is a predominance of buildings or improvements, whether residential or nonresidential, which are impaired by reason of dilapidation, deterioration, age, or obsolescence, and exhibiting one or more of the following factors:

(a) "Inadequate provision for ventilation, light, air, sanitation, or open spaces;

(b) High density of population, compared to the population density of adjacent areas within the county or municipality; and overcrowding, as indicated by government-maintained statistics or other studies and the requirements of the Florida Building Code;

or

(c) The existence of conditions that endanger life or property by fire or other causes."

2.3.2. Definitions of Blighted Area

According to the Florida Statute Section 163.340(8), "blighted area" means:

an "area in which there are a substantial number of deteriorated or deteriorating structures; in which conditions, as indicated by government-maintained statistics or other studies, endanger life or property or are leading to economic distress; and in which two or more of the following factors are present:

(a) Predominance of defective or inadequate street layout, parking facilities, roadways, bridges, or public transportation facilities.

(b) Aggregate assessed values of real property in the area for ad valorem tax purposes have failed to show any appreciable increase over the 5 years prior to the finding of such conditions.

(c) Faulty lot layout in relation to size, adequacy, accessibility, or usefulness.

(d) Unsanitary or unsafe conditions.

(e) Deterioration of site or other improvements.

(f) Inadequate and outdated building density patterns.

(g) Falling lease rates per square foot of office, commercial, or industrial space compared to the remainder of the county or municipality.

(h) Tax or special assessment delinquency exceeding the fair value of the land.

(i) Residential and commercial vacancy rates higher in the area than in the remainder of the county or municipality.

(j) Incidence of crime in the area higher than in the remainder of the county or municipality.

(k) Fire and emergency medical service calls to the area proportionately higher than in the remainder of the county or municipality.

(l) A greater number of violations of the Florida Building Code in the area than the number of violations recorded in the remainder of the county or municipality.

(m) Diversity of ownership or defective or unusual conditions of title which prevent the free alienability of land within the deteriorated or hazardous area.

(n) Governmentally owned property with adverse environmental conditions caused by a public or private entity.

(o) A substantial number or percentage of properties damaged by sinkhole activity which have not been adequately repaired or stabilized."

The term "blighted area" may also be used for any area in which at least one of the factors identified in paragraphs (a) through (o) is present and all taxing authorities subject to 163.387(2)(a) agree, by interlocal agreement or by resolution, that the area is blighted.

2.3.2. Assessment Process

City Staff assessed the Study Area through a multitude of resources, including but not limited to existing data, especially that included in the Green Cove Springs GeoHub; data collected from other departments, especially Public Works and Police; desktop reviews of the area; in person / walking review of the area. Staff assessed the area for many aspects of blight as defined in the Florida Statutes, and this report describes the existing conditions as they relate to these factors.

2.4. Study Area

The specified Study Area encompasses ±172.8 acres and is known as the Downtown and US 17 Corridor. The corridor spans Orange Avenue from Governor Street on the north end to Oak Street on the south end. The Corridor lies between St. Johns Avenue and Magnolia Avenue on its eastern edge and Pine Avenue on its western edge. The Downtown portion reaches slightly farther to the west and east. On the western side, it is bound by Palmer Street, Green Street, and Bay Street. On the eastern side, it expands diagonally eastward from Magnolia starting at Center Street, culminating at the river's edge with Spring Park property. The area is shown in Map 1.

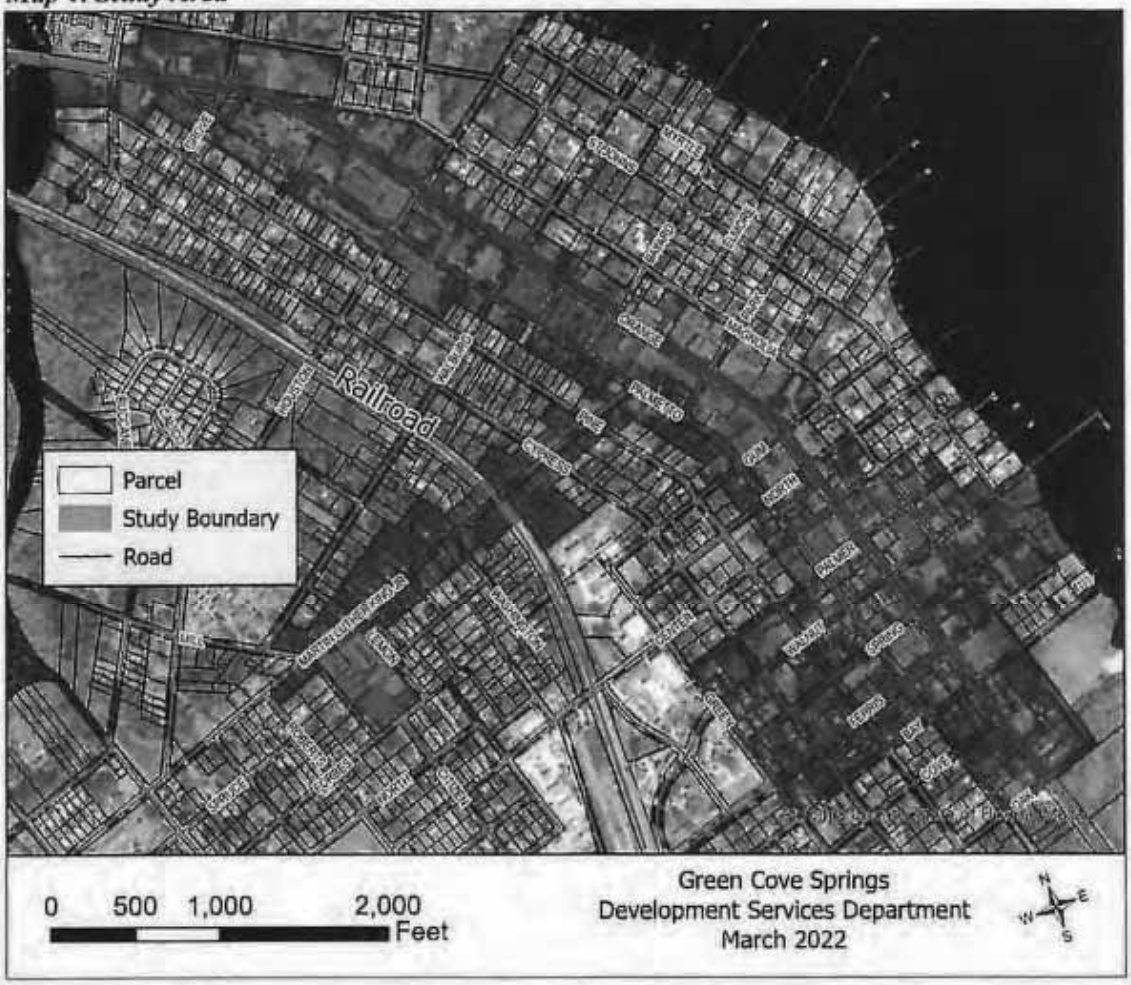
The Study Area contains primarily commercial and institutional uses. Well known locations within the Study Area include: churches such as Springs Baptist Church, First Presbyterian Church, Doxa Church, and United Methodist Church; County government buildings including the Courthouse, Jail, Supervisor of Elections, and Administration Building; food / beverage service businesses such as Spring Park Coffee, Dunkin' Donuts, Burger King, La Casita, and Sweet Sensations; financial institutions, including Wells Fargo and VyStar Credit Union; automobile sales lots such as Green Cove Auto and Good Guys Motors as well as service businesses like Jesse's Auto Services and Darren's Custom & Restorations; retail uses like CVS, The Treasure Box, Walgreens, SS Something Special, and Green Cove Liquors; office uses including Exit Magnolia Realty, Vallencourt Construction, and Action Medical Staffing; and an event venue, Clay Theatre. Additionally, there are numerous vacant properties, including the recently demolished 1050 N Orange Ave, which previously housed an abandoned automobile sales lot, as well as the corner of North Street and Orange Avenue, which once housed two buildings and businesses. The Study Area also contains Spring Park, a well-known and loved park featuring the natural spring, a public spring-fed pool, walking trails, swinging benches, play structures, and great views of the St. Johns River. The foregoing list is not meant to be exhaustive but instead meant to provide a feel of the activity within the Study Area.

The expanse around the Study Area is primarily residential in nature, with some exception specifically along Martin Luther King Jr Blvd, which features some commercial spaces, as well as east of Green Street, which features County School Board property and related uses.

Within the Study Area, there are some planned or potential improvements. These include a proposed freestanding emergency medical facility operated by St. Vincent's as well as

the Palmetto Trail project which will see an eight-foot multi-use path constructed along Palmetto Avenue from its southern end up to the Governors Creek Bridge. As part of the Walnut Street assessment, the City is also planning improvements to Walnut Street, particularly the block between Palmetto Avenue and Orange Avenue.

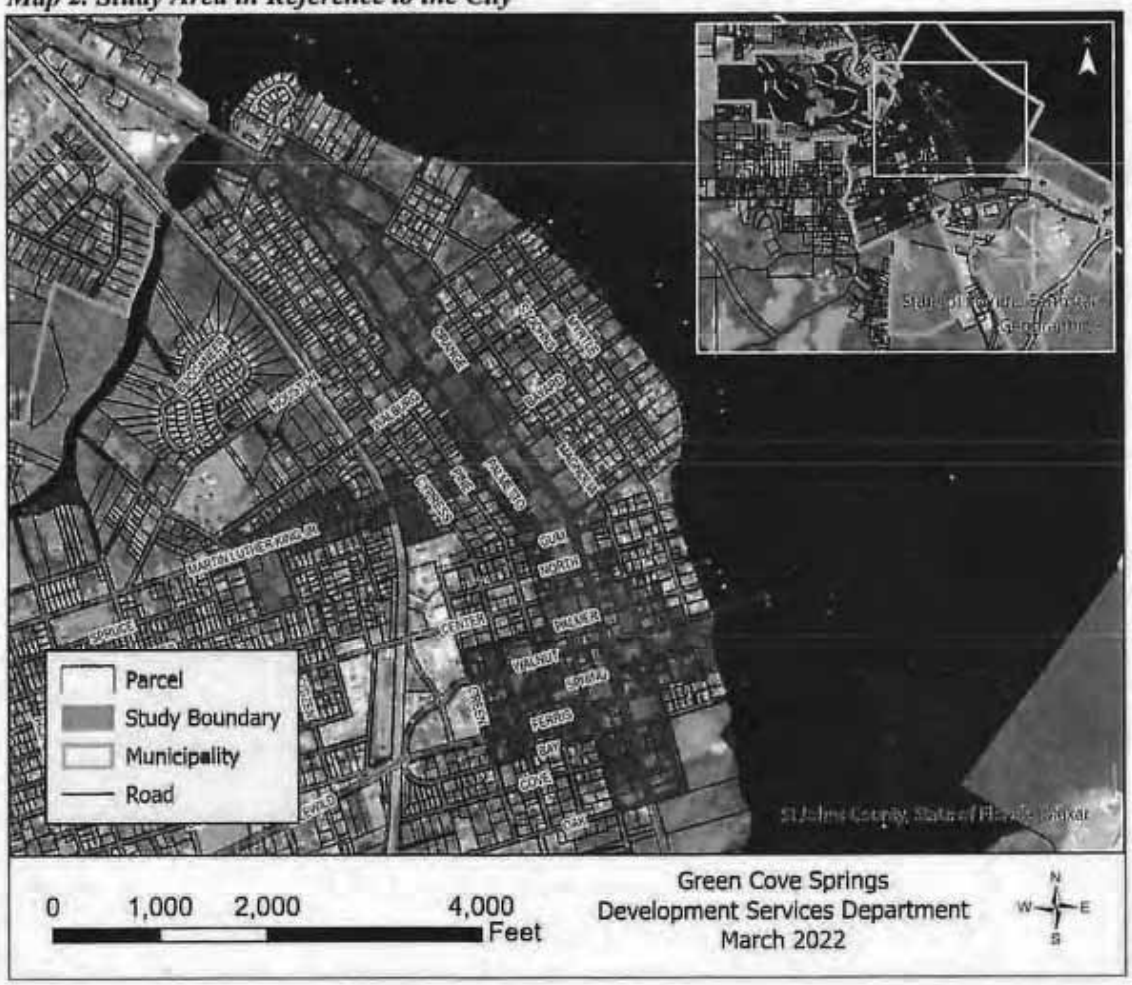
Map 1. Study Area



The Study Area is located somewhat centrally within the City, particularly for commercial development. Its location within the boundaries of the City can be viewed in Map 2. The northwest portion of the City consists of two subdivisions and the southeastern portion of the City consists of Reynolds Park / Clay Port – a future mixed-use development operating as an industrial site at present. The Study Area is contained within what is referred to as the Core City. The western portion of the Core City is dominated by residential development with a smattering of institutional development, namely School Board related properties. US 17 / Orange Avenue, Martin Luther King Blvd, and Palmetto

Avenue, all within the Study Are, feature commercial development with some residential development as well.

Map 2. Study Area in Reference to the City



3. Slum and Blighted Area Analysis

City Staff reviewed the Study Area in relation to the statutory requirements for an area to be determined a slum area or a blighted area.

3.1. Slum

The condition of slum in the Study Area is met under the following criteria:

(c) The existence of conditions that endanger life or property by fire or other causes.

Documentation of existing conditions provided in subsequent sections in this analysis indicates life and / or properties are endangered, specifically by dilapidation; unsecured inhabitable properties; deteriorating roadways, sidewalks, and accessibility features; abandoned homes; and overall deterioration of the Study Area.

3.2. Defective or inadequate public transportation facilities

The City of Green Cove Springs does not have locally operated public transportation facilities. Public transportation within Clay County, called Clay Community Transportation, is operated by the Jacksonville Transportation Authority[2]. Of 4 available lines, 2 lines travel through Green Cove Springs. These lines operate from 6am to 7pm Monday through Friday, excluding holidays. The lines do include a flex service option wherein customers can call a reservation line to schedule a pick-up from their location that will be accommodated *when time allows*. The deviation will go as far as a ¾ mile off the route.

The Blue Line (Map 3) has one stop within the Study Area, the Clay County Courthouse (825 N Orange Ave), and one other stop within City Limits, at the Clay County Health Department. There are two stops moderately close to City Limits – the Pier Station stop west of town on State Road 16 and the Challenge Enterprises stop on Enterprise Way just north of town. There is two to three hours between pickups at the local stops, excluding Challenge Enterprises which only has one pickup time and one drop-off time.

The Green Line (Map 4) has one stop within the Study Area (and the City at large), the Clayton and Mildred Revels Senior Center (604 Walnut St). There are three hours between pickups at this stop, and similarly three hours between drop-offs to the location.

There are no options for local transit from residential to commercial or recreational areas of town. Additionally, the sidewalk and roadway conditions through the Study Area are in a poor state. Many streets show deterioration, especially with top layers breaking down, revealing the older brick streets beneath, which creates uneven surfaces. Sidewalks show significant deterioration as well with the following conditions being regularly observed throughout the Study Area:

- **Cracking**: Locations where the paved surface of the sidewalk has cracked or crumbled
- **Uplift**: A vertical change in height along a sidewalk (generally where "panels" of the sidewalk meet or where cracking has occurred)
- **Fixed Obstructions**: Anchored objects (such as utility poles) that reduce sidewalk width
- **Non-Fixed Obstruction**: Vegetation, non-anchored objects, or uncleanliness that reduces sidewalk width or walkability
- **Spalling**: Surface deterioration that appears as small indentations in the surface
- **Standing Water**: Locations where there is or there is evidence of standing water on the sidewalk
- **Loss**: Locations where a piece or pieces of the sidewalk were removed, whether purposefully for work or through erosion.

Examples of the above defined items are provided in the figures below.

[2] Jacksonville Transit Authority, https://www.jtafla.com/ride-jta/regional-services/clay-community-transportation/ accessed 3/14/2022

Further, there are many places in the Study Area completely lacking sidewalks, primarily on local streets or only on one side of the street and often without excellent road crossing conditions to get from sidewalk to sidewalk as needed.

Such road and sidewalk conditions reduce the ability of the community to safely traverse the Study Area on foot, by micromobility[3] device (bicycle, scooter, skateboard, et cetera) or by motorized vehicle.

Figure 1. Sidewalk Cracking, Palmer St, near 14 N Magnolia Ave

Figure 2. Sidewalk Cracking & Loss, Martin Luther King Jr. Blvd

Figure 3. Deteriorating accessibility feature, Corner of Orange Ave & Center St

Figure 4. Deteriorating accessibility feature, Southwest Corner of Orange Ave & Palmer St

[3] Institute for Transportation & Development Policy, https://www.itdp.org/multimedia/defining-micromobility/ accessed 4/7/2022

Figure 5. Road Disrepair, Walnut St

Figure 6. Road Disrepair, Intersection of Green St & Walnut St

Figure 7. Non-Fixed Obstruction, Martin Luther King Jr. Blvd

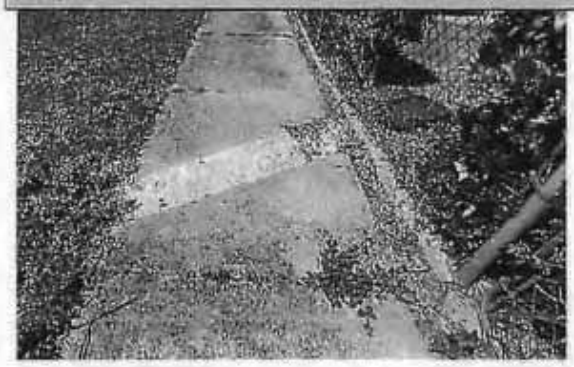
Figure 8. Non-Fixed Obstruction, Martin Luther King Jr. Blvd

Figure 9. Sidewalk Spalling, Martin Luther King Jr. Blvd

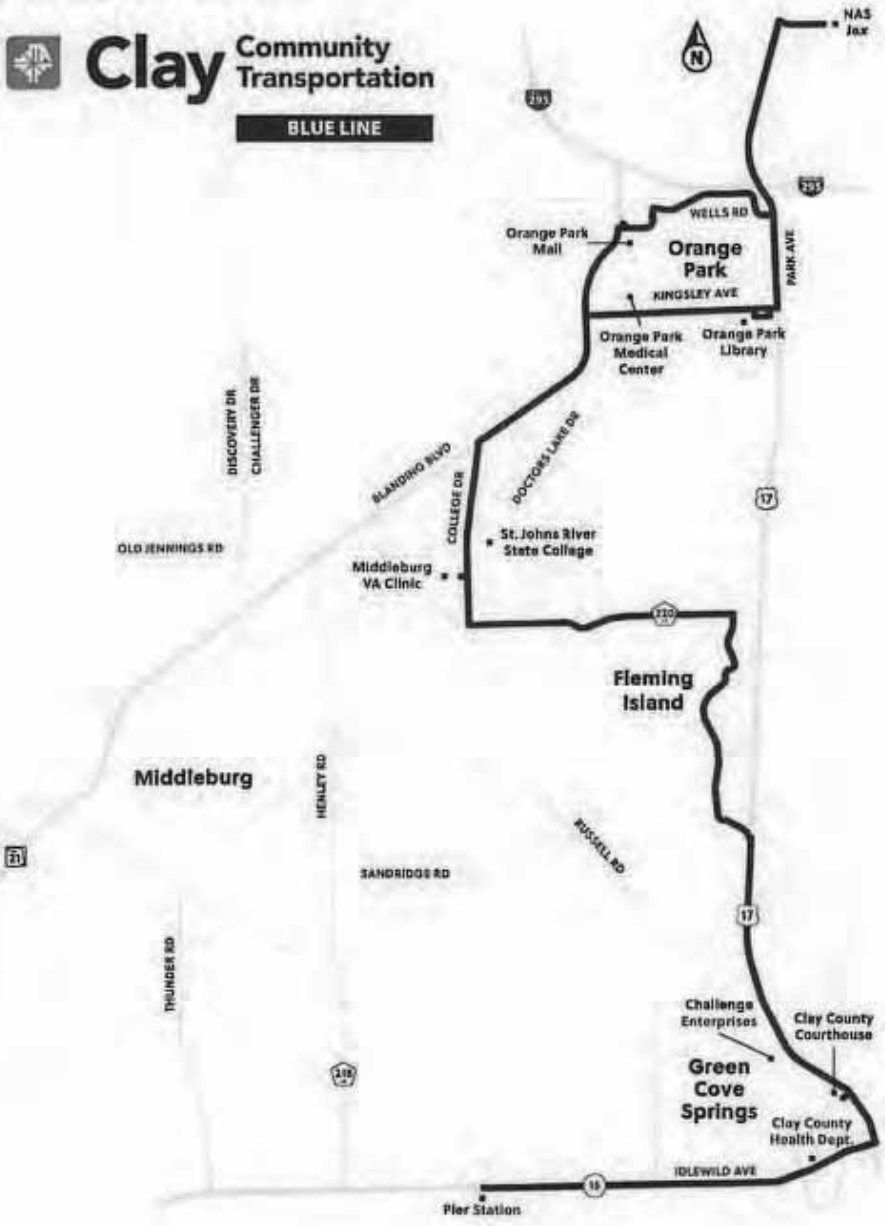
Figure 10. Sidewalk – Standing Water, Martin Luther King Jr. Blvd.

Figure 11. Sidewalk Uplift & Spalling, Martin Luther King Jr. Blvd

Figure 12. Sidewalk Loss, Martin Luther King Jr. Blvd

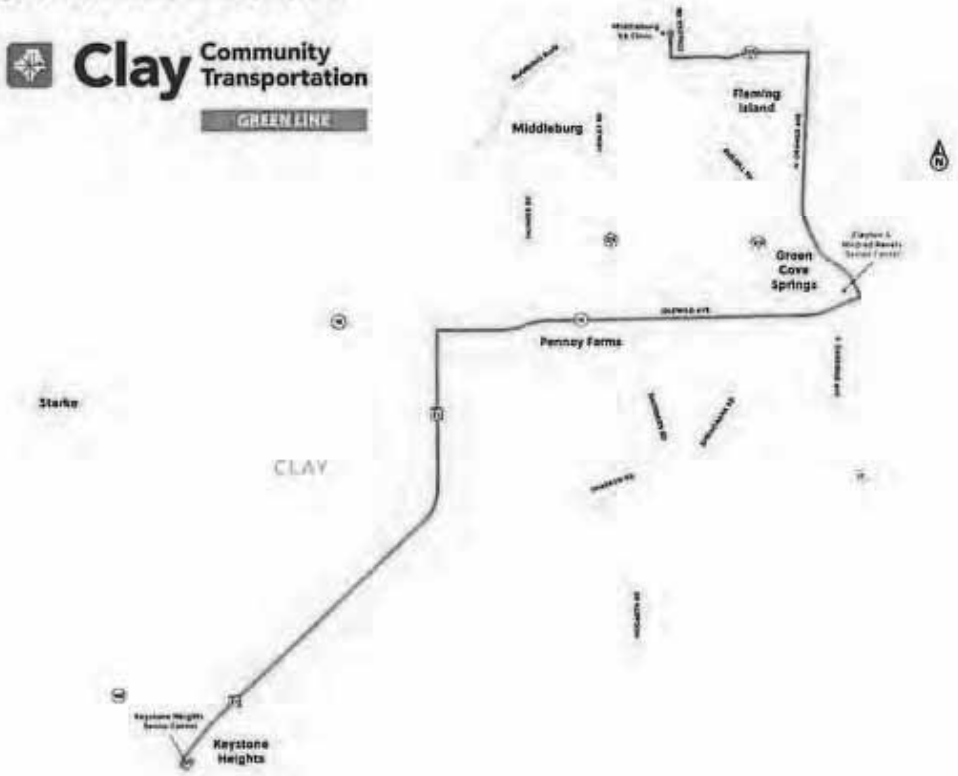


Map 3. Bus Route – Blue Line[4]



[4] Jacksonville Transportation Authority, https://www.jtafla.com/ride-jta/regional-services/clay-community-transportation/clay-blue-line/

Map 4. Bus Route – Green Line[5]



3.3. Aggregate assessed values do not show appreciable increase over past 5 years

The Study Area has experienced some redevelopment in the past five years, but the deterioration present, as shown in later sections, has prevented the Study Area from seeing an appreciable increase in its aggregate assessed value (AAV) as compared to the City as a whole. In Table 1, it is demonstrated that the City as a whole has experienced an increased AAV of 50.71% while the Study Area has only seen an increase of 20.53%.

Table 3. Aggregate Assessed Value Comparison

Year	Study Area	City
2017	$ 85,088,819.00	$590,524,531.00
2018	$88,913,992.00	$642,232,893.00
2019	$95,646,152.00	$802,652,764.00
2020	$95,809,061.00	$802,652,764.00
2021	$102,557,978.00	$890,001,640.00
% Increase	20.53%	50.71%

[5] Jacksonville Transportation Authority. https://www.jtafla.com/ride-jta/regional-services/clay-community-transportation/clay-green-line/

3.4. Faulty lot layout in relation to size, adequacy, accessibility, or usefulness

Within the Study Area, approximately 25.6% of the lots could be considered faulty (Map 4). The criteria for this determination were as follows:

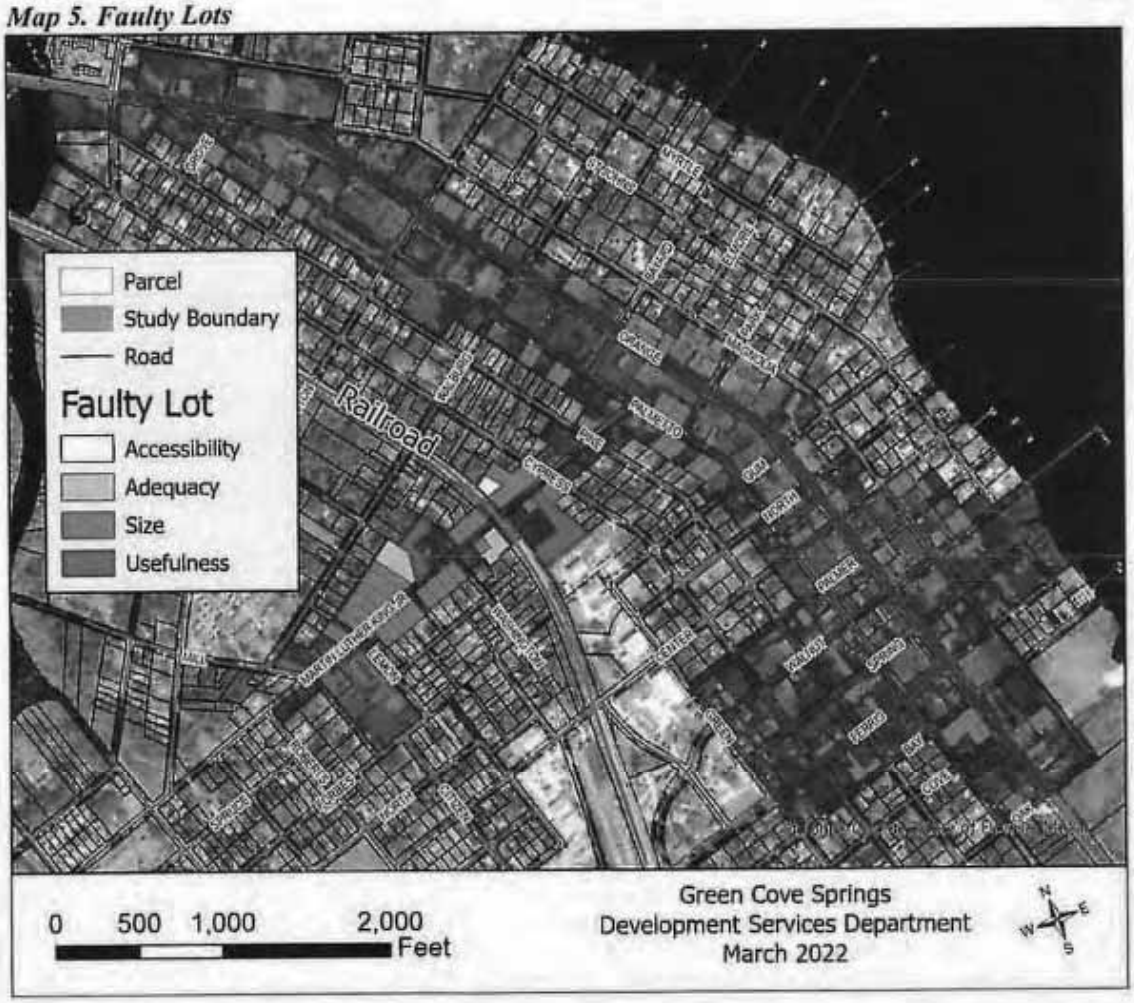
- **Size**: Commercially zoned lots with less than approximately 75 feet of frontage and approximately 100 feet of depth – despite the zoning code identifying no minimum lot requirements in commercial districts, the size of these lots is not suited for adequate commercial development, assuming they are developed individually given the diversity of ownership.
- **Adequacy**: Lots deemed inadequate are shaped in a manner which decreases their developability.
- **Usefulness**: Lots deemed less than useful are shaped in a manner which will likely completely prevent or deter their development or redevelopment.
- **Accessibility**: Lots deemed inaccessible are landlocked.

The City does permit residential development within many commercially zoned areas, and some of the identified lots have historically or recently been developed residentially as a consequence. Ideally, as identified in the Future Land Use Map, these lots would develop commercially or with a mix of uses to better support the neighborhood.

Recent development exemplifies the difficulties with developing commercially on narrow or otherwise small lots. Between 2019 and 2020, Dunkin Donuts constructed a new location within the Study Area – 610 N Orange Ave. The site is approximately 250ft along Orange Avenue (the primary roadway) by 125ft deep. The development received a variance from the City's Zoning Code requirements, which require parking to be to the side or back of a building in the Gateway Commercial Corridor. Due to the depth of the property and the type of development (drive-thru fast food), the lot layout was inadequate to permit development without a variance.

On the basis of the plight of Dunkin Donuts and the criteria identified above, additional lots are truly eligible to be considered faulty within the Study Area, but being that they are already commercially developed, at this time, they are not being considered faulty.

Map 5. Faulty Lots



3.5. Unsanitary or unsafe conditions

There are several sites with unsafe or unsanitary conditions located within the Study Area. Figures 13-29 (following) demonstrate the conditions for a portion of these properties.

Field inspection and Google StreetView inspection of the Study Area identified sites with deteriorating or damaged structures which pose a threat to building occupants, condemned or abandoned buildings, incomplete construction projects, lack of sidewalks or blocked rights-of-way (ROW[s]), as well as brownfield sites. There are unsafe commercial spaces where there is either a lack of defined pedestrian versus vehicular space or a lack of maintenance that would keep the area safe for traversing to and from a business.

These figures represent some of the many deteriorating, unsafe, and at times abandoned structures in the area.

Figure 13. Unsafe, Deteriorating Roof, 116 N Magnolia Ave

Figure 14. Unsafe, Condemned Building, 428 N Orange Ave

Figure 15. Unsafe, Boarded Openings, 115 N Magnolia Ave

Figure 16. Unsafe and unsanitary, Openings / Junk Storage, 115 N Magnolia

Figure 17. Unsafe, No Sidewalk, ROW used for RV Parking, 327 N Orange Ave

Figure 18. Unsafe, No Sidewalk, across from Figure 5, 425 N Orange Ave

Figure 19. Unsanitary, Discontinued Gas Pumps, 201 N Orange Ave

Figure 20. Unsafe, Collapsed Canopy, Petroleum Contamination Site[6], 100 N Orange Ave

Figure 21. Unsafe, Low hanging power lines, concrete drive in disrepair, south of 25 N Orange Av

Figure 22. Unsafe, ROW in disrepair, businses parks in ROW, 3 S Palmetto Ave

Figure 23. Unsafe, Lack of signage, marked parking spaces, pedestrian safety, 24 Green St

[6] FL Department of Environmental Protection's Contamination Locator Map, https://prodenv.dep.state.fl.us/DepClnup

Figure 24. Unsafe area in front of active commercial building, 1100 Martin Luther King

Figure 25. Unsafe Structure / Abandoned, 1007 Martin Luther King Jr Blvd

Figure 26. Unsafe / Abandoned Structure, 1001 Martin Luther King Jr Blvd

Figure 27. Unsafe / Abandoned Structure, 713 Martin Luther King Jr Blvd

Figure 28. Unsafe / Abandoned Structure, 613 Martin Luther King Jr. Blvd

Figure 29. Unsafe Structure, 612 Martin Luther King Jr. Blvd

3.6. Deterioration of site or other improvements

In addition to the deterioration of site improvements shown in section 3.5, within the Study Area, there are multiple occurrences of deteriorating improvements, especially access points or paved areas in surrounding buildings. Paving is wearing away or cracking creating hazardous conditions for drivers using the lots to park or maneuver the site and pedestrians crossing the access points. Figures below provide examples of this type of wear and tear in the corridor.

Figure 30. Deteriorating Drive / Sidewalk, 220 Palmer

Figure 31. Deteriorating Drive, 327 N Orange Ave

Figure 32. Parking lot disrepair, between 604 & 500 Walnut St

Figure 33. Sidewalk disrepair, between 604 & 500 Walnut St

3.7. Inadequate and outdated building density patterns

The applicable zoning districts for the Study Area generally include: Central Business District, Gateway Corridor Commercial, Gateway Corridor Neighborhood, and C-1 Neighborhood Commercial. The heart of the Study Area is where the Central Business District is located – also known as the Downtown area. The Gateway districts are located along the "corridor" area, notably US 17 or Orange Ave. The Martin Luther King Blvd corridor is zoned as neighborhood commercial but features primarily low density residential development including active and abandoned residential structures, churches, vacant lots, concrete block commercial buildings lacking transparency and activation.

Figure 36. Outdated building pattern, 208 N Orange Ave, Food Store

Figure 37. Outdated building pattern, 425 N Orange Ave, Wells Fargo

Figure 38. Outdated Building Pattern, 327 N Orange Ave, Rick Baker's RV

Figure 39. Low Density Development, 606 Spring St

Figure 40. Low Density Development, 627 Spring St

Figure 41. Low Density Development, Not Fronting Street, 702 Ferris St / 709 Spring St

Figure 42. Undeveloped, Gustafson Property, Pine St (behind house on Walnut St)

3.8. Vacancy rates

17.1% of properties within the Study Area are classified as vacant by the Clay County Property Appraiser. This level of vacancy within the Study Area is 44.9% higher than that of the rest of the municipality, which has an 11.8% rate of vacancy.

Many of these lots, shown in the figures below, are prime locations that once housed a local business which has since been removed. The lots have yet to have been redeveloped despite their prime locations in the commercial areas of the City.

Figure 43. Vacant Lot, Previously 208 N Orange Ave

Figure 44. Vacant Lot, East of 604 Walnut St

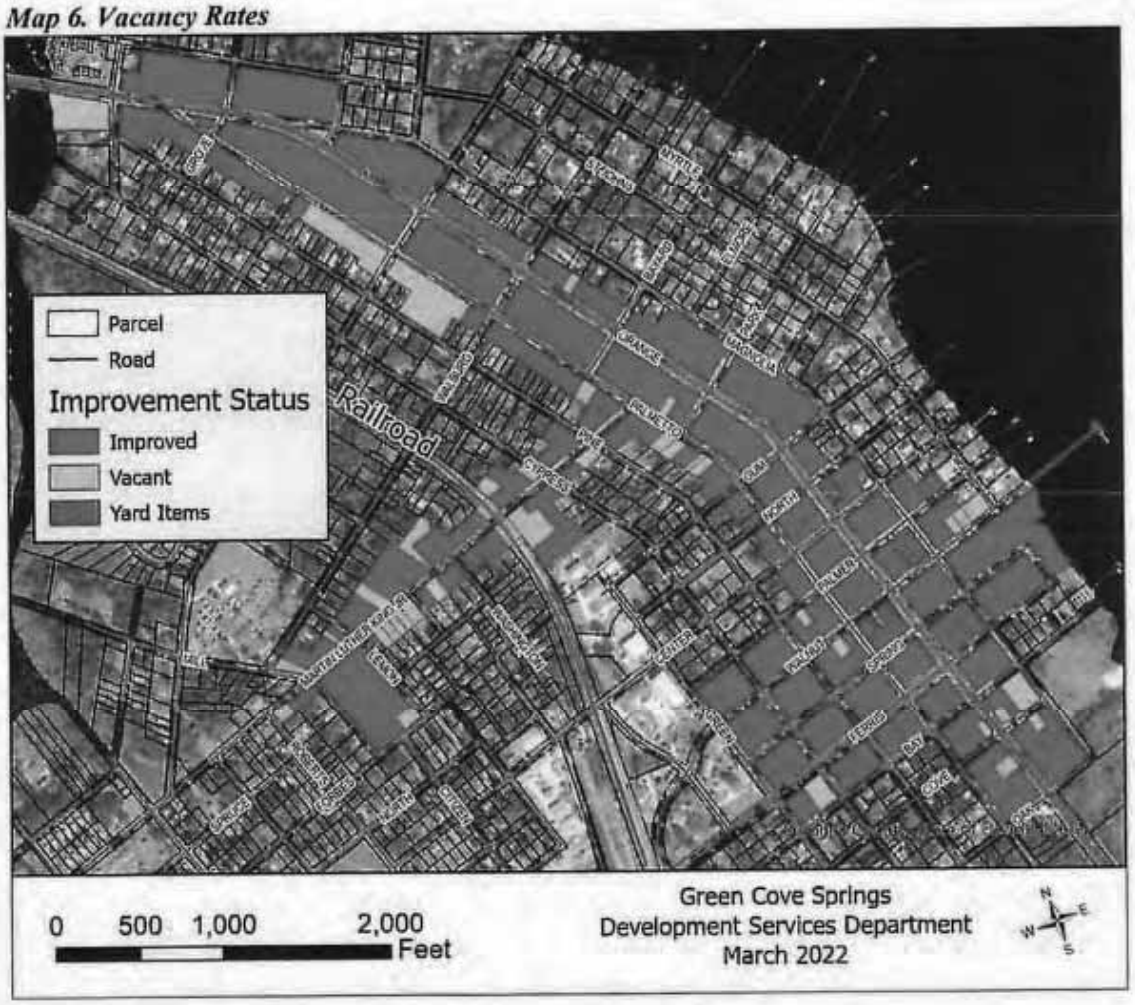
Figure 45. Vacant Lot, BROWNFIELD[7], south of 535 N Orange Ave

Figure 46. Vacant Lot at the northeast corner of Orange Ave &Walburg St

Figure 47. Vacant Lot at the northwest corner of Orange Ave & Governor St

[7] FL Department of Environmental Protection's Contamination Locator Map, https://prodenv.dep.state.fl.us/DepClnup

Map 6. Vacancy Rates



4. Recommendations

The Study Area meets the criteria established in Section 163.340, Florida Statutes (F.S.). It is staff recommendation that the City of Green Cove Springs adopt this Finding of Necessity by resolution per Section 163.355, F.S., and create a Community Redevelopment Agency for the Study Area as defined herein. This will enable redevelopment of the area which is necessary for the safety and economic welfare of the community.

2021-2022-56 Resolution- Declaring the Need - Creation of the Green Cove Springs CRA BCC #11

Final Audit Report 2022-08-11

Created:	2022-08-10
By:	Lisa Osha (Lisa.Osha@claycountygov.com)
Status:	Signed
Transaction ID:	CBJCHBCAABAA8PWW_XD4tkpTa4FDtxoh5Zna-D_pFdVw

"2021-2022-56 Resolution- Declaring the Need - Creation of the Green Cove Springs CRA BCC #11" History

Document created by Lisa Osha (Lisa.Osha@claycountygov.com)
2022-08-10 - 6:58:47 PM GMT

Document emailed to clayesign@claycountygov.com for signature
2022-08-10 - 7:00:01 PM GMT

Email viewed by clayesign@claycountygov.com
2022-08-11 - 6:36:40 PM GMT

Signer clayesign@claycountygov.com entered name at signing as WFBolla
2022-08-11 - 6:37:18 PM GMT

Document e-signed by WFBolla (clayesign@claycountygov.com)
Signature Date: 2022-08-11 - 6:37:19 PM GMT - Time Source: server

Document emailed to bccdocs@clayclerk.com for signature
2022-08-11 - 6:37:24 PM GMT

Email viewed by bccdocs@clayclerk.com
2022-08-11 - 9:03:10 PM GMT

Signer bccdocs@clayclerk.com entered name at signing as Tara S. Green
2022-08-11 - 9:03:57 PM GMT

Document e-signed by Tara S. Green (bccdocs@clayclerk.com)
Signature Date: 2022-08-11 - 9:03:58 PM GMT - Time Source: server

Agreement completed.

2022-08-11 - 9:03:58 PM GMT

Adobe Acrobat Sign

DOWNTOWN MASTER PLAN

Green Cove Springs, Florida

TABLE OF CONTENTS

FOUNDATION 1
Preface 1
Evolution of Green Cove Springs 2
Introduction 4
The Time is Now 5

1: PROCESS 7
Existing Conditions Analysis 8
Retail Market Analysis 9
Community Outreach 11
Opportunities & Constraints 12
Guiding Principles 13

2: FOCUS AREA 15
The Critical Start 16
Visualizing the Plan 17

3: IMPLEMENTATION 23
Phase 1 Improvements (Focus Area) 24
Phase 2 Improvements (Focus Area Expanded) 42
Phase 3 Improvements (Study Areawide) 44

4: 2042 VISION PLAN 46

SUPPLEMENTAL DOCUMENTS
A Public Engagement Summary
B Existing Conditions Analysis
C Demographics & Market Analysis
D Retail Action Plan

PREFACE

Located in Northeast Florida, approximately 25 miles south of Jacksonville and 25 miles west of St. Augustine, the City of Green Cove Springs is the County Seat of Clay County. The City is located on the western bank of the St. Johns River and registered a population of 9,786 residents in the 2020 Census.

A thriving town during the river and railroad heydays of the late 1800s, the City has suffered from a lack of regional connectivity as the interstate highway system expanded in other areas of the region. Downtown Green Cove Springs is more than 19 miles from the nearest I-95 exit and approximately 14 miles from the nearest I-295 exit, either destination is greater than a 20-minute drive.

EVOLUTION OF GREEN COVE SPRINGS

1816

George J.F. Clarke, is granted 22,000 acres of timbered land from the Spanish to develop a sawmill along the St. Johns River in eastern Florida.

In 1854 Clarke develops the land as White Sulfur Springs. It was renamed in 1866 as **Green Cove Springs** and became the county seat in 1871.

The first Federated Women's Club of Florida is founded in Green Cove Springs.

1884

A railroad route from Jacksonville to Palatka includes a stop to West Tocoi, south of Green Cove Springs, which helped bring tourists from the North down to the area.

TOURISM GROWTH

Henry Flagler's Railroad to St. Augustine sparks a steady decline in tourism after the St. Johns Railroad closes.

1890

1895

Green Cove Springs attracts many visitors from the north, as an authentic Florida destination along the St. Johns River. People flock to the natural spring and several hotels capitalize on the visitors like the The Qui-Si-Sana Hotel (left) and St. Clair Hotel.

1908

Gustafson's Farm is established by Agnes and Frank Gustafson, bringing a large dairy farming industry to the area.

James Cash Penney establishes "Penney Farms" west of the City and plans to develop a farming community.

FARMING GROWTH

1930

The City begins to recover from the great depression, receiving funding from the Works Progress Administration (WPA).

1940

MILITARY GROWTH

The Federal Government builds the Naval base ***Benjamin Lee Field*** in Green Cove Springs and ***Camp Blanding*** 20 miles west of the City, bringing a large military community to the area.

1940 Green Cove Springs Naval Base

DRAFT

The City earns the nickname "Little Detroit" as a result of many thriving car dealerships that served the Naval families.

1950

Spring Square, what would become known as ***Spring Park***, is purchased by the City from Foremost Properties, Inc.

1961

Vice President Lyndon B. Johnson closes the Naval Base and moves the "Mothball Fleet" to Texas.

The City purchases the base in hopes of developing it for industrial use.

City sells the base to the J. Louis Reynolds Corporation for development of a premier Industrial Park.

1970

1989

2 National Register Districts are designated containing 70 to 75 contributing historic structures, including the Clay County Courthouse, County Jail, Spring Park and more.

1998

Clinton designates Historic St. Johns River as an "American Heritage River."

2004

The new City Hall is built, inspired by the Qui-Sa-Sana Hotel that was once on the site.

2009

The City acquires the Dunbar High school, built in 1942, and begins converting it to the ***Augusta Savage Arts and Community Center*** in honor of Augusta Savage–artist, educator, activist, and community leader–who was born in Green Cove Springs in 1892.

2013

Gustafson Dairy Farm closes.

Women's Club celebrates 100 years at their dedicated building on Palmetto Ave.

2015

2017

The renovated Spring Park Public Pool opens after multi-million dollar upgrades.

2018

First Coast Expressway construction begins which will enhance connection into the City.

2022

The ***Augusta Savage Library and Mentoring Center*** anticipated opening.

NEW CIVIC SPACES

TODAY

Source: https://www.greencovesprings.com/history-of-green-cove-springs

Spring Park Pool

Judge Rivers House

INVESTING IN THE HISTORIC PAST

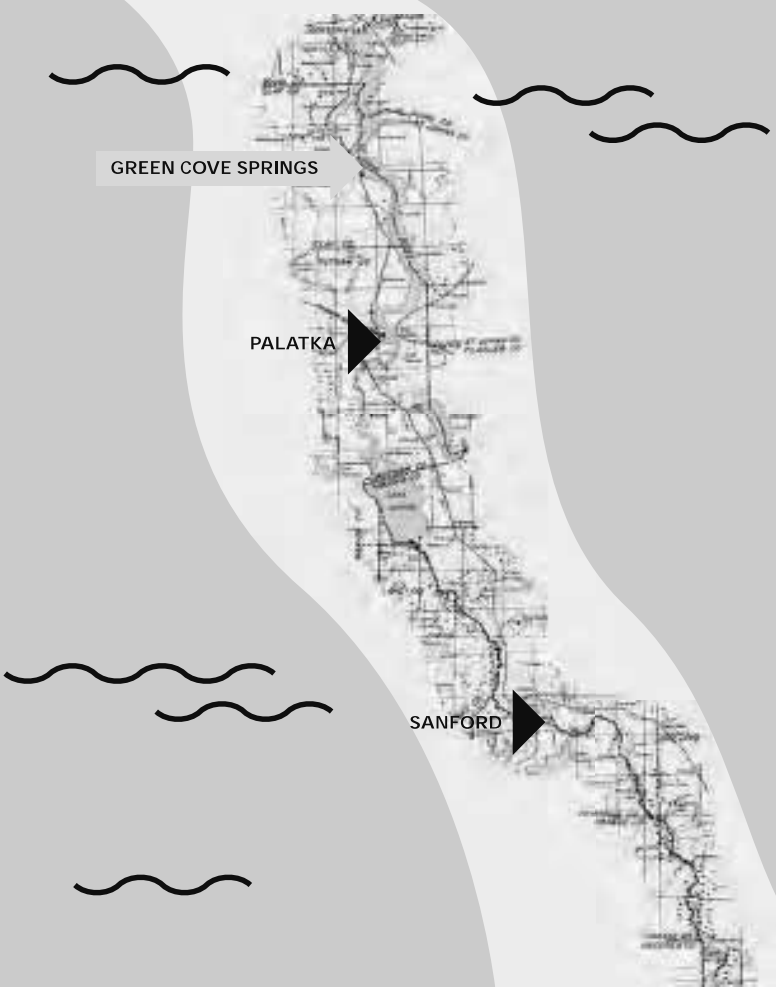
INTRODUCTION

Land use and transportation systems are inextricably linked. Navigable waterways were the primary system of regional transportation for thousands of years, which is why so many of the nation's most historic and prolific cities were located along riverbanks and ocean shores.

The City of Green Cove Springs, the Clay County seat, lies along the St. Johns River similar to other county seats across the region, including Palatka in Putnam County and Sanford in Seminole County. The St. Johns River was an active waterway in the late 1800s and early 1900s and functioned as a crucial artery of commerce and tourism. As a result, river towns began to emerge in quick succession along many of Florida's navigable waterways—several of which also became popular tourism destinations due to the area's warmer climate and wealth of pristine waterbodies. Despite the proliferation of new waterfront cities seeking to capitalize on Florida's emerging tourism industry, Green Cove Springs stood alone as the region's predominant tourism destination because of its rich natural springs, visitor accommodations, and southern hospitality, which helped the City earn its nickname as the "Saratoga of the South."

Yet, cruising along the St. Johns River was not the City's only option available for travel throughout the region, as the late 1800s also ushered in the era of the steam locomotive. The region received its first rail route in 1884 with a stop located south of Green Cove Springs, thus providing another pathway for commerce and tourism to make its way to the City.

Nearly half a century later, the end of World War II brought economic prosperity throughout the United States. The combination of the development of the Interstate Highway System in the 1950s, new financing opportunities for homebuyers and builders, and the proliferation of the personal automobile allowed growth within the region to flourish—particularly along the I-295 beltway, which is located approximately 14 miles north of Green Cove Springs. Over the last 40 years the population of Clay County has increased by more than 150,000 residents.



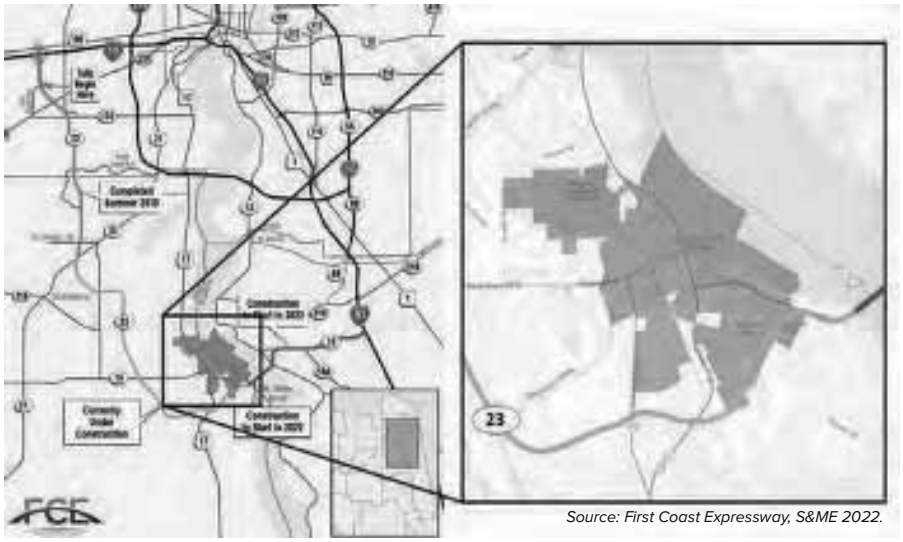
DRAFT

THE TIME IS **NOW**

The First Coast Expressway, already under construction, will provide a new connection between I-95 and I-10. This 46-mile, multi-lane toll road will serve as a Jacksonville bypass. Like the establishment of the St. Johns River route and the establishment of Florida's rail network in the 1800s, this new regional connection is likely to usher in another era of substantial growth for the City, bringing with it a wealth of new opportunities for Green Cove Springs and its Downtown.

In addition to the City's rich natural amenities, the expansion of the river and rail networks allowed Green Cove Springs to become one of Florida's preeminent destinations for tourism and commerce. With the construction of the First Coast Expressway set to be completed within the next few years, the City will be presented with a wealth of new opportunities for growth.

This community-driven Master Plan provides a roadmap for the City to successfully accommodate and incentivize the growth of its Downtown communities, businesses, and amenities, while continuing to honor the City's rich small-town charm and history. This plan identifies the issues and opportunities facing Downtown and recommends strategic investments and projects to advance toward the community's vision for Downtown Green Cove Springs as



Source: First Coast Expressway, S&ME 2022.

a thriving convergence of commerce, history, and community.

DRAFT

WHAT DOES
GREEN COVE SPRINGS
MEAN TO ME?

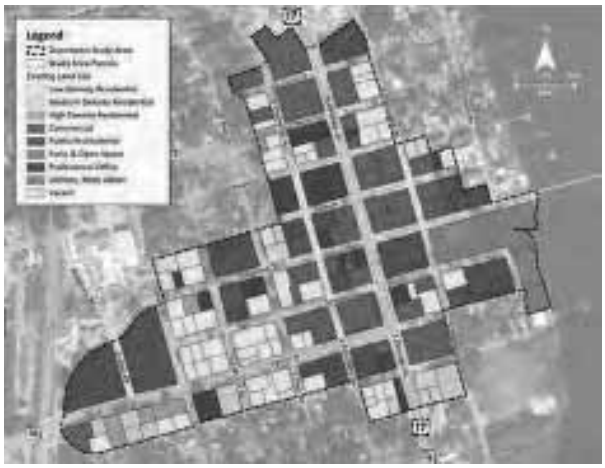
"IT'S HOME"

- COUNCIL MEMBER VAN ROYAL

PROCESS

1

EXISTING CONDITIONS ANALYSIS



The Project Team analyzed the ***land use, zoning, infrastructure, mobility, parking, parks***, and ***open space conditions*** within the Study Area using data provided by the City, Clay County, regional and state organizations such as the St. Johns River Water Management District and Florida Department of Transportation, and national agencies like the Federal Emergency Management Agency. This analysis allowed the Project Team to verify and support the insights provided by the public during the community outreach process while also discovering new details that would help further contextualize and inform this master planning effort. This assessment is detailed in the Existing Conditions Report accompanying the Plan.

The Project Team also sought to understand the socioeconomic and market conditions facing Downtown Green Cove Springs so that the Master Plan can provide clear and context-sensitive recommendations on the programs and projects necessary to energize the local economy. The conditions examined during this analysis included population, age, gender, race and ethnicity, education, employment, income, and industry leakages and surpluses for local retail and dining. This analysis can be found in the Demographic and Market Characteristics Report, which also includes additional recommendations specifically addressing the retail environment within the Study Area.

The four primary themes which surfaced during these analyses are summarized as follows:

- Improve ***connectivity and walkability*** within the Study Area by addressing the automobile-oriented nature of US 17, the safety issues present at the Walnut Street / US 17 intersection, and the lack of pedestrian accommodations throughout the Study Area.
- Transition site design requirements for ***future development*** from suburban (e.g., front-loaded parking, significant setbacks) to more urban standards, such as requiring rear-loaded parking lots, minimal setbacks, pedestrian-oriented entranceways, etc.
- Capitalize on the ***small-town charm and history*** of the community by establishing a gateway and wayfinding signage program throughout the Study Area, promoting a new and unique brand for Downtown, and celebrating the City's wealth of cultural and historical landmarks.
- Encourage ***infill and redevelopment opportunities*** to address issues of vacancies, underutilized developments, and blighted properties.

DRAFT

DRAFT

RETAIL MARKET ANALYSIS

A market analysis, a component of the master planning effort of Downtown Green Cove Springs, was conducted to identify the existing supply of and demand for specific retail industry sectors. The methodology of this analysis included an evaluation of the market conditions within three areas; the 5, 10 and 15-minute drive times around Downtown Green Cove Springs, as shown on the map included on this page. The utilization of drive times to define market areas is the industry-standard, with the 15-minute drive time as the primary market area limit. Distances longer than a 15-minute drive are considered to be outside the local market area as consumers are less inclined to make a "special trip" that is longer than 15 minutes.

5-Minute Drive	
Population	7,389
Households	2,572
Median HH Income	$48,182
10-Minute Drive	
Population	19,315
Households	7,097
Median HH Income	$60,018
15-Minute Drive	
Population	35,973
Households	13,444
Median HH Income	$67,380

The 5-minute drive area has one of the region's lower median household income levels at $48,182. The median household incomes increase in the 10- and 15-minute drive areas to $60,018 and $67,380, respectively. Income levels and the number of households increase significantly from the 5-minute drive area to the 15-minute drive area.

With greater population and disposable income available in the 10 and 15-minute drive areas, improving Downtown Green Cove Springs as a destination could spur redevelopment across a variety of industry sectors. Currently unmet market demands, including a variety of retail shops and services, were identified in each of three areas as detailed in the supplemental report Retail Market Analysis. For Green Cove Springs to capitalize on opportunities that would foster redevelopment in downtown, it will be necessary to facilitate the development of an "anchor-use" that will attract visitors from the 10 and 15-minute drive areas.

5-10-15 Minute Drive Market Area

Source: ESRI, BAO, 2022. S&ME 2022.

DRAFT

GCS Restaurant Potential

As shown in exhibit to the right, there is a high demand (over $3,524,353 in unmet annual demand) in the 15-minute drive market area for Drinking Places (Alcoholic Beverages). There is an unmet demand in the 5 and 10-minute drive area's as well. We recognize that multiple stand-alone bars in Downtown may change the existing small-town character, which the community wants to preserve. Alternatively, this market opportunity could be fulfilled as part of a full-service restaurant. The 10-minute drive area shows a demand for restaurants that exceeds available supply.

Dining out is a timeless experience. People are willing to drive for a great meal and waterfront views enhance the draw. Leveraging the unmet demand for Drinking Places to develop a destination/anchor restaurant would help attract more customers to Downtown and help to spur additional reinvestment. The opportunity for restaurants in downtown can be seen firsthand with the success of the City's Food Truck Friday events.

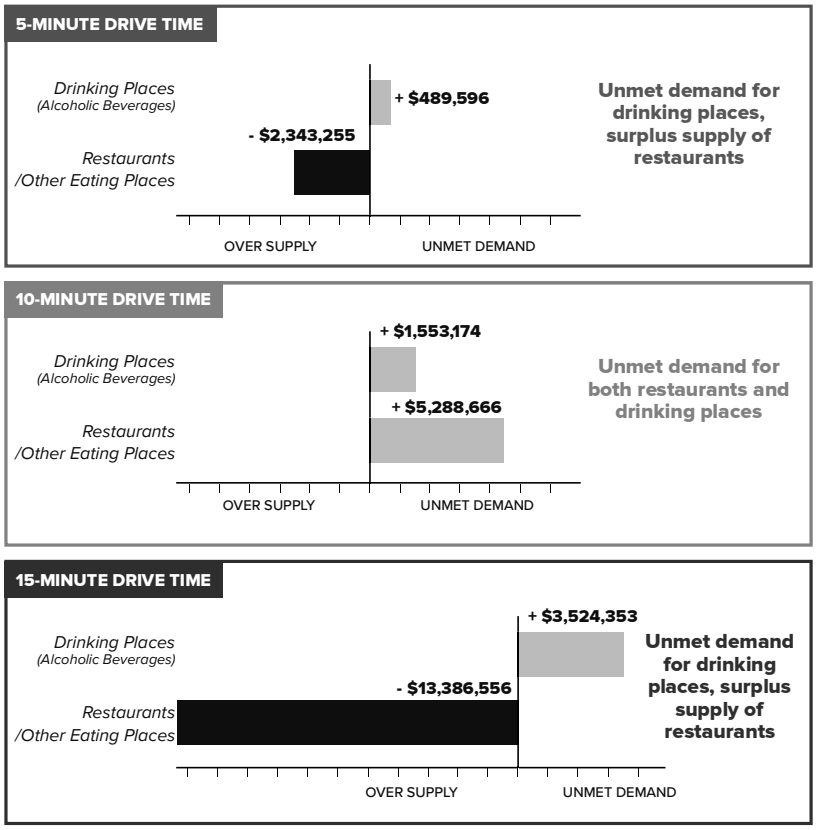
The following tables demonstrate the unmet demand for food and drink services within 10-minute drive time market area and the unmet demand for Drinking Places within the entire (5-10-15-minute) market area.

The unmet demand for Food Drink services within the 10-minute drive time coupled with the annualized sales per square feet for 'full-service' restaurants ($275 per square foot) yield a retail development potential of over 24,000 square feet to accommodate unmet annual demand for Food and Drink services. The average size for a "Family-Style" restaurant ranges from ~4,000 sq. ft. on the smaller end to ~8,000 sq. ft. on the larger end. The Downtown Green Cove Springs 10-minute drive time market area, may accommodate the development of several (2-3) full-service, family style restaurants.

Restauraunt Development Potential within 10-Minute Drive Market Area		
Unmet Annual Sales Demand	Annual Sales (per Sq. Ft.)	Restaraunt Development Potential
$6,841,840	**$275**	**24,879 Sq. Ft.**

Source: National Restaurant Association, Sales per Square Foot, Full Service Restaurant, February 8, 2022.

Retail Market Supply & Demand: Food & Drink



Source: ESRI, BAO, 2022. S&ME 2022.

DRAFT

COMMUNITY OUTREACH

Before drafting the Master Plan for Downtown Green Cove Springs, the Project Team sought to cultivate a rich and profound understanding of the issues and opportunities facing the Study Area. To realize this goal, two primary research methods were undertaken. The first was an Existing Conditions Analysis. The second was an intensive community outreach process which included both in-person and online engagement options, such as a project website, stakeholder interviews, and a five-day design charrette. The results of these research methods are summarized as follows and are further detailed in Supplemental Documents A (Public Engagement Summary), B (Existing Conditions Analysis), and C (Demographics & Market Analysis) of this Plan.

- Early in the project's lifespan, the Project Team ***established a website*** for the Downtown Master Planning effort utilizing the Social Pinpoint platform (smeinc.mysocialpinpoint.com/downtown_gcs_master_plan). In addition to hosting a wealth of project-related information, the project website also hosted an ***online survey*** and an ***interactive comment map*** where visitors could provide location-specific thoughts, perspectives, and opinions on how the Downtown should grow in the decades ahead. Over the course of the project website's lifespan, the site was visited over 1,800 times by nearly 600 unique viewers.

- The second community outreach tool utilized for the project was an intensive ***five-day charrette*** within City Hall between Monday, January 24th and Friday, January 28th, 2022. Monday's schedule included interviews with various Downtown stakeholders, a walking audit of the Study Area, and a ***Public Kick-Off and Visioning Session*** with the community. The following day involved a series of additional stakeholder interviews, a presentation to the Planning & Zoning Board, and beginning to draft the community's vision for Downtown. This vision was advanced further on Wednesday and presented to the public that evening at the ***Community Visioning and Design Workshop***. Using the feedback provided from the public, the Project Team began developing the first master plan concept on Thursday and presented this plan at the ***Vision & Design Unveiling Open House*** on Friday. After the presentation concluded, meeting attendees overwhelmingly expressed their approval of the proposed master plan and wished to be notified when the document was completed to see the final vision.

Whether participating online or in-person, the public provided a wealth of local expertise throughout the community outreach process which greatly informed this master planning effort. The three most reoccurring themes which emerged from the public during this time are summarized as follows:

- Identify ways in which to ***leverage Spring Park and the waterfront*** to cultivate authentic ecotourism opportunities, attract new and expanded events, and spur economic development within the Downtown

- Address the need for ***new development*** projects which enhance the vibrancy, volume, and diversity of activities Downtown (such as restaurants, shops, and lodging) without sacrificing the ***small-town charm and history*** that is unique to Green Cove Springs

- Improve the public realm to safely support and accommodate a wide variety of motorized and non-motorized transportation options which will ***connect residents and visitors alike to Downtown*** restaurants, shops, amenities, and services.

OPPORTUNITIES & CONSTRAINTS

The ideas and perspectives provided by the public during the Community Outreach process and the assessment conducted during the Existing Conditions Analysis helped set the stage for drafting the Downtown Master Plan by clearly inventorying opportunities and constraints within the Study Area. These items are represented graphically in the map presented on this page and are strategically addressed within this Plan through a series of context-sensitive projects. These projects are discussed in the following section of this document and are further detailed in the Implementation Strategy.

KEY

- Study Area (83.3 AC)
- Public Land (15.8 AC)
- Signalized Intersection
- Existing Public Parking (± 155 Spaces)
- Gateways
- "Main Street" Improvement
- 8' Multi-Use Trail under Construction
- Potential Multi-Use Trail/Pedestrian Connection
- Focus Area
- Existing Building
- Potential Restaurant/Retail Building
- Potential Pocket Park/Open Space
- Activity Barges
- Intersection Improvement
- Potential Street Closure
- Proposed Underground Utility
- Existing Monthly Food Truck Event Location
- Potential On-Street Parking
- Potential Sidewalk

DRAFT

DRAFT

GUIDING PRINCIPLES

The Guiding Principles outlined below were identified based on extensive community engagement and the clear consensus to balance the preservation of the City's history and character with compatible economic development.

Over the next twenty years, there will be significant development throughout Clay County to meet the demands of a growing population. The principles of **Waterfront**, **History**, and **Charm** speak to the current attributes of Downtown Green Cove Springs. These are unique attributes that cannot be replicated. The Downtown Master Plan will seek to enhance these existing assets.

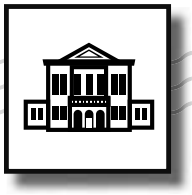
The principle of **Connectivity** seeks to further strengthen these assets by linking points of interest to create synergies.

The final principle of **Development** is realized through strengthening and connecting existing assets. It is embodied by desired real estate investment in Downtown that will complement the existing character and foster enhanced commerce and a greater sense of community.

WATERFRONT

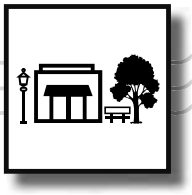
Activate and leverage the waterfront and park

HISTORY



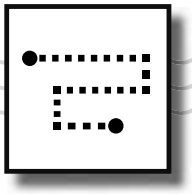
Embrace the local history

CHARM



Retain the small-town charm

CONNECTIVITY



Connect points of interest

DEVELOPMENT

Manage and plan for future development

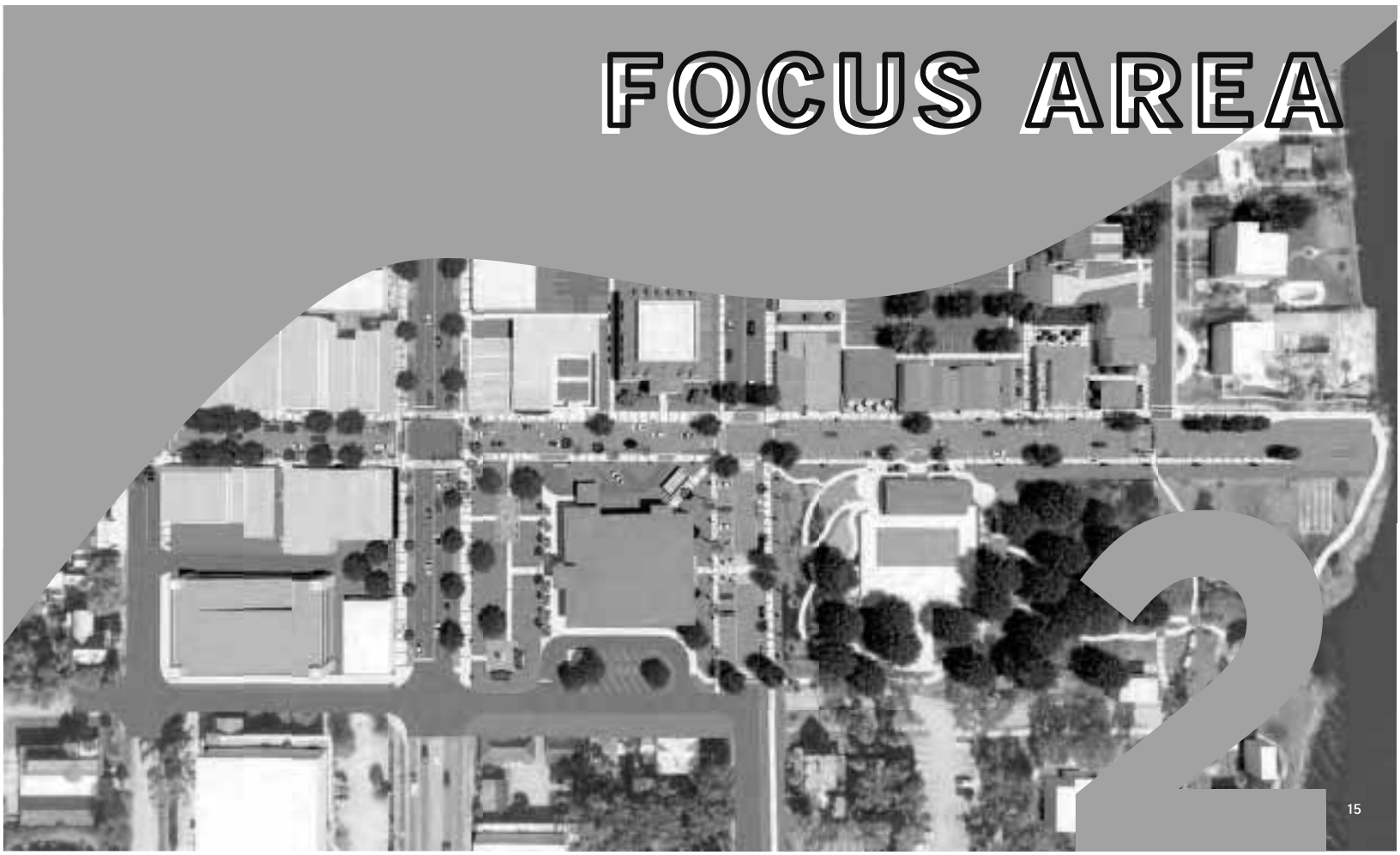
DRAFT

"YOU KNOW WHAT I THINK DOWNTOWN NEEDS? MORE PLACES TO

PLAY AND STAY"

- TRACY SMITH, OWNER OF SOMETHING SPECIAL ANTIQUES

FOCUS AREA 2

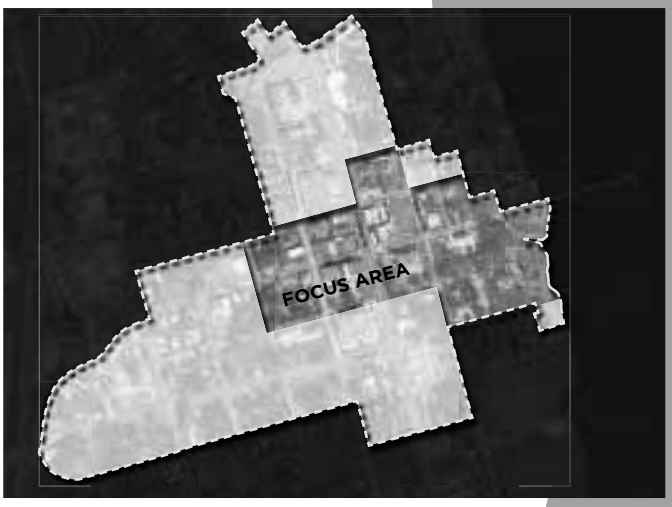


THE CRITICAL START

This master planning process was conducted utilizing the Downtown Study Area boundary provided by the City. The ideas and perspectives provided by the public during the Community Outreach process and supplemented by the Project Team's existing conditions analysis helped identify redevelopment needs throughout Downtown. However, these needs are extensive and cannot be addressed overnight. Many master plans, filled with great ideas and designs, often fail to address the long-term needs of their respective communities because they lack a clear starting point.

Therefore, although this Master Plan provides a long-term, 20-year vision for the Study Area, this Plan places the greatest amount of detail, attention, and guidance to the critical first phase of implementation. Projects proposed in Phase 1 are focused almost entirely within the City's urban core. This 'Focus Area', generally defined within this Plan as the portion of the Study Area found east of Pine Avenue between Palmer and Spring Street, contains many of the City's most prized assets, including the Walnut Street 'main street' corridor, Spring Park, and the St. Johns River. The value of these highly concentrated assets is enduring and, with the right plan, can once again be leveraged to generate increased activity, commerce, and energy to Downtown Green Cove Springs for decades to come. As such, the implementation of this Plan begins within this critical geographical area.

Source: Green Cove Springs, City Hall.

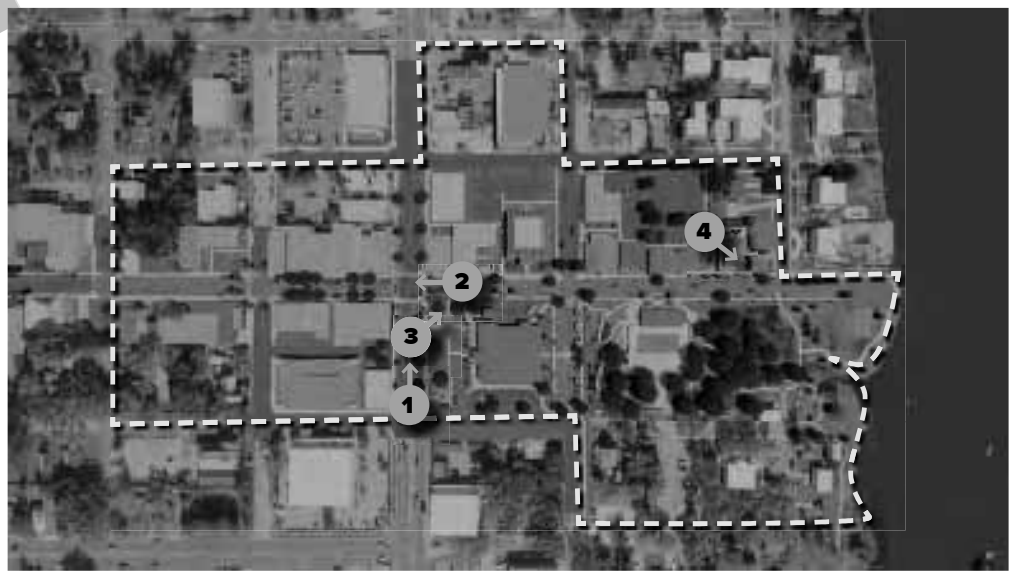


DRAFT

DRAFT

VISUALIZING THE PLAN

By establishing a smaller focus area, the implementation becomes more feasible and clear. To further articulate the reality of the proposed Plan, four illustrative perspectives were developed. The following 3-D visualizations showcase several key project sites proposed in the crucial Phase 1 and help communicate the reality of what is most achievable within the 20-year timeframe outlined in this Plan. These illustrations document some of the details proposed and effectively communicate the spaces and usability.



Perspective 1

Showcases the proposed US 17 streetscape improvements that enhance the sense of arrival into Downtown Green Cove Springs.

Perspective 2

Exhibits 3 key Phase 1 projects: the re-imagined US 17 / Walnut Street intersection, City Hall Park, and the Walnut Street Corridor upgrades.

Perspective 3

Previews a new civic space in front of City Hall which both celebrates and contributes to Downtown's iconic parks and open space system.

Perspective 4

Visualizes a Destination Restaurant that capitalizes on pristine views afforded by the proximity of the site to the waterfront and Spring Park.

1. US 17

Looking north towards Walnut Street

2. Intersection

Looking west along Walnut Street

3. City Hall Park

Looking northeast towards the park space

4.Restaurant

Looking southeast towards waterfront

"I SEE GREEN COVE SPRINGS' DOWNTOWN AS

CHARMING AND HOPEFUL"

- ANDREA VALLENCOURT, OWNER OF CLAY THEATRE

IMPLEMENTATION

3

PHASE 1

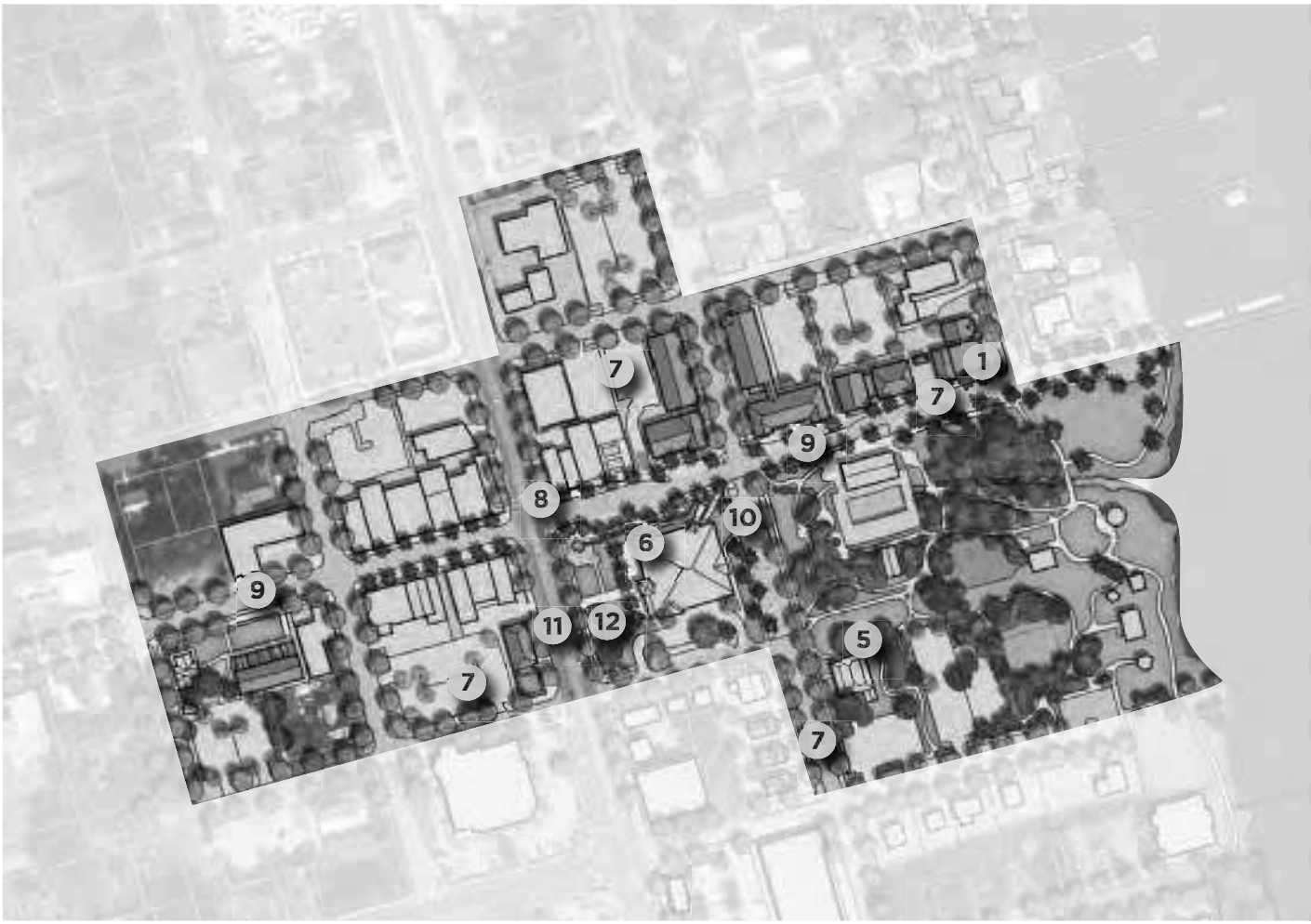
DRAFT

The master planning process for Downtown Green Cove Springs yielded numerous opportunities and capital improvement projects. One of the most common obstacles to implementation of these types of plans are the lack of a clear starting point.

This 20-Year Vision for the future of Downtown Green Cove Springs begins by implementing the projects and improvements outlined in Phase 1. These projects are listed by order of importance within the Phase 1 Table and are shown spatially on the following page. The key objectives for Phase 1 are to set the stage for current and future growth by capitalizing on Downtown's **WATERFRONT** vistas via a destination restaurant, establish a Downtown brand which captures the **HISTORY** and **CHARM** of the Study Area, identify funding and regulatory mechanisms to support future **DEVELOPMENT** projects within the public and private realm, and seek to coordinate (and lead as necessary) roadway improvement projects which enhance **CONNECTIVITY** between existing and future Downtown assets.

Phase 1 (1-5 Years)		
1	Leverage City-owned Catalyst Site to attract a Destination Restaurant	$$$
2	Establish a Downtown Community Redevelopment Agency	$
3	Adopt Downtown Brand and Logo	$
4	Establish & Adopt Form-Based Code	$
5	Pursue grants for restoration of the Judge Rivers House	$
6	Identify use for unfinished/unoccupied rooms in City Hall	$$
7	Increase Downtown Parking Supply (within Focus Area)	$$$
8	US 17 and Walnut Street Intersection Enhancement	$$$$
9	Improve Walnut Street Corridor (From Palmetto Ave. to the River)	$$$$
10	Magnolia Avenue - Festival Street	$$$
11	FDOT Improvements to US 17 Corridor (Oak Street to Governor's Creek)	$$$$
12	Design and Construct City Hall Park	$$$

EST. COST: $ = <$100,000 | $$ = $100,000-$1 Million | $$$ = $1-5 Million | $$$$ = >$5 Millon



PHASE 1 OVERVIEW

DRAFT

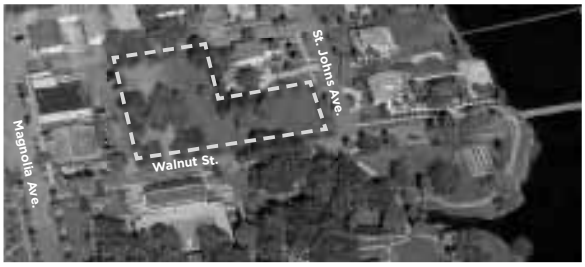
1. Leverage City-owned Catalyst Site to attract a Destination Restaurant

Walnut Street, between North Orange Avenue and the St. Johns River, is the original commercial Main Street of Green Cove Springs. Today, there are only two operating commercial uses along this segment: the Clay Theatre and Ronnie's Wings. Re-establishing the urban form and function of this corridor, in an architectural style and massing compatible with the community character, should be the fundamental first step in restoring the historic vitality of Downtown Green Cove Springs.

The City owns four contiguous parcels totaling approximately .92 acres along Walnut Street just north of Spring Park. This property is well-positioned for a destination restaurant that could offer convenient onsite parking and beautiful waterfront vistas.

The City was recently awarded a $400,000 grant from the Florida Department of Environmental Protection. This grant would help to fund Low Impact Development (LID) stormwater measures such as pervious parking spaces, tree boxes and bioswales on this property and along Walnut Street from the River to Magnolia Avenue.

Utilizing the state authorized redevelopment tools provided through the establishment of a Community Redevelopment Agency (CRA), the City should position the property as a 'pad-ready' site with parking and solicit proposals for development that would include a destination restaurant. Preparation of the property should include appropriate site civil, geotechnical and environmental analyses as well as a conceptual design for parking and stormwater.



Utilizing a Request for Qualifications (RFQ), instead of a Request for Proposals (RFP), would allow the City to select a development partner and work collaboratively towards establishing a commercially viable project that complements the rich character of Downtown Green Cove Springs.

Development of the site should be of traditional urban form and compatible with the existing architectural styles in Downtown Green Cove Springs. Consistent with an anticipated form-based code, the site provides the opportunity for the development of two or three buildings fronting Walnut Street. The buildings should be limited to no more than three stories with a maximum setback of ten feet, as measured from building face to the northern edge of sidewalk/right-of-way line. Parking should be behind the buildings. The City should also retain the right to approve the architecture of the building to ensure that the development complements the existing character of the community.

The revitalization of the entire Walnut Street corridor is an important long-term objective of this Downtown Master Plan. This segment (between North Orange Avenue and the River), with its proximity to the popular Spring Park, was prioritized in order to spur additional redevelopment within the Study Area.

DRAFT

Catalyst Site Development Process

1. Identify potential development partners to invite to respond
2. Prepare and issue a Request for Qualifications (RFQ) for a development partner that clearly states the City's vision for the property
3. Review, short-list, and interview the top three respondents; make selection
4. Negotiate a Memorandum of Understanding (City/Developer) to establish a process and schedule for the creation of a development plan
5. Advance the following site planning efforts:
    a. Developer performs their due diligence and commences planning efforts
    b. City performs environmental and geotechnical investigations of the site
    c. City identifies relevant City investments affecting the project site (e.g., streetscapes, park enhancements and other capital improvements)
    d. City identifies potential assistance that may be available to the Developer (e.g., design assistance, grants, TIF rebates, fee waivers and/or discounts)
    e. Developer proposes a development plan and requests incentives
    f. City and Developer negotiate terms of a Development Agreement
6. Prepare and execute Development Agreement
7. Commence Construction

DRAFT

2. Establish a Downtown Community Redevelopment Agency

The establishment of a Community Redevelopment Agency is a critical first step towards revitalization and the implementation of the Downtown Master Plan.

Community Redevelopment Agencies are authorized by Chapter 163, Part III of the Florida Statutes. Under Chapter 163, Part III, local governments are able to designate areas as Community Redevelopment Areas where "slum and blight" exist. Examples of conditions that can support the creation of a Community Redevelopment Area include, but are not limited to: the presence of substandard or inadequate structures, a shortage of affordable housing, inadequate infrastructure, insufficient roadways, and inadequate parking.

To determine if those conditions exist, the City would evaluate the proposed redevelopment area and prepare a Finding of Necessity report. If the Finding of Necessity determines that the required conditions exist, the City may create a Community Redevelopment Agency to provide the tools needed to foster and support redevelopment of the targeted area.

The activities and programs offered within a Community Redevelopment Area are administered by the Community Redevelopment Agency, a five to seven member CRA "Board" created by the City that directs the agency. The Community Redevelopment Agency is responsible for developing and implementing the Community Redevelopment Plan that addresses the unique needs of the targeted area.

The plan includes the overall goals for redevelopment in the area, as well as identifying the types of projects planned for the area. Potential projects and programming contained in CRA Plan include: streetscape and roadway improvements, building renovations, new building construction, water and sewer improvements, parking lots and garages, neighborhood parks, streetscape, sidewalks and street tree plantings. The CRA Plan can also include redevelopment incentives such as grants and loans for such things as façade improvements, building stabilization, business recruitment and business retention programs.

Many of the proposed strategic investments and projects within the Green Cove Springs Downtown Master Plan are typical of the those contained within a Community Redevelopment Plan. As such, this Master Plan could easily serve as the base document for the creation the Green Cove Springs Community Redevelopment Plan.

CRA Establishment Process

1. Coordinate redevelopment goals and objectives with Clay County
2. Prepare and adopt a Findings of Necessity report to identify conditions of slum and blight within the targeted area
3. Develop and adopt the Community Redevelopment Plan to address the unique needs of the targeted area via the identification of goals, objectives, and projects
4. Receive Delegation of Authority Resolution from the County
5. Establish the Community Redevelopment Agency and its Board
6. Create a Redevelopment [Tax Increment] Trust Fund to direct the increase in real property tax revenues back into the targeted area

DRAFT

3. Adopt Downtown Brand & Logo

The inspiration for the branding of Green Cove Springs started with an assessment of the character and personality of the City. Through interviews, a walking audit, and branding research, it was clear to see the rich history and natural beauty deserving of celebration within the logo for the Downtown.

The physical elements of the City that are showcased in the final logo composition include oak tress, charming brick streets, decorative lamp posts, and the re-imagined historic buildings along Walnut Street. The spring and river elements are honored in the waves below and “Cove” is emphasized in the City name above. The badge design compliments the City seal and the colors reflect a cohesive brand approach.

The objective of this branding initiative was to establish the Downtown area as a unique place within the City. This guided the emphasis of “Downtown” in the final design. The tagline speaks to the geographic significance of the City along the St. Johns River and nods to the residents’ cherished Floridian lifestyle–Where Cove Life Happens.

Full-color logo

3-color logo variations

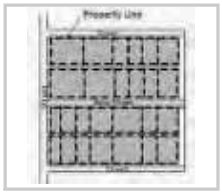
DRAFT

4. Establish & Adopt Form-Based Code

The Land Development Code and Zoning Map are the most important tools for implementing the vision for Downtown. Most sites in the Downtown are zoned Central Business District (CBD), the north and south gateways into downtown (US 17) are zoned Gateway Corridor Commercial (GCC), and the south side of the Ferris Street corridor and the west side of Palmetto Avenue are zoned Gateway Corridor Neighborhood (GCN). There are a few sites on Magnolia Avenue zoned R-1. Public sites are zoned Institutional (INS). While the current zoning standards have tried to address infill, redevelopment, and quality of design, transitioning to a Form-Based Code for the Downtown area and the US 17 and SR 16 commercial corridors as they enter the downtown would be the best option to achieve the vision.

The intent of the Form-Based Code (FBC) will be to preserve the existing character of the Downtown, while promoting quality infill and redevelopment in a walkable and mixed-use urban environment. The new FBC will contribute to streamlining the current zoning and development review process and provide developers, builders and residents with a more predictable and transparent process for development and redevelopment. Implementation of a form-based code would also lead to greater interest in the city for new investment and economic growth that would be fueled by the creation of a richer and more vibrant urban environment in the heart of Green Cove Springs.

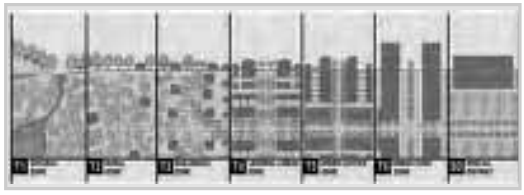
Recommendations for implementing a Form-Based Code within the City are detailed within Supplemental Document B.



Block Layout / Connectivity
Block size is key to achieving good urban form and transportation connectivity. Shorter blocks improve the pedestrian experience as well as foster a street network that supports the efficient distribution of traffic. The urban core gridded network shall be maintained and improved.

Building Placement / Orientation
The placement of a building on a site is critical to creating a vital and coherent public realm. Buildings must be oriented to the street; parking areas must be placed behind the buildings. Building orientation can also be defined by locating prominent entrances along the principal street.

Public Realm
Sidewalks in commercial areas must be wide enough to accommodate pedestrian activity, landscaping and streetscape furniture. Due to the lack of right-of-way along certain corridors, some sites may need to dedicate an easement to the city to accommodate such elements.



Regulating Plan
The organizing principle of a FBC is the regulating plan, a two-dimensional graphic that depicts the geographic distribution of the transect zones. Generally, the T-Zones range from T-1 to T-6, depending on the local context but not all FBCs include all 6.

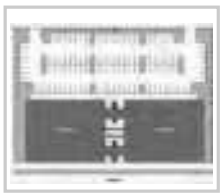
Source: Form-Based Codes Institute

DRAFT

Building Frontage and Setbacks
Minimum building frontage (the length of the façade along the street) and consistent front setbacks are important to creating a continuous urban form. Buildings need to be constructed close to the streets and sidewalks but not so close that the public realm is diminished.

Building Form, Massing and Scale
Standards must be adopted to ensure buildings have certain components (e.g., base, middle and top) and large building volumes are divided to appear as smaller volumes grouped together. Volume breaks may be achieved by volume projections and recesses, and varying heights and roof lines.

Façade Articulation & Fenestration
Facades must be designed to reduce the monolithic appearance of large unadorned walls. Fenestration (the arrangement of windows and doors along a façade) is a critical part of façade articulation. The percentage of fenestration shall be regulated to ensure transparency and adequate façade design.



Circulation, Access & Parking
Vehicular, bicycle and pedestrian traffic must be addressed. Curb cuts along primary streets should be minimized. Rear alleys, secondary roadways or joint use driveways should be used instead. Parking flexibility is needed in the core, especially if the city is committed to providing public parking in the Downtown.

Landscaping, Lighting and Drainage
Landscaping standards should focus less on buffers and use separation and more on providing shade and accentuating buildings and public spaces. Lighting should focus on safety and compatibility. Low Impact Development practices (e.g., green roofs, rain gardens, rain cisterns, or other design techniques) should be encouraged.

Signage, Wayfinding & Murals
Sign regulations must ensure redevelopment and infill projects have adequate signage in line with the vision for Downtown. Standards must also address storefront signage location, materials, and size to ensure a consistent environment. Murals and wayfinding should be addressed separately from the Code and instead be managed the city.

Public Art / Murals
Art (sculptures and murals) are an important part of urban life. Vibrant downtowns are made more unique when sprinkled with local art. The city should consider adopting an art program that would allow sculptures and murals throughout the core. Murals should not be regulated as signs as they are not intended as advertisement but rather as works of art. They should be allowed as part of a program managed by the city. Many cities in Florida have established their own programs and include requirements such as prior experience of the artist, size and placement limitations.

5. Pursue grants and other funding sources for restoration of the Judge Rivers House

The Florida Department of State, Division of Historical Resources, offers *Special Category Matching Grants* up to $500,000 on an annual basis. Development projects with the mission of Preservation, Restoration, Rehabilitation or Reconstruction of historic properties that are both owned by local governments and are regularly open to the public are eligible for this grant.

A formal announcement of the City's intent to preserve and restore the Judge Rivers House can help galvanize community support for this effort. A local non-profit organization, formed by supporters, could help raise funds for restoration and foster momentum for the project.

FLORIDA TRUST FOR HISTORIC PRESERVATION

Historical Resources

National Trust for Historic Preservation

DRAFT

DRAFT

6. Identify use for unfinished/unoccupied rooms in City Hall

The combination of City Hall's classical architecture and prominent location on the corner of Walnut Street and Orange Avenue render this important civic facility as one of Downtown's most prolific symbols of local character, history, and beauty. However, much like the Downtown itself, City Hall is full of underutilized potential. With a wealth of arched windows overlooking Downtown Green Cove Springs, two of the facility's most prominent rooms in the building are amongst its most beautiful, yet these spaces are currently being used for storage. The City should seek to immediately remedy this issue by identifying and cultivating strategic partnerships to finish and activate these spaces. Potential uses for these rooms should be those which seek to further enhance the vibrancy and activity within Downtown, as identified below.

COMMUNITY MEETING SPACE | SMALL BUSINESS INCUBATOR | ART GALLERY

7. Increase Downtown Parking Supply (within Focus Area)

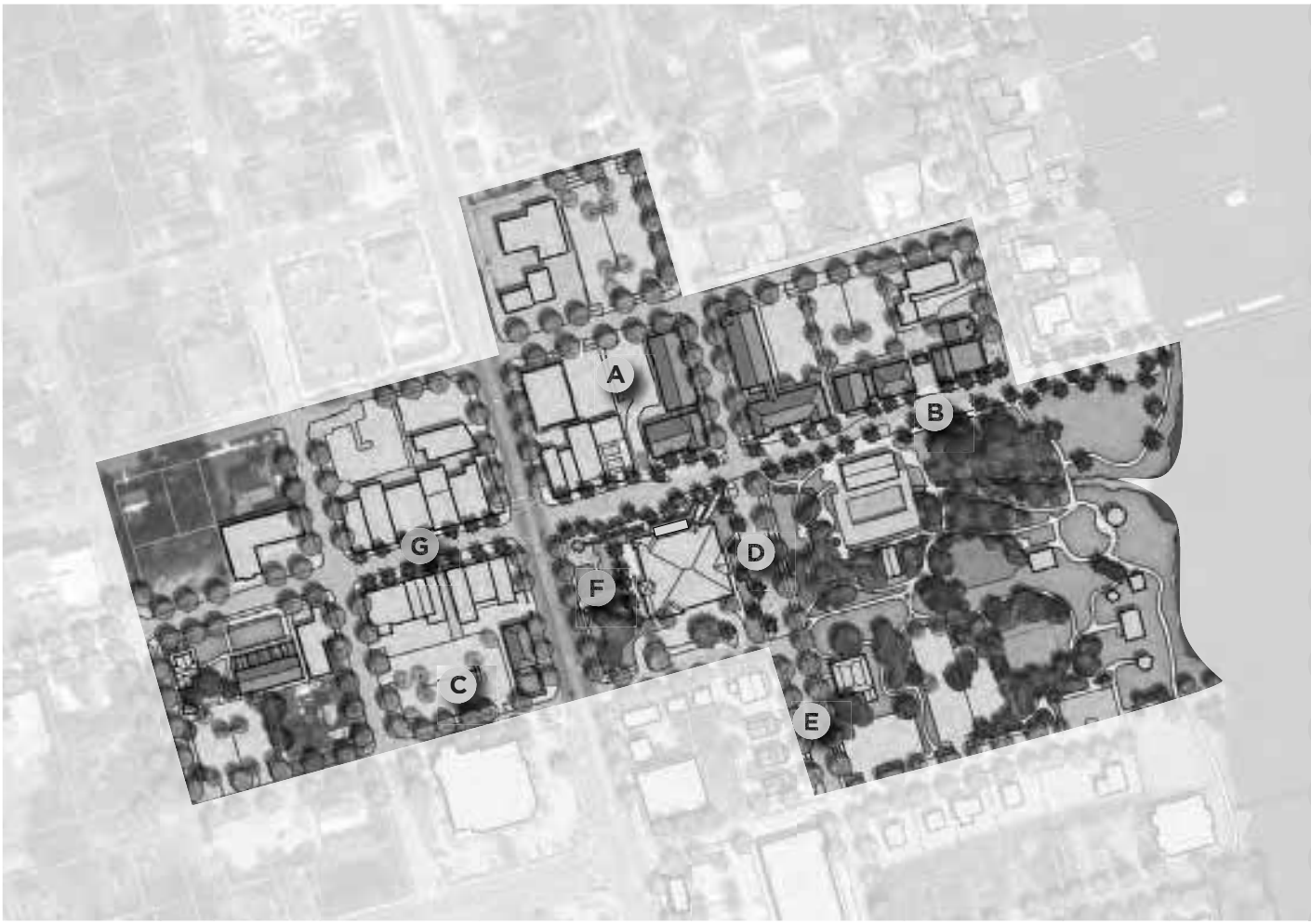
THA Consulting completed a parking study in 2022 which examined existing and projected parking conditions within the greater Downtown area of Green Cove Springs. During their analysis, THA Consulting found that the City currently possesses a parking surplus within the overall Parking Study Area on both weekdays and weekends. However, when the firm examined conditions within the Core Sub-Area (loosely defined as the area west of US 17 between Palmer and Ferris St.), it found that although the weekday parking supply was sufficient, the Core Sub-Area experienced a shortage of 41 spaces during the weekend. Furthermore, projected parking demand for the overall Parking Study Area (based upon 2031 population projections) was not expected to exceed the Area's current supply by 2031, but the existing weekend parking deficiency within the Core Sub-Area is expected to marginally increase throughout the next nine years.

The City should begin the process of incrementally increasing the parking supply Downtown. Five potential parking improvements (three on-street and two off-street) are proposed for Phase 1, which are identified in the following Table and illustrated on the Phase 1 Parking Map. These potential parking improvements were selected based on their potential to increase the area's total supply for parking, their location to major parking generators (e.g., Spring Park, the Walnut Street business corridor), and their estimated feasibility based upon the properties' current ownership status (*note: Projects A and C will require the acquisition of private property*).

As Downtown Green Cove Springs further develops and the projects identified within Phases 1, 2, and 3 of this Master Plan continue to be implemented, the City should remain vigilant of the Study Area's changing parking demands before moving forward with additional parking improvements (particularly if they would hinder walkability within the Study Area or fail to consider alternative modes of travel, such as bikes, scooters, transit, ride-sharing apps, etc.). However, if the demand for vehicular parking clearly escalates within the Study Area to such a degree that it effectively discourages further private sector investment, two potential locations for structured parking have been identified in Phase 3.

Phase 1 Proposed Parking Improvements (Est.)

	Parking Type & Location	EXISTING Spaces	PROPOSED Spaces	Net Change
A	*Mid-Block Palmer Street* **Parking Lot** *(Between Magnolia & St. Johns Ave.)*	**18 spaces (60°)**	**48 spaces (90°)**	**30 spaces**
B	*Walnut Street* **On-Street Parking** *(East of Magnolia Ave.)*	**22 spaces (30° & 60°)**	**41 spaces (30° & 90°)**	**19 spaces**
C	*Palmetto Ave. & Spring St. Intersection* **Parking Lot** *(Northeast Quadrant)*	**22 spaces (90°)**	**60 spaces (90°)**	**38 spaces**
D	*Magnolia Ave.* **Festival Street Parking** *(Between Walnut & Spring Street)*	**0 spaces**	**29 spaces (90° & Parallel)**	**29 spaces**
E	*Magnolia Ave.* **On-Street Parking** *(Between Spring & Ferris St.)*	**0 spaces**	**21 spaces (Parallel)**	**21 spaces**
F	*City Hall* **Off-Street Parking** *(See City Hall Park Project)*	26 spaces (45° & 90°)	12 spaces (45°)	-14 spaces
G	*Walnut Street* **On-Street Parking** *(Between Orange Ave. and Palmetto Ave.)*	20 spaces (Parallel)	10 spaces (Parallel)	-10 spaces
			Total Increase	**113 spaces**

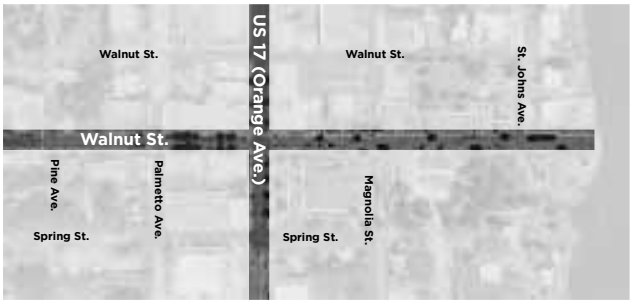


PHASE 1 PARKING

8. US 17 & Walnut Street Intersection Enhancement

Approximately 25,000 cars per day cross Walnut Street via US 17 and this amount is expected to double by the year 2045 with the completion of the First Coast Expressway. How many people in these vehicles realize they are driving through Historic Green Cove Springs, the Clay County seat? Furthermore, how do these fast-moving cars serve as a divide to pedestrian movement from the east to the west side of the City?

As part of the Walnut Street Conceptual Design Project, we identified Connectivity, Improved Access, and Use for Pedestrians as key design drivers for the corridor. Our proposed improvements for the intersection include removing the center turn lanes, adding curb extensions, and narrowing travel lanes–all of which reduce the pedestrian crossing distance across US 17 and also provide traffic calming. Other proposed improvements include landscape areas and street trees which provide shade and natural beauty and also provide additional traffic calming. Installing new mast arms and pedestrian signals enhances safety and reduces overhead wires. These proposed improvements will not only make this intersection more pedestrian-friendly, but will also provide a clear sense of arrival into Downtown and serve to effectively bridge the eastern and western portions of the Downtown.



DRAFT

DRAFT

9. Improve Walnut Street Corridor (from Palmetto Avenue to the River)

Walnut Street has served as the primary civic and commercial area within Downtown since the City's founding. As part of the Walnut Street Conceptual Design Project, we identified the need to create a 'sense of place' that would activate the corridor and encourage redevelopment and revitalization. The proposed design would create a flexible curbless street with expanded sidewalks and on-street parallel parking on the north side of the street. Expanded sidewalks can accommodate outdoor seating as well as provide areas for streetscape improvements such as furnishing zones for bike racks, litter receptacles and benches. Pedestrian-scale light poles create opportunities for hanging baskets and banners along the corridor, providing additional beautification. Planter pots and landscape areas are proposed to soften the streetscape environment and create a comfortable and welcoming pedestrian experience perfect for window shopping, outdoor dining, boutiques, and other types of activated retail spaces. Removable bollards can be placed at the end of each block to close down specific areas for evening and weekend events creating a true festival street experience. Underscoring the importance of connectivity and walkability, the Walnut Street Conceptual Design proposed landscape and lighting improvements to the existing paseo (pedestrian connection) from Walnut Street to the City-owned parking lot to the south of the corridor.

DRAFT

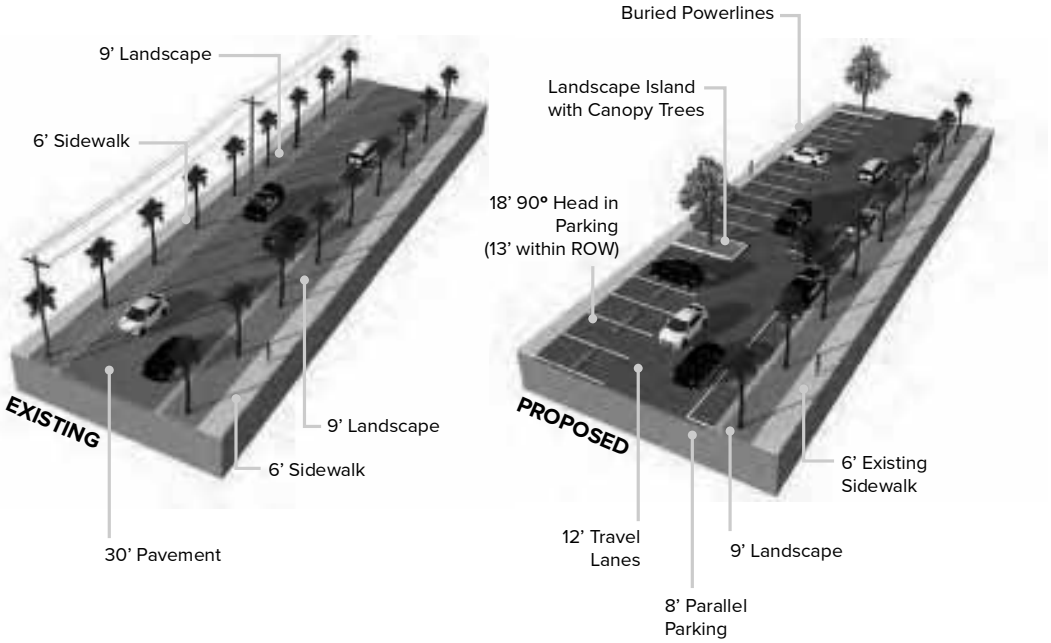
10. Magnolia Avenue - Festival Street

Magnolia Avenue is a north-south local collector which acts as Springs Park's western-most boundary. Today, this 52-foot right-of-way features two lanes of travel with no opportunities for on-street parking—indicating to drivers that the corridor (and the buildings and amenities which line the roadway) is something to travel through rather than a destination in of itself.

As such, this Plan proposes to transition a critical portion of Magnolia Avenue located between Walnut and Spring Street into a 'festival street', which are roadway segments designed to allow for frequent and temporary closures of vehicular traffic for pedestrian-oriented events and activities. By implementing this project, the City could effectively expand the size of Spring Park and thus, increase the capacity and programming for Downtown events such as Food Truck Friday and 3rd Saturday Market in the Park.

As shown on the PROPOSED typical street section, the conversion of Magnolia Avenue into a festival street would render the sidewalk flush with the street, install landscape treatments, equip the roadway with removable bollards, underground utilities (as part of the City's CIP), and provide both angled and parallel parking to increase the supply of parking within the Study Area.

MAGNOLIA AVENUE - Festival Street
(Looking North)
60' R.O.W. with 90° & Parallel Parking



DRAFT

ENHANCED FOOD TRUCK PARK

FLOWER BEDS

ADDITIONAL PARKING

REMOVABLE BOLLARDS

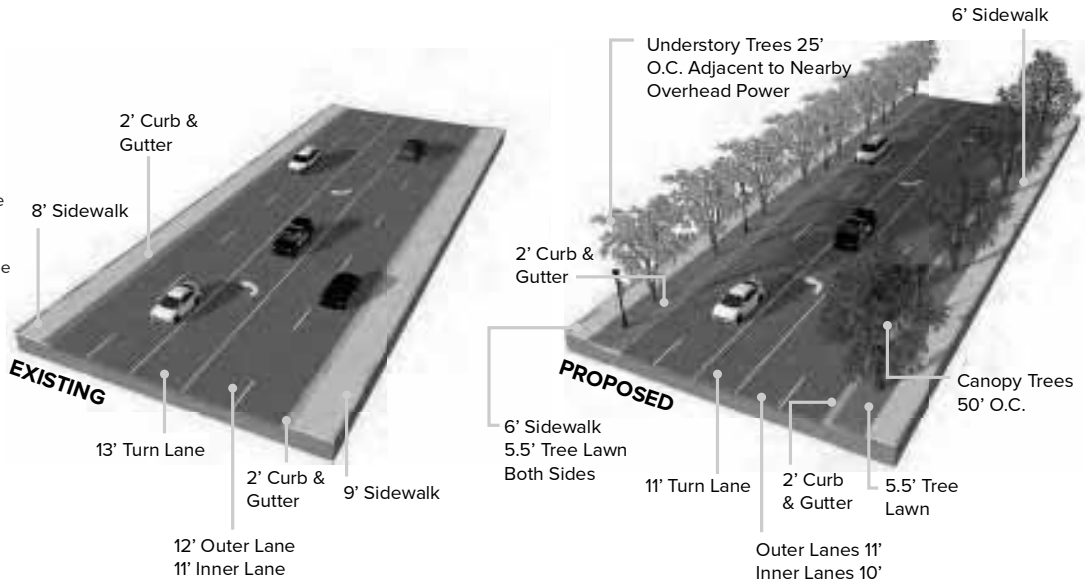
11. FDOT Improvements to US 17 Corridor (Oak Street to Governor's Creek)

The FDOT Context Classification of US 17 from just south of Oak Street to the Sheriff's Office driveway north of Governor's Creek is C4 – Urban General.

Walking along Orange Avenue (US 17) in Downtown Green Cove Springs, where the sidewalk extends directly to the curb, can be a harrowing experience as cars barrel past the posted 30 mile-per-hour speed limit. This is an uncomfortable and potentially unsafe condition that should be improved.

As shown in the PROPOSED typical section, this classification provides the opportunity to reduce travel lane widths, provide and expand landscape buffers, install street trees and provide sidewalks with a six foot minimum width. These improvements will serve to enhance pedestrian comfort, safety, community aesthetics and provide a greater sense of arrival to Green Cove Springs.

ORANGE AVENUE
(Looking North)
80' R.O.W.



DRAFT

DRAFT

12. Design and Construct City Hall Park

City Hall, with its architectural integrity and prominent location, serves as an important and compelling structure within Downtown Green Cove Springs. Unfortunately, the surface parking spaces along the front of the building undermine the property's full potential as a welcoming civic gateway.

The proposed design seeks to relocate parking spaces to the rear of the building and redevelop the front of City Hall as a small park/ plaza. This design would seek to reinforce the improvements to the US 17/Walnut Street intersection; improving the pedestrian experience and accentuating a sense of arrival into Downtown Green Cove Springs.

PROPOSED PARK SPACE

INSPIRATION: ST. AUGUSTINE

PHASE 2

WATERFRONT | HISTORY | CHARM | CONNECTIVITY | DEVELOPMENT

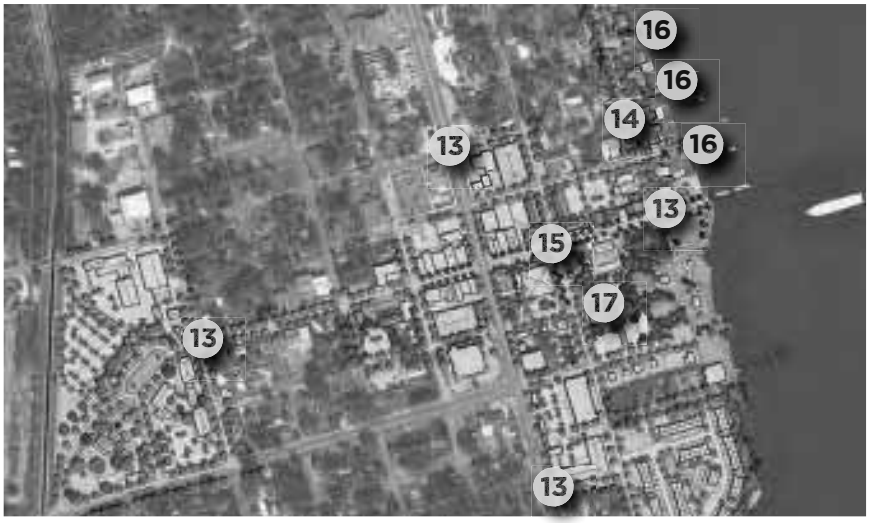
The projects proposed in Phase 2 are derived from the guiding principles provided by the community and the strategic improvements introduced in Phase 1. The following projects seek to activate the **WATERFRONT** by converting underutilized rights-of-way into neighborhood-serving pocket parks, capitalize on the City's unique **HISTORY** and **CHARM** by expanding Spring Park and establishing authentic gateway signage, provide for non-motorized **CONNECTIVITY** opportunities into the Downtown from neighborhoods to the north via a new trail project along St. Johns Avenue, and 'filling-in' the perceived gaps within the Focus Area by priming a vacant catalyst site for **DEVELOPMENT**.

Phase 2 (6-10 Years)		
13	Gateway Features	$$
14	St. Johns Avenue Trail (North of Walnut St.)	$$
15	Strategic Infill Project (Vacant Lot at Walnut St./Magnolia Ave.)	$$$
16	Waterfront Pocket Parks	$$
17	Spring Park Expansion & Improvements (Vacate Spring St.)	$$$

EST. COST: $ = <$100,000 | $$ = $100,000-$1 Million | $$$ = $1-5 Million | $$$$ = >$5 Millon

#14 ST. JOHNS AVE. TRAIL

#16 POCKET PARKS



DRAFT

13 Gateway features such as signage, monuments, and banners do more than just identify the location of an area or activity center. They are critical for establishing a sense of place, a community's identity, and conveying powerful messages. This Plan proposes to implement gateway features at strategic and highly visible locations within the Study Area which announce to residents and visitors alike they are entering thriving Downtown community rich with shops, restaurants, history, culture, and amenities.

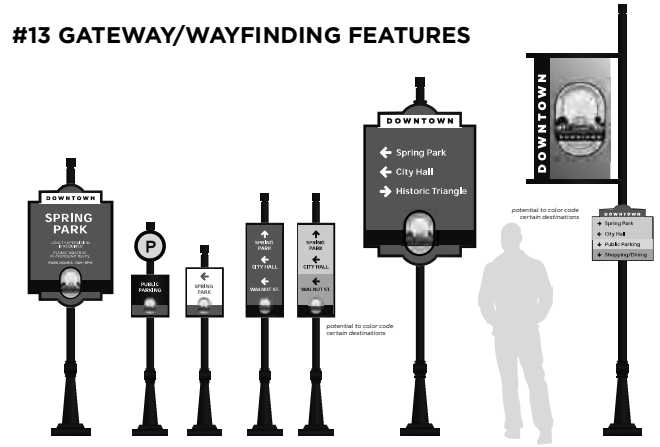
14 Consistent with the community's desire for additional nonmotorized connections between neighborhoods, the waterfront, and downtown amenities, this project would convert a portion of the St. Johns Avenue right-of-way into an off-street, multi-use path for pedestrians, cyclists, scooters, and other motorless forms of transportation.

15 This Plan places a significant emphasis on the revitalization and redevelopment of the historic Walnut Street corridor between US 17 and the St. Johns River. A necessary step to realizing this goal will be to address the presence of vacant and underutilized properties. One such site is the northwest quadrant of the Walnut Street and Magnolia Avenue, which is currently privately owned and is being used as an unpaved private parking lot. As such, the property owner should be approached by the City to discuss a more intense use for the site, potential incentive programming to assist in the redevelopment process, and/or whether the site should be purchased by the City to further redevelopment efforts Downtown.

16 Many east-west roadways within the Study Area terminate after connecting with St. Johns Avenue. However, the rights-of-way from these roadways often extend into the River. Thus, ample opportunities exist to convert these underutilized or vacant spaces into waterfront pocket parks which can serve the Downtown neighborhoods and connect the proposed St. Johns Avenue trail. Potential amenities at these locations may include benches, pavilions, tables, water fountains, and kayak/canoe launches.

17 From its world-class active and passive recreational facilities to its wildly popular public events, Spring Park stands alone as the region's premier civic open space. This Plan proposes to vacate the Spring Street right-of-way east of Magnolia Avenue, resulting in a loss of 12 spaces, to further expand the Park's capacity for future facilities, programming, and events. As part of this effort, the City should also reevaluate the functionality of the space and determine if the Park's current layout and amenities are complimenting the City's Downtown revitalization efforts.

#13 GATEWAY/WAYFINDING FEATURES



PROPOSED LOCATIONS FOR WAYFINDING & GATEWAY SIGNAGE

● **Gateways**

● **Wayfinding Signage**

PHASE 3

WATERFRONT | HISTORY | CHARM | CONNECTIVITY | DEVELOPMENT

The third and final phase of this Master Plan identifies a series of long-term and community-driven strategic investments intended to set the stage for future economic development within Downtown Green Cove Springs. Most notably, this Plan proposes the construction of high-capacity parking garages to service existing and future **DEVELOPMENT**, embrace the City's **HISTORY** and **CHARM** by revitalizing the Historic Triangle, establish meaningful **CONNECTIVITY** between points of interests throughout Downtown via cultural markers, signage, and paths, and leverage the City's prime **WATERFRONT** location to cultivate a thriving river-based economy and tourism industry.

Phase 3 (11-20 Years)		
18	Parking Garage - North (Intersection of Palmer St./Magnolia Ave.)	$$$$
19	Parking Garage - South (Intersection of Palmetto Ave./Spring St.)	$$$$
20	Culture Walk Markers	$$
21	Strategic Infill Project (Gustafson House - 515 Walnut St.)	$$$
22	Historic Triangle Site Redesign	$$$$
23	Marine Field Programming	$
EST. COST: $ = <$100,000 | $$ = $100,000-$1 Million \| $$$ = $1-5 Million | $$$$ = >$5 Millon		

#18 & #19 PARKING GARAGES

DRAFT

18 **19** As Downtown's economy flourishes and the inventory of developable properties nears depletion, the City should consider allowing developers to convert existing off-street parking lots into new redevelopment projects. This policy change will likely result in the exhaustion of Downtown's parking supply and thus, will trigger the need for one or more intensive, large-scale parking structures within the Study Area. Two potential locations for these facilities are identified in the Phase 3 Map.

20 Downtown Green Cove Springs is rich with history and culture. In efforts to both celebrate the area's unique cultural heritage while simultaneously enhancing connectivity throughout the Study Area, the City should establish a Downtown cultural trail program complemented by historical markers, imagery, and murals which link important local assets. If implemented effectively, the Culture Walk program would compel residents and visitors alike to stay and explore the Downtown area after reaching their initial destination.

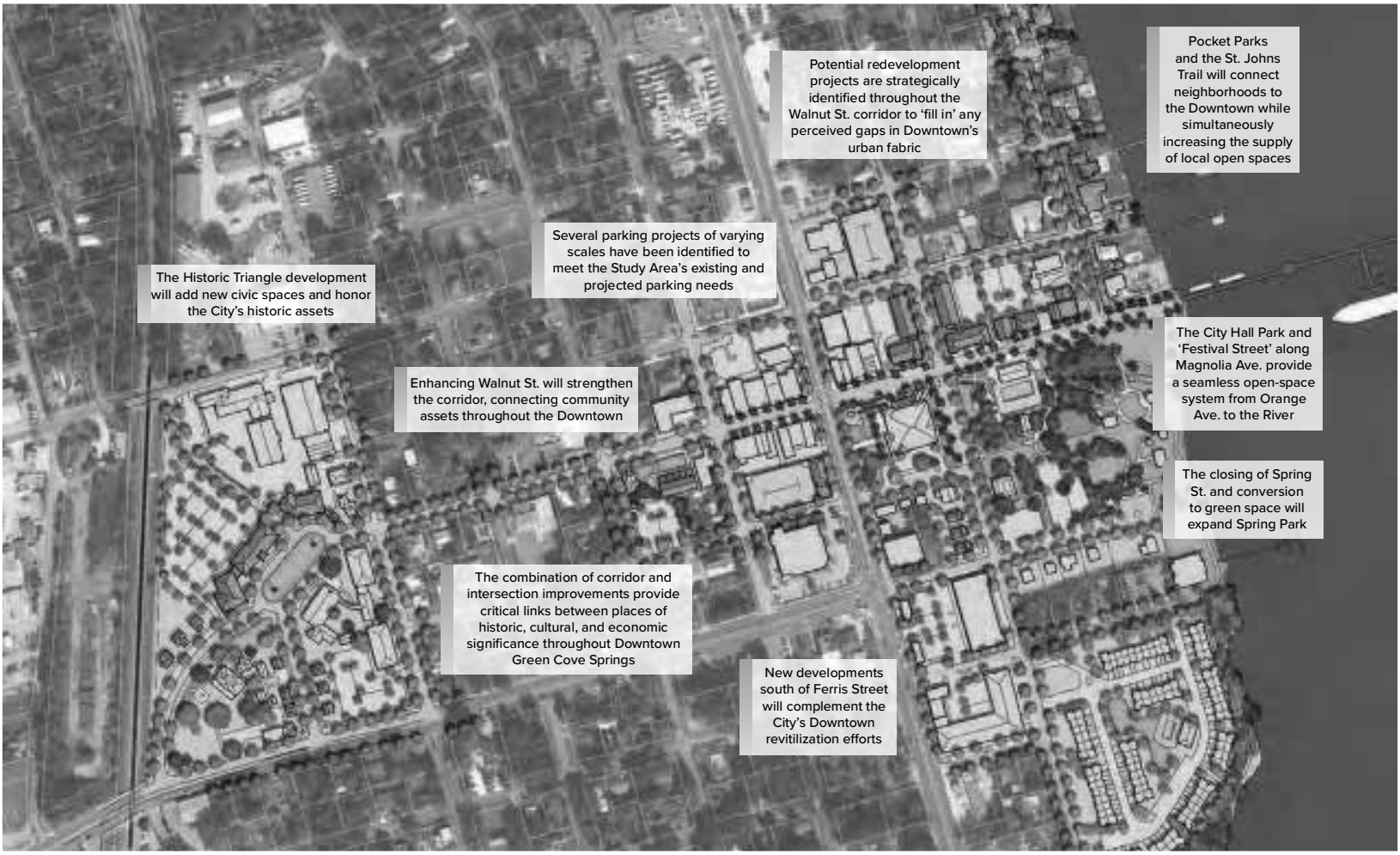
21 Frank and Agnes Gustafson, the founders of the Gustafson Dairy Farm, once resided along the historic Walnut Street corridor within Downtown Green Cove Springs. Today, their home remains under family ownership, but remains largely vacant and untouched since their passing. This Plan proposes to honor *Mama and Papa Gus*' legacy by working with the family to rehabilitate the historic home and repurpose it for a public use. Potential uses may include a history museum, small event space, visitor/community center, or other uses which help serve the community that this iconic couple called home.

22 The Walnut [Main] Street corridor is of critical importance to the success of Downtown and the City as a whole. In the past, significant attention has been paid to the blocks immediately east and west of the US 17 corridor. However, to create a truly vibrant Main Street, the corridor must be densely populated by public and private development that is bookended by important community focal points. Although the eastern end of the corridor meets this standard by featuring the St. Johns River and Spring Park, the western end terminates into the 'Historic Triangle', which houses a number of institutional uses in a sprawling and underdeveloped setting which fail to contribute to the Main Street vision of Walnut presented in this Plan. As such, this project includes various improvements to the corridor's eastern terminus by proposing a new public park facility, expanded parking facilities to accommodate Downtown events, and designating areas for future development which further support the Main Street activities along Walnut Street.

23 The City of Green Cove Springs is fortunate to be positioned adjacent to the St. Johns River—a renowned waterway whose natural conditions are favorable for a wide swath of aquatic activities, such as kayaking, fishing, and paddle boating. Additionally, the portion of the St. Johns River where the City resides is also unique in that it is an ideal setting for an established marine field capable of supporting boating lessons and training programs. Once established, this catalyst industry would attract a wide variety of commercial and industrial support businesses to the area, including restaurants, bait and tackle shops, hotels, and boat repair and restoration facilities.

#22 HISTORIC TRIANGLE

#23 MARINE FIELD PROGRAMMING


Potential redevelopment projects are strategically identified throughout the Walnut St. corridor to 'fill in' any perceived gaps in Downtown's urban fabric
Pocket Parks and the St. Johns Trail will connect neighborhoods to the Downtown while simultaneously increasing the supply of local open spaces
Several parking projects of varying scales have been identified to meet the Study Area's existing and projected parking needs
The Historic Triangle development will add new civic spaces and honor the City's historic assets
The City Hall Park and 'Festival Street' along Magnolia Ave. provide a seamless open-space system from Orange Ave. to the River
Enhancing Walnut St. will strengthen the corridor, connecting community assets throughout the Downtown
The closing of Spring St. and conversion to green space will expand Spring Park
The combination of corridor and intersection improvements provide critical links between places of historic, cultural, and economic significance throughout Downtown Green Cove Springs
New developments south of Ferris Street will complement the City's Downtown revitilization efforts

RAFT

VISION 2042

A lot can happen in twenty years. In 2042, the First Coast Expressway will have long been completed and it is anticipated that the long-awaited redevelopment of Reynolds Park will have taken form. According to the mid-range projections from the University of Florida's Bureau of Economic and Business Research, the population of the greater Clay County region will grow by more than 50,000 residents over the next twenty years.

The effort to revitalize Downtown Green Cove Springs has already begun with the creation of this Master Plan. By embracing the history and character to advance thoughtful and compatible economic development strategies, Green Cove Springs will be a desired destination.

Phase 1 of this Master Plan includes projects such as improvements along Orange Avenue and Walnut Street corridors, US 17/Walnut intersection enhancements, and the design and construction of a small park in front of City Hall. These projects are intended to foster a greater sense of arrival into Downtown Green Cove Springs. The first phase also seeks to leverage these public improvements for private investment. The City-owned parcels along Walnut Street, between Magnolia Avenue and St. Johns Avenue, provide a prime location for redevelopment that could include a destination restaurant that capitalizes on a beautiful and protected waterfront vista across Spring Park.

Phase 2 of this Master Plan seeks to further enhance the public realm within the Focus Area. The Spring Park expansion includes the vacation of a portion of Spring Street to increase green space. The conversion of Magnolia Avenue, from Walnut Street to Spring Street, to a curbless 'festival street' seeks to connect the Park to City Hall and create continuous park space from the St. Johns River out to US 17. A restored Judge Rivers House will serve as a physical symbol of the City's history and values. These public improvements will advance another private sector redevelopment opportunity on the vacant lot next to the Clay Theatre.

Phase 3 of this Master Plan reflects the anticipated success of the first two phases. Increased property values and the growing popularity of Downtown Green Cove Springs should create the need for one or more parking garages to serve both residents and visitors. Furthermore, the success and revitalization near the St. Johns River should extend and create opportunities for redevelopment on the west side of Walnut Street, including the underutilized publicly-owned parcels west of Green Street.

Over the next twenty years, there will be many new developments to support a growing Clay County region. However, no new development can replicate the authenticity of Downtown Green Cove Springs. Through thoughtful public realm enhancements and targeted private investments, which enhance activity and preserve community character, Downtown Green Cove Springs can regain its past vitality and position the City for new achievements in the 21st century.

ACKNOWLEDGMENTS

The Residents of Green Cove Springs

Edward Gaw, Mayor
Matt Johnson, Vice Mayor
Connie Butler, Council Member
Steven Kelley, Council Member
Van Royal, Council Member

Henrietta Francis, Planning & Zoning Board Chair
Gary Luke, Planning & Zoning Board Vice-Chair
Brian Cook, Planning & Zoning Board Member
Justin Hall, Planning & Zoning Board Member
Richard Hobbs, Planning & Zoning Board Member

Steve Kennedy, City Manager
Mike Null, Assistant City Manager / Public Works Director
Michael Daniels, Planning & Zoning Director
Heather Glisson, Planning Technician
Tiffanie Kelly, Public Information Officer

& The Stakeholder Interview Group

LEAD CONSULTANT:

TEAMING PARTNER:

TORTI GALLAS + PARTNERS

Exhibit “B”

INTERLOCAL AGREEMENT
BETWEEN CLAY COUNTY,
CITY OF GREEN COVE SPRINGS AND
GREEN COVE SPRINGS COMMUNITY REDEVELOPMENT AGENCY

This Interlocal Agreement (hereinafter "Interlocal Agreement" or "Agreement") by and between Clay County, a charter county and political subdivision of the State of Florida (hereinafter "County"), the City of Green Cove Springs, a Florida municipality (hereinafter "City") and the Green Cove Springs Community Redevelopment Agency, a public body corporate created pursuant to Section 163.357, Florida Statutes (hereinafter "Agency"), (County, City and Agency collectively, the "Parties"), is made and entered into on the ____ day of _____, 2023, and shall be effective on the latter date of execution by the Parties hereto.

WHEREAS, on April 19, 2022, the City approved Resolution R-03-2022 finding the existence of blight in an area of the City (the "Redevelopment Area") based on a study containing evidence, data, analysis and facts dated March, 2022 ("City's Study"); making certain findings and determinations; and finding a need for creating a Community Redevelopment Agency pursuant to Chapter 163 Part III, Florida Statutes; and

WHEREAS, the Redevelopment Area is generally described as the downtown and US 17 corridor, which is specifically described in the City's Study; and

WHEREAS, the County, as a charter county, is vested with all of the powers under the Community Redevelopment Act of 1969; and

WHEREAS, Section 163.410, Florida Statutes, authorizes the delegation by the County,in its discretion, to the City the exercise of certain powers related to community redevelopment under Chapter 163, Part III, Florida Statutes, subject to such conditions and limitations as the County may impose; and

WHEREAS, Chapter 163, Florida Statutes, authorizes public agencies to enter into agreements to provide services and to exercise jointly any power, privilege, or authority they share in common and which each might exercise separately; and

WHEREAS, on August 9, 2022, the County approved Resolution 2021/2022 – 56 declaring and finding a need to create a Community Redevelopment Agency for the Redevelopment Area within the City and delegating the exercise of certain limited powers to the City to establish a Community Redevelopment Agency and delegate to the Community Redevelopment Agency to prepare and adopt a plan of redevelopment to be submitted to the City and the County for review and approval; and

WHEREAS, on November 29, 2022, the City Planning and Zoning Commission, as the Local Planning Agency, unanimously approved a Redevelopment Plan (the "Plan"); and

WHEREAS, on December 13, 2022, the City established the Green Cove Springs Community Redevelopment Agency (the "Agency") pursuant to Ordinance O-24-2022; and

WHEREAS, on January 12, 2023, the Community Redevelopment Agency approved the Plan; and

WHEREAS, the County approved the Plan on April 25, 2023, pursuant to Resolution 2022/2023-_____; and

WHEREAS, Section 6 of the County's Resolution 2021/2022 – 56 provided the County would consider the delegation of additional community redevelopment powers to the Agency by an interlocal agreement; and

WHEREAS, the County approved this Interlocal Agreement on April 25, 2023; and

WHEREAS, on _____, 2023, the City approved the Plan and this Interlocal Agreement pursuant to Resolution 2023-____; and

WHEREAS, on _____, 2023, the City established the Green Cove Springs Redevelopment Trust Fund pursuant to Ordinance _____; and

WHEREAS, the Agency approved this Interlocal Agreement on _____; and

WHEREAS, the City, the County, and the Agency now wish to enter into this Agreement to establish procedures for the governance of the City, County and Community Redevelopment Agency and to further provide for the delegation of authority and powers by the County to the City and the Agency.

NOW THEREFORE, in consideration of the mutual covenants declared herein and other good and valuable consideration each Party agrees as follows:

This Interlocal Agreement is entered into pursuant to Section 163.400, Florida Statutes, and the Florida Interlocal Cooperation Act contained in Sections 163.01, et.al., Florida Statutes.

Section 1. Intent of Parties.

It is the intent of the Parties that provisions in this Agreement which conflict with provisions of the Community Redevelopment Act of 1969, Chapter 163, Part III, Florida Statutes (the "Act"), as amended, shall control. The County, the City and the Agency intend to bind themselves to the terms and obligations of this Agreement.

Section 2. CRA Redevelopment Plan and Base Year.

The Parties agree that:

A. Pursuant to the Act and the terms of this Agreement, the Agency may adopt a Community Redevelopment Plan for a term of 30 years beginning January 2023, and the City and the County shall appropriate funds to a redevelopment trust fund in accordance with the Act and this Agreement through January 1, 2054, each with approval of the City and the County.

(1) The Agency may amend its plan to extend the term of the Plan only with an affirmative vote of both the City and the County.

(2) Neither the Agency nor the City may expand the boundaries of the Redevelopment Area without express authorization of the County evidenced by an additional delegating resolution.

B. The "base year" taxable property assessment roll, used for the calculation in Section 163.387(1), Florida Statutes, shall be the values used for taxation in calendar year 2023.

Section 3. County delegation of powers.

A. With the exception of the community redevelopment powers that continue to vest in the County pursuant to Section 163.358 of the Act, the Agency shall have the right and sole responsibility to exercise the following redevelopment powers specifically delegated by the County pursuant to section 163.370 of the Act only within the Redevelopment Area:

(1) The power to make and execute contracts and other instruments necessary or convenient to the exercise of its powers pursuant to the Act.

(2) The power to disseminate information regarding slum clearance and community redevelopment.

(3) The power to undertake and carry out community redevelopment and related activities within the Redevelopment Area, which redevelopment may include:

(a) Acquisition of a slum area or a blighted area or portion thereof by purchase, lease, option, gift, grant, bequest, devise, or other voluntary method of acquisition.

(b) Demolition and removal of buildings and improvements.

(c) Installation, construction, or reconstruction of streets, utilities, parks, playgrounds, public areas of major hotels that are constructed in support of convention centers, including meeting rooms, banquet facilities, parking garages, lobbies, and passageways, and other improvements necessary for carrying out in the Redevelopment Area the community redevelopment objectives of the Act in accordance with the Plan.

(d) The power to dispose of any property acquired in the Redevelopment Area at its fair value as provided in Section 163.380 of the Act, for uses in accordance with the Plan.

(e) The power to carry out plans for a program of voluntary or compulsory repair and rehabilitation of buildings or other improvements in accordance with the Plan.

(f) The power to acquire real property in the Redevelopment Area by purchase, lease, option, gift, grant, bequest, devise, or other voluntary method of acquisition which, under the Plan, is to be repaired or rehabilitated for dwelling use or related facilities, repair or rehabilitation of the structures for guidance purposes, and resale of the property, or otherwise put to use for the public good as set forth in the Plan.

(g) The power to acquire any other real property in the Redevelopment Area by purchase, lease, option, gift, grant, bequest, devise, or other voluntary method of acquisition, when necessary to eliminate unhealthful, unsanitary or unsafe conditions; eliminate obsolete or other uses detrimental to the public welfare; or otherwise to remove or

prevent the spread of blight or deterioration or to provide land for needed public facilities.

(h) The power to acquire, without regard to any requirement that the area be a slum or blighted area, air rights in an area consisting principally of land over highways, railway or subway tracks, bridge or tunnel entrances, or other similar facilities which have a blighting influence on the surrounding area and over which air rights sites are to be developed for the elimination of such blighting influences and for the provision of housing (and related facilities and uses) designed specifically for, and limited to, families and individuals of low or moderate income.

(i) The power to construct the foundations and platforms necessary for the provision of air rights sites of housing (and related facilities and uses) designed specifically for, and limited to, families and individuals of low or moderate income.

(4) The power to provide, or to arrange or contract for, the furnishing or repair by any qualified, licensed person or agency, public or private, of services, privileges, works, streets, roads, bridges, public utilities, or other facilities for, or in connection with, the Plan; to install, construct, and reconstruct streets, bridges, utilities, parks, playgrounds, and other public improvements; and to agree to any conditions that it deems necessary and appropriate, which are attached to federal financial assistance and imposed pursuant to federal law relating to the determination of prevailing salaries or wages or compliance with labor standards, in the undertaking or carrying out the Plan and related activities, and to include in any contract authorized by the Agency in connection with such redevelopment and related activities, provisions to fulfill such of the conditions as it deems reasonable and appropriate.

(5) The power to enter into any building or property in the Redevelopment Area in order to make inspections, surveys, appraisals, soundings, test borings, or contamination tests, with the permission of the owner(s) and to request an order for this purpose from a court of competent jurisdiction in the event entry is denied or resisted.

(6) The power to acquire by purchase, lease, option, gift, grant, bequest, devise or otherwise any real property within the Redevelopment Area (or personal property for its administrative purposes), together with any improvements thereon.

(7) The power to hold, improve, clear or prepare for redevelopment any property within the Redevelopment Area acquired by the Agency.

(8) The power to mortgage, pledge, hypothecate, or otherwise encumber or dispose of any real property acquired by the Agency within the Redevelopment Area.

(9) The power to insure or provide for the insurance of any real or personal property acquired by the Agency within the Redevelopment Area or operations of the Agency against any risks or hazards, including the power to pay premiums on any such insurance.

(10) The power to enter into any contracts necessary to effectuate the purposes of the Act.

(11) The power to solicit requests for proposals for redevelopment of parcels of real property within the Redevelopment Area contemplated by the Plan to be acquired for redevelopment purposes by the Agency and, as a result of such requests for proposals, to advertise for the disposition of such real property to

private persons or entities pursuant to Section 163.380 of the Act, prior to acquisition of such real property by the Agency.

(12) The power to invest any community redevelopment funds held in reserves or sinking funds or any such funds not required for immediate disbursement in property or securities in which savings banks may legally invest funds subject to their control and to redeem such bonds as have been issued pursuant to Section 163.385 of the Act, at redemption price established therein or to purchase such bonds at less than the redemption price, all such bonds so redeemed or purchased to be canceled.

(13) Subject to prior approval of both the City and the County, which approval or disapproval shall be in the sole and absolute discretion of the City and the County, the power to borrow money and to apply for and accept advances, loans, contributions, and any other form of financial assistance from the Federal Government or the state, county, or other public body or from any sources, public or private, for the purposes of the Act, and as a condition of the award of such loan or contribution, to give such security as may be required and to enter into and carry out contracts or agreements in connection therewith; and to include in any contract for financial assistance with the Federal Government for or with respect to community redevelopment and related activities such conditions imposed pursuant to federal laws as the Agency deems reasonable and appropriate which are not inconsistent with the purposes of the Act.

(14) The power to make or have made all surveys and plans necessary to the carrying out of the purposes of the Act; to contract with any person, public or private, in making and carrying out such plans; and to adopt or approve, modify, and amend such plans, which plans may include, but are not limited to:

(a) Plans for carrying out a program of voluntary or compulsory repair and rehabilitation or buildings and improvements.

(b) Plans for the enforcement of state and local laws, codes, and regulations relating to the use of land and the use and occupancy of buildings and improvements and to the compulsory repair, rehabilitation, demolition, or removal of buildings and improvements.

(c) Appraisals, title searches, surveys, studies, and other plans and work necessary to prepare for the undertaking of community redevelopment and related activities.

(15) The power to develop, test, and report methods and techniques, and carry out demonstrations and other activities, for the prevention and the elimination of slums and urban blight and developing and demonstrating new or improved means of providing housing for families and persons of low income.

(16) The power to apply for, accept, and utilize grants of funds from the Federal Government for such purposes.

(17) The power to prepare plans for and assist in the relocation of persons (including individuals, families, business concerns, nonprofit organizations, and others) displaced from the Redevelopment Area and to make relocation payments to or with respect to such persons for moving expenses and losses of property for which reimbursement or compensation is not otherwise made, including the making of such payments financed by the Federal Government.

(18) The power to appropriate such funds and make such expenditures as are necessary to carry out the purposes of the Act; to make a request to the City or the County to rezone any part of the Redevelopment Area or make exceptions from, or revisions to, building regulations; and to enter into

agreements with a housing authority, which agreements may extend over any period, notwithstanding any provision or rule of law to the contrary, respecting action to be taken by such county or municipality pursuant to any of the powers granted by the Act.

(19) The power to make a request to the appropriate authority to close, vacate, plan, or replan streets, roads, sidewalks, ways, or other places and to plan or replan any part of the City or the County located within the Redevelopment Area.

(20) The power to provide funding to support the development and implementation of community policing innovations, subject to any budgetary limitations set forth in this Agreement.

(21) The right to exercise any other power that the Florida Legislature grants to community redevelopment agencies after the date of this Agreement, subject to approval of the exercise of such power by the City, and if approved by the City, subsequent approval by the County.

(22) The Agency shall have the power and obligation to procure all commodities and services under the same purchasing processes and requirements that apply to the City.

(23) Nothing in this Agreement is intended to prohibit the County and the City from exercising their sovereign powers as prescribed by law.

B. The following powers may <u>not</u> be paid for or financed by increment revenues:

(1) Construction or expansion of administrative building for public bodies or police and fire buildings, unless each taxing authority agrees to such method of financing for the construction or expansion, or unless the construction or expansion is contemplated as part of a community policing innovation.

(2) Installation, construction, reconstruction, repair or alteration of any publicly owned capital improvements or projects, if such projects or improvements were scheduled to be installed, constructed, reconstructed, repaired, or altered within three years of the approval of the Plan by the County pursuant to a previously approved public capital improvement or project schedule or plan of the County as the governing body which approved the Plan, or schedule or plan of the City, unless and until such projects or improvements have been removed from such schedule or plan of the County or the City and three years have elapsed since such removal or such projects or improvements were identified in such schedule or plan to be funded, in whole or in part, with funds on deposit within the community redevelopment Trust Fund.

(3) General government operating expenses unrelated to the planning and carrying out of the Plan.

Section 4. Agency, City and County Obligations.

A. Community Redevelopment Trust Fund

(1) The City shall establish by ordinance and administer the redevelopment trust fund (the "Trust Fund") in accordance with the provisions of Section 163.387, Florida Statutes.

(2) The City and the County shall comply with all of the provisions of the Act and this Agreement to fund the Trust Fund.

(3) The Parties shall comply with all provisions of the Act and this Agreement regarding the Trust Fund.

B. Implementation of the Plan

(1) The County has delegated to the Agency all the powers for redevelopment set forth above in Section 3 with respect to the Redevelopment Area and only with respect to the Plan as approved by the County, together with any amendments to the Plan, provided that such are approved by the County.

(2) The Plan and all amendments to the Plan shall meet all the requirements of the applicable statutes, including the requirement that the Plan contain a detailed statement of the projected costs of redevelopment, "including the amounts to be expended on publicly funded capital projects in the redevelopment area and any indebtedness of the community redevelopment agency... if such indebtedness is to be repaid with increment revenues." *See* Sec. 163.362(9), Fla. Stat.

(3) For purposes of this Agreement, tax increment funds are such funds or revenues as defined by Section 163.387(1)(a) of the Act and further defined for the County as solely the Ad Valorem Taxes- County Wide Services levied on taxable real property contained within the Redevelopment Area and shall not include the Ad Valorem Taxes – Fire Control MSTU-9 levied therein, nor any other ad valorem taxes that may be levied now or in the future in the Redevelopment Area.

(4) Beginning in October, 2024 but no later than January 1, 2025, and annually thereafter through and including October, 2053, the City shall appropriate and deposit ninety-five percent (95%) of an amount based on the calculation of increment using the City's millage in the applicable year into the Trust Fund in accordance with the Act.

(5) Beginning in October, 2024 but no later than January 1, 2025, and annually thereafter as described in this subsection (5), the County shall appropriate and deposit ninety percent (90%) of the tax increment funds as defined above and derived from the Redevelopment Area in the applicable year into the Trust Fund

for years one through twenty (through and including October, 2043). For years twenty-one through thirty (October, 2044 through and including October, 2053), the County shall appropriate and deposit eighty percent (80%) of the tax increment funds as defined above and derived from the Redevelopment Area in the applicable year into the Trust Fund.

(6) The monies in the Trust Fund shall be used to fund the Agency projects identified in the Plan. The Agency shall not substantially deviate from the projects set forth in the Plan without a plan amendment approved by both the City and the County.

(7) The Agency shall review the Plan annually and update it at least every five years.

(8) Redevelopment activities and projects in the Plan shall be designed to mitigate the slum/blighted conditions of the Redevelopment Area in accordance with the provisions of the Act.

(9) Subject to the provisions of Section 3.A. (13) hereof, the Agency may issue bonds and execute notes, and enter into other forms of debt or leveraging, as well as collateral documents, to finance capital improvements deemed necessary by the Agency for redevelopment purposes in accordance with the powers delegated in Section 3 hereof; provided, however, all such forms of indebtedness shall be paid in full no later than the sunset date, January 1, 2054, unless agreed to otherwise in writing by the Parties.

C. Budget

(1) The Agency shall adopt an annual budget in accordance with the provisions of Section 163.387(6), Florida Statutes and after approval by the Agency and the City submit such to the County.

(2) Each annual budget shall include a section outlining the accomplishments of the

prior fiscal year.

(3) Any amendments to the adopted annual budget shall be submitted to the County in accordance with the provisions of Section 163.387(6), Florida Statutes.

D. The Agency shall abide by all provisions of this Agreement, any implementing regulations, and to the extent not inconsistent, the Act.

E. The composition of the Agency shall at all times consist of two (2) members appointed by the City, two (2) members appointed by the County and one (1) at-large member appointed by the other four (4) members.

F. Sunset

Unless extended by approval of the Parties pursuant to an amendment to this Interlocal Agreement, the sunset date for the Agency, the Area and the Plan shall be January 1, 2054. In addition, unless the Parties agree in writing to a different timeframe, beginning in October, 2052, the Agency, the City and the County will negotiate an interlocal agreement to account for the sunset of the Agency, Area and Plan. Such agreement shall include but not be limited to the methodology for disbursement of Trust Fund revenues remaining in the Trust Fund on the sunset date to the taxing authorities (County and City), the disposition of real and personal property purchased with the Agency funds, and any other issues associated with the dissolution of the Agency. Further, unless otherwise agreed to by the Parties in writing, beginning on October 1, 2052, the Agency will not fund any new projects, grants, initiatives, or other plans in order to complete all previously funded projects, grants, initiatives or other plans, in order to provide for the proper closeout of the Agency by the sunset date.

Section 5. Entire Agreement.

This Agreement constitutes the entire agreement, including all attachments, and supersedes all prior written or oral agreements, understandings, or representations.

Section 6. Default and Termination.

This Agreement shall be effective on the effective date above and remain in effect until the sunset of the Agency, unless terminated earlier as follows:

A. If any Party fails to fulfill its obligations under this Agreement in a timely and satisfactory manner, or if any Party breaches any of the provisions, covenants or stipulations under this Agreement, a Party may give a written notice to all Parties stating the failure or breach and provide a reasonable time period for correction of same. In the event the correction is not made in the allotted time, the representatives of the Parties shall meet to resolve the dispute.

B. If the representatives are unable to resolve the dispute, the Parties shall agree to mediate any dispute according to the provisions of Chapter 164, Florida Statutes. If mediation is unsuccessful, a non- breaching party may terminate this Agreement upon affirmative vote of the respective governing body for a material breach. The termination would then be effective at the time the next payment to the Trust Fund by the non-breaching party is due provided however there are no outstanding bonds or other forms of Agency indebtedness. If at the time of termination, the Agency has outstanding bonds or other forms of indebtedness, termination shall be subject to the provisions of Florida Statutes Section 163.3755.

C. If any unallocated funds remain in the Trust Fund at the termination of the Agency, the funds shall be divided proportionally based on the percentage of contribution between the County and the City.

Section 7. Indemnification.

Each Party hereby assumes responsibility for, and hereby agrees to indemnify and hold the other Parties harmless from any and all liability, claims or damages imposed on another Party up to the monetary limits provided in Sec. 768.28, Fla. Stat., arising out of or in connection with the negligent acts, omissions or misconduct of a Party, and its agents and employees relating to the responsibilities of the Parties under this Agreement.

Section 8. Liability.

Each Party shall be solely responsible for the negligent acts or omissions of its employees, ang agents which in any way relate to or arise out of this Agreement. Nothing contained herein shall be construed as consent to be used by third parties in any matter arising out of this Agreement or constitute a waiver by any Party of its sovereign immunity or provisions of Sec. 768.28, Fla. Stat. This Agreement does not create any relationship with, or any rights in favor of any third party.

Section 9. Filing of Agreement.

The County, upon execution of this Agreement, shall file the same with the Clerk of the Circuit Court in the Official Records of Clay County, as required by Sec. 163.01(11), Fla. Stat.

Section 10. Project Records.

Each Party shall meet the requirements of Chapter 119, Fla. Stat., for retaining public records and transfer, at no cost, to any other requesting Party, copies of all public records regarding the subject of this Agreement which are in the possession of the Party. All records stored electronically shall be provided to the requesting Party in a format that is compatible with the information technology systems of the requesting Party.

Section 11. Applicable Law.

The laws of the State of Florida shall govern this Agreement, and the venue is Clay County, Florida, for any legal actions arising hereunder. In the event of any legal actions or litigation arising hereunder, the prevailing party shall be entitled to its attorneys' fees and costs from trial through any appellate action subject to and without waiving the monetary limits provided in Sec. 768.28, Fla. Stat.

Section 12. Notices.

Except as otherwise provided herein, any notice, acceptance, request or approval from any Party to any other Party shall be in writing and sent by certified mail, return receipt requested, to all Parties and shall be deemed to have been received when either deposited in a United States Postal Service mailbox or personally delivered with signed proof of delivery. For the purposes of this Agreement, the Parties' representatives are:

COUNTY
County Manager
Clay County, Florida
477 Houston Street
PO Box 1366
Green Cove Springs, FL 32043

With a copy to:
County Attorney
477 Houston Street
PO Box 1366
Green Cove Springs, FL 32043

CITY
City Manager
321 Walnut Street
Green Cove Springs, FL 32043

With a copy to:
City Attorney
321 Walnut Street
Green Cove Springs, FL 32043

With a copy to:
Development Services Director
321 Walnut Street
Green Cove Springs, FL 32043

AGENCY
Chair, Green Cove Springs Community Redevelopment Agency
321 Walnut Street
Green Cove Springs, FL 32043

Section 13. Non-Waiver.

Waiver or breach of any provision of this Agreement shall not be deemed to be a waiver of any other breach and shall not be construed to be a modification of the terms of this Agreement.

Section 14. Amendment.

The Parties may amend this Agreement only by a mutual written agreement.

Section 15. Severability.

If any provision of this Agreement shall be declared illegal, void, or unenforceable, this Agreement shall be deemed void and of no further effect. The provisions of this Agreement are not severable.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed on the day and year as shown below.

Clay County, Florida

By: _____
Betsy Condon, Chair
Board of County Commissioners

Date: _____

_____
Tara S. Green
Clerk of Court and Comptroller
Ex Officio Clerk to the Board

City of Green Cove Springs

By: _____
Daniel M. Johnson
Mayor

Date: _____

_____
Erin West, City Clerk
Clay County

Date: _____

Approved as to form:

_____
Jim Arnold, City Attorney

Date: _____

Green Cove Springs Community
Redevelopment Agency

By: _____
Roy M. Timberlake, Jr., Chair

Date: _____

2022-2023-39 Resolution-CRA FINAL FOR SIGNING with Exhibits BCC#13

Final Audit Report 2023-05-03

Created:	2023-04-27
By:	Lisa Osha (Lisa.Osha@claycountygov.com)
Status:	Signed
Transaction ID:	CBJCHBCAABAAL07yiB7SCx5lylS47mX5R33oonjkqtRP

"2022-2023-39 Resolution-CRA FINAL FOR SIGNING with Exhibits BCC#13" History

Document created by Lisa Osha (Lisa.Osha@claycountygov.com)
2023-04-27 - 8:50:43 PM GMT

Document emailed to clayesign@claycountygov.com for signature
2023-04-27 - 8:51:53 PM GMT

Email viewed by clayesign@claycountygov.com
2023-05-03 - 4:23:06 PM GMT

Signer clayesign@claycountygov.com entered name at signing as Betsy Condon
2023-05-03 - 5:51:40 PM GMT

Document e-signed by Betsy Condon (clayesign@claycountygov.com)
Signature Date: 2023-05-03 - 5:51:42 PM GMT - Time Source: server

Document emailed to bccdocs@clayclerk.com for signature
2023-05-03 - 5:51:46 PM GMT

Email viewed by bccdocs@clayclerk.com
2023-05-03 - 7:30:43 PM GMT

Signer bccdocs@clayclerk.com entered name at signing as Tara S Green
2023-05-03 - 7:31:22 PM GMT

Document e-signed by Tara S Green (bccdocs@clayclerk.com)
Signature Date: 2023-05-03 - 7:31:24 PM GMT - Time Source: server

Agreement completed.
2023-05-03 - 7:31:24 PM GMT

Agreement completed.

2022-08-11 - 9:03:58 PM GMT

Adobe Acrobat Sign

DOWNTOWN MASTER PLAN

Green Cove Springs, Florida

GREEN Cove SPRINGS
DOWNTOWN
WHERE COVE LIFE HAPPENS

TABLE OF CONTENTS

FOUNDATION 1
Preface 1
Evolution of Green Cove Springs 2
Introduction 4
The Time is Now 5

1: PROCESS 7
Existing Conditions Analysis 8
Retail Market Analysis 9
Community Outreach 11
Opportunities & Constraints 12
Guiding Principles 13

2: FOCUS AREA 15
The Critical Start 16
Visualizing the Plan 17

3: IMPLEMENTATION 23
Phase 1 Improvements (Focus Area) 24
Phase 2 Improvements (Focus Area Expanded) 42
Phase 3 Improvements (Study Areawide) 44

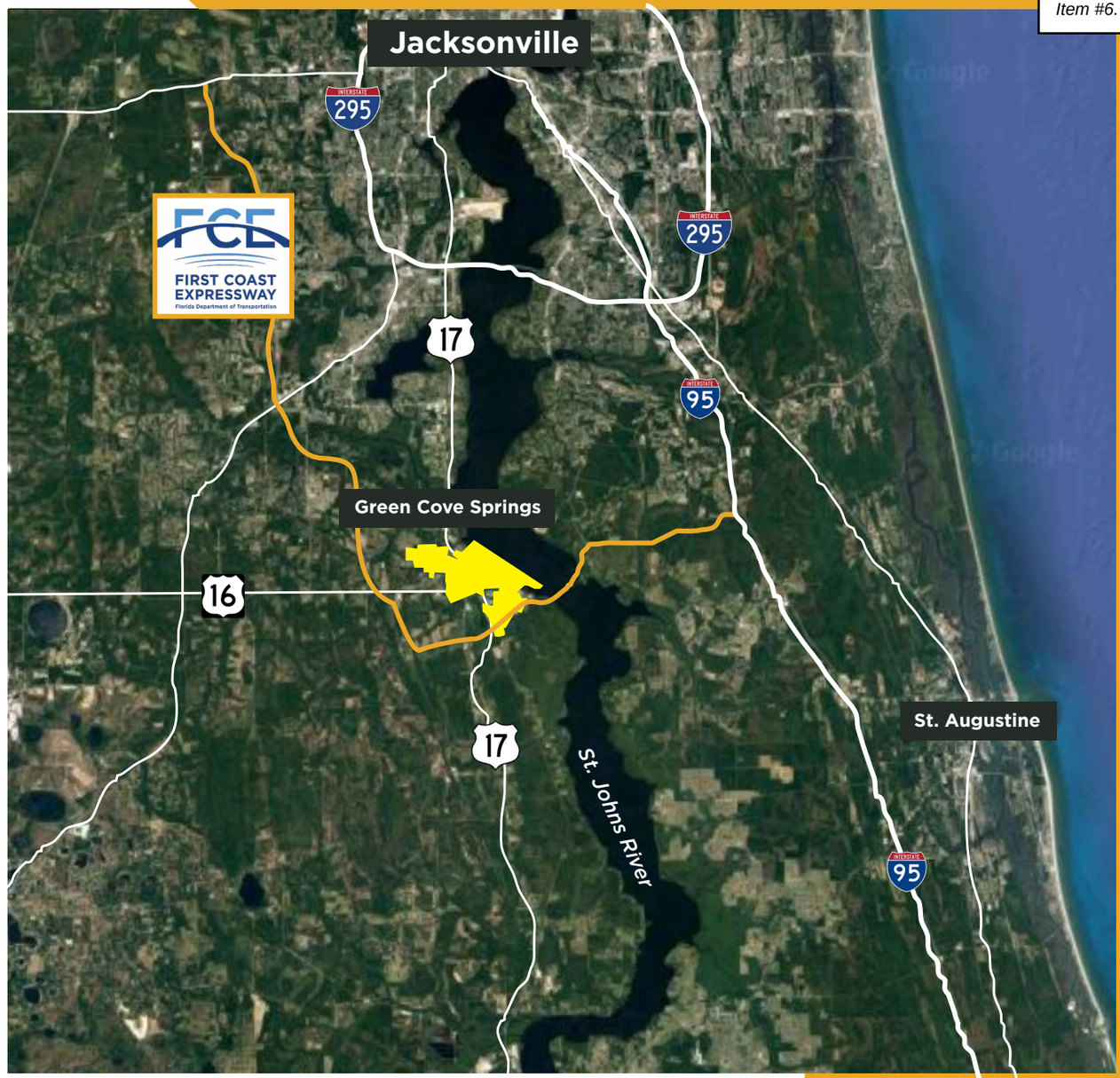
4: 2042 VISION PLAN 46

SUPPLEMENTAL DOCUMENTS
A Public Engagement Summary
B Existing Conditions Analysis
C Demographics & Market Analysis
D Retail Action Plan

PREFACE

Located in Northeast Florida, approximately 25 miles south of Jacksonville and 25 miles west of St. Augustine, the City of Green Cove Springs is the County Seat of Clay County. The City is located on the western bank of the St. Johns River and registered a population of 9,786 residents in the 2020 Census.

A thriving town during the river and railroad heydays of the late 1800s, the City has suffered from a lack of regional connectivity as the interstate highway system expanded in other areas of the region. Downtown Green Cove Springs is more than 19 miles from the nearest I-95 exit and approximately 14 miles from the nearest I-295 exit, either destination is greater than a 20-minute drive.



EVOLUTION OF GREEN COVE SPRINGS

1816

George J.F. Clarke, is granted 22,000 acres of timbered land from the Spanish to develop a sawmill along the St. Johns River in eastern Florida.

In 1854 Clarke develops the land as White Sulfur Springs. It was renamed in 1866 as **Green Cove Springs** and became the county seat in 1871.

1884

The first Federated Women's Club of Florida is founded in Green Cove Springs.

A railroad route from Jacksonville to Palatka includes a stop to West Tocoi, south of Green Cove Springs, which helped bring tourists from the North down to the area.

TOURISM GROWTH

1890

Henry Flagler's Railroad to St. Augustine sparks a steady decline in tourism after the St. Johns Railroad closes.

1895

Green Cove Springs attracts many visitors from the north, as an authentic Florida destination along the St. Johns River. People flock to the natural spring and several hotels capitalize on the visitors like the The Qui-Si-Sana Hotel (left) and St. Clair Hotel.

1908

Gustafson's Farm is established by Agnes and Frank Gustafson, bringing a large dairy farming industry to the area.

FARMING GROWTH

James Cash Penney establishes "Penney Farms" west of the City and plans to develop a farming community.

1930

The City begins to recover from the great depression, receiving funding from the Works Progress Administration (WPA).

1940

MILITARY GROWTH

The Federal Government builds the Naval base ***Benjamin Lee Field*** in Green Cove Springs and ***Camp Blanding*** 20 miles west of the City, bringing a large military community to the area.

1940 Green Cove Springs Naval Base

DRAFT

The City earns the nickname "Little Detroit" as a result of many thriving car dealerships that served the Naval families.

1950

Spring Square, what would become known as ***Spring Park***, is purchased by the City from Foremost Properties, Inc.

1961

Vice President Lyndon B. Johnson closes the Naval Base and moves the "Mothball Fleet" to Texas.

The City purchases the base in hopes of developing it for industrial use.

City sells the base to the J. Louis Reynolds Corporation for development of a premier Industrial Park.

1970

1989

2 National Register Districts are designated containing 70 to 75 contributing historic structures, including the Clay County Courthouse, County Jail, Spring Park and more.

Clinton designates Historic St. Johns River as an "American Heritage River."

1998

'Renaissance Woman'

Cummer show highlights work of pioneering African American sculptor

By Charlie Patton
For the Times-Union

For sculptor Augusta Savage, born in Green Cove Springs, life was a struggle despite her abundant gifts.

"She was a woman in a system built to keep her and many like her from achieving success," writes Jeffreen Hayes, guest curator of "Augusta Savage: Renaissance Woman," a new exhibit at the Cummer Museum of Art & Gardens.

"... As a black woman artist from the South in the early years of the 20th century, she faced obstacle after obstacle: poverty, sexism, racism," writes Holly Kerin, the Cummer's chief operating officer and chief curator.

The exhibit, one of the most ambitious ever mounted by the Cummer, features 70 works Savage created (19 sculptures, one painting); 24 works by 10 artists she mentored during the 1930s and early 1940s; assorted photos; and a handful of letters written by or about Savage, including several by W.E.B DuBois, the author of the ground-breaking book "The Souls of Black People."

In the main essay in the exhibit catalogue, also titled "Augusta Savage: Renaissance Woman," Hayes argues that Savage was a key figure in the Harlem Renaissance, which she calls the Negro Renaissance.

Her view of Savage's importance in that Renaissance is shared by Howard Dodson, former director of Harlem's

"The Harp," bronze sculpture by August Savage, an almost 11-inch-tall replica of nearly 16-foot plaster sculpture exhibited during the 1939 World's Fair (CUMMER MUSEUM AND GARDENS)

Augusta Savage, 1938. (NEW YORK PUBLIC LIBRARY)

Augusta Savage: Renaissance Woman

Through April 7

Cummer Museum of Art & Gardens, 829 Riverside Ave.

Open 10 a.m. to 9 p.m. Tuesday, 10 a.m. to 4 p.m. Wednesday-Saturday, noon-4 p.m. Sunday

Museum admission is $10 for adults, $6 for seniors, military and students

Every Voice and Sing," was by some accounts the most popular exhibit at the fair.

In addition to the popularity of "The Harp," 1939 was marked by three other significant events: an exhibit early in the year at New York's Argent Galleries; a visit to Jacksonville where she sold a bronze sculpture, "The Diving Board," to Ninah Cummer; and the June opening of a gallery owned by Savage, the Salon of Contemporary Negro Art, the first gallery to exclusively feature the work of black artists.

But in the end both "The Harp" and the Salon provided major

Augusta Savage with her sculpture 'Realization,' 1938. (NEW

2004

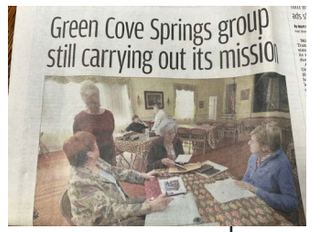
The new City Hall is built, inspired by the Qui-Sa-Sana Hotel that was once on the site.

2009

The City acquires the Dunbar High school, built in 1942, and begins converting it to the ***Augusta Savage Arts and Community Center*** in honor of Augusta Savage–artist, educator, activist, and community leader–who was born in Green Cove Springs in 1892.

2013

Women's Club celebrates 100 years at their dedicated building on Palmetto Ave.


Green Cove Springs group still carrying out its missio

2015

Gustafson Dairy Farm closes.

2017

The renovated Spring Park Public Pool opens after multi-million dollar upgrades.

NEW CIVIC SPACES

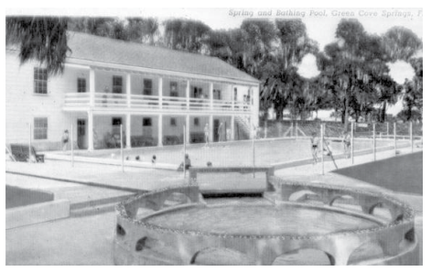
2018

First Coast Expressway construction begins which will enhance connection into the City.

2022

The ***Augusta Savage Library and Mentoring Center*** anticipated opening.

TODAY


Spring Park Pool

Judge Rivers House

INVESTING IN THE HISTORIC PAST

Source: https://www.greencovesprings.com/history-of-green-cove-springs

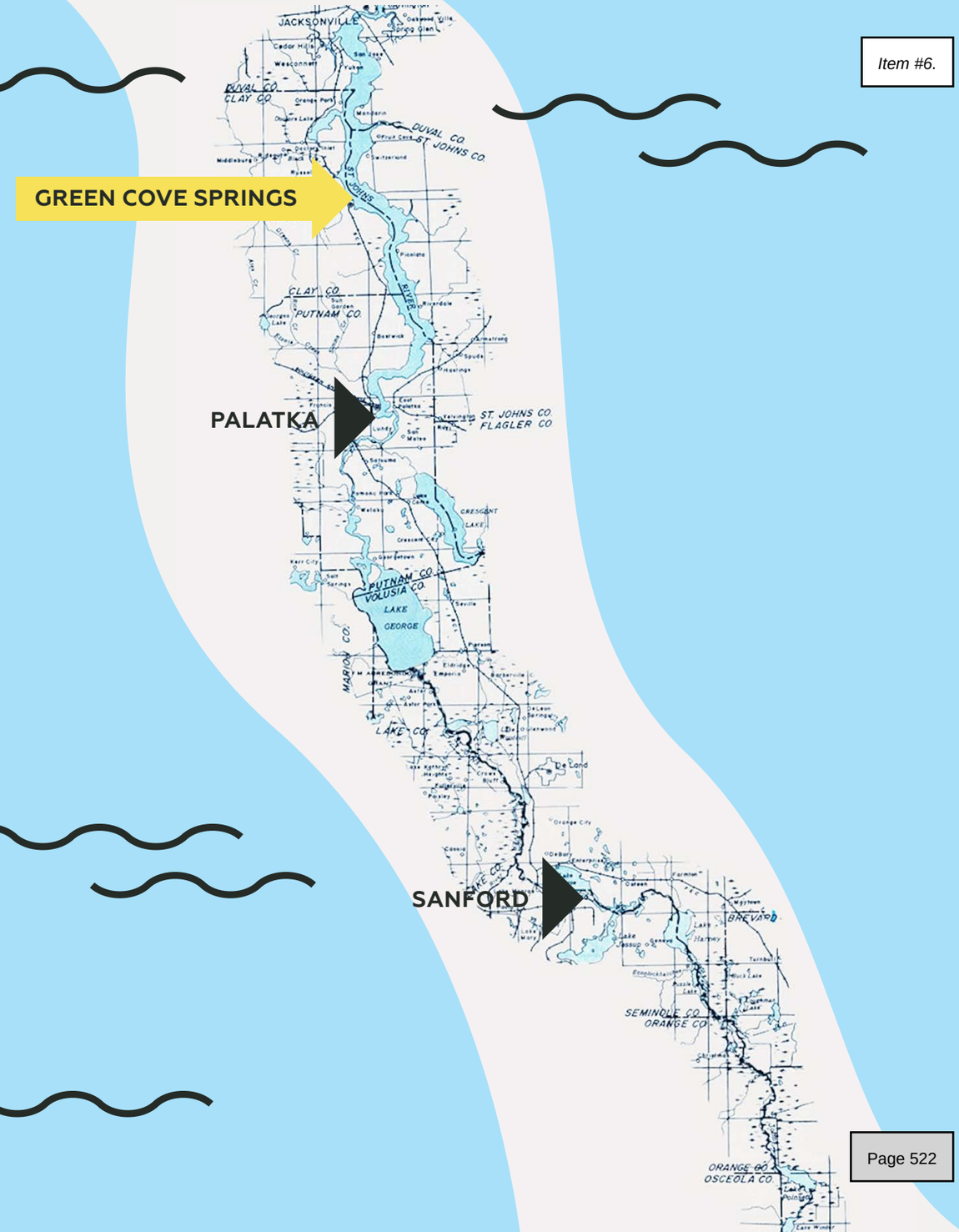
INTRODUCTION

Land use and transportation systems are inextricably linked. Navigable waterways were the primary system of regional transportation for thousands of years, which is why so many of the nation's most historic and prolific cities were located along riverbanks and ocean shores.

The City of Green Cove Springs, the Clay County seat, lies along the St. Johns River similar to other county seats across the region, including Palatka in Putnam County and Sanford in Seminole County. The St. Johns River was an active waterway in the late 1800s and early 1900s and functioned as a crucial artery of commerce and tourism. As a result, river towns began to emerge in quick succession along many of Florida's navigable waterways—several of which also became popular tourism destinations due to the area's warmer climate and wealth of pristine waterbodies. Despite the proliferation of new waterfront cities seeking to capitalize on Florida's emerging tourism industry, Green Cove Springs stood alone as the region's predominant tourism destination because of its rich natural springs, visitor accommodations, and southern hospitality, which helped the City earn its nickname as the "Saratoga of the South."

Yet, cruising along the St. Johns River was not the City's only option available for travel throughout the region, as the late 1800s also ushered in the era of the steam locomotive. The region received its first rail route in 1884 with a stop located south of Green Cove Springs, thus providing another pathway for commerce and tourism to make its way to the City.

Nearly half a century later, the end of World War II brought economic prosperity throughout the United States. The combination of the development of the Interstate Highway System in the 1950s, new financing opportunities for homebuyers and builders, and the proliferation of the personal automobile allowed growth within the region to flourish—particularly along the I-295 beltway, which is located approximately 14 miles north of Green Cove Springs. Over the last 40 years the population of Clay County has increased by more than 150,000 residents.



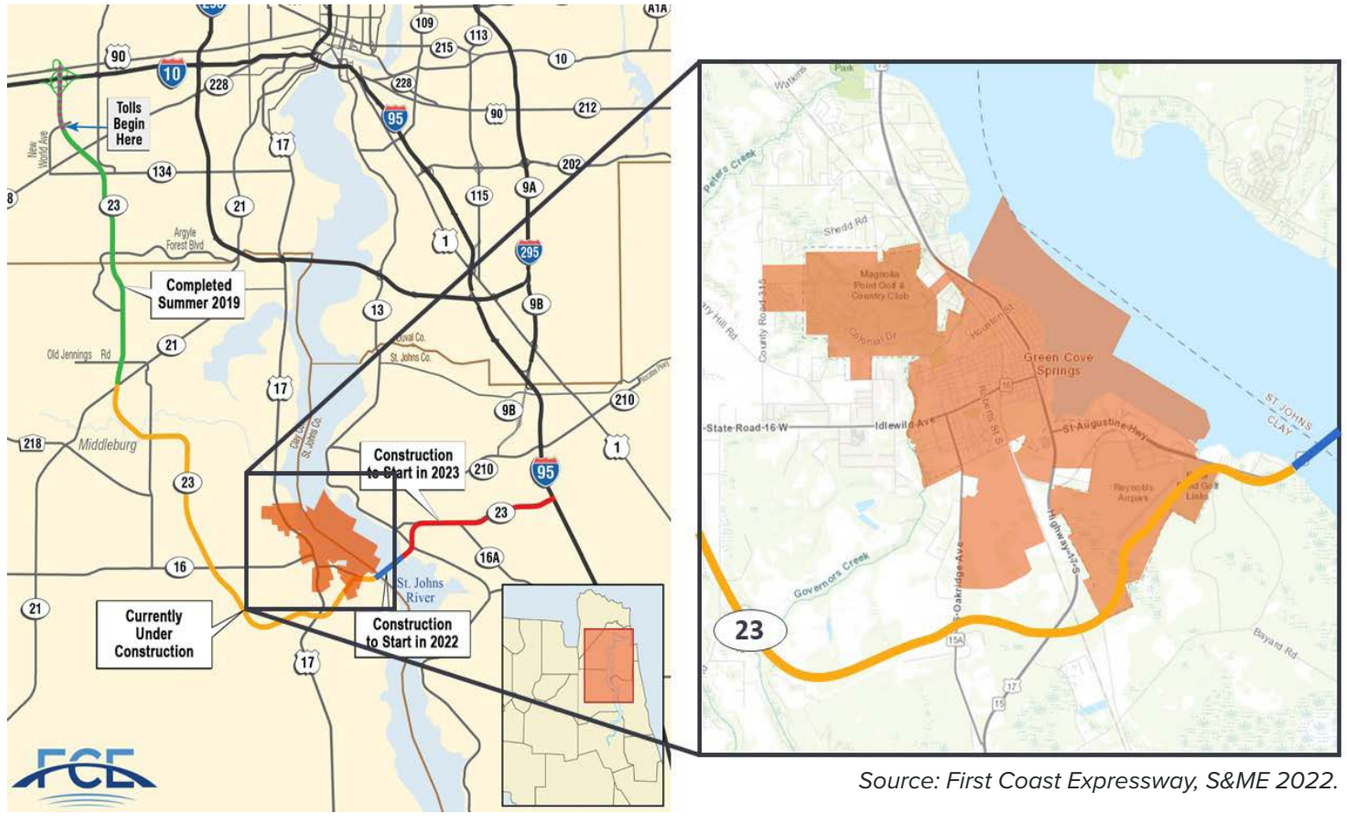
THE TIME IS **NOW**

DRAFT

The First Coast Expressway, already under construction, will provide a new connection between I-95 and I-10. This 46-mile, multi-lane toll road will serve as a Jacksonville bypass. Like the establishment of the St. Johns River route and the establishment of Florida's rail network in the 1800s, this new regional connection is likely to usher in another era of substantial growth for the City, bringing with it a wealth of new opportunities for Green Cove Springs and its Downtown.

In addition to the City's rich natural amenities, the expansion of the river and rail networks allowed Green Cove Springs to become one of Florida's preeminent destinations for tourism and commerce. With the construction of the First Coast Expressway set to be completed within the next few years, the City will be presented with a wealth of new opportunities for growth.

This community-driven Master Plan provides a roadmap for the City to successfully accommodate and incentivize the growth of its Downtown communities, businesses, and amenities, while continuing to honor the City's rich small-town charm and history. This plan identifies the issues and opportunities facing Downtown and recommends strategic investments and projects to advance toward the community's vision for Downtown Green Cove Springs as



Source: First Coast Expressway, S&ME 2022.

a thriving convergence of commerce, history, and community.

DRAFT

WHAT DOES GREEN COVE SPRINGS MEAN TO ME?

"IT'S HOME"

- COUNCIL MEMBER VAN ROYAL

PROCESS

1

EXISTING CONDITIONS ANALYSIS

The Project Team analyzed the ***land use, zoning, infrastructure, mobility, parking, parks***, and ***open space conditions*** within the Study Area using data provided by the City, Clay County, regional and state organizations such as the St. Johns River Water Management District and Florida Department of Transportation, and national agencies like the Federal Emergency Management Agency. This analysis allowed the Project Team to verify and support the insights provided by the public during the community outreach process while also discovering new details that would help further contextualize and inform this master planning effort. This assessment is detailed in the Existing Conditions Report accompanying the Plan.

The Project Team also sought to understand the socioeconomic and market conditions facing Downtown Green Cove Springs so that the Master Plan can provide clear and context-sensitive recommendations on the programs and projects necessary to energize the local economy. The conditions examined during this analysis included population, age, gender, race and ethnicity, education, employment, income, and industry leakages and surpluses for local retail and dining. This analysis can be found in the Demographic and Market Characteristics Report, which also includes additional recommendations specifically addressing the retail environment within the Study Area.

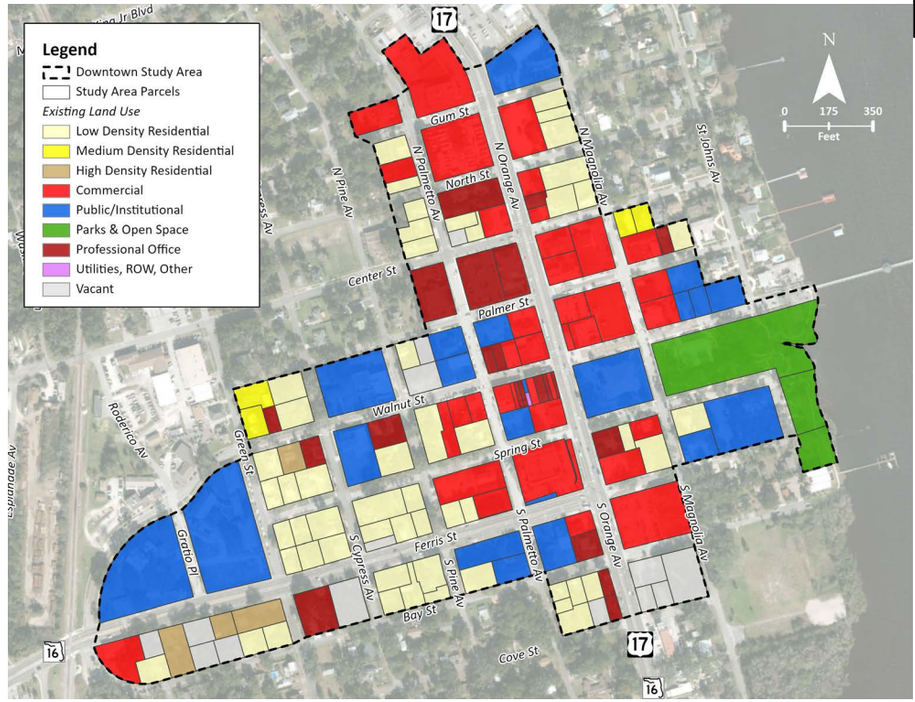
The four primary themes which surfaced during these analyses are summarized as follows:

- Improve ***connectivity and walkability*** within the Study Area by addressing the automobile-oriented nature of US 17, the safety issues present at the Walnut Street / US 17 intersection, and the lack of pedestrian accommodations throughout the Study Area.

- Transition site design requirements for ***future development*** from suburban (e.g., front-loaded parking, significant setbacks) to more urban standards, such as requiring rear-loaded parking lots, minimal setbacks, pedestrian-oriented entranceways, etc.

- Capitalize on the ***small-town charm and history*** of the community by establishing a gateway and wayfinding signage program throughout the Study Area, promoting a new and unique brand for Downtown, and celebrating the City's wealth of cultural and historical landmarks.

- Encourage ***infill and redevelopment opportunities*** to address issues of vacancies, underutilized developments, and blighted properties.



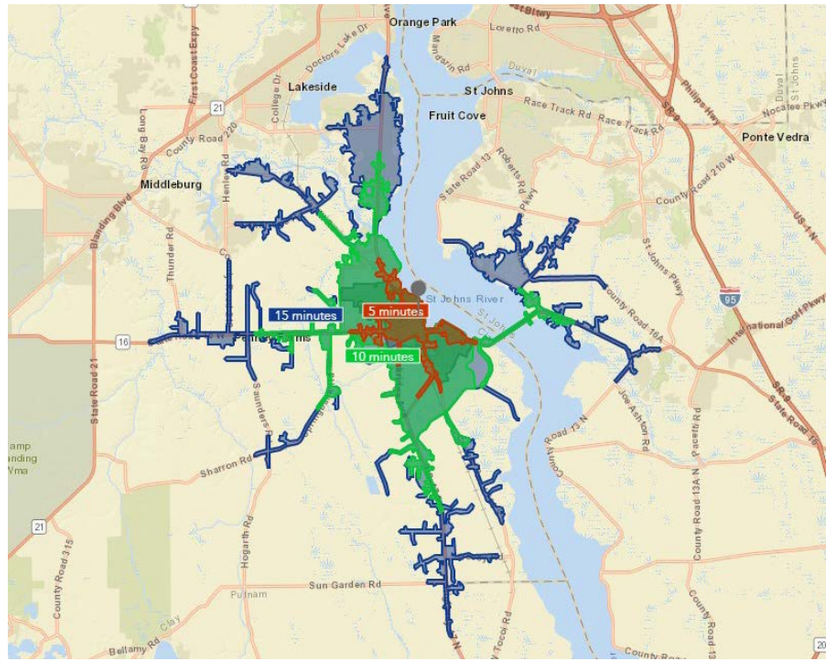
DRAFT

RETAIL MARKET ANALYSIS

A market analysis, a component of the master planning effort of Downtown Green Cove Springs, was conducted to identify the existing supply of and demand for specific retail industry sectors. The methodology of this analysis included an evaluation of the market conditions within three areas; the 5, 10 and 15-minute drive times around Downtown Green Cove Springs, as shown on the map included on this page. The utilization of drive times to define market areas is the industry-standard, with the 15-minute drive time as the primary market area limit. Distances longer than a 15-minute drive are considered to be outside the local market area as consumers are less inclined to make a “special trip” that is longer than 15 minutes.

5-Minute Drive	
Population	**7,389**
Households	**2,572**
Median HH Income	**$48,182**
10-Minute Drive	
Population	**19,315**
Households	**7,097**
Median HH Income	**$60,018**
15-Minute Drive	
Population	**35,973**
Households	**13,444**
Median HH Income	**$67,380**

5-10-15 Minute Drive Market Area



The 5-minute drive area has one of the region’s lower median household income levels at $48,182. The median household incomes increase in the 10- and 15-minute drive areas to $60,018 and $67,380, respectively. Income levels and the number of households increase significantly from the 5-minute drive area to the 15-minute drive area.

With greater population and disposable income available in the 10 and 15-minute drive areas, improving Downtown Green Cove Springs as a destination could spur redevelopment across a variety of industry sectors. Currently unmet market demands, including a variety of retail shops and services, were identified in each of three areas as detailed in the supplemental report Retail Market Analysis. For Green Cove Springs to capitalize on opportunities that would foster redevelopment in downtown, it will be necessary to facilitate the development of an “anchor-use” that will attract visitors from the 10 and 15-minute drive areas.

Source: ESRI, BAO, 2022. S&ME 2022.

GCS Restaurant Potential

As shown in exhibit to the right, there is a high demand (over $3,524,353 in unmet annual demand) in the 15-minute drive market area for Drinking Places (Alcoholic Beverages). There is an unmet demand in the 5 and 10-minute drive area's as well. We recognize that multiple stand-alone bars in Downtown may change the existing small-town character, which the community wants to preserve. Alternatively, this market opportunity could be fulfilled as part of a full-service restaurant. The 10-minute drive area shows a demand for restaurants that exceeds available supply.

Dining out is a timeless experience. People are willing to drive for a great meal and waterfront views enhance the draw. Leveraging the unmet demand for Drinking Places to develop a destination/anchor restaurant would help attract more customers to Downtown and help to spur additional reinvestment. The opportunity for restaurants in downtown can be seen firsthand with the success of the City's Food Truck Friday events.

The following tables demonstrate the unmet demand for food and drink services within 10-minute drive time market area and the unmet demand for Drinking Places within the entire (5-10-15-minute) market area.

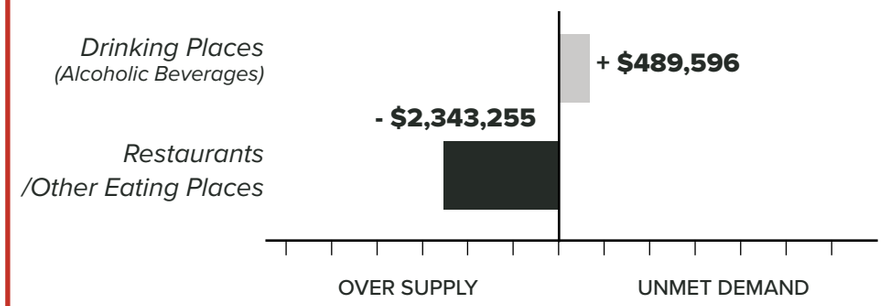
The unmet demand for Food Drink services within the 10-minute drive time coupled with the annualized sales per square feet for 'full-service' restaurants ($275 per square foot) yield a retail development potential of over 24,000 square feet to accommodate unmet annual demand for Food and Drink services. The average size for a "Family-Style" restaurant ranges from ~4,000 sq. ft. on the smaller end to ~8,000 sq. ft. on the larger end. The Downtown Green Cove Springs 10-minute drive time market area, may accommodate the development of several (2-3) full-service, family style restaurants.

Restauraunt Development Potential within 10-Minute Drive Market Area		
Unmet Annual Sales Demand	Annual Sales (per Sq. Ft.)	Restaraunt Development Potential
$6,841,840	**$275**	**24,879 Sq. Ft.**

Source: National Restaurant Association, Sales per Square Foot, Full Service Restaurant, February 8, 2022.

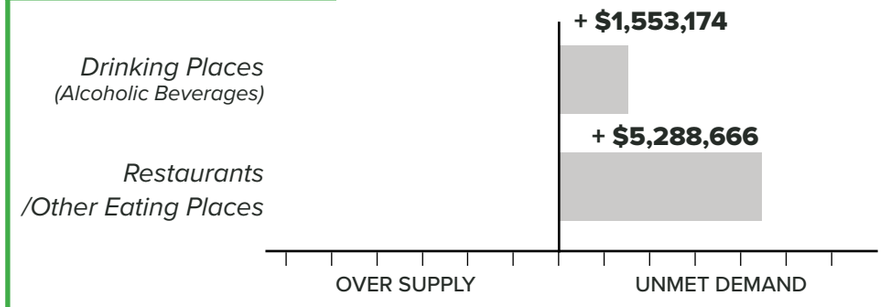
Retail Market Supply & Demand: Food & Drink

5-MINUTE DRIVE TIME



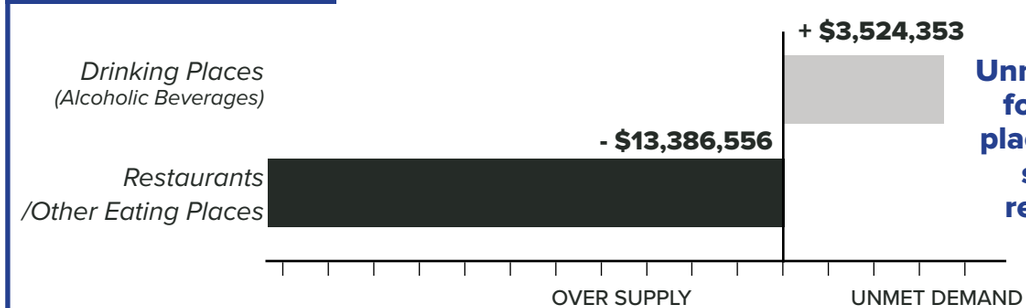
Unmet demand for drinking places, surplus supply of restaurants

10-MINUTE DRIVE TIME



Unmet demand for both restaurants and drinking places

15-MINUTE DRIVE TIME



Unmet demand for drinking places, surplus supply of restaurants

Source: ESRI, BAO, 2022. S&M

DRAFT

COMMUNITY OUTREACH

Before drafting the Master Plan for Downtown Green Cove Springs, the Project Team sought to cultivate a rich and profound understanding of the issues and opportunities facing the Study Area. To realize this goal, two primary research methods were undertaken. The first was an Existing Conditions Analysis. The second was an intensive community outreach process which included both in-person and online engagement options, such as a project website, stakeholder interviews, and a five-day design charrette. The results of these research methods are summarized as follows and are further detailed in Supplemental Documents A (Public Engagement Summary), B (Existing Conditions Analysis), and C (Demographics & Market Analysis) of this Plan.

- Early in the project's lifespan, the Project Team ***established a website*** for the Downtown Master Planning effort utilizing the Social Pinpoint platform (smeinc.mysocialpinpoint.com/downtown_gcs_master_plan). In addition to hosting a wealth of project-related information, the project website also hosted an ***online survey*** and an ***interactive comment map*** where visitors could provide location-specific thoughts, perspectives, and opinions on how the Downtown should grow in the decades ahead. Over the course of the project website's lifespan, the site was visited over 1,800 times by nearly 600 unique viewers.

- The second community outreach tool utilized for the project was an intensive ***five-day charrette*** within City Hall between Monday, January 24th and Friday, January 28th, 2022. Monday's schedule included interviews with various Downtown stakeholders, a walking audit of the Study Area, and a ***Public Kick-Off and Visioning Session*** with the community. The following day involved a series of additional stakeholder interviews, a presentation to the Planning & Zoning Board, and beginning to draft the community's vision for Downtown. This vision was advanced further on Wednesday and presented to the public that evening at the ***Community Visioning and Design Workshop***. Using the feedback provided from the public, the Project Team began developing the first master plan concept on Thursday and presented this plan at the ***Vision & Design Unveiling Open House*** on Friday. After the presentation concluded, meeting attendees overwhelmingly expressed their approval of the proposed master plan and wished to be notified when the document was completed to see the final vision.

Whether participating online or in-person, the public provided a wealth of local expertise throughout the community outreach process which greatly informed this m planning effort. The three most reoccurring themes which emerged from the public during this time are summarized as follows:

- Identify ways in which to ***leverage Spring Park and the waterfront*** to cultivate authentic ecotourism opportunities, attract new and expanded events, and spur economic development within the Downtown

- Address the need for ***new development*** projects which enhance the vibrancy, volume, and diversity of activities Downtown (such as restaurants, shops, and lodging) without sacrificing the ***small-town charm and history*** that is unique to Green Cove Springs

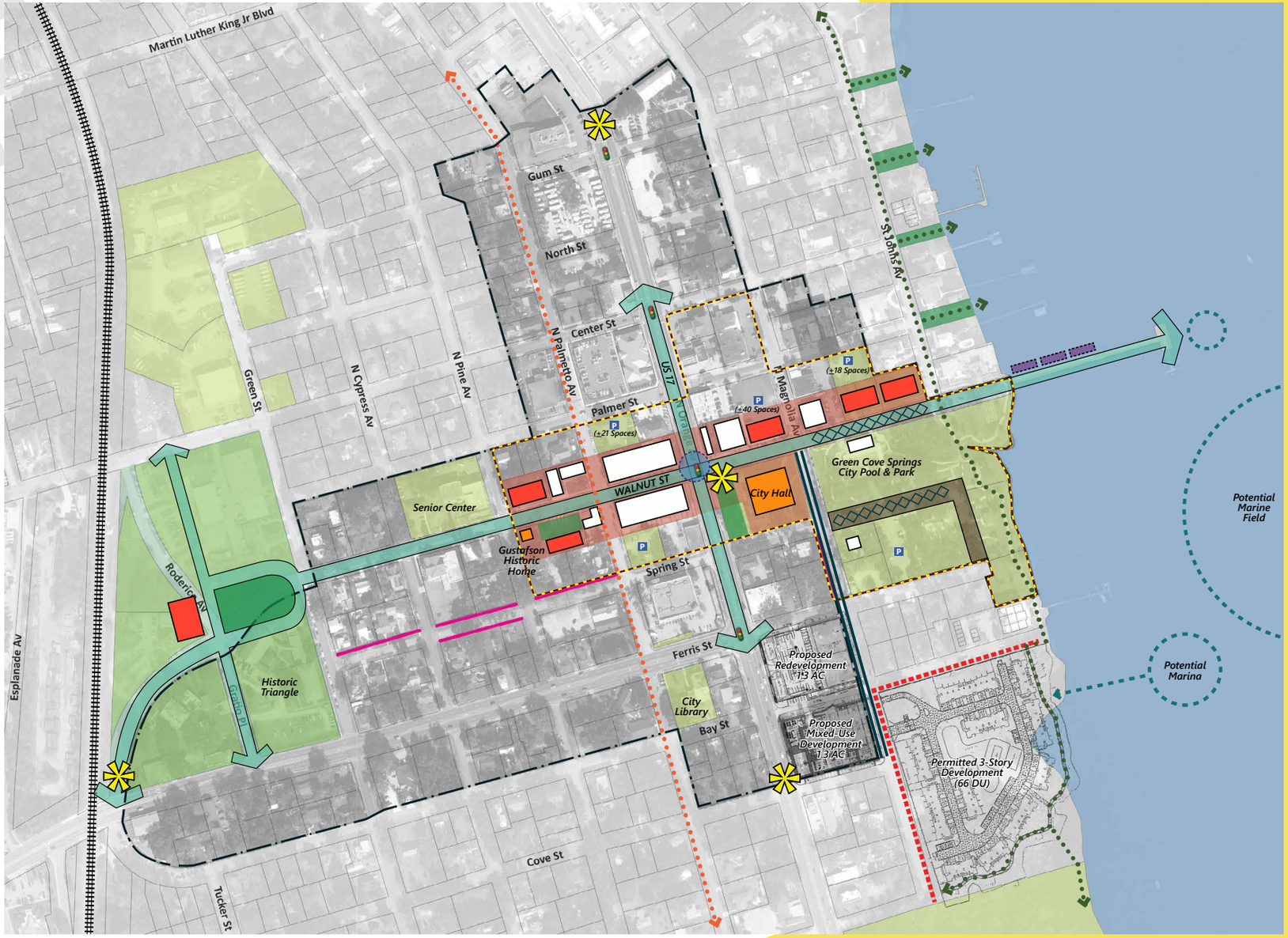
- Improve the public realm to safely support and accommodate a wide variety of motorized and non-motorized transportation options which will ***connect residents and visitors alike to Downtown*** restaurants, shops, amenities, and services.

OPPORTUNITIES & CONSTRAINTS

The ideas and perspectives provided by the public during the Community Outreach process and the assessment conducted during the Existing Conditions Analysis helped set the stage for drafting the Downtown Master Plan by clearly inventorying opportunities and constraints within the Study Area. These items are represented graphically in the map presented on this page and are strategically addressed within this Plan through a series of context-sensitive projects. These projects are discussed in the following section of this document and are further detailed in the Implementation Strategy.

KEY

- Study Area (83.3 AC)
- Public Land (15.8 AC)
- Signalized Intersection
- Existing Public Parking (± 155 Spaces)
- Gateways
- "Main Street" Improvement
- 8' Multi-Use Trail under Construction
- Potential Multi-Use Trail/Pedestrian Connection
- Focus Area
- Existing Building
- Potential Restaurant/Retail Building
- Potential Pocket Park/Open Space
- Activity Barges
- Intersection Improvement
- Potential Street Closure
- Proposed Underground Utility
- Existing Monthly Food Truck Event Location
- Potential On-Street Parking
- Potential Sidewalk



DRAFT

GUIDING PRINCIPLES

The Guiding Principles outlined below were identified based on extensive community engagement and the clear consensus to balance the preservation of the City's history and character with compatible economic development.

Over the next twenty years, there will be significant development throughout Clay County to meet the demands of a growing population. The principles of **Waterfront**, **History**, and **Charm** speak to the current attributes of Downtown Green Cove Springs. These are unique attributes that cannot be replicated. The Downtown Master Plan will seek to enhance these existing assets.

The principle of **Connectivity** seeks to further strengthen these assets by linking points of interest to create synergies.

The final principle of **Development** is realized through strengthening and connecting existing assets. It is embodied by desired real estate investment in Downtown that will complement the existing character and foster enhanced commerce and a greater sense of community.

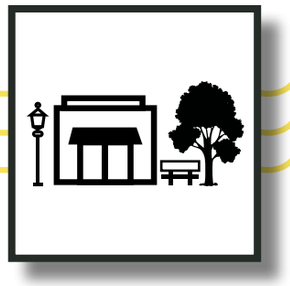
WATERFRONT

Activate and leverage the waterfront and park

HISTORY

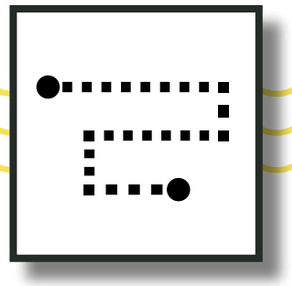
Embrace the local history

CHARM



Retain the small-town charm

CONNECTIVITY



Connect points of interest

DEVELOPMENT

Manage and plan for future development

DRAFT

DRAFT

"YOU KNOW WHAT I THINK DOWNTOWN NEEDS? MORE PLACES TO

PLAY AND STAY"

- TRACY SMITH, OWNER OF SOMETHING SPECIAL ANTIQUES

FOCUS AREA

2

THE CRITICAL START

This master planning process was conducted utilizing the Downtown Study Area boundary provided by the City. The ideas and perspectives provided by the public during the Community Outreach process and supplemented by the Project Team's existing conditions analysis helped identify redevelopment needs throughout Downtown. However, these needs are extensive and cannot be addressed overnight. Many master plans, filled with great ideas and designs, often fail to address the long-term needs of their respective communities because they lack a clear starting point.

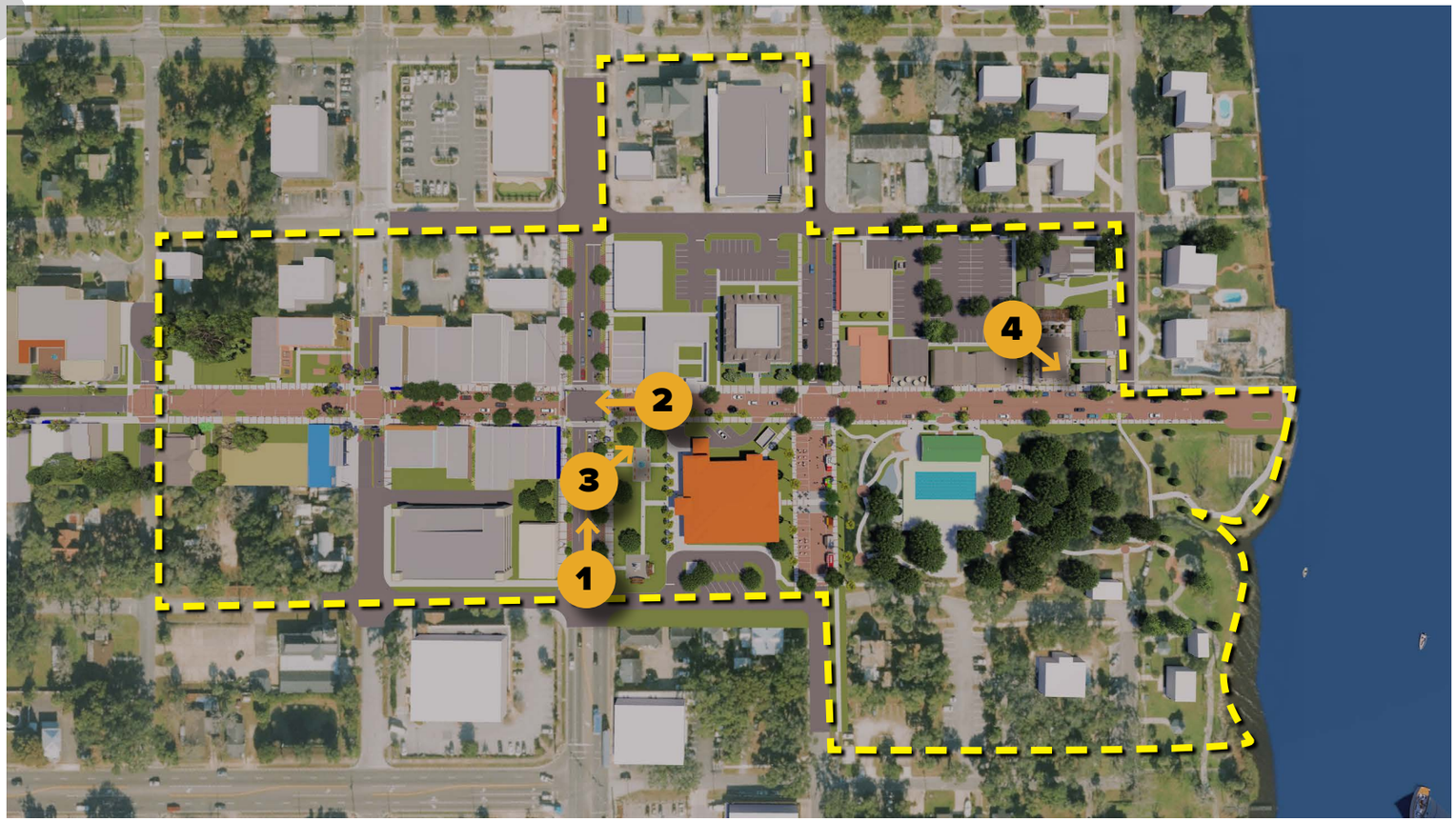
Therefore, although this Master Plan provides a long-term, 20-year vision for the Study Area, this Plan places the greatest amount of detail, attention, and guidance to the critical first phase of implementation. Projects proposed in Phase 1 are focused almost entirely within the City's urban core. This 'Focus Area', generally defined within this Plan as the portion of the Study Area found east of Pine Avenue between Palmer and Spring Street, contains many of the City's most prized assets, including the Walnut Street 'main street' corridor, Spring Park, and the St. Johns River. The value of these highly concentrated assets is enduring and, with the right plan, can once again be leveraged to generate increased activity, commerce, and energy to Downtown Green Cove Springs for decades to come. As such, the implementation of this Plan begins within this critical geographical area.

Source: Green Cove Springs, City Hall.

DRAFT

VISUALIZING THE PLAN

By establishing a smaller focus area, the implementation becomes more feasible and clear. To further articulate the reality of the proposed Plan, four illustrative perspectives were developed. The following 3-D visualizations showcase several key project sites proposed in the crucial Phase 1 and help communicate the reality of what is most achievable within the 20-year timeframe outlined in this Plan. These illustrations document some of the details proposed and effectively communicate the spaces and usability.



Perspective 1

Showcases the proposed US 17 streetscape improvements that enhance the sense of arrival into Downtown Green Cove Springs.

Perspective 2

Exhibits 3 key Phase 1 projects: the re-imagined US 17 / Walnut Street intersection, City Hall Park, and the Walnut Street Corridor upgrades.

Perspective 3

Previews a new civic space in front of City Hall which both celebrates and contributes to Downtown's iconic parks and open space system.

Perspective 4

Visualizes a Destination Restaurant that capitalizes on pristine views afforded by the proximity of the site to the waterfront and Spring Park.

1. US 17

Looking north towards Walnut Street

2. Intersection

Looking west along Walnut Street

3. City Hall Park

Looking northeast towards the park space

4.Restaurant

Looking southeast towards waterfront

"I SEE GREEN COVE SPRINGS' DOWNTOWN AS

CHARMING AND HOPEFUL"

- ANDREA VALLENCOURT, OWNER OF CLAY THEATRE

IMPLEMENTATION

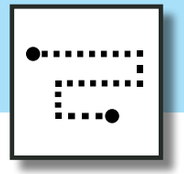
3

PHASE 1

WATERFRONT

HISTORY

CHARM

CONNECTIVITY 

DEVELOPMENT

DRAFT

The master planning process for Downtown Green Cove Springs yielded numerous opportunities and capital improvement projects. One of the most common obstacles to implementation of these types of plans are the lack of a clear starting point.

This 20-Year Vision for the future of Downtown Green Cove Springs begins by implementing the projects and improvements outlined in Phase 1. These projects are listed by order of importance within the Phase 1 Table and are shown spatially on the following page. The key objectives for Phase 1 are to set the stage for current and future growth by capitalizing on Downtown's **WATERFRONT** vistas via a destination restaurant, establish a Downtown brand which captures the **HISTORY** and **CHARM** of the Study Area, identify funding and regulatory mechanisms to support future **DEVELOPMENT** projects within the public and private realm, and seek to coordinate (and lead as necessary) roadway improvement projects which enhance **CONNECTIVITY** between existing and future Downtown assets.

Phase 1 (1-5 Years)		
1	Leverage City-owned Catalyst Site to attract a Destination Restaurant	$$$
2	Establish a Downtown Community Redevelopment Agency	$
3	Adopt Downtown Brand and Logo	$
4	Establish & Adopt Form-Based Code	$
5	Pursue grants for restoration of the Judge Rivers House	$
6	Identify use for unfinished/unoccupied rooms in City Hall	$$
7	Increase Downtown Parking Supply (within Focus Area)	$$$
8	US 17 and Walnut Street Intersection Enhancement	$$$$
9	Improve Walnut Street Corridor (From Palmetto Ave. to the River)	$$$$
10	Magnolia Avenue - Festival Street	$$$
11	FDOT Improvements to US 17 Corridor (Oak Street to Governor's Creek)	$$$$
12	Design and Construct City Hall Park	$$$

EST. COST: $ = <$100,000 | $$ = $100,000-$1 Million | $$$ = $1-5 Million | $$$$ = >$5 Millon

PHASE 1 OVERVIEW

1. Leverage City-owned Catalyst Site to attract a Destination Restaurant

Walnut Street, between North Orange Avenue and the St. Johns River, is the original commercial Main Street of Green Cove Springs. Today, there are only two operating commercial uses along this segment: the Clay Theatre and Ronnie's Wings. Re-establishing the urban form and function of this corridor, in an architectural style and massing compatible with the community character, should be the fundamental first step in restoring the historic vitality of Downtown Green Cove Springs.

The City owns four contiguous parcels totaling approximately .92 acres along Walnut Street just north of Spring Park. This property is well-positioned for a destination restaurant that could offer convenient onsite parking and beautiful waterfront vistas.

The City was recently awarded a $400,000 grant from the Florida Department of Environmental Protection. This grant would help to fund Low Impact Development (LID) stormwater measures such as pervious parking spaces, tree boxes and bioswales on this property and along Walnut Street from the River to Magnolia Avenue.

Utilizing the state authorized redevelopment tools provided through the establishment of a Community Redevelopment Agency (CRA), the City should position the property as a 'pad-ready' site with parking and solicit proposals for development that would include a destination restaurant. Preparation of the property should include appropriate site civil, geotechnical and environmental analyses as well as a conceptual design for parking and stormwater.

Utilizing a Request for Qualifications (RFQ), instead of a Request for Proposals (RFP), would allow the City to select a development partner and work collaboratively towards establishing a commercially viable project that complements the rich character of Downtown Green Cove Springs.

Development of the site should be of traditional urban form and compatible with the existing architectural styles in Downtown Green Cove Springs. Consistent with an anticipated form-based code, the site provides the opportunity for the development of two or three buildings fronting Walnut Street. The buildings should be limited to no more than three stories with a maximum setback of ten feet, as measured from building face to the northern edge of sidewalk/right-of-way line. Parking should be behind the buildings. The City should also retain the right to approve the architecture of the building to ensure that the development complements the existing character of the community.

The revitalization of the entire Walnut Street corridor is an important long-term objective of this Downtown Master Plan. This segment (between North Orange Avenue and the River), with its proximity to the popular Spring Park, was prioritized in order to spur additional redevelopment within the Study Area.

DRAFT

DRAFT

Catalyst Site Development Process

1. Identify potential development partners to invite to respond
2. Prepare and issue a Request for Qualifications (RFQ) for a development partner that clearly states the City's vision for the property
3. Review, short-list, and interview the top three respondents; make selection
4. Negotiate a Memorandum of Understanding (City/Developer) to establish a process and schedule for the creation of a development plan
5. Advance the following site planning efforts:
    a. Developer performs their due diligence and commences planning efforts
    b. City performs environmental and geotechnical investigations of the site
    c. City identifies relevant City investments affecting the project site (e.g., streetscapes, park enhancements and other capital improvements)
    d. City identifies potential assistance that may be available to the Developer (e.g., design assistance, grants, TIF rebates, fee waivers and/or discounts)
    e. Developer proposes a development plan and requests incentives
    f. City and Developer negotiate terms of a Development Agreement
6. Prepare and execute Development Agreement
7. Commence Construction

2. Establish a Downtown Community Redevelopment Agency

The establishment of a Community Redevelopment Agency is a critical first step towards revitalization and the implementation of the Downtown Master Plan.

Community Redevelopment Agencies are authorized by Chapter 163, Part III of the Florida Statutes. Under Chapter 163, Part III, local governments are able to designate areas as Community Redevelopment Areas where “slum and blight” exist. Examples of conditions that can support the creation of a Community Redevelopment Area include, but are not limited to: the presence of substandard or inadequate structures, a shortage of affordable housing, inadequate infrastructure, insufficient roadways, and inadequate parking.

To determine if those conditions exist, the City would evaluate the proposed redevelopment area and prepare a Finding of Necessity report. If the Finding of Necessity determines that the required conditions exist, the City may create a Community Redevelopment Agency to provide the tools needed to foster and support redevelopment of the targeted area.

The activities and programs offered within a Community Redevelopment Area are administered by the Community Redevelopment Agency, a five to seven member CRA “Board” created by the City that directs the agency. The Community Redevelopment Agency is responsible for developing and implementing the Community Redevelopment Plan that addresses the unique needs of the targeted area.

The plan includes the overall goals for redevelopment in the area, as well as identifying the types of projects planned for the area. Potential projects and programming contained in CRA Plan include: streetscape and roadway improvements, building renovations, new building construction, water and sewer improvements, parking lots and garages, neighborhood parks, streetscape, sidewalks and street tree plantings. The CRA Plan can also include redevelopment incentives such as grants and loans for such things as façade improvements, building stabilization, business recruitment and business retention programs.

Many of the proposed strategic investments and projects within the Green Cove Springs Downtown Master Plan are typical of the those contained within a Community Redevelopment Plan. As such, this Master Plan could easily serve as the base document for the creation the Green Cove Springs Community Redevelopment Plan.

CRA Establishment Process

1. Coordinate redevelopment goals and objectives with Clay County
2. Prepare and adopt a Findings of Necessity report to identify conditions of slum and blight within the targeted area
3. Develop and adopt the Community Redevelopment Plan to address the unique needs of the targeted area via the identification of goals, objectives, and projects
4. Receive Delegation of Authority Resolution from the County
5. Establish the Community Redevelopment Agency and its Board
6. Create a Redevelopment [Tax Increment] Trust Fund to direct the increase in real property tax revenues back into the targeted area

DRAFT

3. Adopt Downtown Brand & Logo

DRAFT

The inspiration for the branding of Green Cove Springs started with an assessment of the character and personality of the City. Through interviews, a walking audit, and branding research, it was clear to see the rich history and natural beauty deserving of celebration within the logo for the Downtown.

The physical elements of the City that are showcased in the final logo composition include oak tress, charming brick streets, decorative lamp posts, and the re-imagined historic buildings along Walnut Street. The spring and river elements are honored in the waves below and “Cove” is emphasized in the City name above. The badge design compliments the City seal and the colors reflect a cohesive brand approach.

The objective of this branding initiative was to establish the Downtown area as a unique place within the City. This guided the emphasis of “Downtown” in the final design. The tagline speaks to the geographic significance of the City along the St. Johns River and nods to the residents’ cherished Floridian lifestyle–Where Cove Life Happens.

Full-color logo

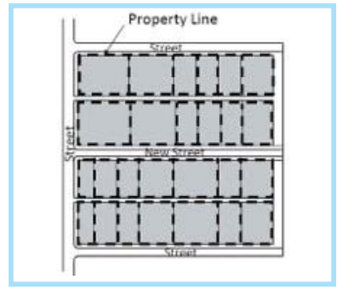
3-color logo variations

4. Establish & Adopt Form-Based Code

The Land Development Code and Zoning Map are the most important tools for implementing the vision for Downtown. Most sites in the Downtown are zoned Central Business District (CBD), the north and south gateways into downtown (US 17) are zoned Gateway Corridor Commercial (GCC), and the south side of the Ferris Street corridor and the west side of Palmetto Avenue are zoned Gateway Corridor Neighborhood (GCN). There are a few sites on Magnolia Avenue zoned R-1. Public sites are zoned Institutional (INS). While the current zoning standards have tried to address infill, redevelopment, and quality of design, transitioning to a Form-Based Code for the Downtown area and the US 17 and SR 16 commercial corridors as they enter the downtown would be the best option to achieve the vision.

The intent of the Form-Based Code (FBC) will be to preserve the existing character of the Downtown, while promoting quality infill and redevelopment in a walkable and mixed-use urban environment. The new FBC will contribute to streamlining the current zoning and development review process and provide developers, builders and residents with a more predictable and transparent process for development and redevelopment. Implementation of a form-based code would also lead to greater interest in the city for new investment and economic growth that would be fueled by the creation of a richer and more vibrant urban environment in the heart of Green Cove Springs.

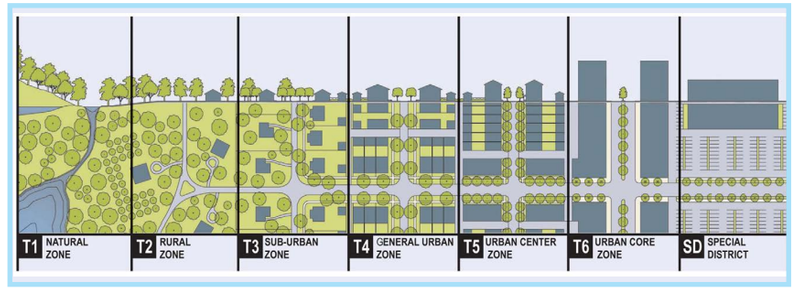
Recommendations for implementing a Form-Based Code within the City are detailed within Supplemental Document B.



Block Layout / Connectivity
Block size is key to achieving good urban form and transportation connectivity. Shorter blocks improve the pedestrian experience as well as foster a street network that supports the efficient distribution of traffic. The urban core gridded network shall be maintained and improved.

Building Placement / Orientation
The placement of a building on a site is critical to creating a vital and coherent public realm. Buildings must be oriented to the street; parking areas must be placed behind the buildings. Building orientation can also be defined by locating prominent entrances along the principal street.

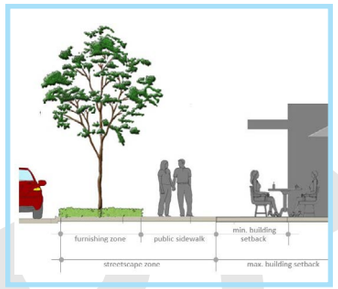
Public Realm
Sidewalks in commercial areas must be wide enough to accommodate pedestrian activity, landscaping and streetscape furniture. Due to the lack of right-of-way along certain corridors, some sites may need to dedicate an easement to the city to accommodate such elements.



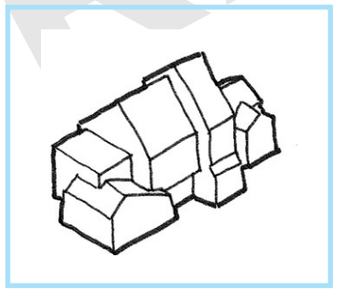
Source: Form-Based Codes Institute

Regulating Plan
The organizing principle of a FBC is the regulating plan, a two-dimensional graphic that depicts the geographic distribution of the transect zones. Generally, the T-Zones range from T-1 to T-6, depending on the local context but not all FBCs include all 6.

DRAFT

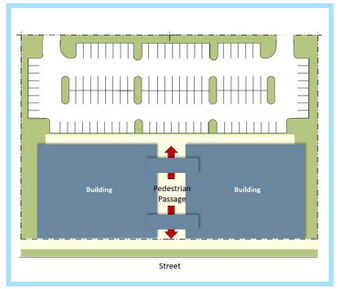


Building Frontage and Setbacks
Minimum building frontage (the length of the façade along the street) and consistent front setbacks are important to creating a continuous urban form. Buildings need to be constructed close to the streets and sidewalks but not so close that the public realm is diminished.



Building Form, Massing and Scale
Standards must be adopted to ensure buildings have certain components (e.g., base, middle and top) and large building volumes are divided to appear as smaller volumes grouped together. Volume breaks may be achieved by volume projections and recesses, and varying heights and roof lines.

Façade Articulation & Fenestration
Facades must be designed to reduce the monolithic appearance of large unadorned walls. Fenestration (the arrangement of windows and doors along a façade) is a critical part of façade articulation. The percentage of fenestration shall be regulated to ensure transparency and adequate façade design.



Circulation, Access & Parking
Vehicular, bicycle and pedestrian traffic must be addressed. Curb cuts along primary streets should be minimized. Rear alleys, secondary roadways or joint use driveways should be used instead. Parking flexibility is needed in the core, especially if the city is committed to providing public parking in the Downtown.

Landscaping, Lighting and Drainage
Landscaping standards should focus less on buffers and use separation and more on providing shade and accentuating buildings and public spaces. Lighting should focus on safety and compatibility. Low Impact Development practices (e.g., green roofs, rain gardens, rain cisterns, or other design techniques) should be encouraged.

Signage, Wayfinding & Murals
Sign regulations must ensure redevelopment and infill projects have adequate signage in line with the vision for Downtown. Standards must also address storefront signage location, materials, and size to ensure a consistent environment. Murals and wayfinding should be addressed separately from the Code and instead be managed the city.

Public Art / Murals
Art (sculptures and murals) are an important part of urban life. Vibrant downtowns are made more unique when sprinkled with local art. The city should consider adopting an art program that would allow sculptures and murals throughout the core. Murals should not be regulated as signs as they are not intended as advertisement but rather as works of art. They should be allowed as part of a program managed by the city. Many cities in Florida have established their own programs and include requirements such as prior experience of the artist, size and placement limitations.

DRAFT

5. Pursue grants and other funding sources for restoration of the Judge Rivers House

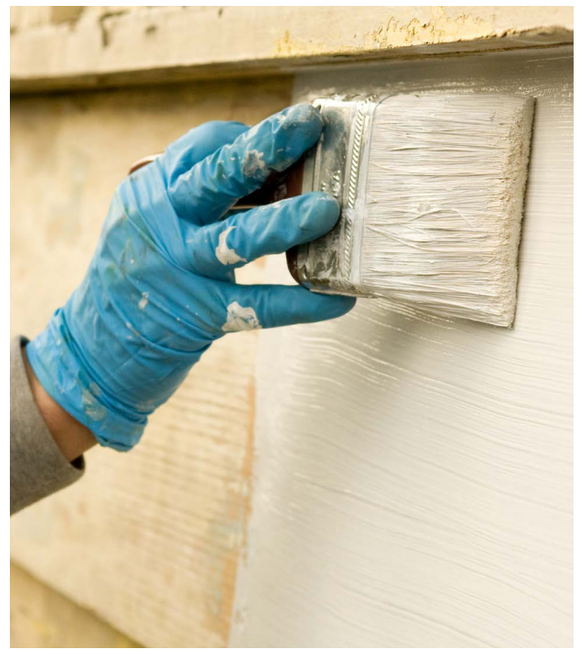
The Florida Department of State, Division of Historical Resources, offers *Special Category Matching Grants* up to $500,000 on an annual basis. Development projects with the mission of Preservation, Restoration, Rehabilitation or Reconstruction of historic properties that are both owned by local governments and are regularly open to the public are eligible for this grant.

A formal announcement of the City's intent to preserve and restore the Judge Rivers House can help galvanize community support for this effort. A local non-profit organization, formed by supporters, could help raise funds for restoration and foster momentum for the project.

FLORIDA TRUST FOR HISTORIC PRESERVATION

FLORIDA DEPARTMENT OF STATE / DIVISION OF Historical Resources

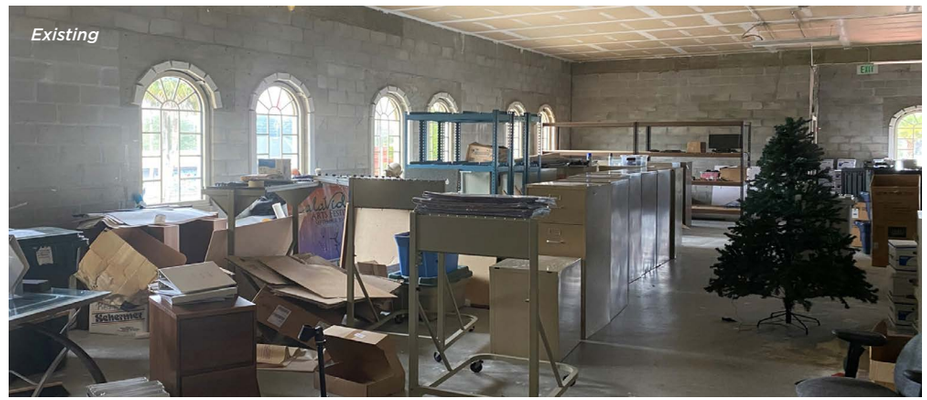
National Trust for Historic Preservation
Save the past. Enrich the future.™



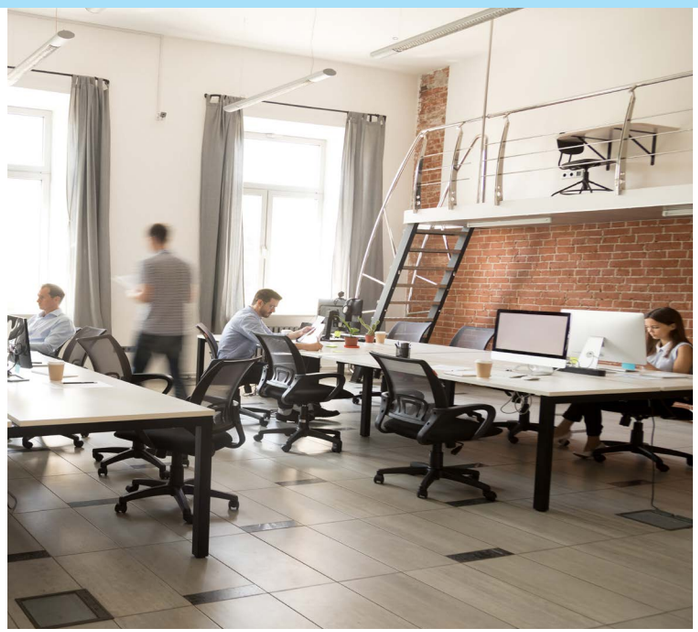
DRAFT

6. Identify use for unfinished/unoccupied rooms in City Hall

The combination of City Hall's classical architecture and prominent location on the corner of Walnut Street and Orange Avenue render this important civic facility as one of Downtown's most prolific symbols of local character, history, and beauty. However, much like the Downtown itself, City Hall is full of underutilized potential. With a wealth of arched windows overlooking Downtown Green Cove Springs, two of the facility's most prominent rooms in the building are amongst its most beautiful, yet these spaces are currently being used for storage. The City should seek to immediately remedy this issue by identifying and cultivating strategic partnerships to finish and activate these spaces. Potential uses for these rooms should be those which seek to further enhance the vibrancy and activity within Downtown, as identified below.



COMMUNITY MEETING SPACE | SMALL BUSINESS INCUBATOR | ART GALLERY



DRAFT

7. Increase Downtown Parking Supply (within Focus Area)

THA Consulting completed a parking study in 2022 which examined existing and projected parking conditions within the greater Downtown area of Green Cove Springs. During their analysis, THA Consulting found that the City currently possesses a parking surplus within the overall Parking Study Area on both weekdays and weekends. However, when the firm examined conditions within the Core Sub-Area (loosely defined as the area west of US 17 between Palmer and Ferris St.), it found that although the weekday parking supply was sufficient, the Core Sub-Area experienced a shortage of 41 spaces during the weekend. Furthermore, projected parking demand for the overall Parking Study Area (based upon 2031 population projections) was not expected to exceed the Area's current supply by 2031, but the existing weekend parking deficiency within the Core Sub-Area is expected to marginally increase throughout the next nine years.

The City should begin the process of incrementally increasing the parking supply Downtown. Five potential parking improvements (three on-street and two off-street) are proposed for Phase 1, which are identified in the following Table and illustrated on the Phase 1 Parking Map. These potential parking improvements were selected based on their potential to increase the area's total supply for parking, their location to major parking generators (e.g., Spring Park, the Walnut Street business corridor), and their estimated feasibility based upon the properties' current ownership status (*note: Projects A and C will require the acquisition of private property*).

As Downtown Green Cove Springs further develops and the projects identified within Phases 1, 2, and 3 of this Master Plan continue to be implemented, the City should remain vigilant of the Study Area's changing parking demands before moving forward with additional parking improvements (particularly if they would hinder walkability within the Study Area or fail to consider alternative modes of travel, such as bikes, scooters, transit, ride-sharing apps, etc.). However, if the demand for vehicular parking clearly escalates within the Study Area to such a degree that it effectively discourages further private sector investment, two potential locations for structured parking have been identified in Phase 3.

Phase 1 Proposed Parking Improvements (Est.)

	Parking Type & Location	EXISTING Spaces	PROPOSED Spaces	Net Change
A	*Mid-Block Palmer Street* **Parking Lot** *(Between Magnolia & St. Johns Ave.)*	**18 spaces (60°)**	**48 spaces (90°)**	**30 spaces**
B	*Walnut Street* **On-Street Parking** *(East of Magnolia Ave.)*	**22 spaces (30° & 60°)**	**41 spaces (30° & 90°)**	**19 spaces**
C	*Palmetto Ave. & Spring St. Intersection* **Parking Lot** *(Northeast Quadrant)*	**22 spaces (90°)**	**60 spaces (90°)**	**38 spaces**
D	*Magnolia Ave.* **Festival Street Parking** *(Between Walnut & Spring Street)*	**0 spaces**	**29 spaces (90° & Parallel)**	**29 spaces**
E	*Magnolia Ave.* **On-Street Parking** *(Between Spring & Ferris St.)*	**0 spaces**	**21 spaces (Parallel)**	**21 spaces**
F	*City Hall* **Off-Street Parking** *(See City Hall Park Project)*	26 spaces (45° & 90°)	12 spaces (45°)	-14 spaces
G	*Walnut Street* **On-Street Parking** *(Between Orange Ave. and Palmetto Ave.)*	20 spaces (Parallel)	10 spaces (Parallel)	-10 spaces
			Total Increase	**113 spaces**

PHASE 1 PARKING

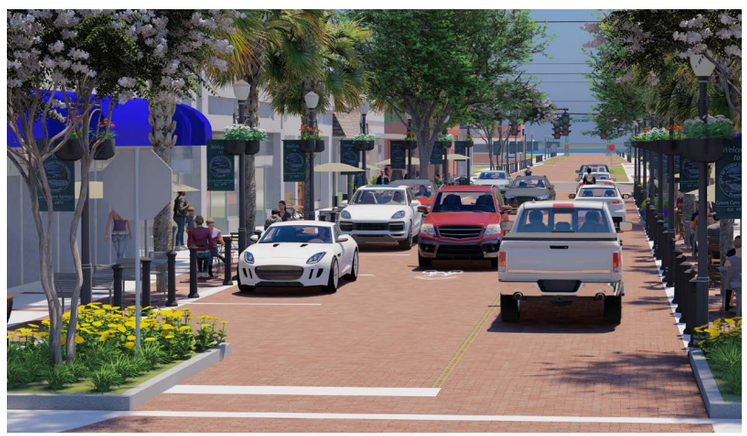
8. US 17 & Walnut Street Intersection Enhancement

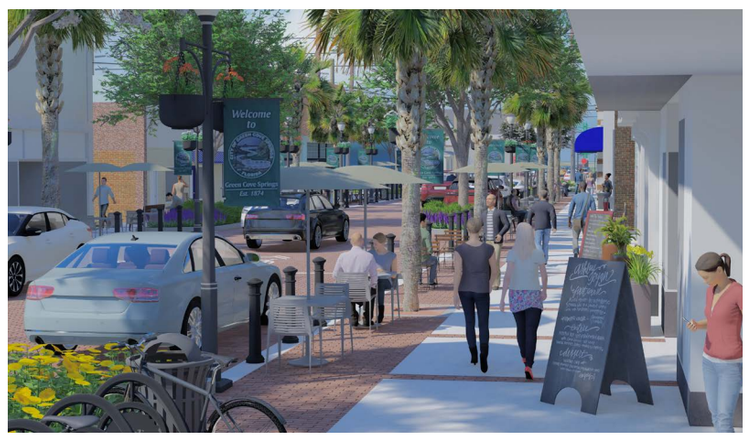
Approximately 25,000 cars per day cross Walnut Street via US 17 and this amount is expected to double by the year 2045 with the completion of the First Coast Expressway. How many people in these vehicles realize they are driving through Historic Green Cove Springs, the Clay County seat? Furthermore, how do these fast-moving cars serve as a divide to pedestrian movement from the east to the west side of the City?

As part of the Walnut Street Conceptual Design Project, we identified Connectivity, Improved Access, and Use for Pedestrians as key design drivers for the corridor. Our proposed improvements for the intersection include removing the center turn lanes, adding curb extensions, and narrowing travel lanes–all of which reduce the pedestrian crossing distance across US 17 and also provide traffic calming. Other proposed improvements include landscape areas and street trees which provide shade and natural beauty and also provide additional traffic calming. Installing new mast arms and pedestrian signals enhances safety and reduces overhead wires. These proposed improvements will not only make this intersection more pedestrian-friendly, but will also provide a clear sense of arrival into Downtown and serve to effectively bridge the eastern and western portions of the Downtown.

9. Improve Walnut Street Corridor (from Palmetto Avenue to the River)

Walnut Street has served as the primary civic and commercial area within Downtown since the City's founding. As part of the Walnut Street Conceptual Design Project, we identified the need to create a 'sense of place' that would activate the corridor and encourage redevelopment and revitalization. The proposed design would create a flexible curbless street with expanded sidewalks and on-street parallel parking on the north side of the street. Expanded sidewalks can accommodate outdoor seating as well as provide areas for streetscape improvements such as furnishing zones for bike racks, litter receptacles and benches. Pedestrian-scale light poles create opportunities for hanging baskets and banners along the corridor, providing additional beautification. Planter pots and landscape areas are proposed to soften the streetscape environment and create a comfortable and welcoming pedestrian experience perfect for window shopping, outdoor dining, boutiques, and other types of activated retail spaces. Removable bollards can be placed at the end of each block to close down specific areas for evening and weekend events creating a true festival street experience. Underscoring the importance of connectivity and walkability, the Walnut Street Conceptual Design proposed landscape and lighting improvements to the existing paseo (pedestrian connection) from Walnut Street to the City-owned parking lot to the south of the corridor.





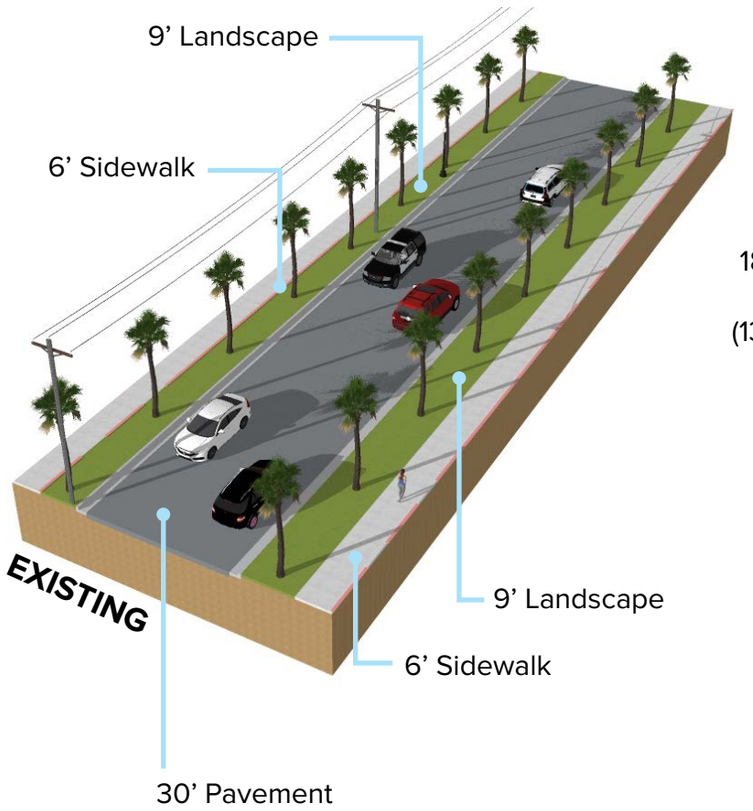
DRAFT

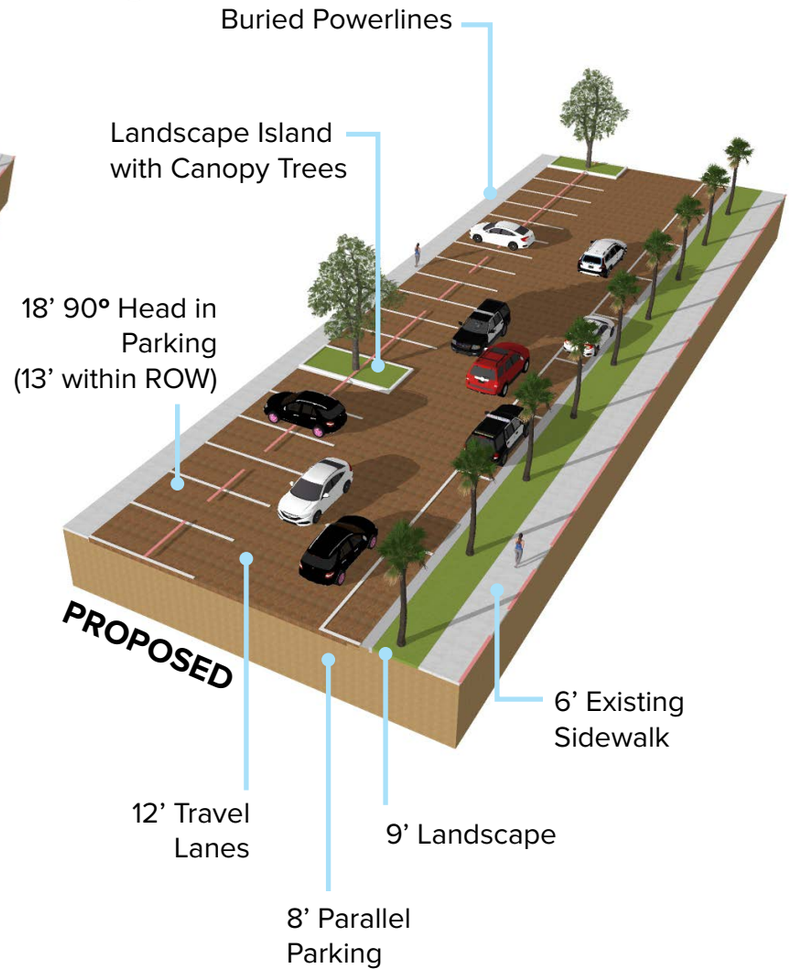
Magnolia Avenue is a north-south local collector which acts as Springs Park's western-most boundary. Today, this 52-foot right-of-way features two lanes of travel with no opportunities for on-street parking—indicating to drivers that the corridor (and the buildings and amenities which line the roadway) is something to travel through rather than a destination in of itself.

As such, this Plan proposes to transition a critical portion of Magnolia Avenue located between Walnut and Spring Street into a 'festival street', which are roadway segments designed to allow for frequent and temporary closures of vehicular traffic for pedestrian-oriented events and activities. By implementing this project, the City could effectively expand the size of Spring Park and thus, increase the capacity and programming for Downtown events such as Food Truck Friday and 3rd Saturday Market in the Park.

As shown on the PROPOSED typical street section, the conversion of Magnolia Avenue into a festival street would render the sidewalk flush with the street, install landscape treatments, equip the roadway with removable bollards, underground utilities (as part of the City's CIP), and provide both angled and parallel parking to increase the supply of parking within the Study Area.

MAGNOLIA AVENUE - Festival Street
(Looking North)
60' R.O.W. with 90° & Parallel Parking





DRAFT

ENHANCED FOOD TRUCK PARK

FLOWER BEDS

ADDITIONAL PARKING

REMOVABLE BOLLARDS

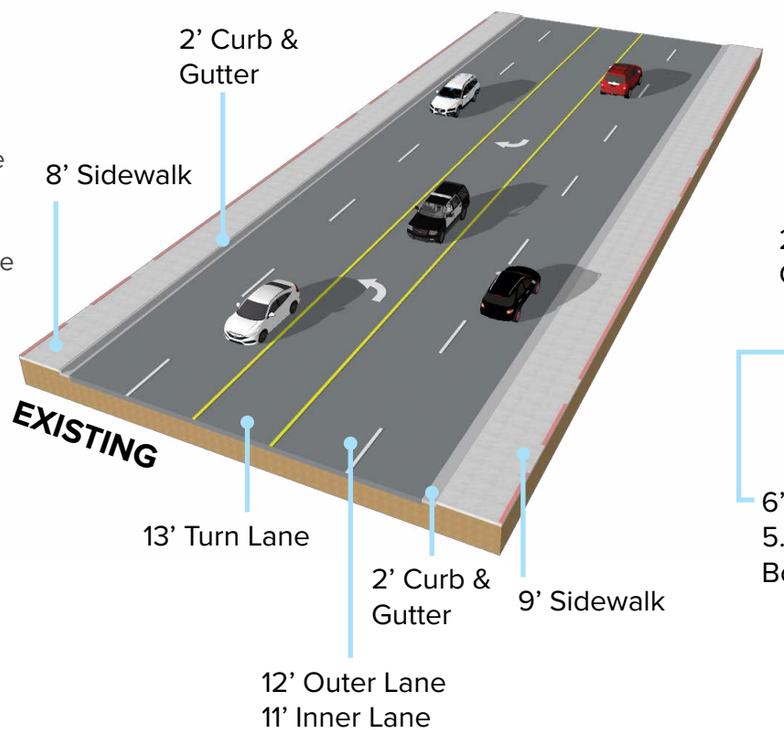
11. FDOT Improvements to US 17 Corridor (Oak Street to Governor's Creek)

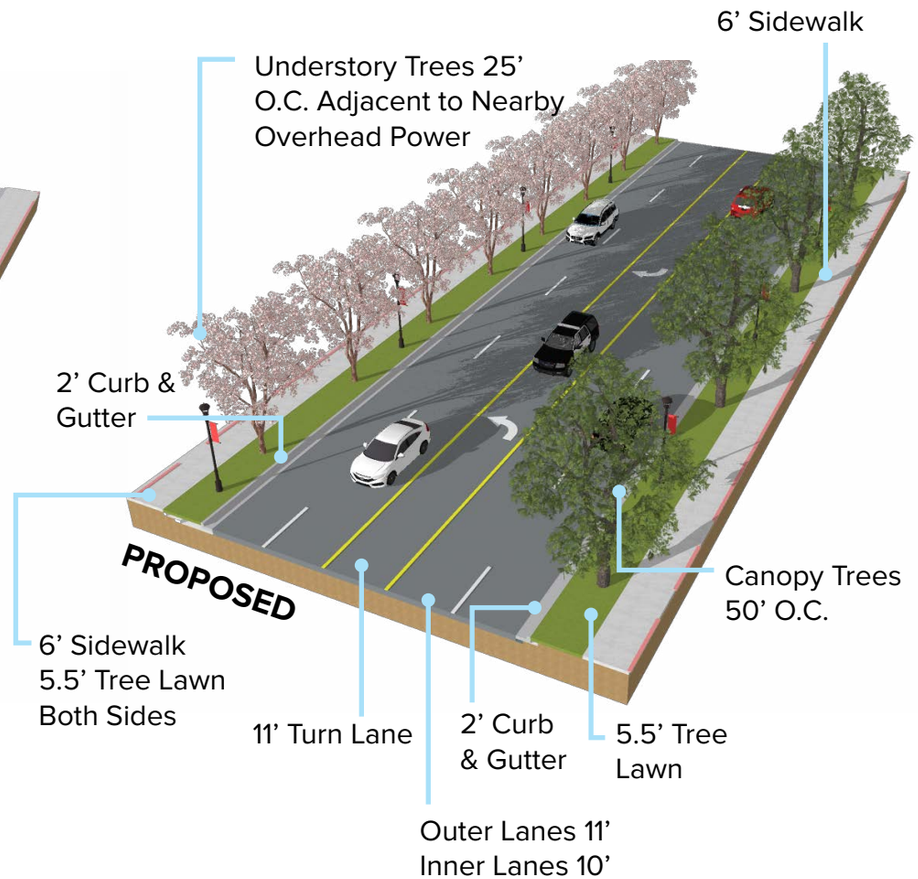
The FDOT Context Classification of US 17 from just south of Oak Street to the Sheriff's Office driveway north of Governor's Creek is C4 – Urban General.

Walking along Orange Avenue (US 17) in Downtown Green Cove Springs, where the sidewalk extends directly to the curb, can be a harrowing experience as cars barrel past the posted 30 mile-per-hour speed limit. This is an uncomfortable and potentially unsafe condition that should be improved.

As shown in the PROPOSED typical section, this classification provides the opportunity to reduce travel lane widths, provide and expand landscape buffers, install street trees and provide sidewalks with a six foot minimum width. These improvements will serve to enhance pedestrian comfort, safety, community aesthetics and provide a greater sense of arrival to Green Cove Springs.

ORANGE AVENUE
(Looking North)
80' R.O.W.





DRAFT

12. Design and Construct City Hall Park

City Hall, with its architectural integrity and prominent location, serves as an important and compelling structure within Downtown Green Cove Springs. Unfortunately, the surface parking spaces along the front of the building undermine the property's full potential as a welcoming civic gateway.

The proposed design seeks to relocate parking spaces to the rear of the building and redevelop the front of City Hall as a small park/ plaza. This design would seek to reinforce the improvements to the US 17/Walnut Street intersection; improving the pedestrian experience and accentuating a sense of arrival into Downtown Green Cove Springs.

DRAFT

PHASE 2

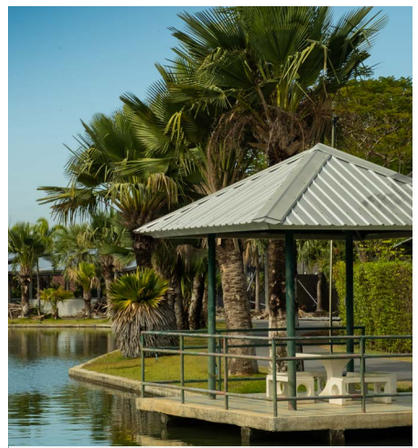
WATERFRONT | HISTORY | CHARM | CONNECTIVITY | DEVELOPMENT

The projects proposed in Phase 2 are derived from the guiding principles provided by the community and the strategic improvements introduced in Phase 1. The following projects seek to activate the **WATERFRONT** by converting underutilized rights-of-way into neighborhood-serving pocket parks, capitalize on the City's unique **HISTORY** and **CHARM** by expanding Spring Park and establishing authentic gateway signage, provide for non-motorized **CONNECTIVITY** opportunities into the Downtown from neighborhoods to the north via a new trail project along St. Johns Avenue, and 'filling-in' the perceived gaps within the Focus Area by priming a vacant catalyst site for **DEVELOPMENT**.

Phase 2 (6-10 Years)		
13	Gateway Features	$$
14	St. Johns Avenue Trail (North of Walnut St.)	$$
15	Strategic Infill Project (Vacant Lot at Walnut St./Magnolia Ave.)	$$$
16	Waterfront Pocket Parks	$$
17	Spring Park Expansion & Improvements (Vacate Spring St.)	$$$

EST. COST: $ = <$100,000 | $$ = $100,000-$1 Million | $$$ = $1-5 Million | $$$$ = >$5 Millon

#14 ST. JOHNS AVE. TRAIL



#16 POCKET PARKS

13 Gateway features such as signage, monuments, and banners do more than just identify the location of an area or activity center. They are critical for establishing a sense of place, a community's identity, and conveying powerful messages. This Plan proposes to implement gateway features at strategic and highly visible locations within the Study Area which announce to residents and visitors alike they are entering thriving Downtown community rich with shops, restaurants, history, culture, and amenities.

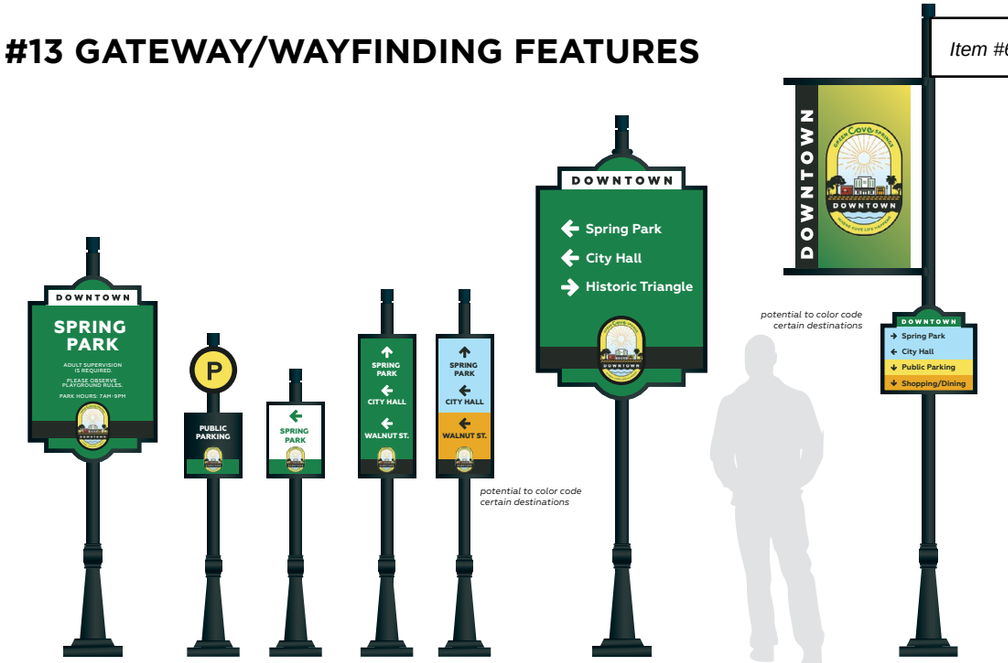
14 Consistent with the community's desire for additional nonmotorized connections between neighborhoods, the waterfront, and downtown amenities, this project would convert a portion of the St. Johns Avenue right-of-way into an off-street, multi-use path for pedestrians, cyclists, scooters, and other motorless forms of transportation.

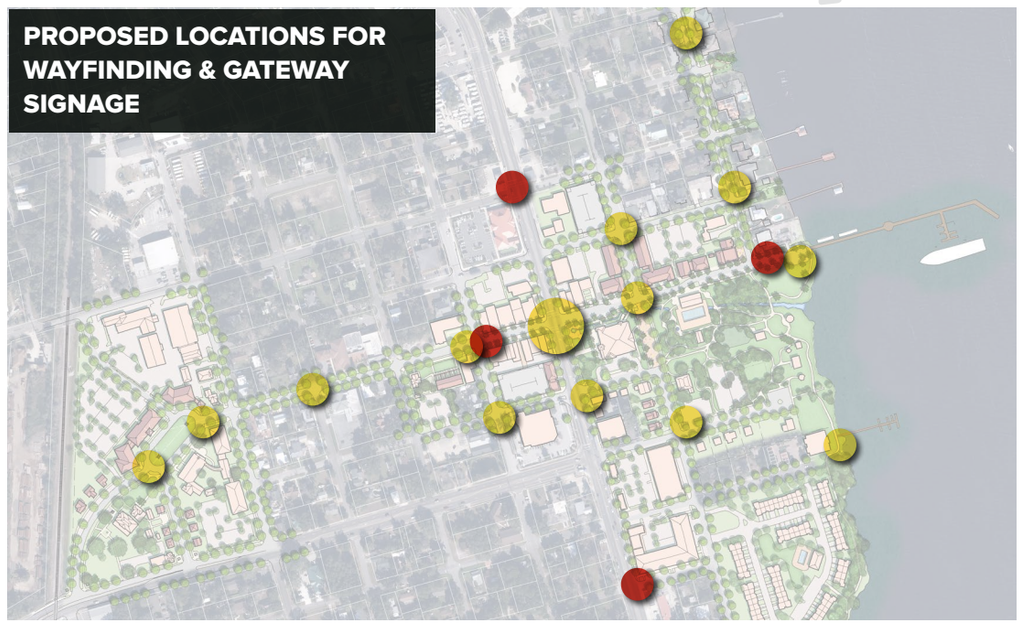
15 This Plan places a significant emphasis on the revitalization and redevelopment of the historic Walnut Street corridor between US 17 and the St. Johns River. A necessary step to realizing this goal will be to address the presence of vacant and underutilized properties. One such site is the northwest quadrant of the Walnut Street and Magnolia Avenue, which is currently privately owned and is being used as an unpaved private parking lot. As such, the property owner should be approached by the City to discuss a more intense use for the site, potential incentive programming to assist in the redevelopment process, and/or whether the site should be purchased by the City to further redevelopment efforts Downtown.

16 Many east-west roadways within the Study Area terminate after connecting with St. Johns Avenue. However, the rights-of-way from these roadways often extend into the River. Thus, ample opportunities exist to convert these underutilized or vacant spaces into waterfront pocket parks which can serve the Downtown neighborhoods and connect the proposed St. Johns Avenue trail. Potential amenities at these locations may include benches, pavilions, tables, water fountains, and kayak/canoe launches.

17 From its world-class active and passive recreational facilities to its wildly popular public events, Spring Park stands alone as the region's premier civic open space. This Plan proposes to vacate the Spring Street right-of-way east of Magnolia Avenue, resulting in a loss of 12 spaces, to further expand the Park's capacity for future facilities, programming, and events. As part of this effort, the City should also reevaluate the functionality of the space and determine if the Park's current layout and amenities are complimenting the City's Downtown revitalization efforts.

#13 GATEWAY/WAYFINDING FEATURES





Gateways

Wayfinding Signage

DRAFT

PHASE 3

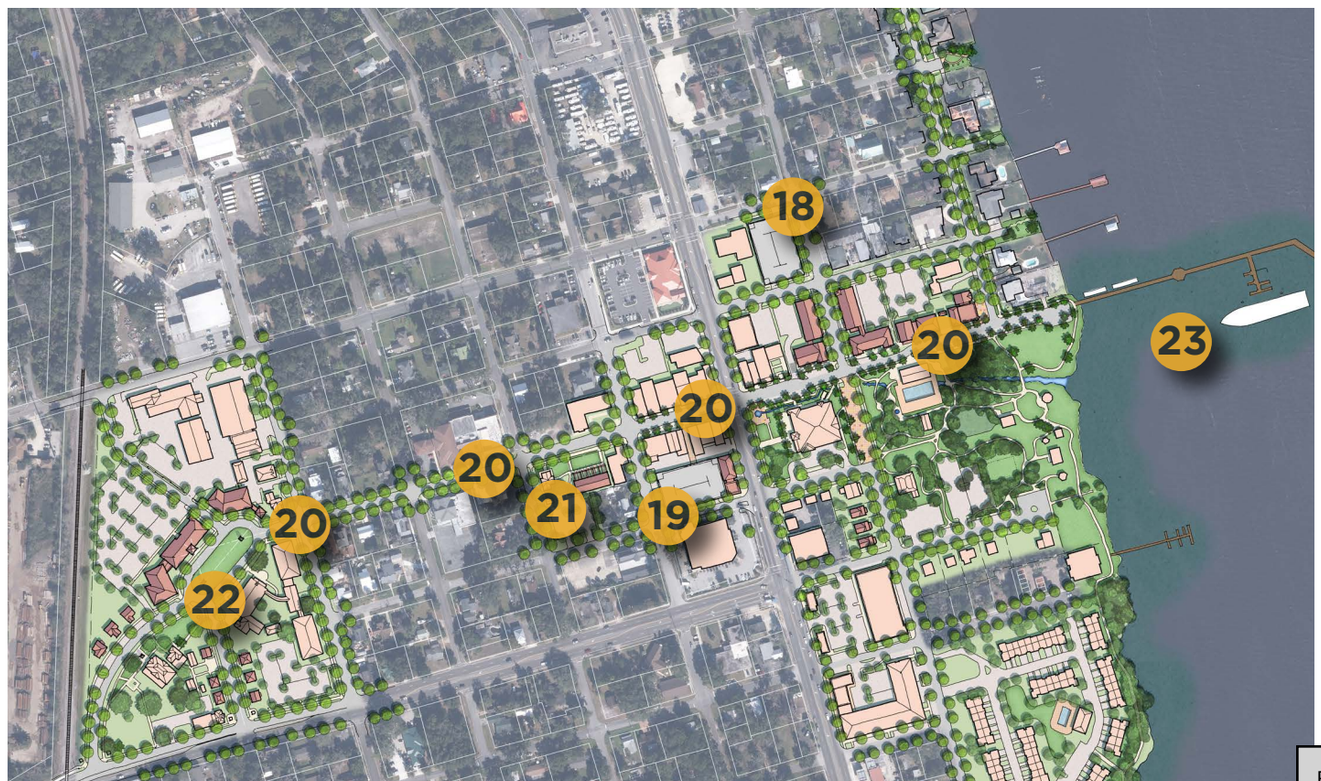
WATERFRONT | HISTORY | CHARM | CONNECTIVITY | DEVELOPMENT

The third and final phase of this Master Plan identifies a series of long-term and community-driven strategic investments intended to set the stage for future economic development within Downtown Green Cove Springs. Most notably, this Plan proposes the construction of high-capacity parking garages to service existing and future **DEVELOPMENT**, embrace the City's **HISTORY** and **CHARM** by revitalizing the Historic Triangle, establish meaningful **CONNECTIVITY** between points of interests throughout Downtown via cultural markers, signage, and paths, and leverage the City's prime **WATERFRONT** location to cultivate a thriving river-based economy and tourism industry.

Phase 3 (11-20 Years)		
18	Parking Garage - North (Intersection of Palmer St./Magnolia Ave.)	$$$$
19	Parking Garage - South (Intersection of Palmetto Ave./Spring St.)	$$$$
20	Culture Walk Markers	$$
21	Strategic Infill Project (Gustafson House - 515 Walnut St.)	$$$
22	Historic Triangle Site Redesign	$$$$
23	Marine Field Programming	$

EST. COST: $ = <$100,000 | $$ = $100,000-$1 Million | $$$ = $1-5 Million | $$$$ = >$5 Millon

#18 & #19 PARKING GARAGES



18 As Downtown's economy flourishes and the inventory of developable properties nears depletion, the City should consider allowing developers to convert existing off-street parking lots into new redevelopment projects. This policy change will likely result in the exhaustion of Downtown's parking supply and thus, will trigger the need for one or more intensive, large-scale parking structures within the Study Area. Two potential locations for these facilities are identified in the Phase 3 Map.

19

20 Downtown Green Cove Springs is rich with history and culture. In efforts to both celebrate the area's unique cultural heritage while simultaneously enhancing connectivity throughout the Study Area, the City should establish a Downtown cultural trail program complemented by historical markers, imagery, and murals which link important local assets. If implemented effectively, the Culture Walk program would compel residents and visitors alike to stay and explore the Downtown area after reaching their initial destination.

21 Frank and Agnes Gustafson, the founders of the Gustafson Dairy Farm, once resided along the historic Walnut Street corridor within Downtown Green Cove Springs. Today, their home remains under family ownership, but remains largely vacant and untouched since their passing. This Plan proposes to honor *Mama and Papa Gus*' legacy by working with the family to rehabilitate the historic home and repurpose it for a public use. Potential uses may include a history museum, small event space, visitor/community center, or other uses which help serve the community that this iconic couple called home.

22 The Walnut [Main] Street corridor is of critical importance to the success of Downtown and the City as a whole. In the past, significant attention has been paid to the blocks immediately east and west of the US 17 corridor. However, to create a truly vibrant Main Street, the corridor must be densely populated by public and private development that is bookended by important community focal points. Although the eastern end of the corridor meets this standard by featuring the St. Johns River and Spring Park, the western end terminates into the 'Historic Triangle', which houses a number of institutional uses in a sprawling and underdeveloped setting which fail to contribute to the Main Street vision of Walnut presented in this Plan. As such, this project includes various improvements to the corridor's eastern terminus by proposing a new public park facility, expanded parking facilities to accommodate Downtown events, and designating areas for future development which further support the Main Street activities along Walnut Street.

23 The City of Green Cove Springs is fortunate to be positioned adjacent to the St. Johns River—a renowned waterway whose natural conditions are favorable for a wide swath of aquatic activities, such as kayaking, fishing, and paddle boating. Additionally, the portion of the St. Johns River where the City resides is also unique in that it is an ideal setting for an established marine field capable of supporting boating lessons and training programs. Once established, this catalyst industry would attract a wide variety of commercial and industrial support businesses to the area, including restaurants, bait and tackle shops, hotels, and boat repair and restoration facilities.

#22 HISTORIC TRIANGLE

#23 MARINE FIELD PROGRAMMING

DRAFT

Potential redevelopment projects are strategically identified throughout the Walnut St. corridor to 'fill in' any perceived gaps in Downtown's urban fabric
Pocket Parks and the St. Johns Trail will connect neighborhoods to the Downtown while simultaneously increasing the supply of local open spaces
Several parking projects of varying scales have been identified to meet the Study Area's existing and projected parking needs
The Historic Triangle development will add new civic spaces and honor the City's historic assets
The City Hall Park and 'Festival Street' along Magnolia Ave. provide a seamless open-space system from Orange Ave. to the River
Enhancing Walnut St. will strengthen the corridor, connecting community assets throughout the Downtown
The closing of Spring St. and conversion to green space will expand Spring Park
The combination of corridor and intersection improvements provide critical links between places of historic, cultural, and economic significance throughout Downtown Green Cove Springs
New developments south of Ferris Street will complement the City's Downtown revitilization efforts

VISION 2042

A lot can happen in twenty years. In 2042, the First Coast Expressway will have long been completed and it is anticipated that the long-awaited redevelopment of Reynolds Park will have taken form. According to the mid-range projections from the University of Florida's Bureau of Economic and Business Research, the population of the greater Clay County region will grow by more than 50,000 residents over the next twenty years.

The effort to revitalize Downtown Green Cove Springs has already begun with the creation of this Master Plan. By embracing the history and character to advance thoughtful and compatible economic development strategies, Green Cove Springs will be a desired destination.

Phase 1 of this Master Plan includes projects such as improvements along Orange Avenue and Walnut Street corridors, US 17/Walnut intersection enhancements, and the design and construction of a small park in front of City Hall. These projects are intended to foster a greater sense of arrival into Downtown Green Cove Springs. The first phase also seeks to leverage these public improvements for private investment. The City-owned parcels along Walnut Street, between Magnolia Avenue and St. Johns Avenue, provide a prime location for redevelopment that could include a destination restaurant that capitalizes on a beautiful and protected waterfront vista across Spring Park.

Phase 2 of this Master Plan seeks to further enhance the public realm within the Focus Area. The Spring Park expansion includes the vacation of a portion of Spring Street to increase green space. The conversion of Magnolia Avenue, from Walnut Street to Spring Street, to a curbless 'festival street' seeks to connect the Park to City Hall and create continuous park space from the St. Johns River out to US 17. A restored Judge Rivers House will serve as a physical symbol of the City's history and values. These public improvements will advance another private sector redevelopment opportunity on the vacant lot next to the Clay Theatre.

Phase 3 of this Master Plan reflects the anticipated success of the first two phases. Increased property values and the growing popularity of Downtown Green Cove Springs should create the need for one or more parking garages to serve both residents and visitors. Furthermore, the success and revitalization near the St. Johns River should extend and create opportunities for redevelopment on the west side of Walnut Street, including the underutilized publicly-owned parcels west of Green Street.

Over the next twenty years, there will be many new developments to support a growing Clay County region. However, no new development can replicate the authenticity of Downtown Green Cove Springs. Through thoughtful public realm enhancements and targeted private investments, which enhance activity and preserve community character, Downtown Green Cove Springs can regain its past vitality and position the City for new achievements in the 21st century.

ACKNOWLEDGMENTS

The Residents of Green Cove Springs

Edward Gaw, Mayor
Matt Johnson, Vice Mayor
Connie Butler, Council Member
Steven Kelley, Council Member
Van Royal, Council Member

Henrietta Francis, Planning & Zoning Board Chair
Gary Luke, Planning & Zoning Board Vice-Chair
Brian Cook, Planning & Zoning Board Member
Justin Hall, Planning & Zoning Board Member
Richard Hobbs, Planning & Zoning Board Member

Steve Kennedy, City Manager
Mike Null, Assistant City Manager / Public Works Director
Michael Daniels, Planning & Zoning Director
Heather Glisson, Planning Technician
Tiffanie Kelly, Public Information Officer

& The Stakeholder Interview Group

LEAD CONSULTANT:

TEAMING PARTNER:

TORTI GALLAS + PARTNERS

STAFF REPORT

CITY OF GREEN COVE SPRINGS, FLORIDA

TO: City Council **MEETING DATE:** May 16, 2023

FROM: Michael Daniels, Development Services Director

SUBJECT: First Reading of Ordinance O-11-2023, Transportation Mobility Fee Ordinance

BACKGROUND

At present, the City manages traditional transportation concurrency carried out through traffic impact analyses. Development applicants generating 40 or more net new peak hour trips must complete a traffic study to determine the impact of their development on area roadways and identify improvements necessary to mitigate that impact. Traffic studies, on average, take approximately six months to complete, which can slow the process of development approval and may prove to be a hindrance to medium-sized development. While this system does intend to support multimodality, the mitigation generally supports vehicles more than other modes of transportation and generally, due to the proportional share requirements, the necessary funding to enact needed improvements is not provided.

In order to continue to manage the impacts of development and move toward a more multimodal transportation system, the City has hired Gannett Fleming to conduct a transportation mobility study to define the need for additional transportation investment, specifically multimodal, document the standards of service and rational for additional capacity and ensure that there is a rational nexus between the payees of the mobility fee and the beneficiaries. The plan was brought to the Planning and Zoning Commission at the February, 2023 meeting. In addition in order to ensure that any change to the Concurrency Management requirements are consistent with the City's Comprehensive Plan, staff has proposed policy amendments to the Comprehensive Plan which was transmitted to the state after Council approval on April 4, 2023.

The final step in creating a mobility fee is to adopt an Ordinance amendment to the City's Concurrency Management Chapter whereby we would remove the traditional concurrency requirements with a mobility fee payment for new and expanding development projects. The Mobility Fee Ordinance consists of revisions to the existing Concurrency Management Requirements and the additions of Division 1. Mobility Fee Ordinance and sections 105-7 to 105-31, which includes:

Sec. 105-7.	DEFINITIONS
Sec. 105-8.	RULES OF CONSTRUCTION
Sec. 105-9.	FINDINGS
Sec. 105-10.	ADOPTION OF MOBILITY FEE STUDY
Sec. 105-11.	IMPOSITION
Sec. 105-12.	CALCULATION OF MOBILITY FEE
Sec. 105-13.	ALTERNATIVE MOBILITY FEE CALCULATION
Sec. 105-14.	PAYMENT
Sec. 105-15	USE OF MOBILITY FEE PROCEEDS
Sec. 105-16.	EXEMPTIONS
Sec. 105-17.	AFFORDABLE AND WORKFORCE HOUSING MOBILITY FEE DEFERRAL CREDITS
Sec. 105-18.	ECONOMIC DEVELOPMENT MITIGATION PROGRAM
Sec. 105-19.	CHANGES IN SIZE AND USE
Sec. 105-20.	DEVELOPER CONTRIBUTION CREDIT
Sec. 105-21.	APPLICABILITY
Sec. 105-22.	ALTERNATIVE COLLECTION METHOD
Sec. 105-23.	REVIEW HEARINGS
Sec. 105-24.	REVIEW REQUIREMENT
Sec. 105-25.	PERIODIC MOBILITY FEE RATE ADJUSTMENT
Sec. 105-26.	DECLARATION OF EXCLUSION FROM ADMINISTRATIVE PROCEDURES ACT
Sec. 105-27.	ACCOUNTING AND REPORTING OF MOBILITY FEE
Sec. 105-28.	NOTICE OF MOBILITY FEE RATES
Sec. 105-29.	SEVERABILITY
Sec. 105-30.	EFFECTIVE DATE
Sec. 105-31.	MOBILITY FEE RATE SCHEDULE

Staff is recommending approval of the City of Green Cove Springs Mobility Fee Ordinance

RECOMMENDED MOTION

Recommend approval of first reading of Ordinance O-11-2023 for form and legality regarding the City's Mobility Fee Ordinance.

ORDINANCE NO. O-11-2023

AN ORDINANCE OF THE CITY OF GREEN COVE SPRINGS, FLORIDA, AMENDING CHAPTER 105 OF THE CITY CODE; AMENDING CHAPTER 105, SEC. 105-2 TO ADD TRANSPORTATION LEVEL OF SERVICE BASED ON PERSON MILES CAPACITY; DELETING CHAPTER 105, SEC. 105-5 AND RENUMBERING SUBSEQUENT SECTIONS ACCORDINGLY; AMENDING CHAPTER 105, SEC. 105-6 REGARDING TRANSPORTATION LEVEL OF SERVICE STANDARDS; ADDING DIVISION 1 MOBILITY FEE ORDINANCE AND SECTIONS 105-7 ~ 105-32 PROVIDING DEFINITIONS, RULES OF CONSTRUCTION, AND FINDINGS; ADOPTING THE MOBILITY FEE STUDY; PROVIDING FOR MUNICIPAL PARTICIPATION; IMPOSING MOBILITY FEES ON NEW CONSTRUCTION; PROVIDING FOR CALCULATION AND ALTERNATIVE CALCULATION PROCEDURES FOR MOBILITY FEES; PROVIDING FOR PAYMENT; PROVIDING FOR THE USE OF MOBILITY FEE PROCEEDS; PROVIDING FOR EXEMPTIONS; PROVIDING FOR AFFORDABLE AND WORKFORCE HOUSING MOBILITY FEE DEFERRAL; PROVIDING FOR AN ECONOMIC DEVELOPMENT MITIGATION PROGRAM; PROVIDING FOR CHANGES IN SIZE AND USE; PROVIDING FOR DEVELOPER CONTRIBUTION CREDIT; PROVIDING FOR APPLICABILITY; PROVIDING FOR AN ALTERNATIVE COLLECTION METHOD; PROVIDING FOR REVIEW HEARINGS; PROVIDING A REVIEW REQUIREMENT; PROVIDING FOR PERIODIC MOBILITY FEE RATE ADJUSTMENT; PROVIDING FOR A DECLARATION OF EXCLUSION FROM ADMINISTRATIVE PROCEDURES ACT; PROVIDING FOR ACCOUNTING AND REPORTING OF MOBILITY FEES; PROVIDING FOR NOTICE OF MOBILITY FEE RATES; PROVIDING FOR CONFLICTS, SEVERABILITY AND SETTING AN EFFECTIVE DATE.

NOW THEREFORE BE IT ENACTED BY THE CITY COUNCIL OF CITY OF GREEN COVE SPRINGS, FLORIDA, AS FOLLOWS:

Section 1. That Chapter 105, Section 105-2 (c) be added as follows: Sec. 105-2. Adopted levels of service shall not be degraded.

(a) *General rule.* All applications for development orders shall demonstrate that the proposed development does not degrade the adopted levels of service in the city comprehensive plan and/or any interlocal agreement with the county concerning such services.

(b) *Exception.* Notwithstanding the provisions of subsection (a) of this section, the prescribed levels of service may be degraded during the actual construction of new facilities if, upon completion of the new facilities, the prescribed levels of service will be met.

© Transportation standard of service shall be defined in person miles capacity (PMC). The Mobility Fee shifts away from a Level of Service (LOS) defined by average travel speed

(average delay per vehicle) toward a supply and accessibility based multimodal transportation system. The Florida Q/LOS Handbook shall be used to monitor multimodal level of service to inform future investment priorities and change investments accordingly to maintain a diverse, accessible, and multimodal suite of travel options at each update interval to the Mobility Fee.

Section 2. That Chapter 105, Section 105-5. Proportionate fair-share program shall be deleted as follows:

~~**Sec. 105-5. Proportionate fair-share program.**~~

~~(a) *Purpose and intent.* The purpose of this section is to establish a method whereby the impacts of development on transportation facilities can be mitigated by the cooperative efforts of the public and private sectors, to be known as the proportionate fair-share program.~~

~~(b) *Applicability.* The proportionate fair-share program shall apply to all developments for which the applicant has been notified of a lack of capacity to satisfy transportation concurrency on a transportation facility, including transportation facilities maintained by the state department of transportation (FDOT), or another jurisdiction that are relied upon for concurrency determinations. The proportionate fair-share program does not apply to developments of regional impact (DRIs) using proportionate fair-share under F.S. § 163.3180(12), or to developments exempted from concurrency.~~

~~(c) *General requirements.*~~

~~(1) An applicant may choose to satisfy the transportation concurrency requirements by making a proportionate fair-share contribution, pursuant to the following requirements:~~

~~a. The proposed development is consistent with the comprehensive plan and applicable land development regulations.~~

~~b. The five-year schedule of capital improvements adopted in the capital improvements element (CIE) includes a transportation improvement or transportation improvements that, upon completion, will provide the needed traffic capacity. The provisions of subsection (c)(2) of this section may apply if projects needed to satisfy concurrency are not presently contained within the local government CIE.~~

~~(2) The city may choose to allow an applicant to satisfy transportation concurrency through the proportionate fair-share program by contributing to an improvement that, upon completion, will satisfy the needed traffic capacity, but is not contained in the five-year schedule of capital improvements in the CIE, where the following apply:~~

~~a. The city adopts, by resolution or ordinance, a commitment to add the improvement to the five-year schedule of capital improvements in the CIE no later than the next regularly scheduled update. To qualify for consideration under this section, the proposed improvement must be determined to be financially feasible pursuant to F.S. § 163.3180(16)(b)1, consistent with the comprehensive plan, and in compliance with the provisions of this chapter. Financial feasibility for this section means that additional contributions, payments or funding sources are reasonably anticipated during a period not to exceed ten years to fully mitigate the impacts on the transportation facilities.~~

~~b. If the funds allocated for the five-year schedule of capital improvements in the CIE are insufficient to fully fund construction of a transportation improvement required by the CMS, the city may still enter into a binding proportionate fair-share agreement with the applicant authorizing construction of that amount of development on which the proportionate fair-share is~~

calculated if the proportionate fair-share amount in such agreement is sufficient to pay for one or more improvements which will, in the opinion of the governmental entity maintaining the transportation facilities, significantly benefit the impacted transportation system. The improvements funded by the proportionate fair-share component must be adopted into the five-year capital improvements schedule of the comprehensive plan at the next annual capital improvements element update.

(3) Any improvement project proposed to meet the developer's fair-share obligation must meet the design standards of the city for locally maintained roadways and those of the FDOT for the state highway system.

(d) *Intergovernmental coordination.* Pursuant to policies in the intergovernmental coordination element of the comprehensive plan and applicable policies in the regional policy plan adopted by the Northeast Florida Regional Council, the city shall coordinate with affected jurisdictions, including FDOT, regarding mitigation to impacted facilities not under the jurisdiction of the local government receiving the application for proportionate fair-share mitigation. An interlocal agreement may be established with other affected jurisdictions for this purpose.

(e) *Application process.*

(1) Upon notification of a lack of capacity to satisfy transportation concurrency, the applicant shall also be notified in writing of the opportunity to satisfy transportation concurrency through the proportionate fair-share program.

(2) Prior to submitting an application for a proportionate fair-share agreement, a pre-application meeting shall be held to discuss eligibility, application submittal requirements, potential mitigation options, and related issues. If the impacted facility is on the strategic intermodal system (SIS), then the FDOT will be notified and invited to participate in the pre-application meeting.

(3) Eligible applicants shall submit an application to the city that includes an application fee of $400.00 and the following:

a. Name, address and phone number of owner, developer and agent;

b. Property location, including parcel identification numbers;

c. Legal description and survey of property;

d. Project description, including type, intensity and amount of development;

e. Phasing schedule, if applicable;

f. Description of requested proportionate fair-share mitigation method; and

g. Copy of concurrency application.

(4) The city shall review the application and certify that the application is sufficient. If an application is determined to be insufficient, incomplete or inconsistent with the general requirements of the proportionate fair-share program, then the applicant will be notified in writing of the reasons for such deficiencies. The applicant shall have 30 days from the receipt of the written notification to correct the deficiencies. The city may, in its discretion, grant an extension of time not to exceed 60 days to cure such deficiencies, provided that the applicant has shown good cause for the extension and has taken reasonable steps to affect a cure. If the applicant does not provide the information within 30 days or does not request an extension, the application shall be closed.

(5) Pursuant to F.S. § 163.3180(16)(e), proposed proportionate fair-share mitigation for development impacts to facilities on the SIS requires the concurrency of the FDOT. The applicant shall submit evidence of an agreement between the applicant and the FDOT for inclusion in the proportionate fair-share agreement.

(6) When an application is deemed sufficient, the applicant shall be advised in writing, and a proposed proportionate fair-share obligation and binding agreement will be prepared by the city. The agreement shall be delivered to the appropriate parties for review, including a copy to the FDOT for any proposed proportionate fair-share mitigation on a SIS facility.

(7) The city shall notify the applicant regarding the date of the city council meeting when the agreement will be considered for final approval. No proportionate fair-share agreement will be effective until approved by the city council.

(f) *Determining proportionate fair-share obligation.*

(1) Proportionate fair-share mitigation for concurrency impacts may include private funds, contributions of land, and construction and contribution of facilities.

(2) A development shall not be required to pay more than its proportionate fair-share. The fair market value of the proportionate fair-share mitigation for the impacted facilities shall not differ, regardless of the method of mitigation.

(3) The methodology used to calculate an applicant's proportionate fair-share obligation shall be as provided for in F.S. § 163.3180(12), as follows:

a. The cumulative number of trips from the proposed development expected to reach roadways during peak hours from the complete build-out of a project or phase being approved, divided by the change in the peak hour maximum service volume (MSV) of roadways resulting from construction of an improvement necessary to maintain the adopted LOS, multiplied by the construction cost, at the time of developer payment, of the improvement necessary to maintain the adopted LOS; or

b. Proportionate Fair-Share = $[[(Development trips)/(SV increase)] × Cost]

Where:

Development trips = Those trips from the development or phase of development under review that are assigned to roadway segment "I" and have triggered a deficiency;

SV increase = Service volume increase provided by the eligible improvement to roadway segment "I" per section E;

Cost = Adjusted cost of the improvement to segment "I." Cost shall include all improvements and associated costs, such as design, right-of-way acquisition, planning, engineering, inspection, and physical development costs directly associated with construction at the anticipated cost in the year it will be incurred.

(4) For the purposes of determining proportionate fair-share obligations, the city shall determine improvement costs based upon the actual cost of the improvement as obtained from the CIE, the MPO/TIP or the FDOT work program. Where such information is not available, improvement cost shall be determined using one of the following methods:

a. An analysis by the city of costs by cross-section type that incorporates data from recent projects and is updated annually and approved by the city council; or

b. The most recent issue of FDOT transportation costs, as adjusted based upon the type of cross-section (urban or rural); locally available data from recent projects on acquisition, drainage and utility costs; and significant changes in the cost of materials due to unforeseeable events. Cost estimates for state road improvements not included in the adopted FDOT work program shall be determined using this method in coordination with the FDOT district.

(5) If the city has accepted an improvement project proposed by the applicant, then the value of the improvement shall be determined using one of the methods provided in this section.

(6) If the city has accepted right-of-way dedication for the proportionate fair-share payment, credit for the dedication of the nonsite-related right-of-way shall be valued on the date of the dedication at 100 percent of the most recent assessed value by the county property appraiser or, at the option of the applicant, by fair market value established by an independent appraisal conducted by an appraiser that is a member of the appraisal institute (MAI) and approved by the city and at no expense to the city. The applicant shall supply a drawing and legal description of the land and a certificate of title or title search of the land to the city at no expense to the city. If the estimated value of the right-of-way dedication proposed by the applicant is less than the city estimated total proportionate fair-share obligation for that development, then the applicant must also pay the difference. Prior to purchase or acquisition of any real estate or acceptance of donations of real estate intended to be used for the proportionate fair-share, public or private partners should contact the FDOT for essential information about compliance with federal law and regulations.

(g) *Proportionate fair-share agreements.*

(1) Upon execution of a proportionate fair-share agreement, the applicant shall receive a city letter or certificate of concurrency approval. Should the applicant fail to apply for a development permit within 12 months of the execution of the agreement, then the agreement shall be considered null and void, and the applicant shall be required to reapply.

(2) Payment of the proportionate fair-share contribution is due in full prior to the issuance of the final development order or recording of the final plat and shall be nonrefundable. If the payment is submitted more than 12 months from the date of execution of the agreement, then the proportionate fair-share cost shall be recalculated at the time of payment based on the best estimate of the construction cost of the required improvement at the time of payment, and adjusted accordingly.

(3) All developer improvements authorized under this section must be completed prior to issuance of a development permit, or as otherwise established in a binding agreement that is accompanied by a security instrument that is sufficient to ensure the completion of all required improvements. It is the intent of this section that any required improvements be completed before issuance of building permits or certificates of occupancy.

(4) Dedication of necessary rights-of-way for facility improvements pursuant to a proportionate fair-share agreement must be completed prior to issuance of the final development order or recording of the final plat.

(5) Any requested change to a development project subsequent to a development order may be subject to additional proportionate fair-share contributions to the extent the change would generate additional traffic that would require mitigation.

(6) Applicants may submit a letter to withdraw from the proportionate fair-share agreement at any time prior to the execution of the agreement. The application fee and any associated advertising costs to the city will be nonrefundable.

(h) *Appropriation of fair-share revenues.*

(1) Proportionate fair-share revenues shall be placed in the appropriate project account for the funding of scheduled improvements in the city CIE, or as otherwise established in the terms of the proportionate fair-share agreement. At the discretion of the city, proportionate fair-share revenues may be used for operational improvements prior to construction of the capacity project from which the proportionate fair-share revenues were derived. Proportionate fair-share revenues may also be used as the 50 percent local match for funding under the FDOT Transportation Regional Incentive Program (TRIP).

(2) In the event a scheduled facility improvement is removed from the CIE, then the revenues collected for its construction may be applied toward the construction of another improvement within that same corridor or sector that would mitigate the impacts of development.

~~(3) Where an impacted regional facility has been designated as a regionally significant transportation facility in an adopted regional transportation plan as provided in F.S. § 339.155, the city may coordinate with other impacted jurisdictions and agencies to apply proportionate fair-share contributions and public contributions to seek funding for improving the impacted regional facility under the FDOT TRIP. Such coordination shall be ratified by the city through an interlocal agreement that establishes a procedure for earmarking of the developer contributions for this purpose.~~

~~(Code 2001, § 94-5; Ord. No. O-01-2000, § 4.00.05, 6-6-2000; Ord. No. O-18-2007, § 1, 8-7-2007; Ord. No. O-08-2011, § 4, 12-6-2011)~~

Section 3. That Chapter 105, Section 105-6. Adopted Levels of Service shall be amended as follows:

Sec. 105-6. Adopted levels of service.

(a) *Potable water.* Development activity shall not be approved unless there is sufficient available capacity to sustain the following levels of service for potable water as established in the potable water sub-element of the city comprehensive plan:

Type of Use	LOS (Average Flow)
Residential	150 gallons per person per day
All other land uses	Estimated use based on multiples of 150 gallons per person per day

(b) *Wastewater.* Development activities shall not be approved unless there is sufficient available capacity to sustain the following levels of service for wastewater treatment as established in the sanitary sewer sub-element of the city comprehensive plan:

Type of Use	LOS (Average Flow)
Residential	120 gallons per person per day
All other land uses	Estimated use based on multiples of 120 gallons per person per day

(c) *Transportation system.*

(1) *Level of service.* Development activities <u>shall be approved so that they align with the land use forecasts used at the time that the Mobility Fee was established. If so, the burden of the additional users associated with the land development have been accounted for in the multimodal transportation investments that comprise the mobility fee. If the land use development proposal is outside the forecast (either by type of land use or scale of land use change) than that land use development shall be required to have a third party traffic and mobility study performed to identify if additional multimodal investments may be necessary above and beyond those identified for funding by the mobility plan. A fees per user (trip or person miles traveled) shall be set based the costs to deliver the necessary system investments.</u>

(d) *Drainage system.* Development activities shall not be approved unless there is sufficient available capacity to sustain the following levels of service for the drainage system as established in the drainage sub-element of the city comprehensive plan:

Type of Use	LOS
Minor internal facilities	10-year return period storm/24-hour duration
Storage basins	25-year return period storm for peak flow attenuation/24-hour duration
Major drainage facilities; minimum floor elevations	100-year return period storm/24-hour duration
Water quality	Water quality standards for all development and redevelopment shall be in accordance with those standards set forth in F.A.C. chs. 40C-42 and 60. Stormwater discharge facilities must be designed so as not to degrade the receiving water body below the minimum conditions necessary to ensure the suitability of water for the designated use of its classification as established in F.A.C. ch. 17-302.

(e) *Solid waste.* Development activities shall not be approved unless there is sufficient available capacity to sustain the following levels of service for the solid waste as established in the solid waste sub-element of the city comprehensive plan:

Type of Use	LOS
Residential	8.0 pounds per person per day
Commercial	Estimated by user based on 8.0 pounds per person per day

(f) *Recreation.* Development activities shall not be approved unless there is sufficient available capacity to sustain the following levels of service for the recreational facilities as established in the recreation and open space element of the city comprehensive plan:

Type of Use	LOS
Recreation/open space	5 acres per 1,000 population

Section 4. That Chapter 105, Division 1, Section 105-7 ~ 105-31. Mobility Fee Ordinance be added as follows:

Division 1. - MOBILITY FEE ORDINANCE

TABLE OF CONTENTS

Sec. 105-7.	DEFINITIONS
Sec. 105-8.	RULES OF CONSTRUCTION
Sec. 105-9.	FINDINGS
Sec. 105-10.	ADOPTION OF MOBILITY FEE STUDY
Sec. 105-11.	IMPOSITION
Sec. 105-12.	CALCULATION OF MOBILITY FEE
Sec. 105-13.	ALTERNATIVE MOBILITY FEE CALCULATION
Sec. 105-14.	PAYMENT
Sec. 105-15	USE OF MOBILITY FEE PROCEEDS
Sec. 105-16.	EXEMPTIONS
Sec. 105-17.	AFFORDABLE HOUSING MOBILITY FEE DEFERRAL CREDITS
Sec. 105-18.	ECONOMIC DEVELOPMENT MITIGATION PROGRAM
Sec. 105-19.	CHANGES IN SIZE AND USE
Sec. 105-20.	DEVELOPER CONTRIBUTION CREDIT
Sec. 105-21.	APPLICABILITY
Sec. 105-22.	ALTERNATIVE COLLECTION METHOD
Sec. 105-23.	REVIEW HEARINGS
Sec. 105-24.	REVIEW REQUIREMENT
Sec. 105-25.	PERIODIC MOBILITY FEE RATE ADJUSTMENT
Sec. 105-26.	DECLARATION OF EXCLUSION FROM ADMINISTRATIVE PROCEDURES ACT
Sec. 105-27.	ACCOUNTING AND REPORTING OF MOBILITY FEE
Sec. 105-28.	NOTICE OF MOBILITY FEE RATES
Sec. 105-29.	SEVERABILITY
Sec. 105-30.	EFFECTIVE DATE
Sec. 105-31.	MOBILITY FEE RATE SCHEDULE

Sec. 105-7. DEFINITIONS. When used in this Ordinance, the following terms shall have the following meanings, unless the context otherwise clearly requires:

"**Access Improvements**" shall mean adjacent improvements designed and constructed to provide safe and adequate ingress and egress from New Construction, which include, but are not limited to, rights-of-way, easements, paving of adjacent or connecting roadways, turn lanes, deceleration and acceleration lanes, intersection upgrades, traffic control devices, signage and markings, sidewalks, multi-use paths, bike lanes, and drainage systems and utilities.

"**Accessory Building or Structure**" shall mean a detached, subordinate building, meeting all property development regulations, the use of which is clearly incidental and related to the use of the principal Building or use of land, and which is located on the same lot as that of the principal Building or vacant land use.

"**Affordable Housing**" shall mean a Dwelling Unit which is offered for sale or rent to Low-Income Persons or Very-Low-Income Persons and which monthly rent or monthly mortgage payments, including taxes, insurance and utilities, do not exceed 30 percent of that amount which represents the percentage of the median adjusted gross income for Low-Income Persons and Very-Low-Income Persons.

"**Alternative Mobility Fee**" shall mean any alternative fee calculated by an Applicant and approved by the Mobility Fee Coordinator pursuant to Section 105-13.

"**Apartment**" shall mean a rental Dwelling Unit located within the same Building as other Dwelling Units.

"**Applicant**" shall mean the person who requests Electrical Power Clearance, an exemption, a deferral, an expansion, or a credit as the case may be and the context requires.

"**Building**" shall mean any structure, either temporary or permanent, having a roof impervious to weather and used or built for the support, shelter, or enclosure of persons, animals, chattels, or property of any kind. This term shall include tents, trailers, mobile homes, or any vehicles serving in any way the function of a building. This term shall not include temporary construction sheds or trailers erected to assist in construction and maintained during the term of a Building Permit.

"**Building Permit**" shall mean an official document or certificate issues by the City, under the authority of ordinance or law, authorizing the construction or siting of any building. "Building Permit" shall also include move-on permits or other development approvals for those structures or Buildings, such as a mobile home, that do not require a Building Permit in order to be constructed or occupied.

"**Certificate of Occupancy**" shall mean the document issued by the City under the authority of ordinance or law that indicates the completion of a Building erected in accordance with plans approved by the building department, and final inspection having been performed, thereby allowing the building to be occupied. "Certificate of Occupancy" shall also include move-on permits or other development approvals for those structures or Buildings, such as a mobile home, that do not require a Building Permit in order to be constructed or occupied.

"**City Transportation System**" shall mean the street system within the City as defined in section 334.03(3), Florida Statutes, or its statutory successor in function. Including those within the State Highway System, associated bike lanes, sidewalks, transit facilities and other multimodal facilities for non-vehicular modes of transportation.

"**Council**" shall mean the City Council of Green Cove Springs, Florida.

"**Comprehensive Plan**" shall mean the City of Green Cove Springs Comprehensive Plan adopted and amended pursuant to the Local Government Comprehensive Planning and Land Development Regulation Act as contained in Part II, Chapter 163, Florida Statutes, or its statutory successor in function.

"**Condominium**" shall mean a single-family or time-sharing ownership unit that has at least one other similar unit within the same building structure. The term Condominium includes all fee simple or titled multi-unit structures, including townhouses and duplexes.

"**City**" shall mean City of Green Cove Springs, Florida, a political subdivision of the State of Florida.

"**City Engineer**" shall mean the Person appointed by the City Manager to serve as its engineer or the designee of such Person, in accordance with Section 336.03, Florida Statutes, or its statutory successor in function.

"**City Manager**" shall mean the chief administrative officer of the City, appointed by the Council, or the designee of such Person.

"**Designated Mobility Improvement**" shall mean a specific capital improvement that adds capacity to the City Transportation System to accommodate the mobility demands from New Construction and is listed for improvement in the Capital Improvement Element of the Comprehensive Plan, as identified in the Mobility Fee Study or subsequently added to the City's Capital Improvement Element.

"**DRI Developer**" shall mean a developer of a Development of Regional Impact ("DRI") under section 380.06, Florida Statutes.

"**Dwelling Unit**" shall mean a Building, or portion thereof, designed for residential occupancy, consisting of one or more rooms which are arranged, designed or used as living quarters for one or more persons.

"**Electrical Power Clearance**" shall mean the establishment of a permanent electrical power service to New Construction. A request for Electrical Power Clearance shall be initiated by the Applicant's request for an Equipment Check Inspection from the City for the New Construction. If the New Construction passes the inspection, the City will notify the appropriate power company that electrical service may be established.

"**Encumbered**" shall mean monies committed by contract or purchase order in a manner that obligates the City to expend the encumbered amount for the delivery of goods, the completion of services, and the conveyance of right-of-way by a vendor, supplier, contract or owner.

"**External Trip**" shall mean any Trip which either has its origins from or its destination to the New Construction and which impacts the City Transportation System.

"**Government Buildings or Facilities**" shall mean property owned by the United States of America or any agency thereof, a sovereign state or nation, the State of Florida or any agency thereof, a county, a city, a special district, a school district.

"**Initial Purchaser**" shall mean the initial Owner-occupant of Residential Construction subject to an Affordable Housing deferral pursuant to Section 105-17.

"**Low-Income Persons**" shall mean one or more natural persons, the total adjusted gross household income of which does not exceed 80% of the median adjusted gross income for households within the Jacksonville, Florida metropolitan statistical area covering the City, adjusted by family size and adjusted annually, as reported by the U.S. Department of Housing and Urban Development or its governmental successor in function.

"**Mixed Use New Construction**" shall mean New Construction in which more than one Mobility Fee Land Use Category is contemplated with each Category constituting a separate and identifiable enterprise not subordinate to or dependent on other enterprises with the New Construction.

"**Mobile Home**" shall mean any vehicle without independent motive power which is designed for housing accommodations and transportation over the highways on a chassis under carriage, which is an integral part thereof, but does not include travel trailers or recreational units as defined by Section 320.01, Florida Statutes. This definition shall include: (1) any unit which meets the criteria above and is certified by the Department of Safety and Motor Vehicles as meeting requirements of (USAS) A-119.2 as prescribed in Chapter 320, Florida Statutes; and (2) manufactured homes designed to be used as Dwelling Units, as defined in Chapter 553, Florida Statutes, or its statutory successor in function.

"**Mobility Fee**" shall mean the Mobility Fee imposed by the City pursuant to Section 105-10, and set forth in Section 105-31 or, if applicable, the Alternative Mobility Fee, pursuant to Section 105-12.

"**Mobility Fee Coordinator**" shall mean the Director of the City of Green Cove Springs Development Services Department or his or her designee.

"**Mobility Fee Land Use Category**" shall mean those categories of land use incorporated in the Mobility Fee Rate Schedule adopted in the Mobility Fee Study.

"**Mobility Fee Rate**" shall mean a Mobility Fee imposed for a particular New Construction under the applicable Mobile Fee Land Use Category established in the schedules included in the Mobility Fee Study.

"**Mobility Fee Study**" shall mean the City of Green Cove Springs Mobility Fee Study adopted pursuant to Section 105-10, as amended and supplemented pursuant to Section 105-24.

"**New Construction**" shall mean land construction designed or intended to permit a use of the land which will contain more Dwelling Units, Buildings or floor space than the existing use of land, or to otherwise change the use of the land in a manner that increases the generation of vehicular or non-vehicular traffic or the number of External Trips.

"**New Net Trip**" shall mean the average daily External Trips after accounting for "pass-by trips". This is often referred to as a primary trip, which a stop at the location is the primary reason for the trip.

"**Off-Site Improvements**" shall mean road improvements located outside of the boundaries of a New Construction which are required to serve External Trips, but not including Access Improvements.

"**Ordinance**" shall mean this City of Green Cove Springs Mobility Fee Ordinance.

"**Owner**" shall mean the Person holding legal title to the real property containing the New Construction.

"Pass-by Trip" is made as an intermediate stop on the way from an origin to a primary trip destination without a route diversion. Pass-by trips are attracted from traffic passing the site on an adjacent street or roadway that offers direct access to the generator (origin or destination).

"**Person**" shall mean any individual, corporation, governmental agency, business trust, estate, trust, partnership, association, property owners' association, two (2) or more persons having a joint or common interest, governmental agency, or other legal entity.

"Person Miles Traveled (PMT)" is a standard measure of mobility that combines both the number and length of trips that is mode neutral.

"**Qualified Target Industry Business**" shall mean a new or expanding business in the City that has a positive economic and fiscal impact on the City and meets the definitional requirements of Section 288.106, Florida Statutes, or its statutory successor in function, for a Qualified Target Industry Business.

"**Residential**" shall mean Apartments, Condominiums, Single-Family Detached Houses, duplexes, and mobile homes.

"**School**" shall mean a Building, including ancillary facilities, designed to house an organization of students for educational purposes at elementary, middle, or high school levels, including public schools authorized under the rules of the State Board of Education and private schools serving the same student grade level populations, but not including any facilities for post high school educational instruction and not including any Day Care Center.

"**Single-Family Detached House**" shall mean a home on an individual lot.

"**Square Footage**" shall mean the gross area measured in square feet from the exterior faces of exterior walls or other exterior boundaries of the Building, including all floors and mezzanines within said Building, but excluding areas within the interior of the Building which are utilized for parking.

"**State Highway System**" shall mean the road system of the State of Florida that lies within the City, as defined in Section 334.03(24), Florida Statutes, or its statutory successor in function.

"**Target CRA Businesses**" shall include the following new or expanded uses within the Community Redevelopment Area (CRA):

- Restaurant (applicable ITE Land Use Codes: 930-Fast Casual Restaurant, 931-Fine Dining Restaurant, 932-High Turnover (sit-down) Restaurant)

- Brewpub (applicable ITE Land Use Codes: 970-Wine Tasting Room, 971-Brewery Tap Room, 975-Drinking Place)
- Hotel (applicable ITE Land Use Codes: 310-Hotel, 311-All Suites Hotel, 312-Business Hotel)

"**Trip**" shall mean a one-way movement of vehicular travel from an origin (one trip end) to a destination (the other trip end). The word Trip shall have the meaning which it has in commonly accepted traffic engineering practice.

"**Trip Generation or Trip Generator Rate**" shall mean the maximum average new daily trip generation rates for the applicable Trip Generation Land Use Category defined by the current version of the Institute of Transportation Engineers Trip Generation, and adjusted by the Mobility Fee Study.

"**Trip Generation Land Use Category (LUC)**" shall mean the trip characteristics studies within the 11th edition of the Institute of Transportation Engineers Trip Generation, published by the Institute of Transportation Engineers (ITE), as the same may be updated from time to time, when used in calculation of any update or revision of the Mobility Fee Study pursuant to Section 3.09.

"**Very-Low-Income Persons**" shall mean one or more natural persons, the total adjusted gross household income of which does not exceed 50% of the median adjusted gross income for households within the Jacksonville, Florida metropolitan statistical area covering the City, adjusted by family size and adjusted annually, as reported by the U.S. Department of Housing and Urban Development or its governmental successor in function.

Sec. 105-8. RULES OF CONSTRUCTION. For the purposes of administration and enforcement of this Ordinance, unless otherwise stated in this section, the following rules of construction shall apply:

A. The word "shall" is always mandatory and not discretionary; the word "may" is discretionary.

B. Words used in the present tense shall include the future and words in the singular shall include the plural and the plural the singular, unless the context clearly indicates the contrary.

C. Unless the context clearly indicates the contrary, where a regulation involves two (2) or more items, conditions, provisions, or events connected by the conjunction "and," "or" or "either…or" the conjunction shall be interpreted as follows:

(1) *And* indicates that all the connected terms, conditions, provisions or events shall apply.

(2) *Or* indicates that the connected terms, conditions, provisions or events may apply singly or in any combination.

(3) *Either…or* indicates that the connected terms, conditions, provisions or events shall apply singly but not in combination.

D. The word "includes" shall not limit a term to the specific example but is intended to extend its meaning to all other instances or circumstances of like kind or character.

Sec. 105-9. FINDINGS. It is hereby ascertained, determined and declared:

A. Pursuant to Article VIII, section 1(g), Florida Constitution, sections 166.021 and 166.041, Florida Statutes, and other applicable provisions of law, the Council has all powers of local self-government to perform functions, except when prohibited by law, and such power may be exercised by the enactment of legislation in the form of City ordinances.

B. The City Council has determined that the multimodal ground transportation system benefits all residents, employees, and visitors in Green Cove Springs. The size and configuration of the multimodal transportation system is suitable for one transportation mobility fee district.

C. Growth contemplated in the Comprehensive Plan and Mobility Fee Study will require improvements and additions to the City Transportation System to accommodate the additional users generated by such growth in order to mitigate and maintain the existing multimodal level of service.

D. Future growth, as represented by New Construction, should assist in mitigating its impacts by contributing its fair share to the cost of improvements and additions to the City Transportation System that are required to accommodate the growth in multimodal traffic, both vehicular and non-vehicular, generated by such growth.

E. Imposition of a Mobility Fee to require New Construction to contribute its fair share to the cost of required vehicular and multimodal additions is an integral and vital element of the regulatory plan of growth management incorporated in the Comprehensive Plan and Mobility Fee Study.

F. The imposition of a Mobility Fee is to provide a source of revenue to fund the construction or improvement of the City Transportation System, including both vehicular and multimodal improvements, that are necessitated by growth as delineated in the capital improvement element of the Comprehensive Plan, Downtown Master Plan, and the Mobility Fee Study.

G. The Designated Mobility Improvements identified in the Mobility Fee Study include roadway capacity improvements, multimodal bicycle and pedestrian improvements,

sidewalks, shared use and multiuse paths, transit stops and mobility hubs, as well as intersection improvements to improve overall efficiency of the City Transportation System.

H. The Mobility Fee Study uses "person miles travelled" (PMT) as the basis for calculating the Mobility Fee. Although the Designated Mobility Improvements include multimodal improvements, those improvements are a vital and necessary part of the City's future transportation system and have been identified to increase connectivity by providing alternatives to vehicular transportation, thereby reducing the number of single-occupant vehicles, and providing a more efficient use of space and travel efficiency on the City Transportation System. The Northeast Regional Planning Model, V.2., developed by the North Florida Transportation Planning Organization, used to estimate the PMTs used in the Mobility Fee Study, incorporates the impact of these existing and future multimodal elements when determining the PMT used in the calculation of the Mobility Fee.

I. The Designated Mobility Improvements to the City Transportation System and the allocation of projected costs between those improvements and additions necessary to serve existing development and those improvements and additions required to accommodate the growth represented by New Construction, as presented in the Mobility Fee study, are proportional and reasonably connected to, and have a rational nexus with the expenditures of the Mobility Fee funds collected and the benefits accruing to the New Construction, and are hereby approved and adopted by the City. Such projections are hereby found to be in conformity with the Comprehensive Plan.

J. Transportation planning is an evolving process and the Designated Mobility Improvements to the City Transportation System identified upon the date of the adoption of this Ordinance constitute projections of growth patterns and transportation improvements and additions based upon present knowledge and judgment. Therefore, in recognition of changing

growth patterns and the dynamic nature of population and employment growth, it is the intent of the Council that the Designated Mobility Improvements to the City Transportation System be reviewed and adjusted periodically, pursuant to Section 105-24, to ensure that Mobility Fees are imposed equitably and lawfully and are utilized effectively based upon actual and anticipated traffic conditions at the time of their imposition.

K. The purpose of this Ordinance is to regulate the development of land within the City by requiring payment of Mobility Fees by New Construction and to provide for the cost of the Designated Mobility Improvements to the City Transportation System which are required to accommodate such growth. This Ordinance shall not be construed to permit the collection of Mobility Fees in excess of the amount reasonably anticipated to offset the demand on the City Transportation System generated by such New Construction.

L. The Mobility Fee Study, Mobility Fee, and this Ordinance are based on the most recent and localized data and comply with the goals, objectives and policies of the Comprehensive Plan, specifically the Transportation Element Policies; and the Capital Improvements Element Policies and are consistent with Florida law.

M. Chapter 420, Florida Statutes, the Florida Legislature directly recognizes the critical shortage of Affordable Housing in the State of Florida for very low to moderate income families, the problems associated with rising housing costs in the State, and the lack of available housing programs to address these needs. In recognition of these problems and the State's encouragement to local governments to work in partnership with the State and private sector to solve these housing problems, the City finds a need for local programs to stimulate and provide for the development of Affordable Housing for Low and Very-Low Income Persons.

N. The Council desires to provide financial incentives to develop and provide Affordable Housing within the City to Low, and Very Low Income Persons. Persons who desire to live and to work in the City may have access to housing, and thus to offset the negative consequences of the shortage of such housing.

O. To accomplish this objective the City Council finds that it is fair and reasonable to provide for deferral of Mobility Fees for Affordable Housing to reduce the burden of Mobility Fees on Low and Very-Low Income Persons and encourage the development of Affordable Housing in the City.

P. Because the imposition of the Mobility Fees herein may place the City in a non-competitive position with other local governments that have chosen not to impose mobility fees and thus hinder efforts by the City and the community to (1) encourage economic development opportunities within the City, (2) create permanent employment expansion opportunities for the City's citizens and (3) encourage new or expanded businesses within the City to help reverse the daily commute out of the City, there is hereby created an Economic Development Mobility Fee Mitigation Program for certain Non-Residential New Construction, Qualified Target Industry Businesses, and the Target Industry Businesses within the CRA to mitigate any real or perceived disadvantage occurring from the imposition of the Mobility Fees.

Sec. 105-10. ADOPTION OF MOBILITY FEE STUDY. The City Council hereby adopts and incorporates by reference, the study entitled "City of Green Cove Springs Mobility Fee Study," dated as of April, 2023, particularly the assumptions, conclusions and findings in such study as to the allocation of anticipated costs of Designated Mobility Improvements to the City Transportation System between those costs required to accommodate existing traffic and those costs required to accommodate traffic generated by growth and those assumptions, conclusions

and findings in such study as to the determination of anticipated costs of additions to the City Transportation System required to accommodate growth.

ARTICLE II

MOBILITY FEES

Sec. 105-11. IMPOSITION.

A. All New Construction occurring within the area of the City shall pay the applicable Mobility Fee established in this Ordinance. The City Council hereby establishes one (1) Mobility District that encompasses the corporate boundary of the City of Green Cove Springs.

B. The City Council hereby adopts the formulae for calculation and the schedules of Mobility Fees as included in the Mobility Fee Study.

Sec. 105-12. CALCULATION OF MOBILITY FEE.

A. Upon receipt of a complete application for a Building Permit, the Mobility Fee Coordinator shall calculate the applicable Mobility Fee, incorporating any applicable credits. If a person has received a credit pursuant to this Ordinance, that credit shall be subtracted from the otherwise applicable Mobility Fee, if such credit applies. A person may request at any time a nonbinding estimate of the Mobility Fee due for a particular development; however, such estimate is subject to change when a complete application for a Building Permit or other development permit is made.

B. The Mobility Fee shall be calculated by using (1) the Mobility Fee Rate Schedule adopted in the Mobility Fee Study in Appendix A and set forth in Section 105-31 herein,, or (2) an Alternative Trip Generation Study approved in accordance with Section 105-13 herein. The Mobility Fees in the Mobility Fee Rate Schedule have been calculated using the formulae presented in the Mobility Fee Study. The dollar amount of a Mobility Fee required to be paid by

each land use in in the Mobility Fee Rate Schedule shall be multiplied by the number of units in the development seeking a Building Permit for such land use.

C. Land uses that are not specifically listed in the Mobility Fee Rate Schedule shall be assigned the trip generation rate of the most similar land use listed in the most recent edition of the Institute of Transportation Engineers, Trip Generation, as provided for in the Mobility Fee Study.

D. In the event New Construction involves 'spec' construction, the Mobility Fee shall be calculated on the basis of the land use for the finished space. The Mobility Fee for spec construction occupied upon completion of construction shall be paid in the following manner: An initial payment shall be due at the time the Applicant requests Electrical Power Clearance for the shell building and shall be in the amount attributable to the most applicable land use category and associated Mobility Fee Rate Schedules set forth in the Mobility Fee Study. If the land uses at the time of Interior Permits are issued generate more trips than the initial assumed set of land uses then the balance of the Mobility Fee shall be paid upon the Applicant's request for the Interior Permits.

E. In the event a New Construction involves a Mixed Use New Construction, the Mobility Fee Coordinator shall calculate the Mobility Fee based upon the number of New Net Trips to be generated by each separate Mobility Fee Land Use Category included in the proposed Mixed Use New Construction.

Sec. 105-13. ALTERNATIVE MOBILITY FEE CALCULATION.

A. In the event an Applicant believes that the impact to the City Transportation System necessitated by its New Construction is less than the New Trips that are assumed under the applicable Mobility Fee Land Use Category adopted in the Mobility Fee Study, such Applicant may, prior to requesting Electrical Power Clearance for such New Construction, file with the Mobility Fee Coordinator an Alternative Mobility Fee calculation that seeks to establish an

alternative number of New Net Trips using the methodology contained in the Mobility Fee Study adopted in Section 105-10. The Mobility Fee Coordinator shall review the alternative calculations of the New Net Trips and make a determination within thirty (30) days of submittal as to whether such calculation complies with the requirements of this Section.

B. For purposes of any Alternative Mobility Fee calculation, the New Construction shall be presumed to have the maximum impact on the City Transportation system for the Trip Generation Land Use Category.

C. The Alternative Mobility Fee calculation of New Net Person Miles Traveled shall be based on data, information or assumptions contained in this Ordinance and the Mobility Fee Study or an independent source, provided that:

(1) The independent source is a generally accepted standard source of transportation engineering or planning information, or

(2) The independent source is a local study supported by data adequate for the conclusions contained in such study performed by a professional engineer pursuant to a generally accepted methodology of transportation planning or engineering.

(3) If, during its approval process, a previously approved New Construction project containing the same proposed uses submitted a trip characteristic study substantially consistent with the criteria required by this Section, and if such study is determined by the Mobility Fee Coordinator to be current, the trip characteristics of such previously approved New Construction shall be presumed to be as described in the prior study. In such circumstances, an Alternative Mobility Fee shall be established reflecting the trip characteristics described in the prior study. There shall be a rebuttable presumption that a trip characteristic study conducted more

than three (3) years earlier is invalid. A traffic impact study conducted more than seven years earlier is invalid and will not be considered.

(4) It is acknowledged that the Mobility Fee Rates are based upon the applicable Trip Generation Rates for the Trip Generation Land Use Categories corresponding to the Mobility Fee Land Use Categories set forth in the Mobility Fee Study. In recognition of such acknowledgment, the Trip Generation Rates for the Trip Generation Land Use Categories shall be considered an independent source for the purpose of an Alternative Mobile Fee calculation without the necessity of a study as required by Subsections C(1) and C(2) of this Section.

D. If the Mobility Fee Coordinator determines that the data, information, and assumptions utilized by the Applicant comply with the requirements of this Section and that the calculation of the Alternative Mobility Fee number of Person Miles Traveled was by a generally accepted methodology, then the Alternative Mobility Fee shall be paid in lieu of the fee set forth in Sections 105.11 and 105.12 of this Section.

E. If the Mobility Fee Coordinator determines that the data, information and assumptions utilized by the Applicant to compute an alternative number of Person Miles Traveled using the methodology contained in the Mobility Fee Study do not comply with the requirements of this Section, then the Mobility Fee Coordinator shall provide to the Applicant by certified mail, return receipt requested, written notification of the rejection of the Alternative Mobility Fee and the reasons therefore, including notification that the Mobility Fee imposed in Section 105-11 and 105-12, as applicable, shall be paid in accord with the provisions of this Ordinance.

F. An Applicant who submits a proposed Alternative Mobility Fee pursuant to this Section, and desires to secure Electrical Power Clearance prior to the resolution of a pending

Alternative Mobility Fee shall pay the applicable Mobility Fee at the time said Applicant requests Electrical Power Clearance. Said payment shall be deemed paid "under protest" and shall not be construed as a waiver of any rights. Any difference in the amount of the Mobility Fee after resolution of the pending Alternative Mobility Fee shall be refunded to the Applicant or Owner.

G. The Council shall require that the applicant pay the costs of outside third-party experts for the review of the Alternative Mobility calculation to cover the City's costs incurred in processing and reviewing any Alternative Mobility Fee applications, including fees incurred for review of any applications by third party experts.

Sec. 105-14. PAYMENT.

A. The City will provide the amount of the Mobility Fee due for the requested New Construction at the time a Building Permit is issued for said construction.

B. Except as otherwise provided in this Ordinance, an Applicant shall pay the Mobility fee to the City at the time of requesting Electrical Power Clearance for New Construction.

C. The obligation for payment of the Mobility Fee and any credits related thereto shall run with the land.

D. The payment of the Mobility Fee shall be in addition to any other fees, charges or assessments of the City which are due in order to secure Electrical Power Clearance for the New Construction.

E. A mobility fee collected under this Ordinance may be considered for refund to the payor by the Mobility Fee Coordinator if the request is made within sixty (60) days of payment, if the payment was made in error, and if the funds have not been expended or encumbered. A request must include a notarized sworn statement that the requestor mad the payment and the reason the payment was made in error along with a copy of the dated receipt issued for payment of the fee.

The decision on a request for a refund is within the sole discretion of the Mobility Fee Coordinator and is final. The City shall retain 2% of any Mobility fee with respect to which a refund is made hereunder as a charge to offset its administrative costs. Credits applied in lieu of payment of Mobility Fees shall not be eligible for a refund under this section.

Sec. 105-15. USE OF MOBILITY FEE PROCEEDS.

A. The City Council hereby establishes one (1) trust account for the Mobility Fee, which shall be maintained separate and apart from all other accounts of the City.

B. All Mobility Fees and all interest which may accrue thereon shall be used solely to provide for the growth contemplated in the Comprehensive Plan and the Mobility Fee Study in the form of Designated Mobility Improvements to the City Transportation System which when completed will serve to accommodate the additional users and transportation demand generated by such growth and maintain existing levels of service within the City.

C. Mobility Fee funds shall not be used for any expenditure that would be classified as a transportation operation and maintenance expense. The monies deposited into the Mobility Fee Trust Account shall be used solely for the purpose of constructing or improving the Designated Mobility Improvements to the City Transportation System, as these improvements may be amended from time to time, including, but not limited to:

(1) design, engineering and construction plan preparation;

(2) permitting;

(3) right-of-way acquisition, including any costs of acquisition or condemnation;

(4) construction of new through lanes;

(5) construction of new turn lanes;

(6) construction of new bridges;

(7) construction of new drainage facilities in conjunction with new roadway construction;

(8) purchase and installation of traffic signals;

(9) construction of new curbs, medians and shoulders and associated costs for curb work, utility corridors, and elements associated in a street right of way which may be affected by the project so long as these costs do not represent a significant portion of the overall costs;

(10) construction of new shared use and multi-use paths, bike lanes, sidewalks and other bicycle and pedestrian improvements;

(11) construction of new transit facilities and mobility hubs;

(12) relocating utilities to accommodate new roadway construction;

(13) construction management and inspection, including multimodal mobility hub buildings and structures and initial asset capitalization of microtransit, shared use mobility and micromobility solutions;

(14) surveying and soils and material testing;

(15) repayment of monies transferred or borrowed from any budgetary fund of the City which were used to fund any growth impacted construction or improvements as herein defined;

(16) payment of principal and interest, necessary reserves and costs of issuance under any bonds or other indebtedness issued by the City to provide funds to construct or acquire growth impacted capital transportation improvements on the City Transportation System; and

(17) transportation planning, development and engineering.

Any monies on deposit which are not immediately necessary for expenditure shall be invested by the City. All income derived from such investments shall be deposited in the Mobility Fee Trust Account and used as provided herein.

G. The City Council hereby adopts a $100 Administrative fee to cover the City's costs for processing mobility fee applications.

H. The Mobility Fees collected pursuant to this Ordinance may be returned to the then current Owner of the property on behalf of which such fee was paid if such fees have not been expended or encumbered prior to the end of the fiscal year immediately following the eighth anniversary of the date upon which such fees were paid. Refunds shall be made only in accordance with the following procedure:

(1) The then current Owner shall petition the City for the refund within 180 days following the eighth anniversary date on which the Mobility Fees Fee was paid.

(2) The petition for refund shall be submitted to the Mobility Fee Coordinator and City Manager by regular and certified mail and shall contain:

(a) A notarized sworn statement that the petitioner is the current Owner of the property on behalf of which the Mobility Fees Fee was paid;

(b) A copy of the dated receipt issued for payment of such fee or such other record as would indicate payment of such fee;

(c) A certified copy of the latest recorded deed; and,

(d) A copy of the most recent ad valorem tax bill.

(3) Within ninety days from the date of receipt of a petition for refund, the Mobility Fee Coordinator will advise the Owner of the status of the Mobility Fee requested for refund, and if such Mobility Fee has not been spent or Encumbered within the applicable time

period, then it shall be returned to the Petitioner subject to the extension described in 105-15H(4). For the purposes of this Section, fees collected shall be deemed to be spent or Encumbered on the basis of the first fee in shall be the first fee out.

(4) The City may, by resolution, extend for up to 3 years the date by which the funds must be refunded. Such an extension, shall be made upon a finding that within the three-year period, improvements are scheduled to be constructed that are reasonably attributable to the Owner's land development activity and that the fees for which the time of refund is extended shall be spent for those capital improvements. The City may adopt a resolution extending the date by which the funds must be refunded at any time, up to 270 days after the eighth anniversary date on which the mobility fee was paid.

(5) Any application submitted after the 180 day period provided in 105-15H(1) shall not be accepted and the Applicant shall have no further right to a refund of Mobility Fees.

Sec. 105-16. EXEMPTIONS.

A. Subject to the Changes of Size and Use provisions in Section 105-19 herein, the following shall be exempted from payment of the Mobility Fee:

(1) Alterations, expansion, or replacement of an existing Dwelling Unit which does not result in any additional Dwelling Units or increase the number of families for which such Dwelling Unit is arranged, designed or intended to accommodate for the purpose of providing living quarters.

(2) Subject to Section 105-19A, the alteration or expansion of a Building if the Building use upon completion does not increase the number of External Trips under the applicable Mobility Fee Rate which were initially attributed to the Building.

(3) The replacement of a Dwelling Unit, Mobile Home, Building or an Accessory Building or Structure if the replacement Dwelling Unit, Mobile Home, Building or Accessory Building or Structure does not result in a land use generating greater External trips under the applicable Mobile Fee Rate. In the event of a replacement of the primary Building, the existing and replacement structures must be located on the same lot and the electrical Power Clearance for such replacement must occur within five (5) years of the date the previous Building was previously occupied.

(4) The issuance of a tie-down permit on a Mobile Home on which applicable Mobility Fees have previously been paid for the lot upon which the Mobile Home is to be situated. The Electrical Power Clearance must be secured for the replacement Mobile Home within five (5) years of the date the previous Mobile Home was occupied.

(5) Government Buildings or Facilities and Schools. The City is ultimately responsible for funding all Designated Mobility Improvements for which Mobility Fee payments will be collected including any shortfalls. The cumulative number of trips and resulting PMT from any City, County or State proposed development or School Board school facility development will be analyzed and included in the modeled capacity available. Neither the City, County or School Board will be required to pay Mobility Fees in order to proceed with their respective proposed development. However, any Mobility Fee exemption issued for a Government Building or Facilities or School shall expire if an alteration causes the Government Building or Facility or School facility to no longer be a government Building. The Mobility Fee for other land uses shall not be increased as a result of this exemption for government facilities.

Sec. 105-17. AFFORDABLE HOUSING MOBILITY FEE DEFERRAL.

A. Pursuant to the requirements established in this Section, the City shall defer the payment of the Mobility Fees for any new Owner-occupied Residential Construction which qualifies as Affordable Housing as defined herein.

B. Any Applicant seeking an Affordable Housing deferral for proposed Residential New Construction shall file with the Mobility Fee Coordinator an Application for Deferral, prior to requesting Electrical Power Clearance for the proposed Residential New Construction. The Application for Deferral shall contain the following:

(1) The name and address of the Initial Purchaser;

(2) The legal description of the residential New Construction;

(3) The proposed selling price of the residential New Construction;

(4) Evidence that the Residential New Construction shall be occupied by Very Low-Income Persons and Low-Income Persons, as certified by the Mobility Fee Coordinator; and

(5) Evidence that the residential New Construction is funded by a governmental affordable housing program, if applicable.

C. If the proposed residential New Construction meets the requirements for an Affordable Housing Deferral as set forth in this Section, the City Manager shall be authorized to enter into an Affordable Housing Mobility Fee Deferral Agreement (the "Deferral Agreement") with the developer or the Initial Purchaser, as applicable. The Deferral Agreement shall be accepted by the City in lieu of prompt payment of the Mobility Fees that would otherwise be due and payable but for the Agreement. The Deferral Agreement shall provide for, at a minimum, the following, and shall further include such provisions deemed necessary by the Council to effectuate the provisions of this Section:

(1) The deferred Mobility Fees shall be a lien on the New Construction for the duration of the deferral period established pursuant to this Section. The lien may be foreclosed upon in the event of noncompliance with the requirements of the Deferral Agreement. The lien shall terminate upon the expiration of a deferral period or upon payment of the lien following a sale or transfer of the New Construction as provided herein. Such termination of the lien shall be evidenced by the recording of a release or satisfaction of lien in the public records of the County. Such release shall be recorded upon payment in full.

(2) Neither the deferred Mobility Fees nor the Deferral Agreement shall be transferred, assigned, credited or otherwise conveyed from the Residential New Construction. The deferral of Mobility Fees and the Deferral Agreement shall run with the land.

(3) In the event the Owner is in default under the Deferral Agreement, and the default is not cured within 30 days after written notice is provided to the Owner, the Council may at its sole option collect the Mobility Fee amounts in default or bring a civil action to enforce the Deferral Agreement or declare that the deferred Mobility Fees are then in default and immediately due and payable. The Council shall be entitled to recover all fees and costs, including attorney's fees and costs, incurred by the City in enforcing the Deferral Agreement plus interest at the then maximum statutory rate for judgments calculated on a calendar day basis until paid. In the event the City initially funded the deferred Mobility Fee for the Residential New Construction from other available City revenues, the deferred Mobility Fees collected upon a breach of the Deferral Agreement will be used to repay such City funds.

(4) The Deferral Agreement shall be binding upon the developer and Initial Purchaser's successors and assigns, as applicable.

(5) The Deferral Agreement shall be recorded in the official records of the County at the owner's expense.

D. To qualify for a deferral under this Section, Owner-occupied residential New Construction must meet all of the following criteria:

(1) The Initial Purchaser(s) or anticipated Initial Purchaser(s) must qualify as Very-Low Income Persons or Low-Income Persons, as defined herein, at the time of execution by the City of the Deferral Agreement.

(2) The purchase price of the residential New Construction, shall not exceed 30 percent of the amount which represents the percentage of the median annual gross income for the applicable household category and the standards set forth for Very Low, and Low Income persons for the Jacksonville, Florida metropolitan statistical area covering the City as reported by the U.S. Department of Housing and Urban Development or its governmental successor in function

.

(3) The residential New Construction shall qualify as "Owner-occupied" if:

(a) a written affirmation from the developer to the City guarantees that the requisite Affordable Housing units will be constructed; and

(b) the affirmation is in effect on the date of execution of the Deferral Agreement by the City; and

(c) within six months from the date of Electrical Power Clearance or the execution of the affirmation, whichever is later, any option to purchase is exercised and the qualified Initial Purchaser takes ownership of the residential New Construction. If the qualified Initial Purchaser fails to purchase the residential New Construction within the six-month period, then the deferred Mobility Fees are considered in default as of the date

that the Mobility Fees would have been due without the deferral and the Applicant shall pay all of the Mobility Fees that would have been assessed but for the deferral.

(4) The residential New Construction must be the homestead of the Initial Purchaser(s). The Initial Purchaser(s) of the residential New Construction must be at least 18 years of age and must be either citizen(s) of the United States or be a legal alien who permanently resides in the United States. Proof of United States Citizenship or permanent legal residency must be established to the City's sole satisfaction. The residential New Construction must be granted a homestead exemption pursuant to Chapter 196, Florida Statutes, within one year after the initial purchase of the residential New Construction.

(5) No more than 30 Mobility Fee Deferral Agreements are permitted at any single time for an individual developer, or for any developments that are under common ownership; provided, however, that a developer may apply to the Council for approval to exceed this cap on deferrals for projects that will increase the availability of Affordable Housing within the City. For purposes of this subsection, "common ownership" means ownership by the same person, corporation, firm, entity, partnership, or unincorporated association; or ownership by different corporations, firms, partnerships, entities, or unincorporated associations, in which a stockbroker, partner, or associate, or a member of his family owns an interest in each corporation, firm, partnership, entity, or unincorporated association.

E. All Mobility Fees deferred at the time Electrical Power Clearance was issued shall become due and payable upon the first occurrence of any sale or transfer of the residential New Construction if such sale or transfer occurs within eight years of the date of Electrical Power Clearance for the residential New Construction.

(1) All such deferred Mobility Fees shall be immediately paid in full to the City not later than the closing date of the sale or the effective date of the transfer.

(2) Repayment shall include any accrued interest. Interest shall be computed at the prevailing prime interest rate established for commercial lenders within the City not to exceed the maximum rate of interest permitted by law.

(3) If the household income of the Initial Purchaser rises above the levels for Very Low-Income or Low Income Persons, as defined herein, the Initial Purchaser shall maintain the deferral for the duration of their ownership of the residential New Construction. If, at the point of land sale or transfer, the household income of the Initial Purchaser exceeds that set out in the Deferral Agreement, the appropriate Mobility Fee will become due.

(4) The deferred Mobility Fees shall be forgiven upon the eighth anniversary of the date of Electrical Power Clearance if the Initial Purchaser does not sell or transfer the property within such deferral period.

F. The amount of the Mobility Fees shall not be increased to replace any revenue lost due to any deferral approved pursuant to this Section.

Sec. 105-18. ECONOMIC DEVELOPMENT MITIGATION PROGRAM.

A. Because the imposition of the Mobility Fees herein may place the City in a non-competitive position with other local governments that have chosen not to impose road impact fees or other programs to provide needed transportation improvements to serve future growth, and thus hinder efforts by the City and the community to (1) encourage economic development opportunities within the City; (2) create permanent employment expansion opportunities for the City's citizens; and (3) encourage new or expanded businesses within the City to help reverse the daily commute out of the City, there is hereby created an Economic Development Mobility Fee

Mitigation Program for certain land uses to mitigate any real or perceived disadvantage occurring from the imposition of the Mobility Fees.

B. The City has developed a CRA District within the city boundary. The CRA may contribute funds to offset and reduce the net mobility fee assessed to specific land uses and New Construction within specific areas of the city or for specific land use types. CRA Targeted Businesses as defined in Section 105-7 would be eligible for up to a 50% discount (CRA contribution) in mobility fee payments within the CRA.

Sec. 105-19. CHANGES OF SIZE AND USE. A Mobility Fee shall be imposed for the alteration, expansion or replacement of a Building or Dwelling Unit or the construction of an Accessory Building or Structure if the alteration, expansion or replacement of the Building or Dwelling Unit or the construction of an Accessory Building or Structure results in a land use determined to generate greater External Trips than the present use under the applicable Mobility Fee Rate, and shall be calculated as provided herein:

A. If the Building or Dwelling Unit was continuously vacant and only generating a de minimis number of External Trips for at least five (5) years prior to the date of Electrical Power Clearance for the alteration, expansion or replacement of said Building or Dwelling Unit, then this Section 105-19 shall not apply and the New Construction shall pay the Mobility Fee established in Section 105-11.

B. If Subsection A. of this Section 105-19 is not applicable, then the Mobility Fee shall be calculated as follows:

(1) If the Mobility Fee is calculated on land use and not square footage, the Mobility Fee imposed shall be the Mobility Fee due under the applicable Mobility Fee Rate for the Mobility Fee Land Use Category resulting from the alteration, expansion or replacement, less

the Mobility Fee that would be imposed under the applicable Mobility Fee Rate for the Mobility Fee Land Use Category prior to the alteration, expansion or replacement.

(2) If the Mobility Fee is calculated on the basis of square footage and the Square Footage of a Building is increased, the Mobility Fee Rate for the increased Square Footage represented by the New Construction shall be at the Mobility Fee Rate applicable to New Construction with Square Footage resulting from the alteration, expansion or replacement, less the Mobility Fee that would be imposed under the applicable Square Footage prior to the alteration, expansion or replacement.

(3) The Mobility Fee imposed for any Accessory Building or Structure shall be that applicable under the Mobility Fee Rate for the land use for the primary Building.

(4) The Mobility Fee applicable to occupied spec construction and the finished spec space shall be determined pursuant to Section 105-12D herein.

Sec. 105-20. DEVELOPER CONTRIBUTION CREDIT.

A. Subject to the terms and conditions of this Section 105-20, a credit shall be granted against the Mobility Fees imposed by this Ordinance for the construction of all or any portion of a Designated Mobility Improvement or for the donation of land or contribution of funds for a Designated Mobility Improvement made pursuant to a development order or voluntarily in connection with New Construction. The donation, contribution or construction shall only provide improvements or additions to Designated Mobility Improvements which are required to accommodate growth as projected in the Mobility Fee Study. No credit shall be given for the construction of Access Improvements. Further, no credit shall be given for the donation of land or construction of a capital improvement unless such property is conveyed, in fee simple to the

City without remuneration. Such conveyance and construction shall be subject to the approval of the Mobility Fee Coordinator and the following standards:

(1) Any land to be conveyed shall be suitable as right-of-way for the contemplated Designated Mobility Improvement;

(2) Any monetary contribution shall be used in accord with Section 105-15 herein for capital improvements and additions to a Designated Mobility Improvement;

(3) Any improvements to be constructed shall be an integral part of the contemplated Designated Mobility Improvement, shall improve the function thereof, and shall exclude Access Improvements;

(4) Any road right of way or land required to be dedicated to the City as a condition of development approval shall be dedicated by plat or deed no later than the time at which Mobility Fees are required to be paid under this Ordinance. The portion of the fee represented by a credit for construction shall be deemed paid when the construction is completed and accepted by the City for maintenance or when adequate security for the completion of the construction has been provided.

(5) The design and/or construction of a Designated Mobility Improvement shall be performed by professionals who are qualified under Florida law and the City Code to perform such work.

B. Prior to requesting Electrical Power Clearance, the Applicant shall submit to the Mobility Fee Coordinator a proposed plan for donation, contribution or construction. The proposed plan shall include:

(1) a designation of the New Construction for which the plan is being submitted;

(2) a legal description of any land proposed to be donated and a written appraisal prepared in conformity with subsection D. of this section;

(3) the amount and source of any monetary contribution;

(4) a list of any contemplated improvements to Designated Mobility Improvements;

(5) a proposed time schedule for completion of the proposed plan.

C. The Mobility Fee Coordinator shall review the proposed plan and determine:

(1) If such proposed plan is in conformity with contemplated capital improvements for and additions to Designated Mobility Improvements;

(2) If the proposed donation, contribution or construction by the Applicant is consistent with the public interest; and

(3) If the proposed time schedule for the conveyance of land, contribution of funds or construction is consistent with the City's capital improvement program for the Designated Mobility Improvements;

(4) Upon approval of a proposed plan, the Mobility Fee Coordinator shall determine the amount of credit based upon the standards contained in Subsection D. of this Section and shall approve the timetable for completion of the plan. The Mobility Fee Coordinator shall issue a decision within forty-five days after the filing of the completed proposed plan.

D. The amount of developer credit to be applied to the Mobility Fee shall be:

(1) The value of constructing an improvement to a Designated Mobility Improvement as estimated in the Mobility Fee Study and which formed the basis of the fee. The successful completion of the project shall comply with Transportation Design Standards accepted by the City Engineer.

(2) The amount of any monetary contribution for a Designated Mobility Improvement.

(3) The value of donated land (when not part of an above Designated Mobility Improvement) based upon a written appraisal of fair market value by an M.A.I. Appraiser who was selected and paid for by the Applicant, and who used generally accepted appraisal techniques. If the appraisal does not conform to the requirements of this Ordinance and any applicable administrative regulations, the appraisal shall be corrected and resubmitted. In the event the Mobility Fee Coordinator accepts the methodology of the appraisal but disagrees with the appraised value, the Mobility Fee Coordinator may engage another M.A.I. Appraiser at the City's expense, and the value shall be an amount equal to the average of the two appraisals. If either party does not accept the average of the two appraisals, a third appraisal shall be obtained, with the cost of said third appraisal being shared equally by the City and the Owner or Applicant. The third appraiser shall be selected by the first two appraisers and the third appraisal shall be binding on the parties.

E. If a proposed plan is approved for an infrastructure credit by the Mobility Fee Coordinator, the Applicant or Owner and the Council shall enter into a Credit Agreement which shall provide for the parties' obligations and responsibilities, including, but not limited to:

(1) The timing of actions to be taken by the Applicant and the obligations and responsibilities of the Applicant, including, but not limited to, the construction standards and requirements to be complied with;

(2) The obligations and responsibilities of the City, including, but not limited to, inspection of the project;

(3) The amount of the credit as determined in accordance with Subsection D. of this section; and

(4) If required, provisions for a payment bond or an irrevocable letter of credit to be posted with the City, in an amount representing the difference between the Mobility Fee obligation and the amount of any credit from donated land.

F. A credit for a monetary contribution or a land donation shall be granted at such time as the City is in receipt of the full amount of the monetary contribution and/or the donated land has been conveyed to the City, and a Credit Agreement is approved and executed by both the Council and the Applicant or Owner. A credit for a land donation in conjunction with construction of a Designated Mobility Improvement, or portion thereof, shall be available after a Credit Agreement is approved and executed by both the Council and the Applicant or Owner, and upon dedication and acceptance by the Council of the donated land, up to the value of the donated land. A credit for the construction of the Designated Mobility Improvement shall be available once the improvement is completed, dedicated to, and accepted by the City. In the alternative, following the dedication and acceptance of the donated land for a Designated Mobility Improvement, the Applicant or Owner may access the credit for the construction of the Designated Mobility Improvement early by posting a payment bond or irrevocable letter of credit with the City in an amount representing the difference between the Mobility Fee obligation and the value of the donated land. Provided, however, that in the event the Applicant or Owner fails to convey the land to be donated or fails to convey the completed Designated Mobility Improvement or such property or improvement is not ultimately accepted by the City in accordance with the terms of the Credit Agreement, then the credit shall be revoked and all Mobility Fees shall immediately become due and payable and collected in any manner authorized by law. The administration of said credits

shall be the responsibility of the Mobility Fee Coordinator. Mobility Fee credits available for use as provided for in this subsection which are in excess of those required to satisfy the Mobility Fee obligation generated by the New Construction may be transferred in accord with the provisions of Section 163.31801, Florida Statutes, as amended.

H. All construction cost estimates shall be based upon and all construction plans and specifications shall be in conformity with the road construction standards of the City or the Florida Department of Transportation as deemed appropriate by the City Engineer. All plans and specifications shall be approved by the City Engineer prior to commencement of construction. For construction projects within City-owned right-of-way, the requirements set forth in Sections 101-327 through 101-331 of the City of Green Cove Springs Code, state law and city ordinance bidding requirements and construction bonding requirements shall be deemed to apply to such construction only to the extent required by law.

I. Any Applicant who submits a proposed plan pursuant to this Section and who desires Electrical Power Clearance prior to the resolution of a pending credit shall pay the applicable Mobility Fee at the time of requesting Electrical Power Clearance. Said payment shall be deemed paid "under protest" and shall not be construed as a waiver of any review rights. Any difference shall be refunded to the Applicant or Owner upon the execution of a Credit Agreement.

J. Nothing contained herein shall be construed to qualify the conveyance of land which is required as right-of-way for the construction of Access Improvements for a developer contribution credit.

Sec. 105-21. APPLICABILITY. This Ordinance and the obligations herein for the payment of the Mobility Fee shall apply to all New Construction that requests an Electrical Power Clearance on or after the effective date of this Ordinance, as provided in Section 105-30.

Sec. 105-22. ALTERNATIVE COLLECTION METHOD. In the event that an equipment check inspection for Electrical Power Clearance is granted in error by reason of the failure to collect the applicable Mobility Fee, then prompt demand for payment of the Mobility Fee shall be made to the Building Permit holder of the New Construction, and no final inspection shall be made or certificate of occupancy issued until payment of the Mobility Fee has been received. In the event that an Equipment Check Inspection for Electrical Power Clearance is performed in error by reason of the failure to collect the applicable Mobility Fee, and the New Construction has been completed and final authorization for occupancy has been granted, then prompt demand for payment of the Mobility Fee shall be made to the Owner of New Construction for which the Building Permit was issued, and such Mobility Fee shall be subject to collection in any manner authorized by law.

Sec. 105-23. REVIEW HEARINGS.

A. An Applicant or Owner who is required to pay a Mobility Fee shall have the right to request a review hearing.

B. Such hearing shall be limited to the review of the following:

(1) The application or calculation of the Mobility Fee under Sections 105-11 and 105-12 of this Ordinance.

(2) The rejection of the Alternative Mobility Fee calculation pursuant to Section 105-9.

(3) The denial or partial denial of a credit pursuant to Section 105-20.

(4) The denial of an Affordable Housing Mobility Fee Deferral pursuant to Section 105-17.

(5) The denial or partial denial of an Economic Development Mobility Fee Mitigation waiver pursuant to Section 105-18.

C. Such hearing shall be requested by the Applicant or Owner in writing within thirty (30) days of the following dates:

(1) The issuance of a Building Permit which shall contain the amount of the Mobility Fee that is due for the New Construction;

(2) A negative determination in writing on a proposed Individual or Alternative Mobility Fee pursuant to Sections 105-12 and 105-13, respectively; credit pursuant to Section 105-20; Mobility Fee deferral pursuant to Section 105-17; or Mobility Fee mitigation pursuant to Section 105-18.

(3) Failure to request a hearing within the time provided shall be deemed a waiver of such right.

D. The request for hearing shall be filed in writing with the Mobility Fee Coordinator with copy to the City Manager and shall contain the following:

(1) The name and address of the Applicant or Owner;

(2) The legal description of the property in question;

(3) If issued, the date the Building Permit was issued.

(4) A brief description of the nature of the construction being undertaken;

(5) If paid, the date the Mobility Fee was paid; and

(6) A statement of the reasons why the Applicant or Owner is requesting the hearing.

E. Upon receipt of such request, the Mobility Fee Coordinator shall schedule a hearing before the City Manager called for the purpose of conducting the hearing and shall provide the

Applicant and/or Owner written notice of the time and place of the hearing. Such hearing shall be held within sixty (60) days of the date the request for hearing was filed.

F. Such hearing shall be before the City Manager and shall be conducted in a manner designed to obtain all information and evidence relevant to the requested hearing. Formal rules of civil procedure and evidence shall not be applicable; however, the hearing shall be conducted in a fair and impartial manner with each party having an opportunity to be heard and to present information and evidence.

G. Any Applicant who requests a hearing pursuant to this Section who desires Electrical Power Clearance prior to the hearing shall pay the applicable Mobility Fee pursuant to Section 105-11 or Section 105-12, as applicable, at the time of requesting Electrical Power Clearance. Said payment shall be deemed paid "under protest" and shall not be construed as a waiver of any review rights.

H. An Applicant may request a hearing under this Section without paying the applicable Mobility Fee, but Electrical Power Clearance shall not be granted until such Mobility Fee is paid in the amount initially calculated, or the amount approved upon completion of the review provided in this Section.

Sec. 105-24. REVIEW REQUIREMENT. This Ordinance and the Mobility Fee Study shall be reviewed by the City Council at least every five (5) years and not sooner than every four (4) years. The initial and each review thereafter shall consider new estimates of population and other socioeconomic data, changes in construction, land acquisition and related costs, and adjustments to the assumptions, conclusions or findings set forth in the Mobility Fee Study adopted by Section 105-10. Each review shall additionally consider changes in right-of-way acquisition and related costs and changes in Trip Generation rates, External Trip lengths, traffic volume

counts, and a review of the administrative fees authorized herein. The purpose of this review is to evaluate and revise the Mobility Fee, if necessary, to ensure that they do not exceed the reasonable anticipated costs associated with the improvements and additions necessary to offset the demand generated by the New Construction on the City Transportation System. In the event the review of the Ordinance required by this Section alters or changes the assumptions, conclusions and findings of the studies adopted by reference in Section 105-10, revises or changes the Designated Mobility Improvements, or alters or changes the amount or classification of the Mobility Fee, the Mobility Fee Study adopted by reference in Section 105-10 shall be amended and updated to reflect the assumptions, conclusions and findings of such reviews and Section 105-10 shall be amended to adopt by reference such updates studies.

Sec. 105-25. PERIODIC MOBILITY FEE RATE ADJUSTMENT.

A. Beginning on October 1, 2024, and on each October 1 thereafter, the Council shall escalate the base Mobility Fees by a percent change for the previous Fiscal Year using available data from the Florida Department of Transportation Construction Cost Indictor Reports.

B. Provided, however, that in the event the Mobility Fee Coordinator determines that this annual rate adjustment of the Mobility Fees will cause New Construction to pay more than its fair share of the cost of the Designated Mobility Improvements to the City Transportation System that are necessary to accommodate the traffic generated by such growth, said automatic rate adjustment will be decreased accordingly.

C. The adjusted Mobility Fees must be noticed in conformance with Section 105-28 prior to going into effect if the adjustment results in an increased Mobility Fee.

Sec. 105-26. DECLARATION OF EXCLUSION FROM ADMINISTRATIVE PROCEDURES ACT.

Nothing contained in this Ordinance shall be construed or interpreted to include the City in the definition of Agency as contained in Section 120.52, Florida Statutes, or to otherwise subject the City to the application of the Administrative Procedures Act, Chapter 120, Florida Statutes. This declaration of intent and exclusion shall apply to all proceedings taken as a result of or pursuant to this Ordinance, including specifically, but not limited to, a determination of an Alternative Fee Calculation pursuant to Section 105-13, developer credit hearings pursuant to Section 105-20, and review hearings under Section 105-23.

Sec. 105-27. ACCOUNTING AND REPORTING OF MOBILITY FEE. The revenues realized from Mobility Fees imposed pursuant to this Ordinance shall be identified in the City's budget as a separate trust fund account required by Section 163.31801(4)(b), Florida Statutes (2022) as amended. The City shall maintain adequate records to justify all expenditures from the Mobility Fee trust fund and any accounts established within such trust fund. The City shall prepare an annual report reflecting the collection and expenditures during the previous year of the Mobility Fees imposed pursuant to this Ordinance.

Sec. 105-28. NOTICE OF MOBILITY FEE RATES. Upon adoption of this Ordinance or any amendment hereto imposing new or revised Mobility Fee rates or revising the land use categories for any Mobility Fee, the Mobility Fee Coordinator shall publish a notice once in a newspaper of general circulation within the City which notice shall include: (1) a brief and general description of the affected Mobility Fee, (2) a description of the geographic area (City limits) in which the Mobility Fee will be collected; (3) the Mobility Fee Rates to be imposed for each land use category; and (4) the date of implementation of the Mobility Fee Rates set forth in the notice, which date shall not be earlier than ninety (90) days after the date of publication of the notice.

Sec. 105-29 Mobility Fee Rate Schedule

Land Use Code	Land Use Categories	Land Use Categories	Unit of measure	Base Impact fee per unit
220	*Residential*	Multiple Family (low rise)	dwelling	$ 2,981
221	*Residential*	Multiple Family (mid-rise)	dwelling	$ 2,008
251	*Residential*	Senior Adult Housing - detached and independent	dwelling/bed	$ 1,906
253	*Residential*	Assisted Living/Congregate Care Facility	dwelling	$ 977
210.3	*Residential*	Single Family (less than 1,500 sqft)	dwelling	$ 2,946
210	*Residential*	Single Family (1,500 sqft to 2,499 sqft)	dwelling	$ 3,693
210.4	*Residential*	Single Family (> 2,499 sqft)	dwelling	$ 4,171
240	*Residential*	Mobile Home	dwelling	$ 3,149
255	*Residential*	Continuing Care Retirement Community	occupied units	$ 1,092
260	*Residential*	Recreational Home/Vehicle	dwelling	$ 1,570
110	*Industrial*	Light Industry (110)	ksq ft of GFA	$ 2,154
150	*Industrial*	Warehouse	ksq ft of GFA	$ 756
151	*Industrial*	Mini-Warehouse	ksq ft of GFA	$ 641
140	*Industrial*	Manufacturing	ksq ft of GFA	$ 2,101
565	*Commercial – Services*	Day Care	ksq ft of GFA	$ 21,062
492	*Commercial – Services*	Health Club / Fitness	ksq ft of GFA	$ 579
310	*Commercial – Services*	Hotel	rooms	$ 3,534
320	*Commercial – Services*	Motel	rooms	$ 1,482
312	*Commercial – Services*	Business Hotel	rooms	$ 1,778
947	*Commercial – Services*	Carwash (self wash)	wash stall	$ 16,719
948	*Commercial – Services*	Carwash (automated wash)	wash stall	$ 11,997
420	*Commercial – Retail*	Marina	berth	$ 1,066
850	*Commercial – Retail*	Supermarket	ksq ft of GFA	$ 26,563
815	*Commercial – Retail*	Free Standing Retail Store	ksq ft of GFA	$ 17,631
816	*Commercial – Retail*	Hardware / Paint Store	ksq ft of GFA	$ 2,641
817	*Commercial – Retail*	Nursery (Garden Center)	ksq ft of GFA	$ 22,289
818	*Commercial – Retail*	Nursery (Wholesale)	ksq ft of GFA	$ 14,292
880	*Commercial – Retail*	Pharmacy/Drugstore w/o Drive Thru	ksq ft of GFA	$ 18,726
881	*Commercial – Retail*	Pharmacy/Drugstore with Drive Thru	ksq ft of GFA	$ 22,534
820	*Commercial – Retail*	Shopping Center (>150k)	ksq ft of GFA	$ 10,804

Land Use Code	Land Use Categories	Land Use Categories	Unit of measure	Base Impact fee per unit
821	*Commercial – Retail*	Shopping Plaza (40-150k)	ksq ft of GFA	$ 19,710
822	*Commercial – Retail*	Strip Retail Plaza (<40k)	ksq ft of GFA	$ 15,895
850	*Commercial – Retail*	Supermarket	ksq ft of GFA	$ 26,563
814	*Commercial – Retail*	Variety Store	ksq ft of GFA	$ 18,583
857	*Commercial – Retail*	Discount Club	ksq ft of GFA	$ 15,587
863	*Commercial – Retail*	Electronics Superstore	ksq ft of GFA	$ 11,983
849	*Commercial – Retail*	Tire Superstore	ksq ft of GFA	$ 6,487
890	*Commercial – Retail*	Furniture Store	ksq ft of GFA	$ 2,786
931	*Quality Restaurant*	High-Turnover (sit-down) restaurant	ksq ft of GFA	$ 19,140
932	*Commercial – Restaurant*	High-Turnover (sit-down) restaurant	ksq ft of GFA	$ 19,140
710	*Commercial – Office*	General Office Building	ksq ft of GFA	$ 4,794
760	*Commercial – Office*	Research & Development Center	ksq ft of GFA	$ 4,901
550	*Institutional*	University / College / Jr College	students	$ 599
520	*Institutional*	School, K-12	students	$ 1,411
536	*Institutional*	Private School, K-12	students	$ 818
411	*Institutional*	Park	acre	$ 293
610	*Institutional*	Hospital	ksq ft of GFA	$ 4,763
620	*Institutional*	Nursing home	ksq ft of GFA	$ 2,985
560	*Institutional*	Place of worship	ksq ft of GFA	$ 3,361

Section 5. Conflicts. If any portion of this Ordinance is in conflict with any other ordinance, then the provisions of this Ordinance shall govern.

Section 6. Severability. If any section, sentence, clause or phrase of this Ordinance is held to be invalid or unconstitutional by any court of competent jurisdiction, then said holding shall in no way affect the validity of the remaining portions of this Ordinance.

Section 7. Effective Date.

This Ordinance and the obligations herein for the payment of Mobility Fees shall apply to all New Construction that submits a building permit application on or after the effective date of the ordinance pursuant to the notice requirements set forth in Section 105-28,

INTRODUCED AND APPROVED AS TO FORM ONLY ON THE FIRST READING BY THE CITY COUNCIL OF THE CITY OF GREEN COVE SPRINGS, FLORIDA, ON THIS 16th DAY OF MAY 2023.

CITY OF GREEN COVE SPRINGS, FLORIDA

_____
Constance W. Butler, Mayor

ATTEST:

_____
Erin West, City Clerk

PASSED ON SECOND AND FINAL READING BY THE CITY COUNCIL OF THE CITY OFGREEN COVE SPRINGS, FLORIDA, THIS 6TH DAY OF JUNE 2023.

CITY OF GREEN COVE SPRINGS, FLORIDA

_____
Constance W. Butler, Mayor

ATTEST:

_____
Erin West, City Clerk

APPROVED AS TO FORM ONLY:

_____
L.J. Arnold, III, City Attorney

ATTEST:

By: _____

Gannett Fleming

RSG

City of Green Cove Springs Mobility Fee Report

April 2023

Table of Contents

Table of Content

1.0 Introduction 1
1.1 Methodology 1
Overview 1
General Methodology 2
1.2 Summary of the Data Collected and Used 5
1.3 Basis for a Mobility Plan 6

2.0 Land Use 8
2.1 Assessment Framework 8
2.2 Recommendations 9
Land Use Element 9
Transportation Element 14
Capital Improvement Element 18

3.0 Travel Demand 19
3.1 Overview 19
3.2 VMT and PMT 20
3.3 Network Performance 21
3.4 Travel Characteristics 22
Trip Lengths 22
Double Counting Factor 27
Trip Rates 28
Mode Share 30

4.0 Transportation Improvements 31
4.1 Background 31
4.2 Needs and Priority Lists 31
4.3 Transportation Network Improvements 31
Roadway Corridors 31
Active Travel Network 33
Transit Improvements 34
4.4 Network Standards of Service & Improvements 35
4.5 Mobility Fee Projects 38
Cost of Mobility Fee Projects 38

DRAFT

5.0 Mobility Fees 40
5.1 PMT Generated by Land Use 40
5.2 Cost of Infrastructure per PMT 41
5.3 Base Mobility Fee 45

6.0 Credits 47
6.1 Developer Contribution Credits 47
6.2 Revenue Credits 47
Process for Calculating the Revenue Credit 48

7.0 Net Mobility Fees 49

8.0 Mobility Fee Schedule and Application 50
8.1 Inter-Jurisdictional Fee Issues 50

9.0 Legal Application of Mobility Fees 51
9.1 Overview 51
9.2 Legal History 51
Key Principles 52
9.3 Legal Compliance 52

Appendix A: Fee Schedule
Appendix B: Trip Rates

DRAFT

List of Tables

Table 1: Cost per PMT 5
Table 2: Green Cove Springs Population and Employment Growth 19
Table 3: Green Cove Springs VMT and PMT Relationship 20
Table 4: Person Trip Length in Green Cove Springs 26
Table 5: Household Travel Survey Trip Lengths (2017 NFTPO) 26
Table 6: 2017 National HTS Trip Lengths by Trip Purpose 27
Table 7: ITE Trip Generation Rates (Daily by Land Use) 29
Table 8: Travel Model Share by Year 30
Table 9: Existing Transportation Person Miles Capacity 36
Table 10: Current Capacity and Service Standards 36
Table 11: Existing and Future Person Miles Capacity 37
Table 12: Unit Cost per Mile per Infrastructure Type 37
Table 13: Mobility Fee Projects 39
Table 14: Local Cost vs Total Project Cost of Mobility Fee Projects 43
Table 15: Cost per PMT 45
Table 16: Sample Base Mobility Fee Calculations 45
Table 17: Revenue Credit Lookup Table 48
Table 18: Net Mobility Fee Calculation 49

List of Figures

Figure 1: Mobility Fee Concept 2
Figure 2: Identified Mobility Projects 4
Figure 3: Location of the City of Green Cove Springs 8
Figure 4: Historical National VMT/PMT Relationship 21
Figure 5: Year 2015 Green Cove Springs Roadway Volume Capacity Plot 24
Figure 6: Year 2045 Green Cove Springs Roadway Volume Capacity Plot 25
Figure 7: Double Counting Factor 28
Figure 8: Orange Avenue Improvements (source: Downtown Master Plan) 32
Figure 9: Orange Ave Cross Section (source: Downtown Master Plan) 32
Figure 10: Visual of US 17 Improvements (Source: Downtown Master Plan) 33
Figure 11: Mobility Fee Projects (2045 Planning Horizon) 38

DRAFT

1.0 Introduction

The Comprehensive Plan and Downtown Master Plan for the City of Green Cove Springs has envisaged a local transportation system that provides travel options, choices of different travel modes, developing an efficient, cost effective and adaptable system to address the future land use and demographic changes. This study creates a Mobility Fee that provides a local funding mechanism to address the additional burden on the transportation system associated with the future residents, jobs, and visitors.

The City has traditionally managed the impacts of land use development through transportation concurrency. This system has limited the opportunities to provide multimodal and long-term solutions that address the burden of growth and realize the vision set out in the Comprehensive Plan.

A Mobility Fee provides an alternative to concurrency to assess the fair and proportional cost of additional transportation capacity on new land use development. The Florida Constitution grants local governments broad home rule authority to establish assessments and fees. Impact fees and mobility fees are examples of these home rule revenue sources. These fees are a type of land use regulation that local governments use to generate revenue to construct additional mobility capacity to meet the needs associated with increases in travel demand from new land use development.

The Mobility Fee will provide more predictable outcomes for both the City and the land use development applicants using a creating a consistent process connected to the trip generation and size of the land development.

The Mobility Fee will support the City by directing funds to improve multimodal transportation capacity through additional walking and biking facilities, vehicular intersection improvements, and transit mobility hubs.

This report provides the background to support the change from concurrency, the forecast amount of land use growth and development, the types of transportation investments, and the derivation of the base Mobility Fee.

1.1 Methodology

Overview

The methodology for the Green Cove Springs Mobility Fee follows a 'needs-based' also known as a 'plan-based' approach by identifying the future transportation capacity necessary to mitigate the impacts of additional users generated by future land use development on the existing standards of service that users experience. Based on the data developed in the Northeast Florida Regional Planning Model (NERPM), the City is expected to increase the number of households by 251% and the amount of employment by 133%. The City of Green Cove Springs is forecast to grow faster than the north Florida region, which is expected to see a 68% increase in households and employment by 2045.

A plan-based approach develops a forecast of future demand and identifies and evaluates what capacity is needed to meet the needs of that growth. A proportionate share of the cost of

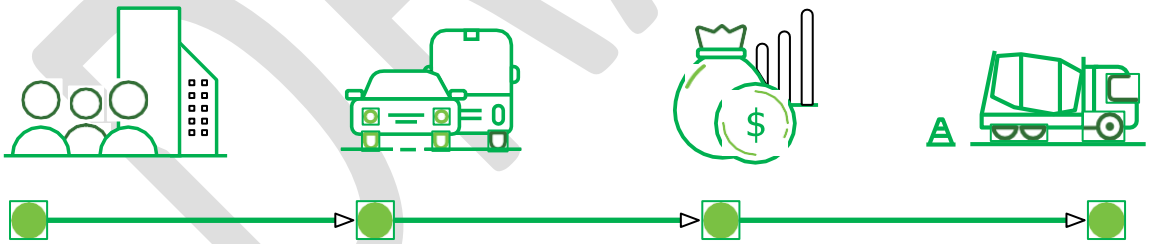
providing that capacity is then allocated to land use changes which create additional transportation demand.

Mobility plans and the subsequent fees that support the capital items are multimodal in nature. The future vision for the City of Green Cove Springs accounts for multimodal integration by supporting a mix of modal options that can meet various travel demands and can allow individuals to use the mode that meets their needs for the specific trip. Diverse land uses, multimodal travel options, and connectivity provide users with choices.

To develop such a fee, the future land use and resulting traffic volume forecasts were reviewed using the latest Northeast Florida Regional Planning Model – Activity Based_v2 (here after referred to as the NERPM). The NERPM model was used by the North Florida Transportation Planning Organization (TPO) for the Year 2045 Long Range Transportation Plan (LRTP). Using the NERPM, allowed for the analysis of travel behavior and complex land use interactions, as well as the analysis of how City of Green Cove Springs interacts with the rest of the TPO area. Using the model, provides the clear connection, or nexus, for imposing mobility fees.

The Mobility Fee develops a list of transportation capacity improvements that are necessary by 2045 to meet the mobility needs of the future users forecast to be added to Green Cove Springs over the next 22 years. The additional capacity is necessary to mitigate the adverse effects that these users will impose on the existing users of the transportation system. The plan presents a multimodal vision that will create additional capacity across various travel modes to provide users alternatives to the private vehicle including transit, walking and biking, golf carts, and future shared travel modes such as e-bikes, scooters, and micro transit.

Figure 1: Mobility Fee Concept



In general terms, more people create more trips. To accommodate those trips, new capacity is needed which can be funded through mobility fees.

General Methodology

The steps included in this Mobility Fee include:

- Land use planning
- Forecast demand
- Identification of transportation capacity and construction costs

- Calculation of base mobility fee as a cost per unit of demand
- Development of the net mobility fee after accounting for credits

Land Use Planning

The Mobility Plan uses the best available information on expected changes in land use within Green Cove Springs and within the overall North Florida TPO region, which covers a six-county area (Baker, Clay, Duval, Nassau, Putnam, and Saint Johns counties). Initial estimates for the changes were obtained through the NERPM travel model. The NERPM covers the six-county North Florida TPO area and has a base year 2015 and horizon year 2045 and was used in the LRTP Year 2045 update.

Changes in the Comprehensive Plan in both the Land Use and Transportation Elements are proposed as part of the Mobility Plan to align the documents with the change in the regulatory framework associated with replacing concurrency with the Mobility Fee.

A review of the land use changes within the NERPM indicated that minor revisions were necessary to reflect the more recent changes in expected land use development. These changes were integrated into the travel model, which was then run to inform the future changes in traffic generation and travel flow through the City and beyond.

A review of the volume-to-capacity of the vehicular network was used to inform where spot improvements to intersections or to roadway segments in the corridors could improve vehicular operations. The travel model was used particularly to inform trip lengths as well as vehicle and person miles of travel. Person miles of travel is used as the basis for the Mobility Fee.

Forecast Demand

The forecast demand was developed using the NERPM. The development of the LRTP is a federal requirement and is a process that is conducted every five years. The City of Green Cove Springs is located within Clay County. Clay County, as a member of the North Florida TPO, developed and/or reviewed the socioeconomic data and projects that are part of the LRTP process for the Clay County area, which includes the municipalities of the City of Green Cove Springs, City of Keystone Heights, Town of Orange Park and the Town of Penny Farms. As stated above, the socioeconomic data and the projects were developed for the years 2015 and 2045. The type of socioeconomic data used in the NERPM, are the number of households, number of persons in the household, school enrollment, and number of employees, among others.

The NERPM model is validated for the year 2015 and forecasted for the year 2045 by assigning the trips people make to different destinations within the study area. The forecasted growth is used in the mobility fee study. This growth is measured in miles traveled, average trip lengths, and by the congestion on the transportation network.

The miles traveled can be expressed in vehicle miles traveled (VMT) or person miles traveled (PMT). Since the City of Green Cove Springs mobility fee study is a multimodal study, and therefore includes pedestrian, bicycle, and transit facilities as well as roadways, the miles traveled are expressed in PMT.

DRAFT

Forecast changes, and in particular growth patterns in population, employment, and the related change in the number and distribution of the trips associated with these socioeconomic inputs were analyzed in the NERPM. The changes in the number of PMT are a direct result of the changes in the land use patterns. The changes in the PMT is the unit of growth used in the Mobility Fee.

Identification of Transportation Capacity and Construction Costs

A comprehensive and collaborative process with many stakeholders from the City of Green Cove Springs and Clay County was used to identify the suite of multimodal transportation improvements to meet the needs of the community over the next two decades. The plan incorporated previous planning efforts including the TPO's Trails and Paths plan, JTA's and Clay County Transit's plans, the Green Cove Springs' Downtown Master Plan, the US Route 17 Corridor Study, and the Green Cove Springs' Comprehensive Plan. Attention to creating practical alternatives to driving was made by filling in gaps in the sidewalk and bikeway network and by creating off-street paths for safe and efficient multimodal travel. Specific intersections as well as key vehicular corridors were identified for vehicle capacity enhancements.

The costs of the projects are estimated in current year dollars based on the Florida Department of Transportation (FDOT) Construction Costs for applicable facility types and adjustments were made based on more recent actual costs for construction projects in Green Cove Springs.

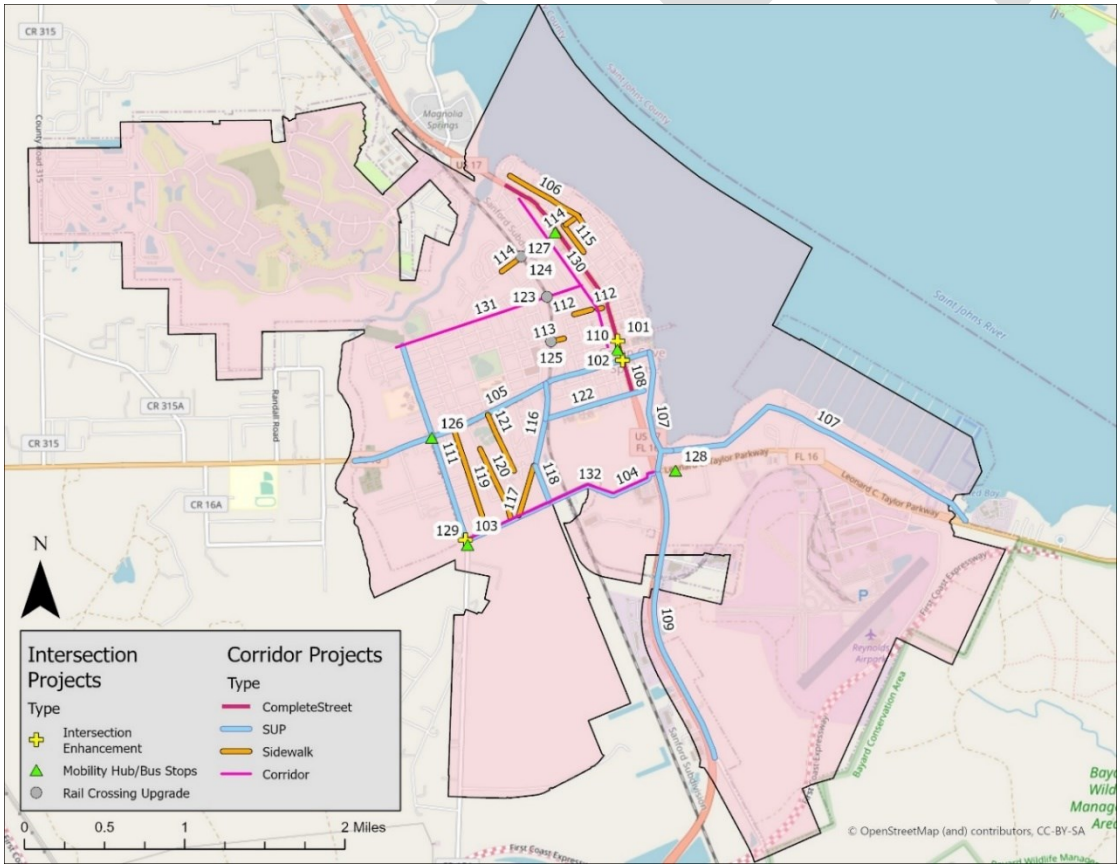


Figure 2: Identified Mobility Projects

Calculation of the Base Mobility Fee as a Cost per unit of Demand

The total cost of the mobility fee projects is divided by the total change in daily PMT within Green Cove Springs. The basis of a dollar cost per person capacity is then assessed based on the amount of travel demand generated by any specific land use change. The fee is proportional to the transportation intensity of the land use.

Table 1: Cost per PMT

Total Cost of new Capacity	$16,529,280
Cost for External (EE) Share of Capacity	$2,293,001
Cost for Local Share of Capacity	$14,236,279
Local PMT (non-EE)	85,621
Cost per PMT	$166.27

Development of the Net Mobility Fee

The net mobility fee accounts for credits which offset the chance that someone pays twice for the same capacity being funded by the mobility fee. This occurs since the cost per PMT is calculated by dividing the cost over the total change in PMT by 2045 where some of that PMT is unrelated to land use changes in Green Cove Springs (e.g., external traffic).

The portion of the project cost attributed to these users requires funding by non-mobility fees such as revenue from the ad valorem property tax. A mobility fee payee requires credit to offset the amount of non-mobility fee revenue that the land use would generate that would go toward bridging that funding gap associated with external traffic.

1.2 Summary of the Data Collected and Used

In close coordination with the Green Cove Springs staff, several documents were reviewed, and a variety of data sources analyzed. The documents that were reviewed and analyzed for the study were:

- US Route 17 Corridor Study
- NFTPO Trails and Paths
- Downtown Master Plan
- Clay County Mobility Plan and Fee
- Inventory of sidewalks and bikeways
- Inventory of transit infrastructure and route coverage

The review and analysis ensured that all projects were properly identified, prioritized, and costed out for inclusion in the mobility fee calculation.

1.3 Basis for a Mobility Plan

The Comprehensive Plan and Downtown Master Plan for the City of Green Cove Springs have envisaged a local transportation system that provides travel options, choice of different travel modes, to develop an efficient, cost effective and adaptable system to address future land use and demographic changes. This study creates a Mobility Fee that provides a local funding mechanism to address the additional burden on the transportation system associated with the future residents, jobs, and visitors.

The City has traditionally managed the impacts of land use development through transportation concurrency. This system has limited the opportunities to provide multimodal and long-term solutions that address the burden of growth and realize the vision set out in the Comprehensive Plan.

A Mobility Fee provides an alternative to concurrency to assess the fair and proportional cost of additional transportation capacity on new land use development. The Florida Constitution grants local governments broad home rule authority to establish assessments and fees. Impact fees and mobility fees are examples of these home rule revenue sources. These fees are a type of land use regulation that local governments use to generate revenue to construct additional mobility capacity to meet the needs associated with increases in travel demand from new land use development.

The Mobility Fee will provide more predictable outcomes for both the City and the land use development applicants using a creating a consistent process connected to the trip generation and size of the land development.

The Mobility Fee will support the City by directing funds to improve multimodal transportation capacity through additional walking and biking facilities, vehicular intersection improvements, and transit mobility hubs.

This report provides the background to support the change from concurrency. It outlines the forecast amount of land use growth and development, the types of transportation investments, and the derivation of the base Mobility Fee.

A mobility fee system collects revenues from the land use changes which are expected to impact the transportation system and would benefit from the proposed suite of transportation capacity enhancements. This relationship between those who generate the need for the projects and need to benefit, is known as the "dual rational nexus". The costs of the projects have been equally shared among all growth in demand, which treats all land uses equally with those generating a higher degree of impact on the system paying a higher share and those with less impact paying less.

Mobility plans and the related fee remains consistent with impact fees in the design and management of, as set out in Florida Statute 163.31801 and Florida Statute 163.3180 Section (5)(i). Plans also need to consider the following tools and techniques for complying with Section (5)(f), which states:

1. Adoption of long-term strategies to facilitate development patterns that support multimodal solutions, including urban design, and appropriate land use mixes, including intensity and density.

2. Adoption of an area wide level of service not dependent on any single road segment function.
3. Exempting or discounting impacts of locally desired development, such as development in urban areas, redevelopment, job creation, and mixed use on the transportation system.
4. Assigning secondary priority to vehicle mobility and primary priority to ensuring a safe, comfortable, and attractive pedestrian environment, with convenient interconnection to transit.
5. Establishing multimodal level of service standards that rely primarily on nonvehicular modes of transportation where existing or planned community design will provide adequate level of mobility.
6. Reducing impact fees or local access fees to promote development within urban areas, multimodal transportation districts, and a balance of mixed-use development in certain areas or districts, or for affordable or workforce housing.

DRAFT

2.0 Land Use

2.1 Assessment Framework

The purpose of this review is to assess land use planning by the City of Green Cove Springs and to identify potential changes to improve support for adoption and implementation of a multi-mobility fee. Two Future Land Use Element reports were reviewed: the data and analysis report, which describes current conditions and local concerns, and the policy report, which establishes policies for the city's land development code (LDC).

As shown in Figure 3, the City of Green Cove Springs occupies 7.5 square miles of land in Clay County, Florida, about 35 miles south of downtown Jacksonville and 27 miles northwest of St. Augustine. US 17 and SR 16 provide major highway access to the City.

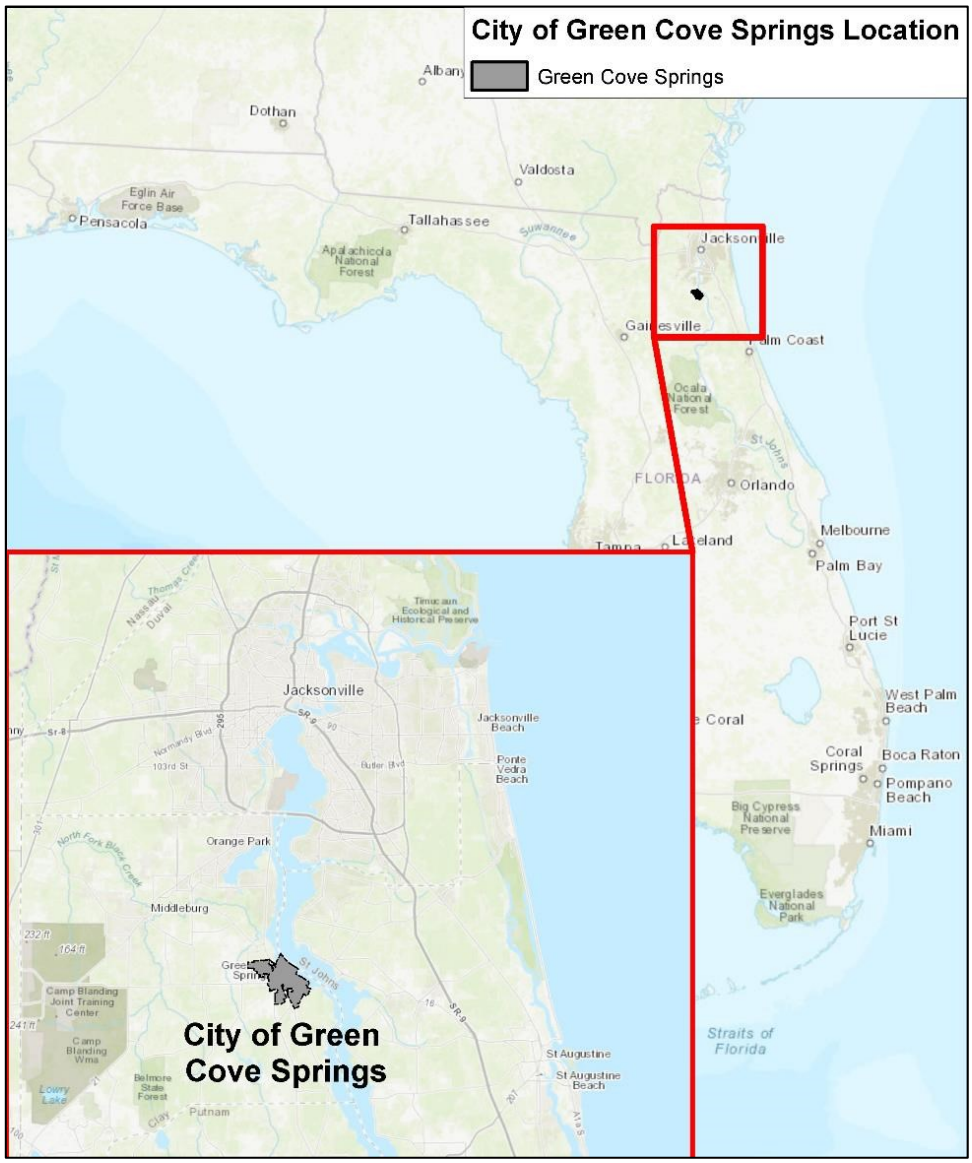


Figure 3: Location of the City of Green Cove Springs

Since its settlement in the early 1800s, the City has developed (or incorporated by annexation) four distinct areas:

1. Historic downtown and surrounding neighborhoods between Green Cove Avenue and Governors Creek. This central area comprises small lots organized by a gridded street network and occupied by varied community and economic uses. This area includes the Green Cove Springs historic district, which is listed on the National Register of Historic Places. This area is approximately 2.5 square miles.
2. Gustafson Farm and adjacent City property along South Oakridge Avenue. This area is approximately 1.1 square miles of agricultural land and woodlands and is largely undeveloped.
3. Reynolds (Industrial) Park, on the former Navy Yard site, and adjacent industrial development. This area is approximately 2.8 square miles. The area was redeveloped following the closure of the Navy Yard in 1961; portions are used for seafood processing, aviation technologies, railcar repair, pipe manufacturing and distribution, boat storage and manufacturing, and a private airport. A large portion is planned for mixed use redevelopment.
4. Magnolia Point. Magnolia Point is a 966-lot residential community, golf course and country club. Magnolia West is an adjoining 535-unit residential community. This area totals approximately 2.0 square miles and is fully developed.

The City's 2045 Comprehensive Plan was prepared in 2021. The plan acknowledges population growth from 6,908 in 2010 to 9,786 in 2020—an increase of 2,878—and anticipates additional community and economic development upon completion of the First Coast Expressway (SR 23), which will pass through the southern portion of Green Cove Springs. While a portion of the development increase may result from annexation of developed properties, new development and redevelopment are expected to generate increased demand on public infrastructure and services.

2.2 Recommendations

Land Use Element

Future Land Use Element: Data and Analysis Report

The data and analysis report presents information on current land use composition, projected population, related analysis of historic resources, natural resources, public facilities and services, including potential annexation areas, and community character. Key points of this research and analysis relevant to multi-mobility are listed below.

1. **Current Land Use Composition.** A significant portion of Green Cove Springs has not been intensively developed. (An exact acreage or percentage cannot be determined since the 2021 data and maps do not clearly reflect the annexation of the Gustafson Farm property in late 2021.) Prior activity on portions of the Gustafson Farm property, noted as 1,108 acres across two parcels, and the Reynolds (Industrial) Park, noted as more than 1,700 acres, has changed and more intensive redevelopment and transportation infrastructure has been envisioned.

2. **Projected Population.** The resident population is projected to increase from 9,786 in 2020 to 18,768 in 2045, an increase of 8,982 residents or 92 percent. This growth is expected as a result of planned development and potential annexations of existing nearby development:
   - Ayrshire, a planned residential community, is expected to develop up to 2,100 units, and house up to 5,153 residents, through 2040 on a portion of Gustafson's Farm property. The property was annexed by the City in 2021.
   - Redevelopment of the Reynolds (Industrial) Park has been outlined but no timeline has been established.
   - St. Johns Landing, a 392-unit multi-family apartment complex north of the City along US 17 housing 962 residents, is expected to be annexed by 2025.
3. **Community Character.** This section discusses land use in relation to location and access.
4. **Parking.** Current parking is perceived as inadequate for traditional downtown businesses and modern community and private events that draw people to downtown venues in large numbers.
5. **Gateway Corridors.** Suburban development patterns that cater to motorized access and visibility, particularly along US 17 and SR 16, were viewed as a threat to community character.
6. **Reynolds Park.** Redevelopment of Reynolds Park is envisioned to include multi-modal connection(s) to downtown.
7. **Waterfront access.** While there are approximately four miles of waterfront in the City, few locations allow public access. There is interest in connecting existing public access points via trails.
8. **Future Land Use.** Six Future Land Use Categories are characterized and mapped. Four of these promote a combination of residential, employment, and leisure/entertainment uses, which could be developed in walkable, bikeable, or transit served patterns.

Future Land Use Element: Policy Report

This portion of the review focuses on the policies of the Future Land Use Element of the 2045 Comprehensive Plan that support, hinder, or may have opportunity to enhance multi-mobility.

OBJECTIVE 1.1. Future Land Use Map

New development and redevelopment activities shall be directed in appropriate areas of the City as depicted on the Future Land Use Map (FLUM).
Policy 1.1.1. The following Future Land Use categories (FLUC), along with their intended uses, densities, and intensities, are established as follows (FAR only applies to non-residential uses):

a. Neighborhood (NBD):
b. Downtown (DT)
c. Mixed Use (MU)
d. Mixed-Use Reynolds Park (MURP)
e. Industrial (IND)
f. Public (PUB)

- This policy defines six broad future land use categories, four of which would allow for a combination of residential, employment, and leisure/entertainment uses. Such uses are regular origins and destinations for residents and could be interconnected and accessed by pedestrians, bicyclists, and transit riders where facilities are available. The Industrial and

Public categories do not include residential uses; however, workers, customers, and visitors may choose or rely on non-motorized modes to reach these destinations.

OBJECTIVE 1.2. Sustainability

The City shall strive to cultivate a sustainable land use pattern by preventing the proliferation of urban sprawl, ensuring the efficient provision of services, and implementing smart growth principles.

Policy 1.2.3. The City shall promote more compact and energy resource efficient residential development where the location and surrounding infrastructure supports multiple modes of transportation.

- This policy mentions "multiple modes of transportation" indicates that vehicular travel will not be the sole mode of transportation. No revision needed.

Policy 1.2.11. The City shall consider establishing a system of development incentives in the Land Development Code to encourage the provision of affordable housing, vertical mixed-use, green building and sustainable construction, dedication of public spaces (e.g., plaza, square) above and beyond what is already required, structure parking, pedestrian and bicycle facilities, transit amenities where transit service is provided, and other development features/treatments that would benefit the community.

- Regarding transportation options, this policy lacks a mention of pedestrian and bicycle facilities, which are both affordable and energy efficient means of travel with direct health and economic benefits to the individual traveler and broader transportation and environmental benefits to the traveling public at large. The addition of pedestrian, bicycle and transit facilities would strengthen this policy.

OBJECTIVE 1.3. Character & Compatibility

Future development and redevelopment projects shall protect the City's unique character, historic neighborhoods, and high quality of life.

Policy 1.3.2. The City shall establish locational criteria in the LDC for future rezoning of sites to higher density and/or intensity districts. The following principles shall be considered:

c. High density residential uses should generally be located in areas that have adequate multimodal access and proximity to service uses.

- Regarding transportation access, this policy only mentions vehicular access. High-density residential uses may include both market-rate housing and subsidized housing, which is targeted to low-income households. Pedestrian, bicycle and transit access is equally important for households looking for an urban lifestyle as well as households with limited economic means. A revision of "adequate vehicular access" to "multimodal access" would strengthen this policy.

Policy 1.3.3. As the City continues to grow, its LDC shall be updated to incorporate urban design principles, such as:

a. Form-based code regulations for the downtown and surrounding areas;

b. Smaller building setbacks and lot sizes;

c. Green infrastructure;

d. A reduction and relocation of vehicular parking spaces and areas to the rear or side of structures where appropriate, and

e. Multimodal facilities, i.e., pedestrian, bicycle and transit facilities and amenities, which include street trees, street furniture, bicycle racks, and bicycle repair stations, and transit shelters where transit service is provided.

- This policy fails to mention multimodal transportation options along its urban design principles. The addition of pedestrian, bicycle and transit facilities and amenities, such as street trees, street furniture, bicycle racks and repair stations, would strengthen this policy.

Policy 1.3.7. The City shall amend its LDC to provide additional design and compatibility requirements that address human scale and non-motorized multimodal access for developments located along major roadway corridors.

- This policy lacks definition of "design and compatibility requirements" though this may be understood locally. Specification of human-scale design to both structures and spaces would strengthen this policy in line with the city's desires to retain and promote its historic small city character.

Policy 1.3.9. The City shall seek to develop a signage and wayfinding master plan for motorists and non-motorized travelers to enhance the navigability, branding, and aesthetic character of the City.
Policy 1.3.10. The City shall work with FDOT and the North Florida TPO to improve the image of the US 17 and SR 16 corridors by adding landscaping, banners, and other elements that would help create a sense of place and portray the historic character and human-scale of the city for visitors.

- These two policies fall short by not defining the audience for signage and wayfinding (Policy 1.3.9) and community image along the US 17 and SR 16 corridors (Policy 1.3.10). The reader and implementor of Policy 1.3.9 may presume that motorists are the intended audience and large-scale signage readable at long distances could result. Adding "for motorists and non-motorized travelers" to the end of the policy would direct the plan to address both audiences. For Policy 1.3.10, adding "and portray the historic character and human-scale of the city for visitors" would help to welcome non-motorized travelers.

OBJECTIVE 1.6. Redevelopment and Renewal: The City shall continue to redevelop and invest in blighted areas of the City.
Policy 1.6.2. The City shall develop a master plan for the Downtown to update the overall vision for the area and address the following topics at a minimum: Economic vitality, multimodal access/connectivity to other parts of the City, balanced land use composition, vehicular and bicycle parking, streetscape design, urban form, public gathering spaces, and the identification of a pilot project.

- This policy broadly mentions access/connectivity and parking as topics for the downtown master plan. These topics are too often viewed from the perspective of motorized

travelers. Revisions to "multimodal access/connectivity" and "vehicular and bicycle parking" would strengthen this policy.

Policy 1.6.3. The City will assess Walnut Street and identify changes to make it safer and more attractive for all travelers.

- This policy should specify a "for whom" audience. Safety and attractiveness may be concerns for motorists, for non-motorists, or for all travelers.

Policy 1.6.7. The City shall assess the current demand and availability of public and private parking spaces in the downtown area and plan for vehicular and bicycle adequate for future redevelopment activities.

- Like Policy 1.6.2., this policy could be strengthened by incorporating a reference to vehicular and bicycle parking, such as "assess the current demand and availability of public and private parking spaces in the downtown area and plan for vehicular and bicycle parking adequate for future development conditions.

Policy 1.6.8. The City shall develop a neighborhood plan that addresses land use and multimodal access for the Martin Luther King, Jr. Avenue corridor.

- This policy falls short in defining what the neighborhood plan should address, as Policy 1.6.2 above defines for the downtown. If pedestrian, bicycle, and/or transit concerns exist, these should be identified.

OBJECTIVE 1.7. MURP-Designated Lands: Understanding the scale, economic importance and redevelopment potential of the Reynolds Park property, the City shall establish a framework for the redevelopment of MURP lands into a livable and sustainable community.
Policy 1.7.1. The City shall seek to develop a Small Area Plan (SAP) for all MURP-designated lands to establish a clear development path that implements the following planning and design principles:

c. Cultivate a multi-modal transportation network which supports pedestrian, bicycle, and vehicular travel to achieve high levels of safety and security, connectivity, and comfort between adjacent and nearby uses, character areas, and other FLU designations.

- This policy calls for "a multi-modal transportation network" and identifies key factors, such as safety and connectivity. Security and comfort are additional factors that make a network convenient and useable.

Policy 1.7.6. Development within the MURP FLUC shall include a Multi-Purpose Trail (MPT) system and other non-motorized access to provide connectivity within the development and to surrounding areas. The MPT shall consist of an eight-foot-wide paved surface and, if located along a street, shall be setback a minimum of 15 feet from the outside travel lane. The non-motorized connections shall include sidewalks, bicycle trails/lanes, and pedestrian connections and are not required to meet the MPT width or setback criteria. The MPT system shall consist of five primary connections as show in in the diagram below:

a. State Road (SR) 16 and US 17 MPTs. Prior to the approval of the first rezoning for the MURP category, a 20-foot-wide strip of land contiguous to the northern or southern rights of way of SR 16 of SR 16 and the eastern edge of US 17 shall be dedicated to the City for the construction

of trails by the City.

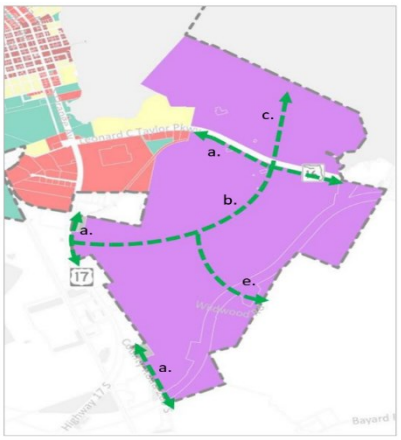
b. SR 16 to US 17 MPT. A MPT connecting SR 16 to US 17 (16/17 MPT) shall be built by the developer concurrent with the construction of the internal road system. The MPT shall be in lieu of a sidewalk on that portion of the internal road system along which it is located.

c. MPT to the Waterfront. A MPT or non-motorized connection shall be constructed by the developer between SR 16 and the waterfront concurrent with the provision of public Waterfront Access pursuant to Policy 1.7.7. The connection may be located adjacent to or within an internal road system right of way, within the Open Space System (OSS), or within a development character area.

d. County Road 209 MPT - Concurrent with the first development plan approval for a project that abuts County Road (CR) 209, a strip of land 20 feet in width and parallel to the easterly right of way of CR 209 shall be dedicated to the City for the purpose of the construction of a MPT by the City.

e. Access to lands south of the FCE and Bayard Conservation Area - If vehicular access is granted by FDOT to the parcels located southerly of the FCE, a MPT shall be constructed by the developer to connect the lands located north of the FCE to the southerly parcels. The required separation specified above between a MPT and the travel lane may be reduced within the limits of the right-of-way of the FCE and to provide transition approaching said right-of-way.

Primary Connections of a Multi-Purpose Trail System for Reynolds Park



a. MTPs along State Road (SR) 16 and US 17.
b. MPT connecting SR 16 to US 17 (16/17 MPT).
c. MPT to the Waterfront.
d. MPT along County Road 209 (not shown).
e. Access to lands south of the FCE and Bayard Conservation Area.

- The small graphic that accompanies this policy is not referenced, not titled, and not clearly labeled. A title such as "Primary Connections of a Multi-Purpose Trail System for Reynolds Park" is suggested. Labeling the dashed lines presenting the desired connections would improve clarity between the text and the graphic. These dashed lines and labels could also be added to the Future Transportation Map if trails are indeed considered an element of the City's multi-modal network.

Transportation Element

GCS Mobility Plan – Comprehensive Plan, Transportation Element Update

- Objective 2.1. Multi-Modal System

Policy 2.1.1. The City shall institute a program of protection and acquisition of right-of-way for the major roadway network, to ensure continuity of the system and the protection of existing and future roadway network from development or encroachments, while being cognizant of protecting private property rights. Right-of-way acquisitions needed for road improvements shall be kept to a minimum.

Policy 2.1.2. The City shall enhance the feasibility of transit and multimodal transportation by implementing higher densities and mixed-use as shown in the Future Land Use Map.

Policy 2.1.3. New and improved streets within the City shall be designed and operated to enable safe access for all users, including pedestrians, bicyclists, freight, motorists and transit, and other transportation options.

Policy 2.1.4. The City shall establish a Complete Streets design guidebook and corridor prioritization plan to implement these policies.

Policy 2.1.5. The City shall continue to coordinate with the North Florida Transportation Planning Organization (TPO), FDOT and Clay County to implement projects supporting multi-modal transportation options in accordance with the Complete Streets guidebook.

Policy 2.1.6. The City shall initiate coordination with the TPO, FDOT and Clay County to implement Complete Streets concepts along SR 16/Idlewild Avenue/Ferris Street. Other streets that should be considered for Complete Street designs include Oakridge Ave., Green Cove Ave, Palmetto Ave., and other local collectors.

Policy 2.1.9. Minimum right-of-way width standards shall be maintained in the land development code (LDC) for future new segments of the roadway network:

Policy 2.1.10. The City shall consider the following speed and multi-modal safety management strategies when designing or approving new roadways or modifying existing roads in the City:

a. *Enclosure*: Framing the road with street trees, buildings, on-street parking.
b. *Engagement*: Connecting the driver with the surrounding environment using tools such as on-
   street parking, narrower lanes, architectural details, and pedestrian or bicyclist activity.
c. *Deflection*: Creating vertical or horizontal shifts incorporating round-abouts, splitter medians, raised intersections, raised and or mid-block crosswalks, or similar designs.

Policy 2.1.11. Roadway improvement projects shall be evaluated, ranked, and added to the Five-Year Schedule of Capital Improvements based on the criteria established in Policy 8.1.3 in the Capital Improvements Element where applicable.

- Objective 2.2. Safe and Convenient

Policy 2.2.1. The City shall strive to reduce the number of traffic crashes and eliminate fatalities and serious injuries (FDOT's Vision Zero).

Policy 2.2.2. Intersections shall improve safety and ease of multimodal use by limiting the pedestrian crossing width; use of adequate lighting; adequate timing for traffic signals; and the provision of facilities for persons with disabilities.

Policy 2.2.3. Traffic operation improvements such as traffic signals, turn lanes, service roads, signing, and pavement marking shall be undertaken when warranted to improve the safety and efficiency of the existing roadway network for all transportation modes.

Policy 2.2.4. Where applicable, the City shall consider traffic signal enhancements such as Lead Pedestrian Interval (LPI), Rectangular Rapid Flashing Beacons (RRFB), and pedestrian hybrid signals such as a High-Intensity Activated Crosswalk beacon (HAWK) signals.
Policy 2.2.5. Crash records shall be investigated on a regular basis to determine whether improvements to the roadway network are warranted to relieve high crash conditions and cooperate with the FDOT on high crash locations on state highways.
Policy 2.2.6. The LDC shall require that all new roadways and access driveways intersecting with existing roadways shall provide a clear zone where no objects will impair the sight of multi-modal transportation at said intersections.
Policy 2.2.7. The City shall continue to pave, maintain, and resurface its roads to ensure safe conditions for multi-modal options including bicycles. The paving of unpaved streets shall be done according to priority of need. Complete Streets designs shall be considered as part of repaving and resurfacing projects, where feasible.

- Objective 2.3. System Performance

Policy 2.3.1. The City shall rely on level of service (LOS) standards adopted in the Capital Improvements Element to ensure that acceptable multimodal traffic conditions are maintained.
Policy 2.3.2. Using information from FDOT and Clay County, the City shall monitor the multimodal travel demand and Q/LOS conditions for the transportation system. The current Florida DOT Q/LOS Handbook shall be used to develop a baseline and monitor conditions over time. The multimodal system of performance will inform future investment priorities within the Mobility Fee program.
Policy 2.3.3. The City shall coordinate with FDOT and the North Florida TPO to utilize Intelligent
Transportation Systems (ITS) tools and strategies to improve mobility.
Policy 2.3.4. The LDC shall establish a connectivity index standard (number of street links divided by the number of nodes or link ends) for residential developments.
Policy 2.3.6. The City shall encourage local traffic to use alternate routes to alleviate traffic along the major thoroughfares.
Policy 2.3.7. The City shall continue to coordinate with the North Florida TPO and FDOT on a traffic flow management system (signal synchronization) for all signalization along US 17 and SR 16.
Policy 2.3.8. The City shall prioritize mobility projects that encourage people to walk, bicycle, use new mobility technology and ride public transit in lieu of adding capacity to roadways.

- Objective 2.4. Pedestrian and Bicycle System Safety

Policy 2.4.1. The City's LDC shall contain standards for the construction of multi-modal transportation facilities.
Policy 2.4.2. The LDC shall require the development of multi-use trails, where appropriate.
Policy 2.4.3. The City shall review development for consistency with the standards in the LDC to assure that adequate provisions exist for multi-modal transportation options, including pedestrians and bicycles.

Policy 2.4.4. The City shall coordinate with Clay County and the FDOT to incorporate pedestrian walkways and bicycle paths, or multi-use trails, in conjunction with road improvements.
Policy 2.4.5. The City shall continue to enforce all applicable bicycling laws. The City shall update the Green Cove Springs Trails Master Plan to address both sidewalks and trails, identify sidewalk gaps along major roadways, and establish main routes through the City, especially leading to the waterfront.
Policy 2.4.6. The Master Plan shall inventory existing crosswalks at signalized intersections and shall identify recommended locations for multi-modal transportation crossings and additional pedestrian crossings.
Policy 2.4.7. The City shall seek funds and grant opportunities and private/public partnerships to further the implementation of the Trails Master Plan.

- Objective 2.5. Development Design

Policy 2.5.1. A program shall be instituted in connection with development approvals for the dedication, preservation, or other protection of right-of-way for the existing and future major roadway network as defined in the Functional Classification Map.
Policy 2.5.2. The City shall maintain in the LDC minimum standards for the design and construction of transportation facilities.
Policy 2.5.3. The City shall review development applications to confirm the types and mix of uses and the resulting number of trip ends produced by the land use change. The latest version of Trip Generation Manual published by the Institute of Transportation Engineers (ITE) shall be used to determine the number of trips that the proposed development will produce or attract.
Policy 2.5.4. A Mobility Fee is assessed on the net additional new trips produced by the land use development. The Mobility Fee will be used to fund the necessary multimodal infrastructure improvements to accommodate future land use development based on the land use forecasts available at the time that the Mobility Fee was instituted.
Policy 2.5.5. In partnership with FDOT and Clay County requirements, the LDC shall require future developments to provide true multi-modal transit connectivity (as opposed to just "entrances" to the developments), internally and to surrounding areas, to provide multiple alternative access/exit points to/from the development.
Policy 2.5.6. The LDC shall require developments that locate on a principal or minor arterial to:

a. Provide adequate and safe entrance intersection(s) including turn lanes, acceleration/deceleration lanes, signalization, signage, and pavement marking as appropriate; and

b. Prevent the creation of hazardous traffic conditions, such as excessive curb cuts which may interfere with the function of the roadway.

Policy 2.5.7. The City shall require new subdivisions to provide "stub-outs" to adjoining undeveloped lands to promote road connectivity, and to connect to existing roadways that are "stubbed-out" at their boundaries.

Policy 2.5.8. The LDC shall require new developments to share access with existing development wherever physically possible, consistent with FDOT access management policies.
Policy 2.5.9. The LDC shall contain provisions for on- site parking for motorized and non-motorized vehicles, internal automobile circulation, circulation of motorized and non-motorized vehicles, bicycle use, golf carts, pedestrian movement, multi-use trails, and other features to minimize utilization of the major roadway network and provide facilities for multiple transportation options.

- Objective 2.6. Coordination with Other Entities

Policy 2.6.1. The City shall coordinate roadway improvements with Clay County and the Florida Department of Transportation to ensure effective application of available revenue.
Policy 2.6.2. The City shall review the traffic circulation plan and programs of Clay County, as they are amended in the future, for compatibility with this element.
Policy 2.6.3. The City shall attend workshops and periodic meetings with FDOT to coordinate with the Florida Department of Transportation Five-Year Transportation Plan.
Policy 2.6.4. The City shall provide Clay County information received in review of traffic studies performed within the City and shall request that Clay County provide the City with information obtained in their major traffic studies.
Policy 2.6.5. The City shall participate on the committees of the North Florida TPO.
Policy 2.6.6. The City shall work with the North Florida TPO, Clay County, and other applicable agencies to expand public transportation to residents of Green Cove Springs.
Policy 2.6.7. The City shall consider working with FDOT and CSX Railroad for the establishment of a "Quiet Zone" in Green Cove Springs.
Policy 2.6.8. The City shall work with North Florida TPO, Clay County, and the FDOT to promote light rail for residents of Green Cove Springs.

Capital Improvement Element

- Objective 8.3. Level of Service (LOS) Standards

Policy 8.3.1. The City shall require that public facilities meet or exceed the following Level of Service Standards.
[note: The table should be revised to remove the ROADS LOS Standards. The change to the Mobility Fee system eliminates the LOS criteria that defines concurrency. The Policy can remain intact given the reference to additional public facilities other than roads.]
Policy 8.3.2. The City shall annually review the adopted Level of Service Standards to determine their adequacy to meet public needs and to determine cost feasibility and budget implications.

3.0 Travel Demand

The NERPM is an activity-based model that allows for a detailed analysis of travel patterns. The model estimates pedestrian, bicycle, transit, and vehicular trips by a geographical area referred to as a traffic analysis zone (TAZ). The socioeconomic data is developed at a smaller geographically area, a subset of the TAZ, referred to as a micro analysis zone (MAZ). The model uses MAZs as well as TAZs to develop the land use data. The type of data used in the NERPM are number of households, population, school enrollment, and number of employees. Based on the American Community Survey (ASC) and the household surveys, the model also uses data associated with household characteristics such as income, number of workers, automobile availability, etc.

3.1 Overview

The socioeconomic data was summarized and reviewed within the municipality of the City of Green Cove Springs. Minor changes were made to the placement of households and employment in the year 2045 database, based on more recent information.

Across the City of Green Cove Springs, a significant amount of new growth and land use development is forecast. Over 6,700 new homes and 7,900 new jobs are expected by 2045. The City of Green Cove Springs is growing faster than the region as a whole, which expects to increase households and jobs by 68%.

Table 2 shows the city-wide changes in households and employment over the study period.

Table 2: Green Cove Springs Population and Employment Growth

Data	2015	2045	% Change
Households	2,688	9,424	251%
Employment	5,965	13,904	133%

Source: NERPM-AB_v2

Other important input variables to the NERPM are the different networks. The NERPM has transit and highway networks for the years 2015 and 2045. These networks simulate the transit service and the roadway system that was in place in 2015 and that is expected to be in place by the year 2045. The 2045 network is developed as part of the LRTP process and is referred to as the adopted Year 2045 Cost Feasible network.

Both the base year network and the future year network were reviewed to ensure that loadings points were correctly placed and that the roadway system was reflected with enough detail. The year 2045 network was updated to better reflect the travel patterns expected in 2045.

Accurately reflecting the networks and socioeconomic data is important to obtain the correct travel patterns within City of Green Cove Springs. Using the NERPM provides the clear connection, or nexus, for imposing mobility fees. Comprehensive use of the NERPM enables a stronger nexus between land use changes within City of Green Cove Springs and the necessary transportation infrastructure enabling mobility in the region.

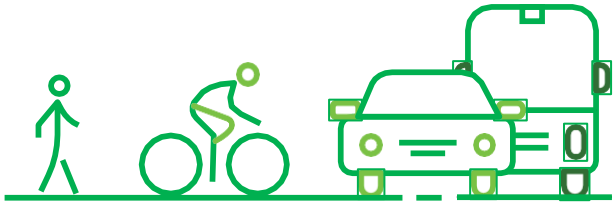
The Mobility Fee is designated for the entire city. The size of Green Cove Springs is appropriate for a single zone, meaning that the same mobility fee is charged throughout the City.

3.2 VMT and PMT

The length and the number of trips traveled within a mobility fee district is an important part of the Mobility Fee calculation. The NERPM allows for the tracing of all the trips on each of the network links. As such, every TAZ was identified within Green Cove Springs as was every link within the network. Tracing all the trips by origin and destination, allowed for the calculation of the trip length and the miles traveled associated with the land uses in the City.

As stated earlier, the model provides information regarding the VMT and the PMT. VMT are strictly associated with the automobile trips. One vehicle trip can be one person trip, if only the driver is in the vehicle. If there are two persons in the vehicle, then they represent two person trips but still one vehicle trip.

For example: One 10 mile car trip has 2 people in it. This trip creates 20 PMT and 10 VMT.



Person Miles Traveled (PMT)

Vehicle Miles Traveled (VMT)

The City of Green Cove Springs multimodal mobility fee study includes all modes of transportation and for that reason, it uses the PMT rather than the VMT. The relationship between the two is shown in

Table 3 and used in the mobility fee calculation. Since PMT accounts for the occupancy of any vehicle and the number of active modal trips (walking and biking), PMT is higher than the VMT produced by the same analysis.

Table 3 shows the amount of VMT and PMT generated in the 2015 base year and the 2045 future year.

Table 3: Green Cove Springs VMT and PMT Relationship

Miles Traveled Distribution	Green Cove Springs
2015 VMT	139,582
2045 VMT	366,661
Difference VMT	**227,079**
2015 PMT	192,845

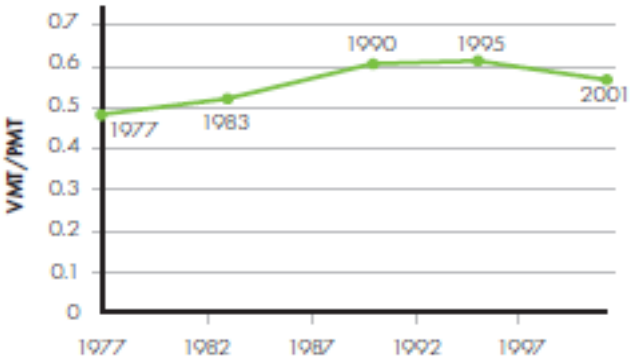
2045 PMT	482,551
Difference PMT	**289,705**

PMT is a standard measure of mobility that combines both the number and length of trips and is mode neutral. Because PMT accounts for all mobility regardless of mode it provides an assessment of the level of multimodal demand generated by the land use growth. Mobility fees are designed to fund a diverse set of travel options to provide users options as well as provide funding for high-capacity efficient modes such as walking, biking, and transit.

PMT is an available output from the NERPM by combining the estimates related to the occupancy of the vehicles on the network, the number of transit trips, and the number of walking and biking trips. The travel model is sensitive to the density, diversity, and accessibility so that areas more conducive to walking and biking will realize a higher active mode share.

Citywide in 2045 the amount of PMT to VMT is 1.32. This factor will be used in the mobility fee to convert the VMT generated by any land use to PMT. This VMT to PMT includes all the City and State roads within Green Cove Springs.

The Center for Urban Transportation Research, University of South Florida (CUTR) analyzed historical National Household Travel Survey data to show the relationship of VMT to PMT over time[1]. The Green Cove Springs data suggests that there is a closer relationship, with a VMT to PMT factor of 0.76. Likely due to the high single vehicle mode share related to the density and size of the City. The CUTR analysis is visualized in Figure 4.



Source: CUTR Florida

Figure 4: Historical National VMT/PMT Relationship

3.3 Network Performance

In simulating the highway network in the NERPM, each roadway is represented by a link. Several characteristics are associated with each of the links, such as the type of roadway facility, number of lanes, and the area type the link is located in. The combination of these characteristics allows for the calculation of the speed and capacity of the roadway. The trips generated by the

[1] https://www.cutr.usf.edu/oldpubs/The%20Case%20for%20Moderate%20Growth%20in%20VMT-%202006%20Final.pdf

socioeconomic data in the model, are assigned to the network. Once the trips are assigned, the model is run until an equilibrium in the assignment is reached. The volume on the assigned network together with the capacity provides information related to the volume capacity ratio on each link. This ratio allows to determine the amount of congestion on the roadway. When the capacity is equal to the volume, the volume capacity ratio is one (1), which in real life would result in standstill. In a travel demand model, such as the NERPM we are estimating the demand of the land use and the model allows for an "over-assignment" which shows the total need of the travelers.

The NERPM was run for the year 2015 and for the year 2045 to analyze the increase in congestion. The plots in Figure 5 and Figure 6 show the level of congestion in the year 2015 and the year 2045 networks. In comparing the volume capacity plots the amount of congestion increases significantly in 2045. The orange links are nearing capacity, while the red, magenta, and black links are functioning over capacity. The future plots include the new facilities that will be constructed bythe 2045.

3.4 Travel Characteristics

The NERPM is a sophisticated tool that can be used to evaluate the travel characteristics of trips in City of Green Cove Springs. Analyzing the trip patterns on the different roadways within the City of Green Cove Springs informs us about the degree to which the land use changes within the mobility fee districts affect the capacity and operations of the transportation network.

Trip Lengths

Based on the socioeconomic data in the model, trips are made from an origin to a destination. For example, a typical trip in the model is a trip that starts at the home and goes to work, referred to as a home-based work trip. The model has a variety of different trip purposes that it assigns to the networks. There are eleven trip purposes in the NERPM, other examples of trip purposes are home-based shop, home-based school, etc.

A trip starts in a particular TAZ and ends in a specific TAZ. The model keeps track of all the starting and ending points of all the trips that take place during an average day.

For this study, all TAZs within the City were identified to ensure that only the trips that use the City of Green Cove Springs portion of the networks are included in the fee calculation. Trips are analyzed in three categories:

- Start and end within the City of Green Cove Springs - Internal- Internal [II] trips
- Start or end inside the City of Green Cove Springs - External-Internal [EI] or Internal-External [IE] trips
- Drive through the City of Green Cove Springs without stopping – External-External [EE] trips

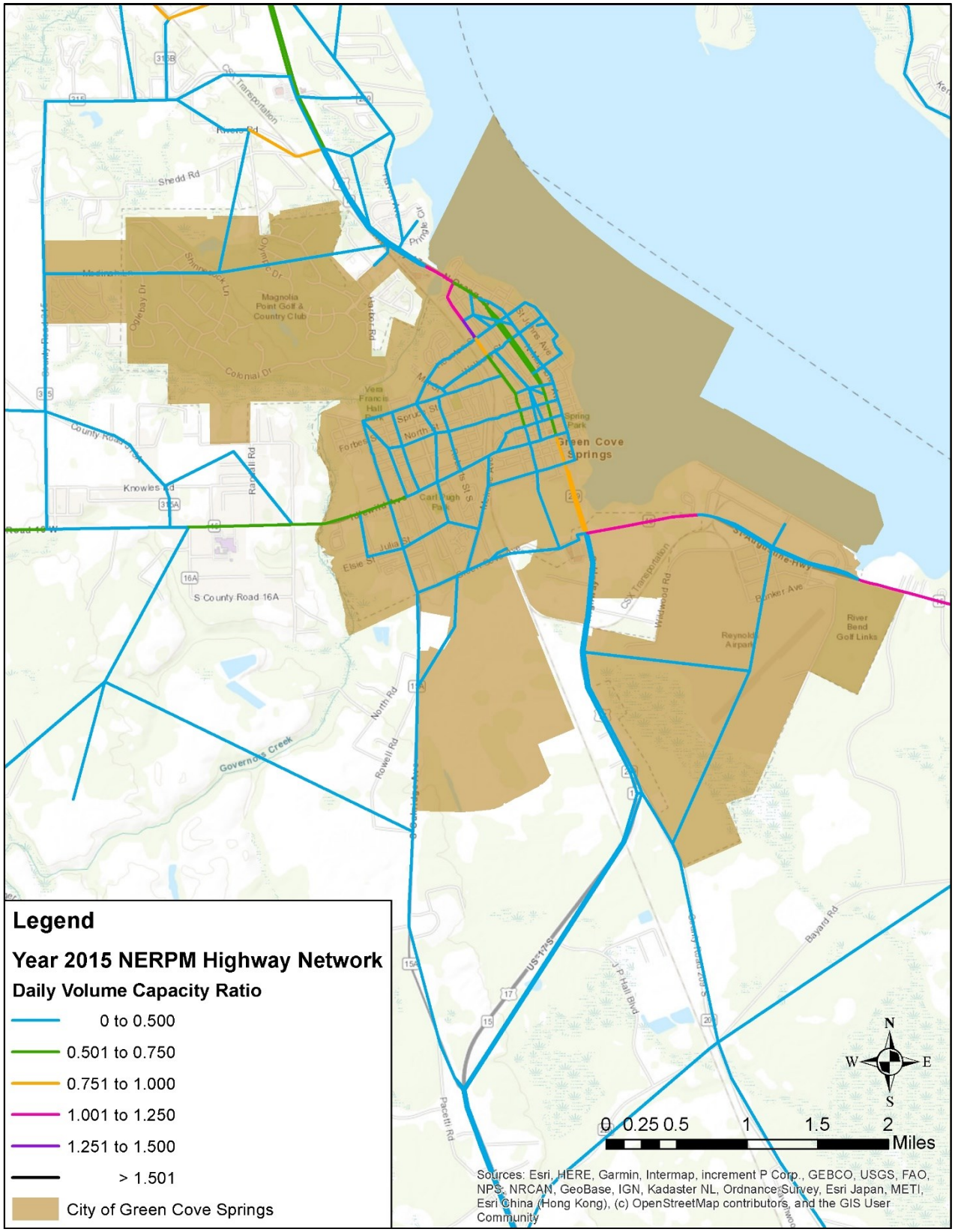


Figure 5: Year 2015 Green Cove Springs Roadway Volume Capacity Plot

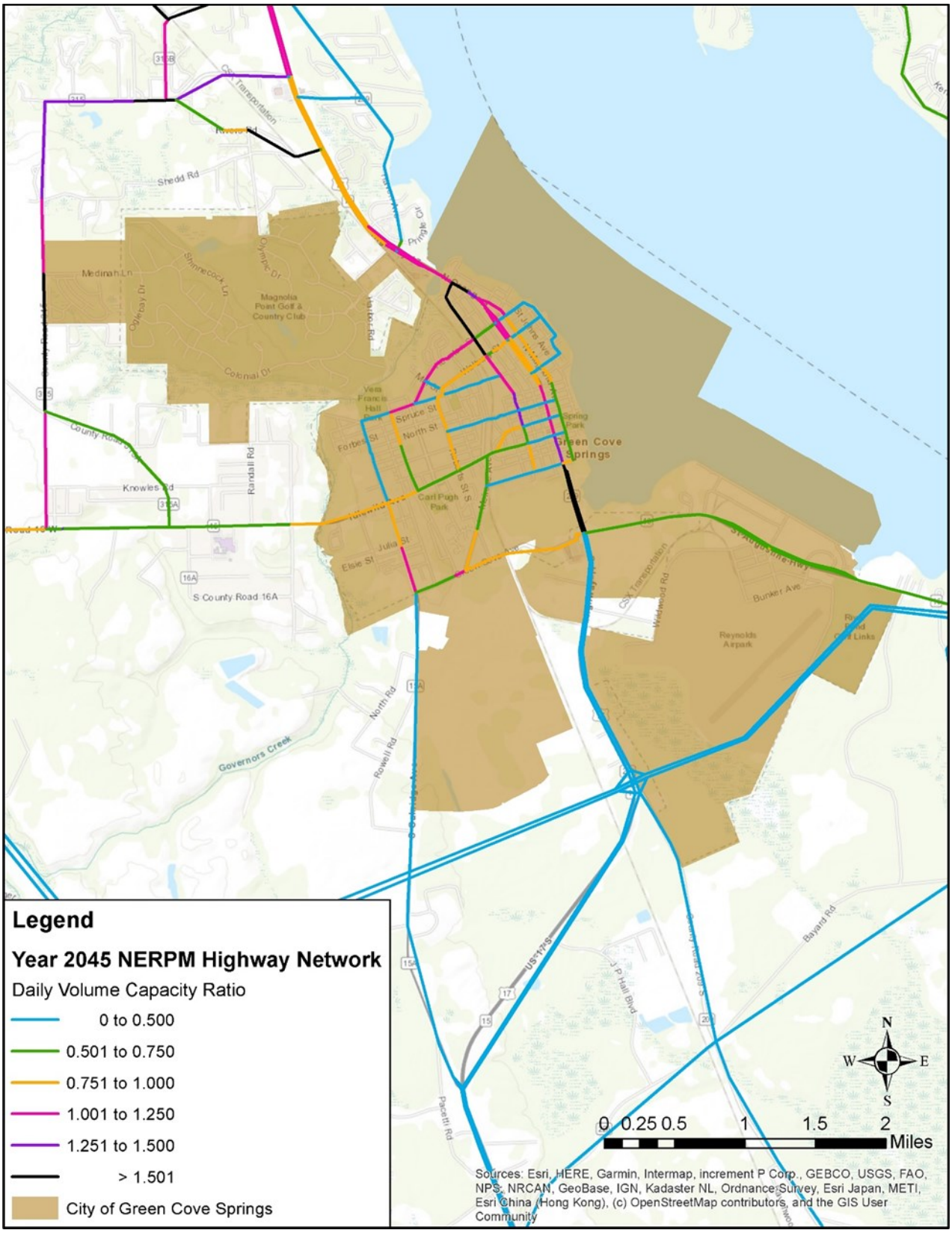


Figure 6: Year 2045 Green Cove Springs Roadway Volume Capacity Plot

This is an important concept because we cannot assess the mobility fee to trips that drive through Green Cove Springs in the calculations. After all, if the trip does not stop in Green Cove Springs, then it is not linked to the land uses in the City.

The model tracks which TAZs and roadway links that are within which city. This allows for keeping track of the origin and destination of the trip, but also of the path the trip travels on. Using this set-up allows for the calculation of the vehicle and person miles traveled by the trips that either originate or have a destination within the City.

The trip lengths used in the Mobility Fee are generally short, given the small physical size of the City itself. Only the length of the trip that occurs within the City is subject to the Mobility Fee. The trip length of 2.29 miles, as shown in Table 4 per average trip is used in the calculation of the base Mobility Fee. Table 5 shows the analysis results for person trip lengths by trip purpose that were collected as part of the 2017 Household Travel Survey conducted by the North Florida TPO[2] . This data included observations from 550,389 households across the TPO region.

Table 4: Person Trip Length in Green Cove Springs

Mobility Fee Area	Average Person Trip Length (miles)
Green Cove Springs	2.29

Source: NERPM-AB_v2

Table 5: Household Travel Survey Trip Lengths (2017 NFTPO)

Destination Purpose	Person Trips by Any Mode	
	Trip Count (n)	Mean Trip Length (Miles)
Activity at home	8,769	9.62
Work/work-related	3,782	18.7
Attending my school/class	1,047	7.19
Shopping/errands/appointments	4.319	7.18
Eat at restaurant/bar/get take-out	1,664	7.07
Recreation/entertainment	2,019	12.76

Source: NFTPO Travel Survey data

The second source of data comparison was the 2017 National Household Travel Survey Data. The vehicle trip length was compared with the NERPM results (which are longer than person trips because walking and biking trips are often shorter than vehicle trips). This survey was conducted throughout the nation and provides a national average as another benchmark against the data

[2] http://northfloridatpo.com/images/uploads/NorthFloridaHTS_FinalReport_07122018.pdf

used. Table 6 lists the results of the National HTS trip lengths by trip purposes.

Table 6: 2017 National HTS Trip Lengths by Trip Purpose

Trip Purpose Summary	Vehicle Trip Length	
	Sample Size	Mean Trip Length (miles)
Home	205,743	9.93
Work	92,392	11.98
School/Daycare/Religious activity	16,288	9.11
Medical/Dental services	11,568	10.14
Shopping/Errands	134,048	7.08
Social/Recreational	52,877	12.6
Transport someone	44,991	7.25
Meals	43,347	7.49
Something else	10,045	11.95
All	**611,299**	**9.55**

Source: Tabulation created on the NHTS website at https://nhts.ornl.gov

Double Counting Factor

The double counting factor accounts for the differences between PMT that remains internal to the City and PMT that has only one end of the trip within the City. The City of Green Cove Springs naturally lends itself to few trips that have both ends of the trip within the city limits, even in the future with the significant expected increase in land use intensity.

The travel demand modeling for the City indicates that approximately 24% of the PMT is associated with trips that have both an origin and a destination in Green Cove Springs. The double counting factor is derived to discount the fee to account for the chance that a Mobility Fee is assessed on the land uses for each end of this trip. Simply put, only half of the internal-to-internal PMT will be assessed.

All other PMT associated with land use in the City, as it has the other end of the trip somewhere outside of Green Cove Springs will be assessed for the length of the trip within the City boundary. The double counting factor is a weighted factor based on the amount of PMT that remains internal versus the share that is associated with trips outside of the City. The final double counting factor is then 88% which is (100%-(24%/2) = 88%).

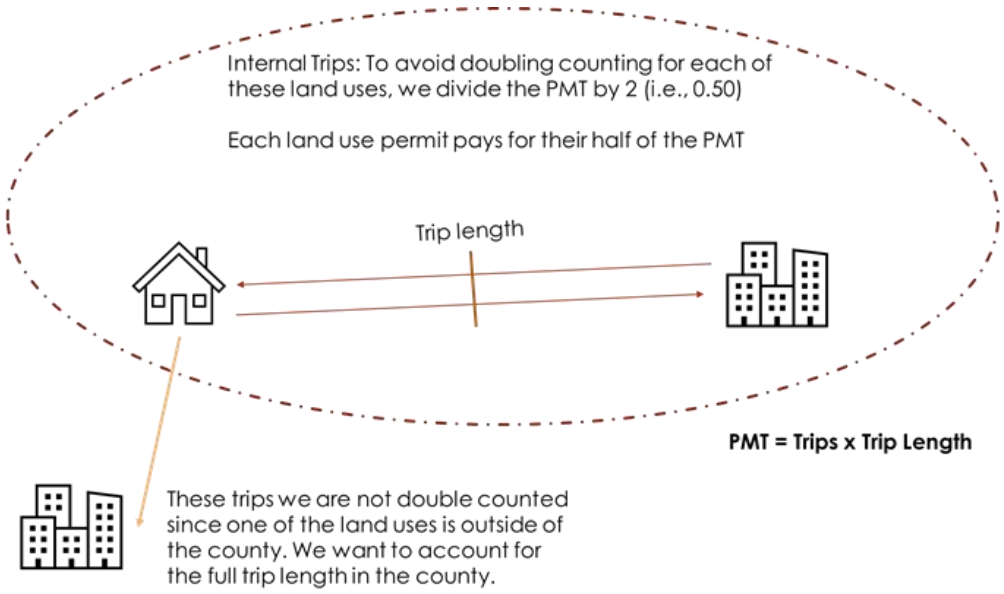


Figure 7: Double Counting Factor

Trip Rates

The daily trips rates for the land uses of interest to the City of Green Cove Springs are included in Table 7. The residential land uses for single family detached dwelling units uses an adjusted trip rate based on national and Florida specific income and size characteristics. See Appendix B for more information.

These trip rates are provided on a daily basis to correspond to the network analysis that uses a daily demand and capacity. These rates are derived from the 11th edition of Trip Generation by the Institute of Transportation Engineers (ITE) and are intended to represent vehicle trips.

Pass-by percentages by percentages apply to some land use categories to account for the portion of trips which are already on the network. Instead of being new trips added to the system, these are existing users who are expected to utilize the site but do not require additional capacity to the system. For example, a gasoline service station is estimated to have a 55% pass-by rate. Out of the 265 daily vehicle trips per fueling pump, 120 of those are new to the network.

It is expected that the City will update the land uses and the trip generation rates as new information becomes available.

Table 7: ITE Trip Generation Rates (Daily by Land Use)

Land Use Code	Land Use Categories	Land Use Categories	Unit of Measure	Daily Vehicle Trips/ Unit [B]	[pass-by]	New Trips [D]	New Daily trips/ unit	Avg. Trip Length [C]	Double Counting Factor [E]	PMT Factor	Total Eligible PMT	Base Impact Fee per Unit
220	*Residential*	Multiple Family (low rise)	dwelling	6.74	0%	100%	6.74	2.29	0.88	1.32	17.93	$ 2,981
221	*Residential*	Multiple Family (mid-rise)	dwelling	4.54	0%	100%	4.54	2.29	0.88	1.32	12.08	$ 2,008
251	*Residential*	Senior Adult Housing - detached and independent	dwelling/bed	4.31	0%	100%	4.31	2.29	0.88	1.32	11.46	$ 1,906
253	*Residential*	Assisted Living/Congregate Care Facility	dwelling	2.21	0%	100%	2.21	2.29	0.88	1.32	5.88	$ 977
210.1	*Residential*	Single Family (less than 1,500 sqft) & Very Low Income	dwelling	2.94	0%	100%	2.94	2.29	0.88	1.32	7.82	$ 1,300
210.2	*Residential*	Single Family (less than 1,500 sqft) & Low Income	dwelling	4.42	0%	100%	4.42	2.29	0.88	1.32	11.75	$ 1,953
210.3	*Residential*	Single Family (less than 1,500 sqft)	dwelling	6.66	0%	100%	6.66	2.29	0.88	1.32	17.72	$ 2,946
210	*Residential*	Single Family (1,500 sqft to 2,499 sqft)	dwelling	8.35	0%	100%	8.35	2.29	0.88	1.32	22.21	$ 3,693
210.4	*Residential*	Single Family (> 2,499 sqft)	dwelling	9.43	0%	100%	9.43	2.29	0.88	1.32	25.08	$ 4,171
240	*Residential*	Mobile Home	dwelling	7.12	0%	100%	7.12	2.29	0.88	1.32	18.94	$ 3,149
255	*Residential*	Continuing Care Retirement Community	occupied units	2.47	0%	100%	2.47	2.29	0.88	1.32	6.57	$ 1,092
260	*Residential*	Recreational Home/Vehicle	dwelling	3.55	0%	100%	3.55	2.29	0.88	1.32	9.44	$ 1,570
110	*Industrial*	Light Industry (110)	ksq ft of GFA	4.87	0%	100%	4.87	2.29	0.88	1.32	12.95	$ 2,154
150	*Industrial*	Warehouse	ksq ft of GFA	1.71	0%	100%	1.71	2.29	0.88	1.32	4.55	$ 756
151	*Industrial*	Mini-Warehouse	ksq ft of GFA	1.45	0%	100%	1.45	2.29	0.88	1.32	3.86	$ 641
140	*Industrial*	Manufacturing	ksq ft of GFA	4.75	0%	100%	4.75	2.29	0.88	1.32	12.64	$ 2,101
911	*Commercial – Services*	Bank - walk in bank	ksq ft of GFA	101.08	20%	80%	80.87	2.29	0.88	1.32	215.11	$ 35,767
565	*Commercial – Services*	Day Care	ksq ft of GFA	47.62	0%	100%	47.62	2.29	0.88	1.32	126.67	$ 21,062
492	*Commercial – Services*	Health Club / Fitness	ksq ft of GFA	1.31	0%	100%	1.31	2.29	0.88	1.32	3.48	$ 579
310	*Commercial – Services*	Hotel	rooms	7.99	0%	100%	7.99	2.29	0.88	1.32	21.25	$ 3,534
320	*Commercial – Services*	Motel	rooms	3.35	0%	100%	3.35	2.29	0.88	1.32	8.91	$ 1,482
312	*Commercial – Services*	Business Hotel	rooms	4.02	0%	100%	4.02	2.29	0.88	1.32	10.69	$ 1,778
945.1	*Commercial – Services*	Service Station (2-4k sq ft)/ Gasoline Sales with Convenience Market	veh fuel pos	265.12	55%	45%	119.30	2.29	0.88	1.32	317.36	$ 52,767
945.2	*Commercial – Services*	Service Station (5.5k-10k sq ft)/ Gasoline Sales with Convenience Market	veh fuel pos	345.75	55%	45%	155.59	2.29	0.88	1.32	413.87	$ 68,815
947	*Commercial – Services*	Carwash (self wash)	wash stall	108.00	65%	35%	37.80	2.29	0.88	1.32	100.55	$ 16,719
948	*Commercial – Services*	Carwash (automated wash)	wash stall	77.50	65%	35%	27.13	2.29	0.88	1.32	72.15	$ 11,997
445	*Commercial – Services*	Movie Theater/Event Hall	ksq ft of GFA	78.09	0%	100%	78.09	2.29	0.88	1.32	207.72	$ 34,538
420	*Commercial – Retail*	Marina	berth	2.41	0%	100%	2.41	2.29	0.88	1.32	6.41	$ 1,066
850	*Commercial – Retail*	Supermarket	ksq ft of GFA	93.84	36%	64%	60.06	2.29	0.88	1.32	159.76	$ 26,563
851	*Commercial – Retail*	Convenience Market (pass by mix of 851 & 853)	ksq ft of GFA	762.28	55%	45%	343.03	2.29	0.88	1.32	912.47	$ 151,717
815	*Commercial – Retail*	Free Standing Retail Store	ksq ft of GFA	53.87	26%	74%	39.86	2.29	0.88	1.32	106.04	$ 17,631
816	*Commercial – Retail*	Hardware / Paint Store	ksq ft of GFA	8.07	26%	74%	5.97	2.29	0.88	1.32	15.89	$ 2,641
817	*Commercial – Retail*	Nursery (Garden Center)	ksq ft of GFA	68.10	26%	74%	50.39	2.29	0.88	1.32	134.05	$ 22,289
818	*Commercial – Retail*	Nursery (Wholesale)	ksq ft of GFA	43.67	26%	74%	32.31	2.29	0.88	1.32	85.96	$ 14,292
880	*Commercial – Retail*	Pharmacy/Drugstore w/o Drive Thru	ksq ft of GFA	90.08	53%	47%	42.34	2.29	0.88	1.32	112.62	$ 18,726
881	*Commercial – Retail*	Pharmacy/Drugstore with Drive Thru	ksq ft of GFA	108.40	53%	47%	50.95	2.29	0.88	1.32	135.52	$ 22,534
820	*Commercial – Retail*	Shopping Center (>150k)	ksq ft of GFA	37.01	34%	66%	24.43	2.29	0.88	1.32	64.98	$ 10,804
821	*Commercial – Retail*	Shopping Plaza (40-150k), no supermarket	ksq ft of GFA	67.52	34%	66%	44.56	2.29	0.88	1.32	118.54	$ 19,710
822	*Commercial – Retail*	Strip Retail Plaza (<40k)	ksq ft of GFA	54.45	34%	66%	35.94	2.29	0.88	1.32	95.59	$ 15,895
850	*Commercial – Retail*	Supermarket	ksq ft of GFA	93.84	36%	64%	60.06	2.29	0.88	1.32	159.76	$ 26,563
814	*Commercial – Retail*	Variety Store	ksq ft of GFA	63.66	34%	66%	42.02	2.29	0.88	1.32	111.76	$ 18,583
857	*Commercial – Retail*	Discount Club	ksq ft of GFA	42.46	17%	83%	35.24	2.29	0.88	1.32	93.75	$ 15,587
863	*Commercial – Retail*	Electronics Superstore	ksq ft of GFA	41.05	34%	66%	27.09	2.29	0.88	1.32	72.07	$ 11,983
849	*Commercial – Retail*	Tire Superstore	ksq ft of GFA	20.37	28%	72%	14.67	2.29	0.88	1.32	39.01	$ 6,487
890	*Commercial – Retail*	Furniture Store	ksq ft of GFA	6.30	0%	100%	6.30	2.29	0.88	1.32	16.76	$ 2,786
932	*Commercial – Restaurant*	High-Turnover (sit-down) restaurant	ksq ft of GFA	107.20	44%	56%	60.03	2.29	0.88	1.32	159.69	$ 26,552
934	*Commercial – Restaurant*	Quick Service Restaurant (Drive- Though)	ksq ft of GFA	467.48	49%	51%	238.41	2.29	0.88	1.32	634.20	$ 105,449
710	*Commercial – Office*	General Office Building	ksq ft of GFA	10.84	0%	100%	10.84	2.29	0.88	1.32	28.84	$ 4,794
720	*Commercial – Office*	Medical Office / Clinic	ksq ft of GFA	36.00	0%	100%	36.00	2.29	0.88	1.32	95.76	$ 15,922
760	*Commercial – Office*	Research & Development Center	ksq ft of GFA	11.08	0%	100%	11.08	2.29	0.88	1.32	29.47	$ 4,901
550	*Institutional*	University / College / Jr College	students	1.36	0%	100%	1.36	2.29	0.88	1.32	3.60	$ 599
520	*Institutional*	School, K-12	students	3.19	0%	100%	3.19	2.29	0.88	1.32	8.49	$ 1,411
536	*Institutional*	Private School, K-12	students	1.85	0%	100%	1.85	2.29	0.88	1.32	4.92	$ 818
411	*Institutional*	Park	acre	0.78	15%	85%	0.66	2.29	0.88	1.32	1.76	$ 293
610	*Institutional*	Hospital	ksq ft of GFA	10.77	0%	100%	10.77	2.29	0.88	1.32	28.65	$ 4,763
620	*Institutional*	Nursing home	ksq ft of GFA	6.75	0%	100%	6.75	2.29	0.88	1.32	17.96	$ 2,985
560	*Institutional*	Place of worship	ksq ft of GFA	7.60	0%	100%	7.60	2.29	0.88	1.32	20.22	$ 3,361

Mode Share

The NERPM provides information regarding the modal use for each of the trips made. The actual mode choice is depended on a variety of factors. Factors such as transit service levels, accessibility, density and diversity are important in the mode choice decision. Table 8 shows the mode choice by percentage and total number for the years 2015 and 2045.

Table 8: Travel Model Share by Year

Area	TRIP MODES	Number	Percent	Number	Percent
City of Green Cove Springs	Walk	3,617	9.50%	8,659	10.70%
	Bike	649	1.70%	1,431	1.80%
	Transit	11	0.10%	208	0.30%
	Auto	33,610	88.70%	70,453	87.20%

4.0 Transportation Improvements

4.1 Background

The City of Green Cove Springs has undertaken extensive planning efforts over the past several years including an extensive corridor study for US Route 17 and the Downtown Master Plan.

These plans support a multimodal vision for the City providing residents and visitors convenient, safe, and accessible ways to travel by a variety of modes. The vision includes an outer grid of off-street 8' paths, completing sidewalks within the existing street grid, creating a context sensitive streetscape downtown, paths that connect the City to Clay County and additional transit and mobility hubs.

The rapid growth and intensity of land use change in Green Cove Springs will be supported by the multimodal investments with additional roadway capacity at specific intersections.

4.2 Needs and Priority Lists

The travel modeling provides insight into the ability of the overall roadway network in the City to accommodate the future travel demands. Although limitations exist given the significant regional scale of the model relative to the scale of the City, it is obvious which streets may experience the higher levels of demand in the future. The forecast volume-to-capacity of the network is used as a guide to inform where spot intersection improvements may be helpful in the future to improve safety and efficiency.

4.3 Transportation Network Improvements

Roadway Corridors

The future travel demand in Green Cove as estimated using the NERPM travel model indicated vehicle travel would likely experience additional congestion along US route 17 as well as the key routes into and around the downtown. The following roads are identified for future capacity improvements to improve safety and operations as demand increases associated with land use development within Green Cove Springs. The capacity improvements could include intersection turn lanes, roundabouts or signalization. Green Cove Avenue and Cooks Lane would be improved by widening and enhancing the multimodal capacity of the important east-west link in the southern part of the City.

- Palmetto Avenue
- Martin Luther King Jr. Boulevard
- Green Cove Avenue and Cooks Lane

Orange Avenue (US Route 17) was the focus of a corridor study within Green Cove Springs. The corridor study, completed in June 2021, identified alternative cross sections with medians, narrower lanes, and improved multimodal capacity. The vision for the corridor was further defined through the 2022 Downtown Master Plan process that several alternative corridor reconfigurations to slow vehicle traffic, improve multimodal access through wider sidewalks, and

improved intersection controls for walking, biking, and golf carts. The complete street vision for Orange Avenue is shown in Figure 8 and Figure 9.

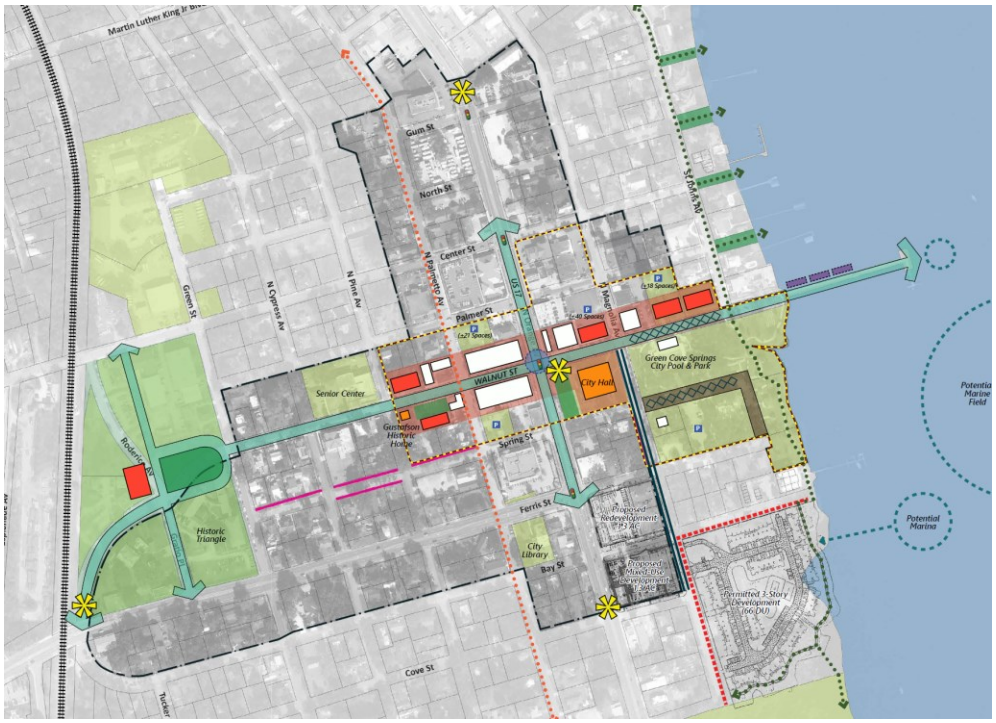


Figure 8: Orange Avenue Improvements (source: Downtown Master Plan)

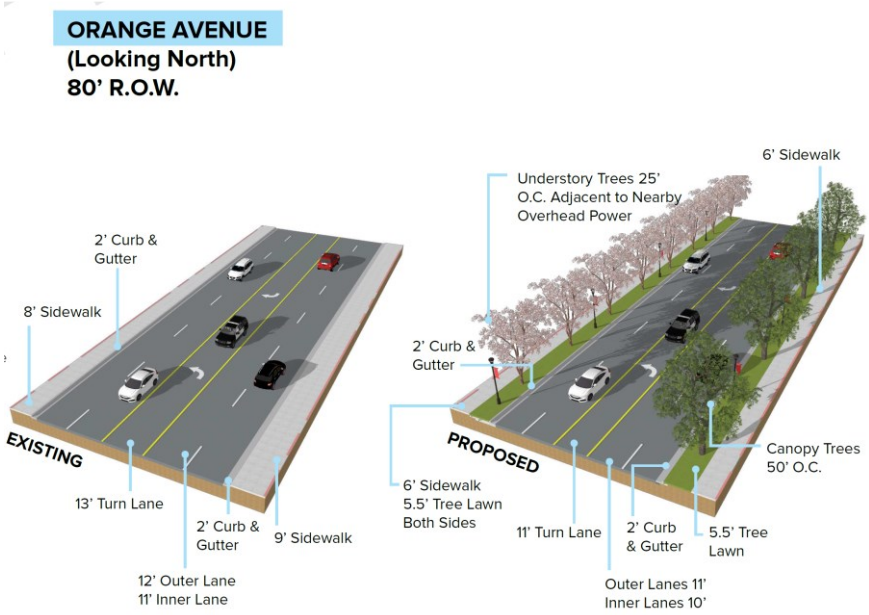


Figure 9: Orange Ave Cross Section (source: Downtown Master Plan)

Figure 10: Visual of US 17 Improvements (Source: Downtown Master Plan)

Active Travel Network

Green Cove Springs' growth is anticipated to occur within downtown, the Community Redevelopment Agency (CRA) district, areas in the southern part of the City and the Reynolds Park area to southeast. The intensification expected in the downtown area support greater ability for residents and visitors to complete their trip by non-car means by offering wide sidewalks, bike lanes, and facilities for golf carts.

Connecting areas of growth by bike lanes and paths will provide travel options. Additional walking and biking infrastructure will create greater network connectivity and provide safe and efficient options to travel. The recent demand in e-bikes and the associated increase in average miles traveled reinforces that these facilities may increase in demand and provide an active alternative way to travel.[3] Providing choices in the transportation system is essential for a more equitable and efficient transportation system. By enabling individuals to choose the mode of travel that is best for that trip, it can spread the demand across the system and improve overall system utilization.

The projects have been identified as those addressing a transportation need, helping meet those mobility needs of future residents, employees, and visitors.

[3] Research published in 2018 states that e-bikes are being used approx. 50% of total trips for commuting or errands, with most of that substituting from the private automobile. Average trip lengths of 9.3 miles by automobile were observed shifting to e-bikes. Source: MacArthur, John, Christopher Cherry, Michael Harpool and Daniel Scheppke. A North American Survey of Electric Bicycle Owners. NITC-RR-1041. Portland, OR: Transportation Research and Education Center (TREC), 2018.

Transit Improvements

Downtown Mobility Hub

Green Cove Springs will consider mobility hubs as a key tool towards network connectivity goals. Mobility hubs are infrastructure designed to support and facilitate multimodal transportation use. These facilities are defined by their intent and structure to aggregate mobility options in one place, allowing individuals greater travel choices and ease of transfer amongst different travel modes.

Mobility hub design focuses on transit, shared-use mobility, and active transportation. Hubs often endeavor to address the "first mile/last mile" issue whereby access to transit and other longer-distance mode usage is stifled by insufficient supportive options to easily reach those modes. While each mobility hub may take on unique form based upon location and context, these hubs tend to support connection between at least a few of the following specific transportation modes:

- Public transportation: stops/stations for trains, buses, vans, and micro transit.
- Transportation Network Companies (TNCs): pick up/ drop off zones for ride-hail providers.
- Carshare: parking and charging stations for carshare vehicles, including electric vehicles.
- Bicycles and scooters: parking, storage, charging stations, and designated paths for personal bicycles, bikeshare, and e-scooters.
- Pedestrian: paths and spaces to pass through as well as rest for those walking or rolling with assistive devices.

In addition to facilitating traveler choice and transfers between these modes, mobility hubs provide a flexible physical space that can support other associated uses:

- Deliveries: a parking location for food or goods delivery vehicles to limit stops/congestion in travel lanes and improve curb management.
- Retail options: collocated stores, food stands, and other businesses which provide value to individuals passing through the space.
- Park features: park amenities which make these hubs more enjoyable places to wait or linger between travel and other activities.

The downtown mobility hub is anticipated to be downtown Green Cove between Ferris Street and Walnut Street on the west side of Orange Avenue. This hub is anticipated to serve as the key downtown hub to the Clay County Transit which can connect to regional routes run by the Jacksonville Transportation Authority (JTA). The hub can be scaled based on the amount of funding available and constraints of the site. It is anticipated that the site will serve as an enhanced transit stop, providing information to visitors to Green Cove Springs, provide parking for micromobility including e-scooters, bikes, and golf carts. The hub would operate as a community destination and connect the transit system with first/ last mile services.

Transit Stops

Enhanced transit stops are expected where existing and future local bus service are likely to provide residents access to jobs and services throughout the region. Four locations have been identified during this plan development, however, they will be confirmed during any final planning process.

- Oakridge Avenue / State Route 16

- US 17 / Houston Street
- US 17 / Reynolds Park
- Oakridge Avenue / Green Cove Avenue

4.4 Network Standards of Service & Improvements

The NERPM evaluates how future users associated with land use changes in the region travel on the roadway network as well as the non-motorized, active mode network. The travel model assigns the traffic flow to the network which can be evaluated for how much the demand compares to the capacity of the system. This specific metric, volume-to-capacity (V/C) is the most common metric used in Florida. Section 3.0 includes plots of the network showing the V/C ratios in color bands. Multimodal Mobility Fees moves beyond the vehicular based V/C ratio system to account for total person miles of travel and person miles of capacity. The shift away from a simple V/C ratio approach for vehicles to one that recognizes multimodal trip making can be defined in person miles capacity (PMC).

The Mobility Fee shifts away from a Level of Service (LOS) defined by travel speed (average delay per vehicle) toward a supply and accessibility based multimodal transportation system. The provision for high quality walking, biking, and transit capacity to support multimodal demand is set out in the Florida DOT Q/LOS Handbook. The handbook informs how quality affects the experience for non-vehicular modes as it relates to the design of that facility or the frequency of transit service.

The Florida Q/LOS Handbook shall be used to monitor multimodal level of service to inform future investment priorities and change investments accordingly to maintain a diverse, accessible, and multimodal suite of travel options at each update interval to the Mobility Fee.

This Mobility Plan and the projects within it start to develop a true multimodal system and the performance for each mode can be tracked over time to inform where and what future investments may be necessary to meet future travel demand. As stated in the Comprehensive Plan, building capacity for non-auto means should be the first priority before widening roads for additional cars. The size of Green Cove Springs can support many trips to be made by non-auto means if safe, efficient, and high-quality non-auto infrastructure is available.

Table 9 shows the existing miles of different infrastructure types and approximate daily capacity for each mode of travel. The number of users in the city is also used to represent the person demand for travel. This is represented as the resident population plus half of any employed persons in the city. The total person miles capacity is the result of the daily person capacity multiplied by the miles of capacity. All of the capacity here excludes private facilities.

The existing transportation system currently has an estimated 181 daily person miles of capacity. The number in isolation has not much value. However, it can show the amount of total transportation capacity available for travel within the City across all modes and is used to compare how that service standard may change as new users are added associated with land use development.

Table 9: Existing Transportation Person Miles Capacity

Infrastructure Type	Daily Capacity at Service Standard Target	Existing Miles (2020)
Off-Road Shared Use Path (8')	9,000	2
Bike lanes and cycleways (on road bike facilities)	8,000	2.4
Footway (5 to 6 foot sidewalks)	980	28
Roads (1 direction lane miles)	11,700	144.4
Daily Person Miles Capacity		**1,755,251**
Users (resident population + 1/2 jobs) in Green Cove		9,674
Person Miles Capacity per User (Capacity / Users)		**181**

Table 10: Current Capacity and Service Standards

Infrastructure Type	Daily Capacity at Service Standard Target	Existing Miles (2020)	Mobility Fee Miles / Proposed Nodes	Total Future Miles or Nodes of Capacity by 2045
Off-Road Shared Use Path (8')	9,000	2	9.4	11.4
Bike lanes and cycleways (on road bike facilities)	8,000	2.4	0	2.4
Footway (5 to 6 foot sidewalks)	980	28	2.8	30.8
Roads (1 direction lane miles)	11,700	144.4	0	144.4
Transit Stops	3,000.00		5	5
Intersection Upgrades	5,000.00		3	3
Corridor (Mix of Green Cove Ave & Orange Ave)	10,000.00		7	7

Mobility fees must comply with basic legal fundamentals such as ensuring that the new users of the system do not pay for more than their impacts. This is interpreted as that the standards of the service do not improve in the future beyond what is experienced today. The analysis shows that in the absence of the additional transportation capacity, the person miles of capacity standard drops from 181 to 68. With the Mobility Fee projects, capacity per user drops from 181 to 75. The significant growth in users anticipated within Green Cove Springs (more than doubling by 2045) is the major driver behind this change.

Table 11: Existing and Future Person Miles Capacity

Existing	Daily Person Miles Capacity (existing)	1,755,251
	Existing Users (resident population + 1/2 jobs) in Green Cove springs	9,674
	Existing Person Miles Capacity per User (Capacity / Users)	181
	Future Users	**25,735**
Future	Existing Person Miles Capacity per User with no expansion (Capacity / Users)	68
	Daily Person Miles Capacity (Future with Mobility Fee Projects)	1,942,284
	Future Person Miles Capacity per User with Mobility Fee Projects (Capacity / Users)	75

This method also converts all modes to one common person miles of capacity. In practice, it is true that not all trips can be made by all modes. However, the principle within the Mobility Fee concept is to provide the multimodal capacity to provide choice and allow the user to use the most appropriate and convenient mode for that trip. As congestion increases for one mode, e.g., cars and roads, it may be faster and more convenient to travel via e-bike. Transit can offer higher capacity vehicles and through dedicated lanes or signal preemption can bypass vehicle queues and reduce travel time.

The significant reduction in person miles of capacity in this analysis suggests that as growth continues in Green Cove Springs the existing system will provide ample capacity to accommodate growth and travel will need to become more diverse in the modes used. In summary, the existing system provides a high level of service (using capacity per user) to the existing users (residents and visitors). Maintaining the high level of service, particularly in terms of roadway lane miles, is unrealistic given the cost burden.

Table 12: Unit Cost per Mile per Infrastructure Type

Infrastructure Type	Existing Miles	Approx Unit Cost (2023$)[4]	Value of Existing System
8' SUP (off road shared use path)	2.0	$500k	$1 million
Cycleway (on-road bike facilities)	2.4	$900k	$2.2 million

[4] Unit costs are derived using FDOT unit costs for facilities. Increased by 45% to represent recent price increases, local conditions and the 2022-2023 cost estimate for the Palmetto Shared Use Path.

If the current value per user is the cost of offering the same transportation service to future users, the cost of delivering that infrastructure would be over $355 million (16,062 new users forecast between 2015 and 2045).

4.5 Mobility Fee Projects

The projects show in Figure 11 and listed in Table 13 were identified for the Mobility Fee project list.

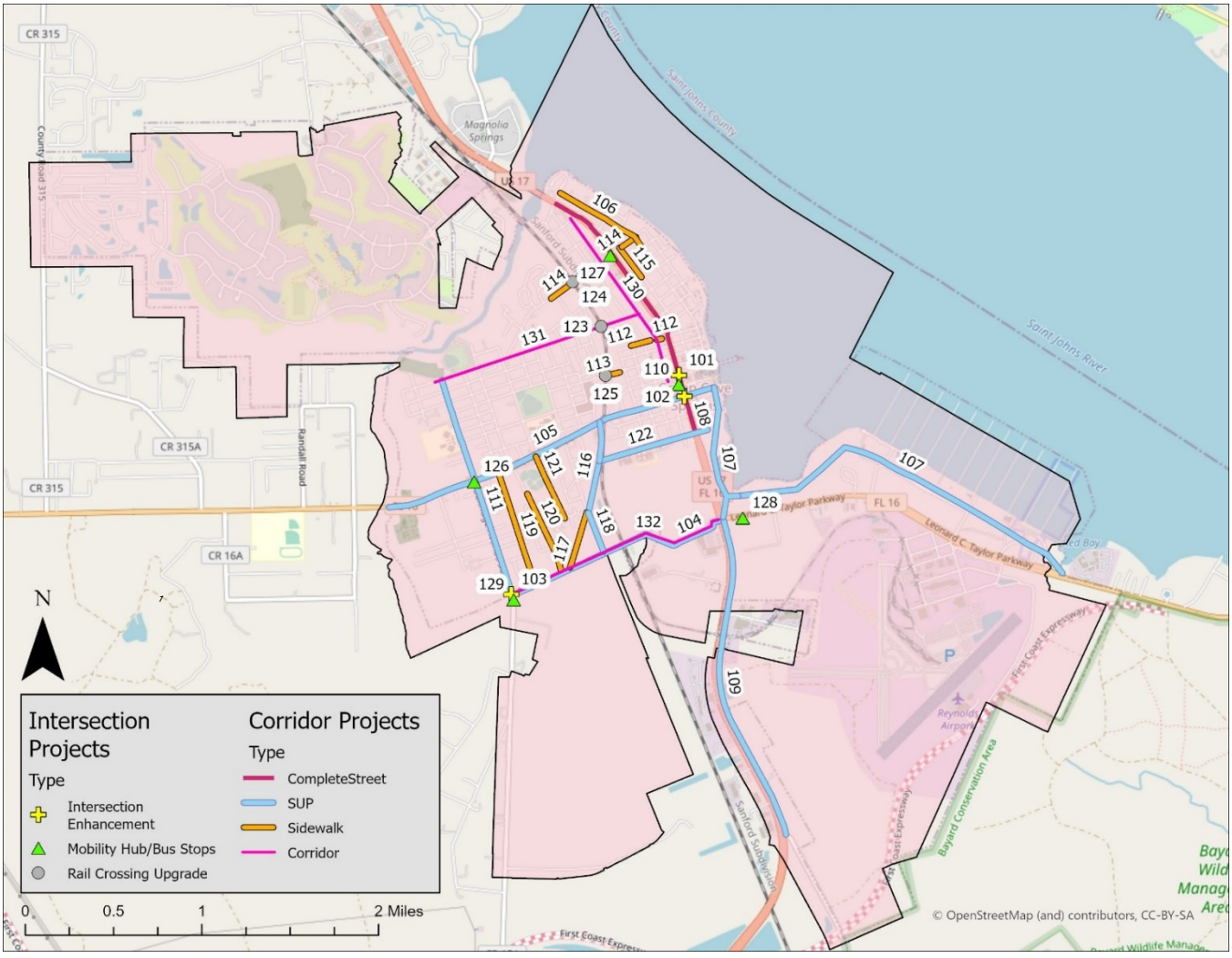


Figure 11: Mobility Fee Projects (2045 Planning Horizon)

Cost of Mobility Fee Projects

A total of $16.5 million of new transportation capacity will expand the person miles of capacity within Green Cove Springs by 2045. These projects will expand capacity for several modes of travel throughout the city to provide choices beyond the private car for residents, employed persons, and visitors to the city.

Table 13: Mobility Fee Projects

Project ID	Location	Improvement
101	US 17/Walnut Steet	Multimodal Intersection Enhancements
102	US 17/SR 16 (Ferris St.)	Multimodal Intersection Enhancements
103	Green Cove Ave and Oakridge Ave	Intersection / Vehicular Capacity Improvements
104	Green Cove Ave	Trail Project
105	SR 16 West	Trail Project connection to Clay-Duval Trail
106	St Johns Ave Sidewalks	Sidewalk Project
107	SR 16/US 17	Trail Project
108	US 17	Reconstruct Cross Section. Local Contribution (PD&E)
109	US 17 Corridor: South side path project	Palatka-GCS Trail
110	Mobility Hub - multimodal downtown. Bus Stop	Mobility Hub and Bus Stop
111	Oakridge Ave	SUP connection to Green Cove Ave
112	Gum St	Gum St 6' sidewalk improvements
113	Center St	Center St 6' sidewalk improvements
114	Houston St	Houston St 6' sidewalk improvements
115	Magnolia Ave North	Magnolia Ave North 6' sidewalk improvements
116	Melrose Ave	6' sidewalk
117	Melrose Ave	8' SUP addition
118	Roberts St South	8' SUP addition
119	Highland Ave South	Highland St 6' sidewalk addition
120	Vermont St	Vermont St 6' sidewalk addition
121	West St	West St 6' sidewalk addition
122	Oak St	8' SUP addition
123	MLK JR Blvd - Rail crossing	Pedestrian Crossing upgrade
124	Houston St	Pedestrian Crossing upgrade
125	Center St	Pedestrian Crossing upgrade
126	Oakridge Ave / SR 16	Bus stop. Shelter. Amenities, etc.
127	US 17 / Houston St.	Bus stop. Shelter. Amenities, etc.
128	US 17 / Reynolds Park Bus Stop	Bus stop. Shelter. Amenities, etc.
129	Oakridge - Green Cove Ave	Bus stop. Shelter. Amenities, etc.
130	Palmetto Intersection Improvements	Roundabouts, turn lanes, or signalization
131	Martin Luther King Jr Blvd Improvements	Roundabouts, turn lanes, or signalization
132	Green Cove Avenue / Cooks Lane	Roadway lanes, intersections

5.0 Mobility Fees

The base mobility fee for a land use change is derived by accounting for the quantity of travel generated by the land use change (number of trips and the lengths of the trips) and the cost of providing the additional transportation capacity. The base fee is before any credits or other fee reductions are made.

The base mobility fee formula is shown below:

Base Mobility Fee =
PMT Generated by Land Use
x Cost of Infrastructure per PMT

5.1 PMT Generated by Land Use

The fee is assessed on the quantity of travel, measured with PMT, that impacts the transportation systems within the City of Green Cove Springs. To estimate the quantity of PMT that impacts the transportation system the following factors are considered:

PMT Generated by Land Use =
[A] * [B] * [C] * [D] * [E]

[A] Vehicle Trip Rate

The daily trip rate per unit of development (residential units, beds, or square feet) as determined by the 11th Edition of ITE's Trip Generation. Some land uses included in the schedule in Section 8.0 have been adapted to fit specific goals such as income sensitivity for housing or where two land uses have been averaged together.

[B] Trip Length

The weighted average trip length for trips within Green Cove Springs is calculated using the NERPM activity-based model at 2.29 miles. These trips include those that start and end in the City as well as those which have either a start or an end in Green Cove Springs.

[C] % New Trips

This factor is obtained through ITE's Trip Generation and accounts for the portion of trips which may enter and exit the project but were previously already on the network (i.e., pass-by trips). For example, residential uses generate 100% new trips while fuel stations may generate only 50% new trips.

[D] Double Counting Factor

The double counting factor of 88% accounts for the differences between PMT that remains

internal to the City and PMT that has one end of the trip within the City.

[E] VMT to PMT Factor

This factor (1.32) converts the estimated VMT from the land use change to PMT. See Section 3.0 for more information.

5.2 Cost of Infrastructure per PMT

The Mobility Fee projects are analyzed for their likelihood to serve local users versus users which may be passing through the City. Given the location of the City and the Shands Bridge there is a sizeable amount of 'through traffic', however, that will change in the future with the First Coast Expressway. As such, the share of users benefiting and generating the demand for the Mobility Fee projects varies within the City, with some locations having more through traffic than others.

Table 14 below shows the mobility fee projects and the share of local traffic (all modes). It is important to consider that only traffic associated with local land use development is eligible to be assessed a mobility fee. Therefore, only the Local Cost in

Table 14 is able to be funded through Mobility Fees. The difference between the Total Project Cost and the Local Cost must be funded with non-mobility fee dollars.

Table 14: Local Cost vs Total Project Cost of Mobility Fee Projects

Project ID	Location	Improvement	Total Project Cost	Mobility Fee Cost	Percent Local Traffic	Local Cost
101	US 17/Walnut Steet	Multimodal Intersection Enhancements	$300,000	$300,000	40%	$120,000
102	US 17/SR 16 (Ferris St.)	Multimodal Intersection Enhancements	$800,000	$800,000	40%	$320,000
103	Green Cove Ave and Oakridge Ave	Intersection / Vehicular Capacity Improvements	$1,500,000	$1,500,000	50%	$750,000
104	Green Cove Ave	Trail Project	$423,672	$423,672	95%	$402,489
105	SR 16 West	Trail Project connection to Clay-Duval Trail	$642,975	$642,975	95%	$610,826
106	St Johns Ave Sidewalks	Sidewalk Project	$128,581	$128,581	100%	$128,581
107	SR 16/US 17	Trail Project	$981,951	$981,951	95%	$932,854
108	US 17	Reconstruct Cross Section. Local Contribution (PD&E)	$400,000	$400,000	100%	$400,000
109	US 17 Corridor: South side path project	Palatka-GCS Trail	$611,424	$611,424	95%	$580,853
110	Mobility Hub - multimodal downtown. Bus Stop	Mobility Hub and Bus Stop	$200,000	$200,000	100%	$200,000
111	Oakridge Ave	SUP connection to Green Cove Ave	$90,678	$90,678	100%	$90,678
112	Gum St	Gum St 6' sidewalk improvements	$32,033	$32,033	100%	$32,033
113	Center St	Center St 6' sidewalk improvements	$15,796	$15,796	100%	$15,796
114	Houston St	Houston St 6' sidewalk improvements	$84,965	$84,965	100%	$84,965
115	Magnolia Ave North	Magnolia Ave North 6' sidewalk improvements	$47,148	$47,148	100%	$47,148
116	Melrose Ave	6' sidewalk	$169,658	$169,658	100%	$169,658
117	Melrose Ave	8' SUP addition	$73,633	$73,633	100%	$73,633
118	Roberts St South	8' SUP addition	$76,940	$76,940	100%	$76,940
119	Highland Ave South	Highland St 6' sidewalk addition	$147,149	$147,149	100%	$147,149
120	Vermont St	Vermont St 6' sidewalk addition	$106,988	$106,988	100%	$106,988
121	West St	West St 6' sidewalk addition	$87,363	$87,363	100%	$87,363
122	Oak St	8' SUP addition	$208,326	$208,326	100%	$208,326
123	MLK JR Blvd - Rail crossing	Pedestrian Crossing upgrade	$200,000	$200,000	100%	$200,000
124	Houston St	Pedestrian Crossing upgrade	$200,000	$200,000	100%	$200,000
125	Center St	Pedestrian Crossing upgrade	$200,000	$200,000	100%	$200,000
126	Oakridge Ave / SR 16	Bus stop. Shelter. Amenities, etc.	$75,000	$75,000	100%	$75,000
127	US 17 / Houston St	Bus stop. Shelter. Amenities, etc.	$75,000	$75,000	100%	$75,000
128	US 17 / Reynolds Park Bus Stop	Bus stop. Shelter. Amenities, etc.	$75,000	$75,000	100%	$75,000
129	Oakridge - Green Cove Ave	Bus stop. Shelter. Amenities, etc.	$75,000	$75,000	100%	$75,000
130	Palmetto Intersection Improvements	Roundabouts, turn lanes, or signalization	$4,000,000	$4,000,000	100%	$4,000,000
131	Martin Luther King Jr Blvd Improvements	Roundabouts, turn lanes, or signalization	$3,000,000	$3,000,000	100%	$3,000,000
132	Green Cove Avenue / Cooks Lane	Roadway lanes, intersections	$1,500,000	$1,500,000	50%	$750,000

Table 15 shows the cost per PMT calculation accounting for the total project cost, the local project cost, and the difference which must be funded with other funds. The non-local share,

shown in the table below as the 'cost for external capacity', is based on the estimated traffic flow through the city that didn't have a start or stop of the trip within the city. The Cost per PMT used in the mobility fee is obtained by dividing the local cost by the growth in local PMT.

Table 15: Cost per PMT

Total Cost of new Capacity	$16,529,280
Cost for External (EE) Share of Capacity	$2,293,001
Cost for Local Share of Capacity	$14,236,279
Local PMT (non-EE)	85,621
Cost per PMT	**$166.27**

5.3 Base Mobility Fee

The base mobility fee is derived by calculating the PMT for each land development proposal and assessing the cost per PMT (Table 15).

The base mobility fee per land use type is shown below for three sample land uses: Single Family Detached (LUC 210), a 10,000 square foot general office building, and a 10,000 square foot general shopping plaza. The base mobility fee is the multiplication of the factors and the cost per PMT. The mobility fee for the 10,000 square foot building is calculated by determining the base mobility fee per 1,000 square feet and then multiplying this by 10 (A*B*C*D*E*PMT Fee * 10).

Table 16: Sample Base Mobility Fee Calculations

Land Use	PMT Fee	Trip Rate	Trip Length	New Trips	PMT Factor	Double Counting Factor	Base mobility Fee
Residential (Single Family Detached between 1500 sq. ft and 2500 sq. ft) (ITE LUC: 210)	$166	8.35	2.29	100%	1.32	0.88	$3,693
General Office 10,000 Square Feet (ITE LUC: 710)	$166	10.84	2.29	100%	1.32	0.88	$47,944
Shopping Plaza 10,000 Square Feet (ITE LUC: 822)	$166	54.45	2.29	74%	1.32	0.88	$178,212

6.0 Credits

Mobility fee credits are developed to mitigate and offset the chance that a land use development would contribute twice to the same capacity being funded through the payment of a mobility fee.

The landowners or applicants of a land use change that is subject to a Mobility Fee contribute other funds through fuel taxes and other taxes as well as direct contributions, either monetary or in kind. Credits address these contributions and reduce the mobility fee liability associated with any land use change accordingly.

The following types of credits are applicable for Green Cove Springs:

- Developer Contribution Credits
- Revenue Credits

6.1 Developer Contribution Credits

Mobility Fee credits for contributions made by those either donating land or constructing improvements identified in this mobility plan and included in setting the Mobility Fee. The credit is limited by the lesser of either the value of the Mobility Fee liability or the cost of the Mobility Fee improvement, as identified in this study.

6.2 Revenue Credits

Revenue credits account for revenues obtained from both the Mobility Fee and other revenues that the City will use to complete the Mobility Fee projects. Specifically, the share of the project costs associated with the external (non-local) traffic will need to be paid for by non-mobility fee funds. The anticipated source of funds will be the general fund using funds from the local ad valorem tax that will be redirected to fund this portion of the mobility fee projects.

The non-local share of $2,293,001 per Table 17 could be called on at any point before 2045. Therefore, dividing the total by 23 years produces an annual amount of $99,696 that may be needed from the ad valorem tax source (shown in column [b]. This amount of funding as a portion of the overall city tax base is expected to decrease as additional development occurs in the City and the overall property valuation increases. Therefore, the annual millage rate shows a real decline on a per annual basis, shown in column [c].

The credit is a reduction of the base Mobility Fee calculated when the fee is paid. The credit represents a net present value at the time of development based on the future stream of ad valorem tax payments which may contribute to the same mobility fee projects which are paid for through the base Mobility Fee. Therefore, the credit offsets the non-local share of the mobility fee project for any development assessed a Mobility Fee. The net present value of the discounted stream of tax payments is shown in the column [d] of the table based on the year of development. The revenue credit inputs and look up table by year of development is shown in Table 17.

The table includes the inputs:

- Base municipal assessed value
- Assumed annualized growth in taxable property values and a discount rate

Table 17: Revenue Credit Lookup Table

$556,461,965	2021 Municipal Assessed Value (excluding govt buildings)
5.00%	City Appraised Property Values will continue to grow annually at this rate
3.00%	Discount Rate
23	Years for funding non-mobility eligible infrastructure (2045-2022)
$2,293,001	Cost of Capacity not eligible for mobility fee funding
$99,695.70	Per year capacity funding through property taxes (=$2.29 million / 23)

Building Year	Annual Expense	Millage Rate Needed (per assessment)	Net Present Value of Discounted Stream of Taxes (millage rate)
[a]	[b]	[c]	[d]
2023	$99,696	0.170629	$1.84
2024	$99,696	0.162503	$1.72
2025	$99,696	0.154765	$1.61
2026	$99,696	0.147395	$1.50
2027	$99,696	0.140377	$1.40
2028	$99,696	0.133692	$1.30
2029	$99,696	0.127326	$1.21
2030	$99,696	0.121263	$1.12
2031	$99,696	0.115488	$1.03
2032	$99,696	0.109989	$0.94
2033	$99,696	0.104751	$0.86
2034	$99,696	0.099763	$0.78
2035	$99,696	0.095012	$0.71
2036	$99,696	0.090488	$0.63
2037	$99,696	0.086179	$0.56
2038	$99,696	0.082075	$0.49
2039	$99,696	0.078167	$0.43
2040	$99,696	0.074445	$0.36
2041	$99,696	0.070900	$0.30
2042	$99,696	0.067524	$0.23
2043	$99,696	0.064308	$0.17
2044	$99,696	0.061246	$0.11
2045	$99,696	0.058329	$0.06

Process for Calculating the Revenue Credit

The following steps are used to calculate the revenue credit.

1) Determine the year of development. When will the construction permits be provided to the land use project.

2) Identify the future assessed value of the project.

3) Assess the net present value of the discounted stream of taxes. Use the assessed value divided by 1,000 and multiply that result by the discounted value in column [d] for the year of development.

7.0 Net Mobility Fees

The net mobility fees are set by land use type. The net mobility fees are calculated by starting with the base Mobility Fee and subtracting the revenue credit based on the value of the property and the year of development.

The net mobility fee formula is shown below:

Net Mobility Fee =
Base Mobility Fee — Credits

Three examples are included in the table below.

Table 18: Net Mobility Fee Calculation

Land Use	Base mobility Fee [a]	Estimated Assessed Value [b]	NPV Millage Rate (Permits in 2023) [c]	Mobility Fee Credit [(Assessed value / 1000) * NPV Millage Rate] [d]	Net Mobility Fee (Base Fee - Credits) [e]
Residential (Single Family Detached btwn 1500 sq. ft and 2500 sq. ft)	$3,693	$350,000	$1.84	$642	$3,051
General Office 10,000 Square Feet	$47,944	$1,725,000	$1.84	$3,166	$44,778
Shopping Plaza 10,000 Square Feet	$158,946	$1,500,000	$1.84	$2,753	$156,193

8.0 Mobility Fee Schedule and Application

The Green Cove Springs Mobility Fee is assessed on land uses given the trip rates as determined by the ITE Trip Generation and other characteristics developed within this study, such as trip length, and person miles travel relative to vehicle miles, and the cost per PMT. Appendix A includes the mobility fee schedule.

8.1 Inter-Jurisdictional Fee Issues

The travel demand modeling and assessment of the future conditions include an analysis of the entire North Florida TPO region. By modeling for the entire region, the effects and changes of the land use developments within Green Cove Springs are included, as well as how growth in Clay County and other surrounding counties affect travel and network performance within the City. Through this inter- regional modeling there is confidence in the degree to which land use changes in Green Cove Springs affect the larger transportation system and how through traffic changes in the future with the First Coast Expressway.

Although it is likely that travel demand associated with land use development within Green Cove Springs will impact Clay County roadways, and vice-versa, there is a jurisdictional divide in the analysis that treats the County as an external jurisdiction. The opposite relationship is true as well, with travel associated with land use development within the County likely to travel on facilities owned and maintained by the City. This jurisdictional divide allows any municipality to develop mobility fees (or impact fees) of their own and apply them to the transportation demand associated with land use changes within the municipality. The Green Cove Springs Mobility Fee is designed to assess the fees only the portion of travel within the City by travel model results for travel changes on city roads but also by using the trip length which considers the length of travel within the City boundary.

The fee does not consider inter-jurisdictional revenue sharing or what the degree of sharing looks like. However, this could be done in the future using data from the travel model if Green Cove Springs and Clay County would like to pursue this option.

9.0 Legal Application of Mobility Fees

9.1 Overview

Florida has been a legal pioneer in the development and application of impact fees since the 1980's. Driven primarily through case law the tools and methods were developed by precedence. In 2006 the Florida Legislature adopted the "Impact Fee Act" that codified many of these concepts. One of these was the determination that impact fees must comply with a "dual rational nexus" test that requires:

- 1st (Need): A reasonable connection between the anticipated need for transportation system improvements and the growth generated by new development.
- 2nd (Benefit): A reasonable connection between the expenditure of fees collected and the benefit to the development. Other guiding principles established over time that should be considered when designing any impact fee (or mobility fee) include:
    - Impact fees should not exceed the cost of the planning and delivering the specific necessary facilities.
    - Fees should be proportional to the demand generated by the development.
    - New development should not be required to pay for a higher level of service than what existing users experience.
    - New development should not have to pay twice for the same capacity through impact fees and through other taxes or fees.

9.2 Legal History

Legislation passed in 1985 required all governments in Florida to develop and adopt Comprehensive Plans to guide future land use and infrastructure development. The language included a provision requiring that adequate facilities must be provided "concurrent" with new growth and development. As a tool of 'police power', concurrency was adopted as a measure to maintain the standards of service for existing users as new users were added to the system. During the 1990's and 2000's there were numerous issues raised with concurrency – namely greenfield development and 'sprawl' because of using available capacity. The costs of widening, both in terms of dollars and social impacts, became obvious in many urbanized areas.

The House Bill 227 passed in 2009 amended the F.S. 163.31801 to include "the government has the burden of proving by a preponderance of the evidence that the imposition or amount of the fee or credit meets the requirements of state legal precedent and this section. The court may not use a deferential standard for the benefit of the government."

State Bill 360 passed in 2009 amended F.S. 163.31801 to remove the necessary 90 days before an effective date when fees are to decrease, be suspended, or be eliminated. State Bill 360, also known as the Florida Community Renewal Act, instructed the Florida Departments of Community Affairs and Transportation to evaluate and consider the implementation of a mobility fee system to replace the existing concurrency system.

House Bill 7207 passed in 2011 adopting the "Community Planning Act" that abolished transportation concurrency, eliminating the Department of Community Affairs, and placed restrictions on local governments ability to implement transportation concurrency. House Bill 319 passed in 2013 introduced changes to F.S. 163.3180 - Concurrency that encouraged local

governments to adopt alternative mobility systems, such as mobility fees, and included the six tools and techniques for developing an alternative mobility system. Under House Bill 319 a mobility fee system must also comply with F.S. 163.31801 governing impact fees.

House Bill 207 passed in 2019 amended the 163.31801 "Impact Fee Act" to clarify language on the timing of the collection of fees, requirements on administrative costs, and added text specifying how bonded projects or previously approved projects must be reasonably connected to or have a rational nexus with the increased impact generated by new development. House Bill 7103 passed in 2019 amended the 163.31801 "Impact Fee Act" to specify how credits will be carried forward and value match the full benefit of the intensity or density of the credit when it was first established. The bill also specified that if the local government offers an exception or waiver for affordable housing, it is not required to use any revenues to offset the impact.

House Bill 337 passed in 2021 amended Section 163.31801 to include several provisions important for the design of this fee and future updates. Specifically, no more than 25% increase from a current impact fee rate, no increase more than once every 4 years, fees could be increased beyond that rate given public workshops documenting the 'extraordinary circumstances' that would warrant a rate increase beyond these limits, and annual financial reporting requirements.

Key Principles

A onetime transportation system charge on new development that allows local governments to assess the proportionate cost of transportation improvements needed to serve the demand generated by development projects.

Mobility Fee vs. Tax

- A mobility fee is a regulatory tool available to local governments to protect the public's experience and use of infrastructure in the face of additional users and burden posed by new development.
- Mobility fees have a designated source of funding to address a specific set of needs, whereas taxes have broad discretion on their application once they are collected.
- Mobility fees must have a rational nexus between the cost levied and the impact caused by the new development. Additionally, the benefits of the infrastructure must convey a proportional benefit to the new development.

9.3 Legal Compliance

The Florida Impact Fee Act F.S. 163.31801 and its complementary statute on concurrency, 163.3180 provide the primary legal guidance regarding the design and requirements of the mobility fee. Specifically:

- Green Cove Springs has developed an ordinance to adopt the Mobility Fee. The ordinance governs the collection, accounting, credits, and the expenditure of funds.
- The Mobility Fee system is proportional and reasonably connected to benefits and impact generated by new land use development. This system complies with the "dual rational nexus" test by:

- The need for the additional transportation capacity is documented by previous studies and evaluation which the City has conducted over the past decade. In the absence of additional capacity, the anticipated land use and development would cause increased burden and deteriorate the standard of service for existing users. The City is investing in building a more diverse and dense land use base which supports active travel as well as providing improved access to the public transit system.
- The benefit of the transportation capacity improvements accrues to those paying for the projects by creating multimodal travel options for existing and future residents and visitors to take the mode that is most convenient for them. This increases total capacity within the ground transportation system within the City, creating benefits for those who are assessed a Mobility Fee.
- The Mobility Fee calculation is based on the most recent and localized data. The current regional travel model used in the North Florida region was used to analyze the effects of land use development on the transportation system. The land use data within the City is based on the current anticipated changes anticipated and are incorporated into the regional travel model. Trip lengths have been obtained through the use of the travel model and align with the size of the Green Cove Springs boundary.
- The projects to be funded through the mobility plan have been identified as necessary capacity to manage and facilitate safe and efficient mobility for the City residents, employees, and visitors. Several stakeholder meetings were held to identify and plan for the best strategies to increase multimodal capacity to meet the future travel demands of the anticipated land use development. The travel model and the district wide service standards validate that the projects will partially mitigate the impacts that new development will place on the transportation system.
- Credits have been designed to offset the chance for new development to contribute twice to the same transportation capacity funded by different revenue sources. Specifically, revenue credits have been designed to offset ad valorem revenues which may be used to fund non-local shares of the mobility fee projects.

Mobility plans and the related fee structure that underpins it is compliant with Florida Statute 163.3180 Section (5)(i). The mobility plan considers the following tools and techniques for complying with Section (5)(f). Specifically:

- The future land use element and mobility plan support greater density and intensity of land use. The mobility plan can continue to adapt the trip length, the share of multimodal trips and ratio of PMT vs VMT, and the suite of projects to support these long-term strategies.
- Adoption of an area wide level of service is not dependent on any single road segment function. The evaluation of a City service standard reflects the demands and capacity of the City acknowledging that as route choice and travel options increase, greater system utilization can occur, reducing the effect on one road accommodating all the demand. The mobility sets a total person miles capacity (PMC). The travel model identifies the growth in person miles travel over time associated with local and use development. Periodic local studies can monitor the PMC and attempt to derive a PMT based on multimodal traffic counts.

- Green Cove Springs seeks to encourage downtown redevelopment through the application of local funds to reduce the Mobility Fee assessed for specific land uses within parts of the City. The revenues used for these discounts occur after a net fee has been calculated and do not increase the mobility fee for others and therefore is not explicitly accounted for in the mobility plan.
- Sensitivity to the income characteristics and the size of the single-family dwelling units is included by comparing average incomes and the size of homes in Green Cove Springs with national averages. Reduced trip generation rates are observed for households with lower income and smaller square footages. The City ordinance may also take further steps to waive the Mobility Fee requirement for eligible households based on income criteria.

Appendix A
Fee Schedule

MOBILITY FEE RATE SCHEDULE

Land Use Code	Land Use Categories	Land Use Categories	Unit of measure	daily trips	pass by	new trips	new trips/unit	avg trip length	double counting factor	PMT factor	Total Eligible PMT	Base Impact fee per unit
220	*Residential*	Multiple Family (low rise)	dwelling	6.74	0%	100%	6.74	2.29	0.88	1.32	17.93	$ 2,981
221	*Residential*	Multiple Family (mid-rise)	dwelling	4.54	0%	100%	4.54	2.29	0.88	1.32	12.08	$ 2,008
251	*Residential*	Senior Adult Housing - detached and independent	dwelling/bed	4.31	0%	100%	4.31	2.29	0.88	1.32	11.46	$ 1,906
253	*Residential*	Assisted Living/Congregate Care Facility	dwelling	2.21	0%	100%	2.21	2.29	0.88	1.32	5.88	$ 977
210.3	*Residential*	Single Family (less than 1,500 sqft)	dwelling	6.66	0%	100%	6.66	2.29	0.88	1.32	17.72	$ 2,946
210	*Residential*	Single Family (1,500 sqft to 2,499 sqft)	dwelling	8.35	0%	100%	8.35	2.29	0.88	1.32	22.21	$ 3,693
210.4	*Residential*	Single Family (> 2,499 sqft)	dwelling	9.43	0%	100%	9.43	2.29	0.88	1.32	25.08	$ 4,171
240	*Residential*	Mobile Home	dwelling	7.12	0%	100%	7.12	2.29	0.88	1.32	18.94	$ 3,149
255	*Residential*	Continuing Care Retirement Community	occupied units	2.47	0%	100%	2.47	2.29	0.88	1.32	6.57	$ 1,092
260	*Residential*	Recreational Home/Vehicle	dwelling	3.55	0%	100%	3.55	2.29	0.88	1.32	9.44	$ 1,570
110	*Industrial*	Light Industry (110)	ksq ft of GFA	4.87	0%	100%	4.87	2.29	0.88	1.32	12.95	$ 2,154
150	*Industrial*	Warehouse	ksq ft of GFA	1.71	0%	100%	1.71	2.29	0.88	1.32	4.55	$ 756
151	*Industrial*	Mini-Warehouse	ksq ft of GFA	1.45	0%	100%	1.45	2.29	0.88	1.32	3.86	$ 641
140	*Industrial*	Manufacturing	ksq ft of GFA	4.75	0%	100%	4.75	2.29	0.88	1.32	12.64	$ 2,101
565	*Commercial – Services*	Day Care	ksq ft of GFA	47.62	0%	100%	47.62	2.29	0.88	1.32	126.67	$ 21,062
492	*Commercial – Services*	Health Club / Fitness	ksq ft of GFA	1.31	0%	100%	1.31	2.29	0.88	1.32	3.48	$ 579
310	*Commercial – Services*	Hotel	rooms	7.99	0%	100%	7.99	2.29	0.88	1.32	21.25	$ 3,534
320	*Commercial – Services*	Motel	rooms	3.35	0%	100%	3.35	2.29	0.88	1.32	8.91	$ 1,482
312	*Commercial – Services*	Business Hotel	rooms	4.02	0%	100%	4.02	2.29	0.88	1.32	10.69	$ 1,778
947	*Commercial – Services*	Carwash (self wash)	wash stall	108.00	65%	35%	37.80	2.29	0.88	1.32	100.55	$ 16,719
948	*Commercial – Services*	Carwash (automated wash)	wash stall	77.50	65%	35%	27.13	2.29	0.88	1.32	72.15	$ 11,997
420	*Commercial – Retail*	Marina	berth	2.41	0%	100%	2.41	2.29	0.88	1.32	6.41	$ 1,066
850	*Commercial – Retail*	Supermarket	ksq ft of GFA	93.84	36%	64%	60.06	2.29	0.88	1.32	159.76	$ 26,563
815	*Commercial – Retail*	Free Standing Retail Store	ksq ft of GFA	53.87	26%	74%	39.86	2.29	0.88	1.32	106.04	$ 17,631
816	*Commercial – Retail*	Hardware / Paint Store	ksq ft of GFA	8.07	26%	74%	5.97	2.29	0.88	1.32	15.89	$ 2,641
817	*Commercial – Retail*	Nursery (Garden Center)	ksq ft of GFA	68.10	26%	74%	50.39	2.29	0.88	1.32	134.05	$ 22,289
818	*Commercial – Retail*	Nursery (Wholesale)	ksq ft of GFA	43.67	26%	74%	32.31	2.29	0.88	1.32	85.96	$ 14,292
880	*Commercial – Retail*	Pharmacy/Drugstore w/o Drive Thru	ksq ft of GFA	90.08	53%	47%	42.34	2.29	0.88	1.32	112.62	$ 18,726
881	*Commercial – Retail*	Pharmacy/Drugstore with Drive Thru	ksq ft of GFA	108.40	53%	47%	50.95	2.29	0.88	1.32	135.52	$ 22,534
820	*Commercial – Retail*	Shopping Center (>150k)	ksq ft of GFA	37.01	34%	66%	24.43	2.29	0.88	1.32	64.98	$ 10,804
821	*Commercial – Retail*	Shopping Plaza (40-150k)	ksq ft of GFA	67.52	34%	66%	44.56	2.29	0.88	1.32	118.54	$ 19,710

Appendix B
Trip Rates

Residential Trip Rate Derivation

The income and size based residential trip rates remain consistent with the 2017 Road Impact Fee Update Study prepared by Tindale Oliver for Clay County. The narrative, methodology and tables are included here to record this process. It is determined that these assumptions remain valid for use within the mobility fee study for Green Cove Springs.

Single Family Residential Trip Generation Rate Tiering

As part of this study, the single family residential trip generation rate tiering was included to reflect a three-tier analysis to ensure equity by the size of a home. To facilitate this, an analysis was completed on the comparative relationship between housing size and household travel behavior. This analysis utilized data from the 2009 National Household Travel Survey (NHTS) and the 2015 American Housing Survey (AHS) to examine overall trip-making characteristics of households in the United States.

Table A-2 presents the trip characteristics being utilized in the proposed roadway impact fee schedule for the single family (detached) land use. The 2009 NHTS database was used to assess average annual household vehicle miles of travel for various annual household income levels. In addition, the 2015 AHS database was used to compare median annual family/household incomes with housing unit size. It is important to recognize that the use of the income variable in each of these databases is completed simply to provide a convenient

linking mechanism between household VMT from the NHTS and housing unit size from the AHS.

Table A-2
Calculated Single Family Trip Characteristics

Calculated Values Excluding Tiering	Trip Rate	Assessable Trip Length	Daily VMT
Single Family (Detached)	7.81	6.62	51.70

Source: Florida Studies for LUC 210 included in this Appendix (Page A-5)

The results of the NHTS and AHS analyses are included in Tables A-3 and A-4. First, the data shown in Table A-3 presents the average income in the U.S. for families/households living in the three housing tiers. As shown, the average income for housing units between 1,500 and 2,499 square feet in size ($70,371) is higher than the overall average income for the U.S. ($63,584). Table A-4 presents the median household income levels for low and very low income levels in Clay County. These levels were used to create additional trip generation rate tiers for smaller homes (less than 1,500 sq ft).

Table A-3
Annual Income by Housing Size

2015 AHS Average Income Data by Housing Size (Single Family, detached)	Annual Income[1]
Less than 1,500 sf	$48,880
1,500 to 2,499 sf	$70,371
2,500 sf or more	$87,897
Average of All Houses	$63,584

Source: American Housing Survey for the United State in 2013
1) Weighted average of annual income for each tier

Table A-4
Annual Income by Housing Size

Clay County SHIP Definitions	
Median Income	$64,400
Low Income[1]	$51,500
Very Low Income[2]	$32,200

Source: Florida Housing Finance Corporation, 2016 Income Limits; SHIP (4 person household)
1) Defined as 80% of the median income
2) Defined as 50% of the median income

To calculate a corresponding trip rate for the new tiers it was necessary to rely on comparative ratios. As an example, consider the $44,880 annual income category. First, it was determined that the average annual household VMT for this income level is 20,736 miles. This figure was then compared to the overall average annual VMT per household in the U.S. and normalized to the average of the $63,584 (24,496 miles) category to derive a ratio of 0.798, as shown in Table A-5.

Table A-5
NHTS Annual VMT by Income Category

2009 NHTS Travel Data by Annual HH Income	Annual VMT/HH	Days	Daily VMT	Ratio to Mean	Normalized to 1.061
Average of $16,100	9,145	365	25.05	0.373	0.352
Average of $25,750	13,748	365	37.67	0.561	0.529
Average of $48,880	20,736	365	56.81	0.847	0.798
Total (All Homes)	24,496	365	67.11	1.000	
Average of $70,371	25,995	365	71.22	1.061	1.000
Average of $87,897	29,347	365	80.40	1.198	1.129

Source: 2009 National Household Travel Survey Database, Federal Highway Administration

Table A-6
Trip Generation Rate by Single Family Land Use Tier

Estimation of Trip Rate by Tier	Trip Rate[1]	Assessable Trip Length[2]	Daily VMT[3]	Ratio to Mean[4]
Single Family (Detached)				
Less than 1,500 sf & Very Low Income	**2.75**	6.62	18.20	0.352
Less than 1,500 sf & Low Income	**4.13**	6.62	27.35	0.529
Less than 1,500 sf	**6.23**	6.62	41.26	0.798
1,500 to 2,499 sf	**7.81**	6.62	51.70	1.000
2,500 sf or larger	**8.82**	6.62	58.37	1.129

1) Daily VMT (Item 3) divided by assessable trip length (Item 2) for each tiered single family land use category
2) Source: Table A-2
3) Ratio to mean (Item 4) multiplied by total daily VMT for the 1,500 to 2,499 sf tier for each tiered single family land use category
4) Source: Table A-5

PAGE INTENTIONALLY LEFT BLANK

Green Cove Springs Mobility Fee Report

Developed by:

Gannett Fleming

RSG

STAFF REPORT

CITY OF GREEN COVE SPRINGS, FLORIDA

TO: Regular Session **MEETING DATE:** May 16, 2023

FROM: Development Services Department/Legal Department

SUBJECT: Second Reading of Ordinance O-14-2023 property transfer from the City to DR Horton, Inc. / Rookery Investors, LLC related to the Rookery Development

BACKGROUND

DR Horton, Inc./Rookery Investors, LLC is completing the property transfer exchange deed that was approved as part of the land transfer request to allow for construction of a roadway connection through city-owned property that was acquired using Florida Communities Trust ("FCT") funds and designated as the Ed Gustafson Regional Park ("Park"). Park development has not yet begun as set forth in Resolution R-01-2022.

The Property to be transferred from the City is 21.3 acres and is a part of Gustafson Park. This is part of a property exchange whereby DR Horton/Rookery Investors, LLC is conveying to the City 21.89 acres of their property.

The approved Resolution and map of the property and proposed ordinance are enclosed.

FISCAL IMPACT

N/A

RECOMMENDATION

Motion to approve on second and final reading Ordinance No. O-14-2023, regarding the property transfer of 21.3 acres from the City to DR Horton, Inc./Rookery Investments, LLC .

RESOLUTION NO. R-01-2022

A RESOLUTION OF THE CITY COUNCIL THE CITY OF GREEN COVE SPRINGS, FLORIDA, ENDORSING AND CONCEPTUALLY APPROVING THE PROPOSAL OF THE CITY OF GREEN COVE SPRINGS, FLORIDA, PURSUANT TO RULE 62-818.016, FLORIDA ADMINISTRATIVE CODE, FOR A LAND EXCHANGE OF ±21.3 ACRES OF PROPERTY WITHIN THE PROPOSED ED GUSTAFSON REGIONAL PARK FOR ±21.89 ACRES OF PROPERTY WITHIN THE PROPOSED ROOKERY DEVELOPMENT ASSHOWN IN EXHIBIT "A"; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the City Council (the "Council") of the City of Green Cove Springs, Florida (the "City") received Florida Community Trust ("FCT") grants between 2002 and 2009 for the acquisition of land for preservation and active/passive recreation in a project known as the Ed Gustafson Regional Park (the "Park"); and

WHEREAS, the proposed Park does not presently have a high level of accessibility from existing roadways; and

WHEREAS, the City received requests from D. R. Horton, Inc. - Jacksonville ("Horton") for an annexation, future land use amendment, and zoning request to permit a residential development ("Rookery") south of the Park, on a portion of parcel number 016515-000-00; and

WHEREAS, Horton has proposed a four-lane roadway that will connect from their development site to US Highway 17 ("US 17") which would also provide additional access from a major roadway to the proposed Park; and

WHEREAS, in exchange for the ±21.3 acres, Horton is donating ±21.89 acres to the Park, will construct the roadway, and will stub utilities to the proposed Park; and

WHEREAS, Part 2(a) of Rule 62-818.016, F.A.C. requires "a written statement from the Recipient's governing council that it has reviewed the proposal and that the governing body conceptually approves the proposed land exchange by an affirmative vote of at least ¾ of its members or the local requirements, whichever is higher".

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF GREEN COVE SPRINGS AS FOLLOWS:

SECTION 1. RECITALS. The above recitals are true and correct and are hereby incorporated herein by reference.

SECTION 2. PURPOSE. The City Council, as the governing council of the City of Green Cove Springs, Florida, declares it has reviewed the proposal to swap ±21.3 acres of land acquired through an FCT grant for ±21.3 acres of parcel 016515-000-00, the

Rookery Development, and the City Council conceptually approves the proposed land exchange.

SECTION 3. DEFINITIONS AND INTERPRETATIONS. Unless otherwise defined herein, all capitalized terms in this resolution shall have the meanings set forth in Chapter 70 of the Code.

SECTION 4. COMPLIANCE. It is the intent of the City that the purpose of this Resolution is to meet the requirements of Rule 62-818.016, F.A.C., and to be a declaration of official intent and conceptual approval of the land swap under such Rule.

SECTION 5. EFFECTIVE DATE. This Resolution shall take effect immediately upon its adoption.

DONE AND RESOLVED BY THE CITY COUNCIL OF THE CITY OF GREEN COVE SPRINGS, FLORIDA, IN REGULAR SESSION THIS 1ST DAY OF FEBRUARY, 2022.

CITY OF GREEN COVE SPRINGS, FLORIDA

_____

Edward R. Gaw, Mayor

ATTEST:

_____

Erin West, City Clerk

APPROVED AS TO FORM ONLY:

_____

L. J. Arnold, III, City Attorney

EXHIBIT A

YIELD ANALYSIS PLANS
FOR
ED GUSTAFSON REGIONAL PARK
CONCEPT PLAN 5
CLAY COUNTY, FLORIDA
(NOT) FOR CONSTRUCTION
GULFSTREAM DESIGN GROUP, LLC
REVISIONS
GRAPHIC SCALE
LEGEND
YIELD PLAN NOTES
SITE DATA TABLE
PROVIDED PARKING SPACES
1,419
21.34±ACRES LAND SWAP
RECREATION 11.2± ACRES FUTURE FIRE & POLICE SUBSTATION
APPROXIMATE WETLANDS
INDUSTRIAL COMPLEX
STORMWATER POND
ROCKING STREET
HICKLAND AVENUE
GARDNER AVENUE

ORDINANCE NO. O-14-2023

AN ORDINANCE OF THE CITY COUNCIL OF GREEN COVE SPRINGS FLORIDA AUTHORIZING THE CONVEYANCE OF CITY OWNED REAL PROPERTY GENERALLY DESCRIBED AS A 21.3 ACRE TRACT OF LAND IN THE SOUTHEAST CORNER OF PARCEL ID #016515-02-002-00, ADJACENT TO THE CSX RAILROAD, PURSUANT TO SECTION 2.12 (7) OF THE CITY CHARTER; PRESCRIBING THAT THE PRECISE TERMS AND CONDITIONS FOR THE CONVEYANCE WILL BE CONTAINED IN A SUBSEQUENT RESOLUTION OF THE CITY COUNCIL; PROVIDING REPEALER, SEVERABILITY, AND SETTING AN EFFECTIVE DATE.

WHEREAS, DR Horton, Inc. ("Horton") or Rookery Investors, LLC, is developing a subdivision West of Highway 17 and South of Cooks Lane on part of the old Gustafson Dairy property and the City of Green Cove Springs ("City") and Horton are exchanging real property in order to provide a more appropriate access into the subject subdivision; and,

WHEREAS, the City Council has determined that the exchange of the properties will be in the best interest of the City's health, safety, and welfare, and is being done for a public purpose.

NOW, THEREFORE BE IT ENACTED BY THE CITY COUNCIL OF GREEN COVE SPRINGS, FLORIDA AS FOLLOWS:

Section 1. The City is hereby authorized to convey that certain real property described in Exhibit "A", attached hereto, to DR Horton, Inc., or their designee Rookery Investors, LLC in exchange for real property to be conveyed to the City of approximate equal or more value.

Section 2. The terms and conditions of the exchange, including the property to be conveyed to the City will be contained in subsequent resolution of the City Council.

Section 3. Severability. If any provision of this ordinance or the application thereof to any person or circumstance is held invalid, such invalidity shall not affect any other provision or application of this ordinance which can be given effect without the invalid provision or application.

Section 4. Repealer. All Ordinances or parts of Ordinances insofar as they are

inconsistent or in conflict with the provisions of this Ordinance are hereby repealed to the extent of any conflict.

Section 5. Effective Date. This Ordinance shall take effect immediately upon its final adoption by the City Council.

INTRODUCED AND APPROVED AS TO FORM ONLY ON THE FIRST READING BY THE CITY COUNCIL OF GREEN COVE SPRINGS, FLORIDA, ON THIS 2nd DAY OF MAY, 2023.

CITY OF GREEN COVE SPRINGS, FLORIDA

By: _____
Daniel M. Johnson, Mayor

ATTEST: _____
Erin West, City Clerk

PASSED ON SECOND AND FINAL READING BY THE CITY COUNCIL OF GREEN COVE SPRINGS, FLORIDA, THIS 16th DAY OF MAY, 2023.

CITY OF GREEN COVE SPRINGS, FLORIDA

By: _____
Constance Butler, Mayor

ATTEST: _____
Erin West, City Clerk

APPROVED AS TO FORM:

_____
L. J. Arnold III, City Attorney

EXHIBIT "A"

Tax Parcel Number 38-06-26-016515-002-00

LEGAL DESCRIPTION

A portion of Section 38 of the George I.F. Clarke Grant, Township 6 South, Range 26 East, Clay County, Florida, being a portion of those lands described as Parcel "A" and recorded in Official Records Book 3316, page 1098, of the Public Records of said county, being more particularly described as follows:

For a Point of Reference, commence at the intersection of the Southerly right of way line of Green Cove Avenue, a variable width right of way as presently established, with the Westerly right of way line of CSX Railroad, a 100 foot right of way as presently established; thence South 21°54'49" East, along said Westerly right of way line, 1424.74 feet to the Point of Beginning.

From said Point of Beginning, thence continue South 21°54'49" East, along said Westerly right of way line, 1502.39 feet to the Northeast corner of those lands described and recorded in Official Records Book 3855, page 1391, of said Public Records; thence North 77°06'26" West, departing said Westerly right of way line and along the Northerly line of last said lands and along the Southerly line of said Parcel "A", 1313.50 feet; thence North 12°52'16" East, departing said Southerly line, 31.45 feet to the point of curvature of a curve concave Easterly having a radius of 1250.00 feet; thence Northerly along the arc of said curve, through a central angle of 17°35'55", an arc length of 383.94 feet to a point on said curve, said arc being subtended by a chord bearing and distance of North 21°40'14" East, 382.43 feet; thence Northeasterly along the arc of a non-tangent curve concave Southeasterly having a radius of 1441.24 feet, through a central angle of 05°53'59", an arc length of 148.41 feet to the point of tangency of said curve, said arc being subtended by a chord bearing and distance of North 26°05'53" East, 148.34 feet; thence North 29°02'53" East, 373.29 feet to the point of curvature of a curve concave Southeasterly having a radius of 517.02 feet; thence Northeasterly along the arc of said curve, through a central angle of 39°09'19", an arc length of 353.33 feet to a point on said curve, said arc being subtended by a chord bearing and distance of North 48°37'32" East, 346.49 feet; thence North 68°05'11" East, along a non-tangent line, 70.00 feet to the Point of Beginning.

Containing 21.30 acres, more or less.

STAFF REPORT

CITY OF GREEN COVE SPRINGS, FLORIDA

TO: City Council Regular Session **MEETING DATE:** May 16, 2023

FROM: Scott Schultz, Asst. Water Utilities Director

SUBJECT: City Council ratification of the purchase of overhead transformers for inventory and storm preparation from Gresco in the amount of $57,730.00 and Sunbelt - Solomon in the amount of $92,060.00 for a total amount of $149,790.00.

BACKGROUND

Electric Department and Warehouse staff have been working with vendors on pole mount transformer specifications, lead times, mounting brackets, pricing and other variables. This time-consuming activity brought us to the point that we need to get them on order as soon as practicable as costs and lead times continue to increase. The Sunbelt-Solomon transformers are remanufactured and were more readily available. The new transformers from Gresco are needed to fulfill inventory requirements.

FISCAL IMPACT

$149,760.00 to the warehouse electric inventory budget

RECOMMENDATION

Ratify the purchase of overhead transformers for inventory and storm preparation from Gresco in the amount of $57,730.00 and Sunbelt - Solomon in the amount of $92,060.00

QUOTE # 6846
CUSTOMER COPY QUOTED DATE 4/

Item #9.

BILL TO:
GRESCO UTILITY SUPPLY, INC.

SHIP TO:
C/0 GREEN COVE SPRINGS(GRESCO)
326 WALNUT STREET

GREEN COVE SPR FL32043

DESCRIPTION	PRODUCT NUMBER	QTY	UNIT PRICE	EXT PRICE
TRANSFORMER LOSS DATA IS BASED ON ANSI C57.12.00:				
LOSS GRT: AVE VOLT% : 100				
NL TEMP BASIS: 85 LL TEMP BASIS: 85				
QUOTED PER FMPA FA-TSF-1 SPECIFICATION AND PER THE				
DESCRIPTION PROVIDED WITH THE RFQ				
EXCEPTION TO SECTION 2.3: IMPEDANCE TOLERANCES				
PER ANSI C57.12.00-2014				
NL=$8.38 AND LL=$2.258 WITH A 2.5% WINDOW				
ITEM 1				
OVERHEAD DIST. TRANSFORMER	POLEMOUNT	1	2266.00	2266.00
ITEM# : 1.00				
NL= 46 LL= 185 IZ=2.000 TL= 231				
OPTIONS BEGIN.....				
015	15 KVA			
706	13200/22860Y 125BIL 2BU			
706Y	13200/22860Y			
001	NO TAPS			
601	120/240 3 OR 4 LVBU (INTERLACED)			
1	1 SET OF HANGER BRACKETS			
000	CONVENTIONAL			
000	NO LIGHTNING ARRESTER AT H1			
050	MILD STL TNK W/SS BOSSES&LIFT EARS			
315	15KV 304L SS COVER.			
315	15KV, 304L SS COVER BAND			
1	STAINLESS STEEL HARDWARE			
53	USE W/IFD (EXTRA CREEP)			
300	GenThermoSet/ThermoPlast w/EyeBolt			
1	RECEIVES STD LENGTH LV GRD STRAP			
P	IFD-REQUIRE6inAIRSPACE(PRVPLUGGED)			
1	#10-1,1WAY TIN/BROZE LUG(STD)19-01			
B	(1) BARCODED ALUMINUM NAMEPLATE			
E	2.5 Black On Yellow Refl.			
S	NON PCB 6x6 WHITE ON BLUE 7-66			
ARRESTER KV	0000000010.00000			
0	STD TX MINERAL OIL			
TKD	0000000015.00000			
TKH	0000000024.00000			
OPTIONS END.....				

QUOTE # 6846
CUSTOMER COPY QUOTED DATE 4/

Item #9.

BILL TO:
GRESCO UTILITY SUPPLY, INC.

SHIP TO:
C/0 GREEN COVE SPRINGS(GRESCO)
326 WALNUT STREET

GREEN COVE SPR FL32043

DESCRIPTION	PRODUCT NUMBER	QTY	UNIT PRICE	EXT PRICE
ITEM 2				
OVERHEAD DIST. TRANSFORMER	POLEMOUNT	1	2731.00	2731.00
ITEM# : 2.00				
NL= 62 LL= 302 IZ=2.000 TL= 364				
OPTIONS BEGIN.....				
025	25 KVA			
706	13200/22860Y 125BIL 2BU			
706Y	13200/22860Y			
001	NO TAPS			
601	120/240 3 OR 4 LVBU (INTERLACED)			
1	1 SET OF HANGER BRACKETS			
000	CONVENTIONAL			
000	NO LIGHTNING ARRESTER AT H1			
050	MILD STL TNK W/SS BOSSES&LIFT EARS			
315	15KV 304L SS COVER.			
315	15KV, 304L SS COVER BAND			
1	STAINLESS STEEL HARDWARE			
53	USE W/IFD (EXTRA CREEP)			
300	GenThermoSet/ThermoPlast w/EyeBolt			
1	RECEIVES STD LENGTH LV GRD STRAP			
P	IFD-REQUIRE6inAIRSPACE(PRVPLUGGED)			
1	#10-1,1WAY TIN/BROZE LUG(STD)19-01			
B	(1) BARCODED ALUMINUM NAMEPLATE			
E	2.5 Black On Yellow Refl.			
S	NON PCB 6x6 WHITE ON BLUE 7-66			
ARRESTER KV	0000000010.00000			
0	STD TX MINERAL OIL			
TKD	0000000017.00000			
TKH	0000000024.00000			
OPTIONS END.....				
ITEM 3				
OVERHEAD DIST. TRANSFORMER	POLEMOUNT	1	3818.00	3818.00
ITEM# : 3.00				
NL= 99 LL= 517 IZ=2.000 TL= 616				
OPTIONS BEGIN.....				
050	50 KVA			
706	13200/22860Y 125BIL 2BU			
706Y	13200/22860Y			
001	NO TAPS			
601	120/240 3 OR 4 LVBU (INTERLACED)			
1	1 SET OF HANGER BRACKETS			

QUOTE # 6846
CUSTOMER COPY QUOTED DATE 4/

Item #9.

BILL TO:
GRESCO UTILITY SUPPLY, INC.

SHIP TO:
C/0 GREEN COVE SPRINGS(GRESCO)
326 WALNUT STREET

GREEN COVE SPR FL32043

DESCRIPTION	PRODUCT NUMBER	QTY	UNIT PRICE	EXT PRICE
000	CONVENTIONAL			
000	NO LIGHTNING ARRESTER AT H1			
050	MILD STL TNK W/SS BOSSES&LIFT EARS			
315	15KV 304L SS COVER.			
315	15KV, 304L SS COVER BAND			
1	STAINLESS STEEL HARDWARE			
53	USE W/IFD (EXTRA CREEP)			
300	GenThermoSet/ThermoPlast w/EyeBolt			
1	RECEIVES STD LENGTH LV GRD STRAP			
P	IFD-REQUIRE6inAIRSPACE(PRVPLUGGED)			
1	#10-1,1WAY TIN/BROZE LUG(STD)19-01			
B	(1) BARCODED ALUMINUM NAMEPLATE			
E	2.5 Black On Yellow Refl.			
S	NON PCB 6x6 WHITE ON BLUE 7-66			
ARRESTER KV	0000000010.00000			
0	STD TX MINERAL OIL			
TKD	0000000018.80000			
TKH	0000000030.00000			
OPTIONS END.....				

NO FRIDAY DELIVERIES

100% CTR W/ SHIPMENT

48 HOUR NOTICE

DELIVERY TO BE FLAT BED

Jeremy Harpe
City of Green Cove Springs
jharpe@greencovesprings.com

Daresa Denis
Inside Sales
daresa.denis@sunbeltsolomon.com | +1 4234530420

PRODUCT	QTY	EACH
	10	$1,676

Single Phase Pole Mount 15 KVA, Shipment: 16-18 Weeks ARO

KVA: 15 @ 65°C | 60Hz | Impedance: Standard
HV: 13200/22860Y (125 KV BIL) | LV: 120/240 (30 KV BIL)
Primary Taps: No Taps

Double Bushing, Single Hanger, Conventional Units
(3) Eyebolt Low Voltage Polemount Bushings
Non-PCB Mineral Oil

PRODUCT	QTY	EACH
	25	$1,870

Single Phase Pole Mount 25 KVA, Shipment: 16-18 Weeks ARO

KVA: 25 @ 65°C | 60Hz | Impedance: Standard
HV: 13200/22860Y (125 KV BIL) | LV: 120/240 (30 KV BIL)
Primary Taps: No Taps

Double Bushing, Single Hanger, Conventional Units
(3) Eyebolt Low Voltage Polemount Bushings
Non-PCB Mineral Oil

PRODUCT	QTY	EACH
	10	$2,855

Single Phase Pole Mount 50 KVA, Shipment: 16-18 Weeks ARO

KVA: 50 @ 65°C | 60Hz | Impedance: Standard
HV: 13200/22860Y (125 KV BIL) | LV: 120/240 (30 KV BIL)
Primary Taps: No Taps

Double Bushing, Single Hanger, Conventional Units
(3) Eyebolt Low Voltage Polemount Bushings
Non-PCB Mineral Oil

Units are Completely Reconditioned to Quoted Specifications

Destination: FL | **FOB:** Destination | **Shipping & Handling:** Prepaid & Allowed
Shipment: 16-18 Weeks ARO | **Warranty:** 3 Years | **Terms:** Net 30 with approved credit.

Offer to sell valid for 30 days. Price is subject to re-evaluation after 15 days. Units subject to availability.

Please note any changes to the specifications on this quotation form and reference the quotation number on your Purchase Order. Sunbelt Solomon ('Supplier") will use your Purchase Order to proceed with manufacturing when terms and conditions are finalized. Please note that changes made after the manufacturing process begins may result in additional charges and potential delays in production. Production of units that are contingent on the approval/receipt of drawings will begin the manufacturing process after the final sign off on the specified drawings by the customer. Please contact your sales

representative for the estimated drawing lead time associated with this quote.

All sales, rental and services are subject to Supplier's Terms and Conditions for Sales and Rentals of Equipment and/or Services ("Terms and Conditions") unless otherwise mutually agreed in writing by officer of Supplier as evidenced by such officer's signature. Acceptance of a Buyer purchase order by Supplier-does not constitute acceptance of Buyer terms and conditions. As orders are time sensitive and it is cost prohibitive to review and negotiate terms and conditions between parties, Supplier Terms and Conditions apply to quotes/orders: 1) with a value before tax of $25,000 or less, 2) emergency services or services completed before issuance of a purchase order, and 3) rush orders for sales and rental that are to ship within three (3) days regardless of submission of terms and conditions by Buyer. If the Quotation is for Company to perform evaluation services on Customer-owned equipment (e.g. for Company to determine how/if the piece of equipment failed and/or whether it can be repaired), then the provisions of terms and conditions will apply which include (among other provisions) risk of loss remaining with Customer and Company only being liable for damage to this equipment to the extent of its gross negligence or willful misconduct. In no event does Supplier accept consequential damages or agree to Prime/Owner contract terms and conditions.

Price does not include tax. If applicable, tax will be added to the invoice. If order is tax exempt, please provide a copy of your exemption certificate. Unit(s) quoted are for normal service conditions as defined by ANSI/IEEE Standards. Notify Supplier at time of quotation should the unit(s) be subject to harmonics, motor starting, shovel duty, or other special service conventions.

Schedules
All Delivery dates are estimates and under no circumstances does Company guarantee date of delivery. Company shall not be responsible or liable for any damage or loss which occurs during transportation and/or shipment of the Equipment. Company is not liable or responsible for any costs of Customer caused by any delays in transportation or delivery.

Company reserves the right to manufacture and ship any items in advance of the acknowledged shipping schedule, unless expressly forbidden by the Customer at the time of the order entry.

Cancelation or Revision of Order
Any Purchase Order may be cancelled or revised by Customer only upon written approval by an authorized representative of the Company, and at the Company's sole discretion. Should Company approve cancellation or revision of a Purchase Order, Customer shall pay the cancellation or revision charges specified in said approval. Cancellation or revision charges will include expenses previously incurred, commitments made pursuant to or in reliance upon such Purchase Order, whether or not such commitments are legally binding on Company, and any other factors considered relevant by Company. In the event that Company does not approve cancellation or revision, Customer shall remain liable to Company for the full price of the Equipment, Rental and/or Services ordered.

Cancellation charges are calculated for each unit cancelled per its individual status.

Standard Cancellation Charges:

Cancellation Charges:	**% of Selling Price**
Before Engineering Review / Scheduling	20
Before Production Begins	65
After Production Begins	100

Company reserves the right to re-quote both price and lead time for any request to revise an order. If it is determined that a revision will incur an additional revision charge, charges are calculated for each unit revised per its individual status.

Standard Revision Charges:

Revision Charges:	**% of Selling Price**
Before Engineering Review / Scheduling	0
Before Production Begins	35
After Production Begins	100

STAFF REPORT

CITY OF GREEN COVE SPRINGS, FLORIDA

TO: City Council Regular Session **MEETING DATE:** May 16, 2023

FROM: Mike Null

SUBJECT: Approval of Amendment Number 2 to Contract # LC 2020-04 with Danella Construction for Directional Boring Services through January 20, 2024. ***Mike Null***

BACKGROUND

At the January 21, 2020 City Council Meeting, Council approved the award of Bid # LC 2020-04 to Danella Construction Corporation of Florida for Directional Boring Services. This award was for a one-year term with the option to renew for up to three additional one-year terms. Due to turnover in personnel, the City failed to renew this agreement (copy attached) prior to its expiration.

At the January 18, 2022, Council approved amendment number 1, extending the agreement to January 20, 2023.

Presented this evening for Council approval is amendment number 2, extending the agreement to January 20, 2024. This is the last available extension of this contract. The copy attached has already been signed by the contractor. Staff plans to advertise for a new contract for these services in October 2023.

FISCAL IMPACT

Use of funds from the approved annual operating and CIP budgets as needed.

RECOMMENDATION

Approve Amendment Number 2 to Contract # LC 2020-04 with Danella Construction for Directional Boring Services through January 20, 2024.

Name Annual Contract for Directional Boring Services - Bid 2020-04 AMENDMENT NO. 2

THIS AMENDMENT made and entered into this __16th__ day of __May__, 2023 by and between THE CITY OF GREEN COVE SPRINGS, FLORIDA, a political subdivision of Florida, by and through its City Council, hereinafter referred to as OWNER, and Danella Construction Corporation of Florida, Inc., a Florida Corporation, hereinafter referred to as CONTRACTOR;

WHEREAS, both parties agreed to the Professional Services Agreement for Directional Boring Services entered into effective January 21, 2020;

NOW, THEREFORE, in consideration of the mutual promises contained in the Professional Services Agreement, both parties agree to Amendment No. 2 as set forth below:

TERM

The OWNER and CONTRACTOR have mutually agreed to renew the Professional Services Agreement for the following services:

Agreement term for an additional one (1) year period with the same terms and conditions, retroactive to January 21, 2023 and through January 20, 2024.

This is the last eligible extension for this agreement.

(Remainder of Page Intentionally Left Blank)

IN WITNESS WHEREOF, the parties hereto have signed this Amendment No. 1 in duplicate. One (1) counterpart each has been delivered to OWNER, and CONTRACTOR.

OWNER: CITY OF GREEN COVE SPRINGS, FLORIDA

By: _____

Constance W. Butler, Mayor

By: _____

Steve Kennedy, City Manager

ATTEST:

By: _____

Erin West, City Clerk

APPROVED AS TO FORM:

By: _____

L.J. Arnold III, City Attorney

CONTRACTOR:

By: Thomas M Schinske VP

Name & Title: Thomas M Schinske VP

WITNESS:

By: Lindsay Newman

Printed Name: Lindsay Newman

STAFF REPORT

CITY OF GREEN COVE SPRINGS, FLORIDA

TO: City Council Regular Session **MEETING DATE:** May 16, 2023

FROM: Scott Schultz, Asst. Water Utilities Director

SUBJECT: City Council approval of funding in the amount of $93,480.00 to Grimes Utilities Inc. for repairs to the 18" trunk sewer line on Clay Street.

BACKGROUND

The 18" clay sewer line has partially collapsed where it enters the manhole. Over the last 2 years staff have requested quotes from six different contractors (Jax Utilities Management, R2T, Insituform, Applied Technologies, Jeff's Excavating) and have not received a formal proposal. Grimes is a reputable contractor performing many projects for CCUA and the Town of Orange Park (among others).

FISCAL IMPACT

$93,480.00 from the Wastewater Fund CIP Budget. This project has been funded since FY21.

RECOMMENDATION

Approve funding in the amount of $93,480.00 to Grimes Utilities Inc. for repairs to the 18" trunk sewer line on Clay Street.

GRIMES Utilities, Inc.

CUCA 50629 CGC 1518790

Proposal

Attn: City of Green Cove Springs **May 5, 2023**
Jason Laurenza

RE: Sewer Repair MH4-6 to MH4-7

Based on the asbuilt and tv report/video as well as a site visit with City of Green Cove Springs representative, we propose the following:

Description	Units	QTY	Unit Cost	Total Cost
Mobilization and General Conditions	LS	1	$ 7,900.00	$ 7,900.00
Sewer Repair	LS	1	$ 85,580.00	$ 85,580.00
			Bid	**$ 93,480.00**

Bid Qualifications for Project are as Follows:

1. Includes: all materials & subcontractors including incidentals, density testing, bypass pumping, trench box, MOT, dewatering, and sod restoration.
2. Excludes: CCTV
3. Proposal valid for 30 days.

We appreciate the opportunity to submit a proposal for this project. Please contact me should you have any questions or concerns at (904)264-0046.

Jessica Fitzgerald
Vice President
jessie@grimesutilities.com

STAFF REPORT

CITY OF GREEN COVE SPRINGS, FLORIDA

TO: City Council Regular Session **MEETING DATE:** May 16, 2023

FROM: Scott Schultz, Asst. Water Utilities Director

SUBJECT: City Council approval to surplus the Information Technology items listed in Attachment "A" ***Scott Schultz***

BACKGROUND

The items listed in Attachment "A" have outlived their useful life and will be surplussed in a manner that provides the greatest return to the city.

FISCAL IMPACT

Funds received will be returned to the appropriate department operating budget.

RECOMMENDATION

Approve the surplus of the Information Technology items listed in Attachment "A"

For Council Meeting of 6/6/2023

Author: Tyler Lewis - IT Technician

ITEM #	DEPT	MAKE	MODEL	SERIAL/VIN #	REASON	QUANTITY
Access Point	IT	Ubiquiti	UniFi AP	1501K0418D6C8CADD	Replaced	7
Desktop	IT	Dell	Inspiron 3647	GTRLK02	Old hardware	1
Desktop	IT	HP	HP Pro 3000 MT	MXL0220BZN	Old hardware	1
File Server	IT	Cybertron	CSE825	C8250FC01M50030	Replaced	1
Laptop	IT	Asus	T100TAM	EAN0CX600033439	Old hardware	1
Misc. Cables	IT	N/A	N/A	N/A	N/A	10-15
Misc. Keyboards/Mice	IT	N/A	N/A	N/A	N/A	3
Monitor	IT	Dell	E2209Wf	CN0U853F7287293C093I	Power issues	1
Monitor	IT	Dell	P2212Hb	CD0NDMRP742610FTU	Dim display	1
Monitor	IT	Dell	S2415Hb	CN03R3XN742615410ELL	Power issues	1
Monitor	IT	Samsung	740NS	HA17H9NP507577K	Old	1
Printer	IT	brother	MFC-7440N	U62063L0N716697	Old hardware	1
Printer	IT	HP	B0ISB060500	VND3G24517	Old/Damaged	1
Printer Ink	IT	EZink	Cartridge TN227	X002DY0YW1	Obsolete	1
Printer Ink	IT	brother	TN277M/BK/C/Y	TKJJ22N8001182YD008E3	Obsolete	4
Server	IT	Cybertron	N/A	C12620S001	Replaced	1
Server	IT	ShoreTel	ST001	S90F1201233055	Replaced	1
Server	IT	ShoreTel	ST002	T1KF11451E502D	Replaced	1
Server	IT	Cybertron	N/A	40001000323548	Replaced	1
Server	IT	Cybertron	N/A	40001000323547	Replaced	1
Switch	IT	Ubiquiti	ES-8-150W	1847G18E82921928B	No boot	1
UPS	IT	APC	BE425M	9B1817A14385	Bad battery	1
UPS	IT	WBOX	0E625V8LCD	FADHV2002244	Bad battery	1
UPS	IT	APC	BE550G	4B1222P60856	Bad battery	1
UPS	IT	APC	BR1500G	3B1149X26204	Bad battery	1
UPS	IT	APC	BX1300G	4B1316P25689	Failed	1
UPS	IT	Verizon	MiFi 8800L	469496024116	No longer in use	1
UPS	IT	TRIPPLITE	ECO750UPS	2148BY0BC819400852	Bad battery	1
UPS	IT	APC	BE425M	0B2146P11030	Bad battery	1

IT Director Approval: _____

STAFF REPORT

CITY OF GREEN COVE SPRINGS, FLORIDA

TO: City Council Regular Session **MEETING DATE:** May 16, 2023

FROM: Scott Schultz, Asst. Water Utilities Director

SUBJECT: City Council approval purchase a John Deere Skid Steer from Dobbs Equipment / Beard Equipment, in the amount of $77,503.00, through the Florida Sherriff's Association Contract Number FSA20-VEH 18.0. ***Scott Schultz***

BACKGROUND

Included in the construction of the Harbor Road Advanced Wastewater Treatment Facility (HRAWWTF) is a concrete pad for properly managing VacCon debris from water, wastewater and stormwater maintenance. This debris has to be scraped from the pad utilizing equipment and hauled to the landfill. A skid steer is the most efficient equipment for this task. In addition, the city has utility easements that have to be maintained, some of which are very rough terrain. A mower attachment will be acquired for the skid steer to assist with easement maintenance.

FISCAL IMPACT

$77,503.00 from the Wastewater Fund CIP Budget.

RECOMMENDATION

Approve the purchase a John Deere Skid Steer from Dobbs Equipment / Beard Equipment, in the amount of $77,503.00, through the Florida Sherriff's Association Contract Number FSA20-VEH 18.0

Dobbs Equipment LLC

2710 Falkenburg Rd Riverview, FL 33578

FLORIDA SHERIFFS ASSOCIATION
FLORIDA ASSOCIATION OF COUNTIES
Heavy Equipment
Contract Number FSA20-VEH 18.0

Date 2-1-2023 **Page** 1 of 1

Requesting Agency	City of Green Cove Springs
Address	900 Gum Street, Green Cove Springs, FL 32043
Contact Person	Scott Schultz
FSA Specification	#156 John Deere 331G Compact Track Loader

Base Model John Deere 331G……. $66,759

Base Options

Open Rops Canopy
15.8” Tracks
EH Joystick Controls
Mechanical Suspension Seat
2” Seat Belt
84” HD Construction Bucket with Edge

Stated Options from Contract

2650	Upgrade to 17.7” zig zag tracks	$456
0752	Add enclosed cab with a/c	$6,158
0950	Add joystick EH performance package	$989
6006	Add air suspension seat	$598
8042	Add rear view camera	$812
8342	Add am/fm radio with bluetooth	$574
8370	Add HD rear grille	$465
8535	Add powered quick attach	$691

Total Purchase Price……...$77,503

Beard Equipment and I thank you for this opportunity.

Servicing Dealer

BEARD EQUIPMENT CO.

Jacksonville FL

Corey Hartley, Salesman Cell 904-322-1511 chartley@beardequipment.com

STAFF REPORT

CITY OF GREEN COVE SPRINGS, FLORIDA

TO: City Council **MEETING DATE:** May 16, 2023

FROM: Mike Null, Assistant City Manager

SUBJECT: Approval of Change Order #4 to EltonAlan, Inc. for construction of the Palmetto Trail Project in the additive amount of $3,949.87 and two (2) days contract time. ***Mike Null***

BACKGROUND

At the July 5, 2022, Council awarded Bid # 2022-02, construction of the Palmetto Trail Project to EltonAlan, Inc. in the award amount of $1,544,374.81. This is a Local Area Project (LAP) project funded through an agreement with FDOT for the construction phase of project 43677-1-38-02, to construct a trail along Palmetto Ave from Oak St to Harbor Road and along MLK Jr. Blvd from Palmetto Ave to Vera Francis Hall Park. The FDOT construction budget is $1,611,250.00. Staff will be managing the project and FDOT will be funding the pay requests on a reimbursable basis.

Pay Applications #1 through 7 have been approved on this project.

At the December 13, 2022 Council Meeting, Council approved Change Order #1 in the amount of $633.19 for one driveway that was not shown on the plans and some additional sidewalk on US 17 at Governors Creek, and 12 days. This increased the contract amount to $1,545,008.00.

At the March 21, 2023 Council Meeting, Council approved Change Order #2 in the amount of $1,328.05 for modification of an existing driveway that was not called out in the plans. This increased the contract amount to $1,546,366.05.

At the May 2, 2023 Council Meeting, Council approved Change Order #3 in the amount of $1,375.00 for extra cutting of concrete curb with the addition of three contract days.

Attached for consideration in this action item is Change Order #4. This change order adds two (2) days to the contract duration. It also adds $3,949.87 for the addition of two concrete driveways that were not shown in the plans as well as flowable fill for backfill of stormwater structures near AC water lines. Approval of this change order will increase the contract amount to $1,551,660.92. FDOT has agreed to fund this additional work. Staff is seeking Council approval of this item as submitted.

FISCAL IMPACT

This project is funded by a FDOT LAP agreement on a reimbursable basis.

RECOMMENDATION

Approve Change Order #4 to EltonAlan, Inc. for construction of the Palmetto Trail Project in the additive amount of $3,949.87 and two (2) days contract time.

District Two Local Agency Change Order Request

Change Order Number 4

Financial Project Number: 435677-1-58-01 Contract Number: G2390

Project Description: Palmetto Avenue Sidewalk Local Agency: City of Green Cove Springs

Contractor: Elton Alan

Original Contract Amount: $1,544,374.81

Change in Contract Amount CO #1: $633.19
Change in Contract Amount CO #2: $1,328.05
Change in Contract Amount CO #3: $1,375.00
Change in Contract Amount C.O.#4 $3,949.87
Present Contract Amount: $1,551,660.92

Original Contract Days: 296 days
Change in Contract Days-CO #1: Twelve (12) days
Change in Contract Days- CO #2: Twelve (12) days
Change in Contract Days- CO #3: Three (3) days
Change in Contract Days- CO #4: Two (2) days
Current Contract Days: 325 days
Change due to Design Error or Omission Yes No X

Description of Changes:

1. Compensates the contractor for flowable filling around drainage Structure S-8 to S-9, S-11, S-12, and the ERCP at approx. stations 67+80 to 68+20.
2. Compensates the contractor for adding additional 6” concrete and deducts 4” concrete sidewalk for the added driveways at station 113+00 and 114+00.
3. Adds 2 Non-Compensable Contract Days for the added work.

Justification for Changes

1. The addition of flowable fill is needed to help protect the existing asbestos concrete watermain from damage. Flowable filling around the structures and ERCP will help protect the water main by eliminating vibration near the water main during compaction of the backfill.
2. At station 113+00 and 114+00 the plans only call to place 4” concrete sidewalk. After review, these areas are being used as driveways for both light and heavy vehicles. Changing the sidewalk from 4” to 6” concrete and adding concrete aprons will prevent future maintenance due to the additional load provided by the vehicle traffic.

Resources/ Materials

Item No.	Item Description	Quantity	Unit Price	Total Additional Cost
522-2	6” Concrete Sidewalk and Driveways	50 SY	$59.19	$2,959.50
522-1	4” Concrete Sidewalk (Deduction)	21.3 SY	$45.56	($970.43)
	Flowable Fill	12 CY	$163.40	$1,960.80
Estimated Total Change Cost				$3,949.87

Local Agency Representative	Date
District Two Program Administrator	Date
Contractor	Date

From: Moseley, Douglas
To: Rogers, Kevin; Bordner, Jason
Cc: Kevin Wagner; Belinda Lubben; McGauley-Steinberg, Cheryl; Lori Williams; Shaw, Brent
Subject: Re: Request for Federal Participation, Change Order 4, Palmetto Ave., 435677-1-58-01, G2390
Date: Monday, May 8, 2023 2:47:19 PM
Attachments: ce_logo_240x46_ddfcf290-2d69-4d4c-a5c7-ee3ac33e0e44.png

Kevin,
Concur with your recommendations below. FHWA Participation granted.

Thanks,
Doug

From: Rogers, Kevin <Kevin.Rogers@dot.state.fl.us>
Sent: Monday, May 8, 2023, 2:10 PM
To: Moseley, Douglas; Bordner, Jason
Cc: Wagner, Kevin; Lubben, Belinda; McGauley-Steinberg, Cheryl; Williams, Lori; Shaw, Brent
Subject: FW: Request for Federal Participation, Change Order 4, Palmetto Ave., 435677-1-58-01, G2390

Doug/Jason,

Please see attached CO 04 on the subject **LAP** project for your review for federal participation. Of note:

- Sidewalk adjustments are being performed at the established contract unit prices
- Flowable fill price is based on actual invoice price plus allowable markups and is below the statewide average (see attached)
- There is no re-work, , delay, premium costs, or inefficiencies associated with this change
- The changes are Value Added adjustments needed to make the project functionally operational.
- All of this work falls within the Project Limits and is consistent with the Original Scope.

The breakdown is as follows:

The summary of change is as follows:

- Compensates the contractor for flowable filling around drainage Structure S-8 to S-9, S-11, S-12, and the ERCP at approx. stations 67+80 to 68+20. - **$2,959.50**
- Compensates the contractor for adding additional 6" concrete and deducts 4" concrete sidewalk for the added driveways at station 113+00 and 114+00. - **$990.37 (Net change)**
- Adds 2 Non-Compensable Contract Days for the added work.

Justification for the change:

- The addition of flowable fill is needed to help protect the existing asbestos concrete watermain from damage. Flowable filling around the structures and ERCP will help protect the water main by eliminating vibration near the water main during compaction of the backfill.

- At station 113+00 and 114+00 the plans only call to place 4” concrete sidewalk. After review, these areas are being used as driveways for both light and heavy vehicles. Changing the sidewalk from 4” to 6” concrete and adding concrete aprons will prevent future maintenance due to the additional load provided by the vehicle traffic.

Therefore, the CCEI feels the request for **FHWA Participation** in the cost of **$3,949.87** and **2 Non-Compensable** Days **should be granted** in accordance with the guidelines provided in the contract documents and the FHWA Core Curriculum Manual.

Thank You,

Kevin D. Rogers
D2 District Construction Services Manager
Florida Department of Transportation
District 2 Construction Office
1109 South Marion Avenue
Lake City, FL 32025
Office- 386-961-7416
Kevin.Rogers@dot.state.fl.us

From: Kevin Wagner <kwagner@consoreng.com>
Sent: Friday, May 5, 2023 10:49 AM
To: Rogers, Kevin <Kevin.Rogers@dot.state.fl.us>
Cc: McGauley-Steinberg, Cheryl <Cheryl.McGauley-Steinberg@dot.state.fl.us>; Lubben, Belinda <blubben@consoreng.com>; Williams, Lori <lwilliams@consoreng.com>
Subject: RE: Request for Federal Participation, Change Order 4, Palmetto Ave., 435677-1-58-01, G2390

EXTERNAL SENDER: Use caution with links and attachments.

Kevin,

Attached, please find revised Change Order No. 4 for Palmetto Ave., 435677-1-58-01, G2390 for your review and federal participation determination.

This change order addresses the following changes:

- Adds Flowable fill to help protect an existing asbestosis concrete watermain.
- Adds 6” concrete sidewalk and deducts 4” concrete sidewalk for added driveways.
- Adds 2 Non-Compensable Contract Days

It is our recommendation that the full amount of $3,949.87 and 2 Non Compensable Day be considered FHWA Participating.

Any questions, please let me know.

Kevin Wagner
PROJECT ADMINISTRATOR
o: +1.352.281.6857 Ext. 51061
m: +1.352.281.6857

consor

consoreng.com

The content of this email is confidential and intended for the recipient specified in message only. It is strictly forbidden to share any part of this message with any third party, without a written consent of the sender. If you received this message by mistake, please reply to this message and follow with its deletion, so that we can ensure such a mistake does not occur in the future.

From: mike@eltonalan.com
To: Kevin Wagner
Cc: Tony Lewis
Subject: Flowable Fill
Date: Tuesday, May 2, 2023 1:45:03 PM
Attachments: image001.png

Kevin,
I checked on the flowable fill and it is $163.40 per CY including the fuel and environmental charges. The minimum delivery is 6CY and so I would go with 6 CY @ $163.40 = $980.40.

Thanks,

Michael E. Holcomb, PE.
CEO
Elton Alan
Consulting Engineers | General Contractors
4463 Harbour North Ct.
Jacksonville, FL 32225
cell: 904-891-0360
email: mike@eltonalan.com
web: EltonAlan.com

From: Mike Null
To: Kevin Wagner
Cc: Steve Thomas; Greg Bauer; Jack Varndell; Lori Williams; Belinda Lubben
Subject: Re: Change Order 4, Palmetto Ave, 435677-1-58-01, G2390
Date: Friday, May 5, 2023 10:33:58 AM
Attachments: image001.png
ce_logo_240x46_ddfcf290-2d69-4d4c-a5c7-ee3ac33e0e44.png

Kevin, this looks good. Thank you.

Mike Null
Assistant City Manager
City of Green Cove Springs
ph (904)297-7098

From: Kevin Wagner <kwagner@consoreng.com>
Sent: Friday, May 5, 2023 10:17:06 AM
To: Mike Null <mnull@greencovesprings.com>
Cc: Steve Thomas <sthomas@greencovesprings.com>; Greg Bauer <gbauer@greencovesprings.com>; Jack Varndell <jack.varndell@consoreng.com>; Lori Williams <lwilliams@consoreng.com>; Belinda Lubben <blubben@consoreng.com>
Subject: RE: Change Order 4, Palmetto Ave, 435677-1-58-01, G2390

CAUTION: This email originated from outside of the organization. . Do not click links or open attachments unless you recognize the sender and know the content is safe.

Mike,

We estimate an additional 6 CY of Flow fill will be needed for the pipe run between S-8 and S-9. Please review and let me know if you have any questions.

Kevin Wagner
PROJECT ADMINISTRATOR
o: +1.352.281.6857 Ext. 51061
m: +1.352.281.6857

consor

consoreng.com

The content of this email is confidential and intended for the recipient specified in message only. It is strictly forbidden to share any part of this message with any third party, without a written consent of the sender. If you received this message by mistake, please reply to this message and follow with its deletion, so that we can ensure such a mistake does not occur in the future.

From: Mike Null <mnull@greencovesprings.com>
Sent: Wednesday, May 3, 2023 11:54 AM

To: Kevin Wagner <kwagner@consoreng.com>
Cc: Steve Thomas <sthomas@greencovesprings.com>; Greg Bauer <gbauer@greencovesprings.com>; Jack Varndell <jack.varndell@consoreng.com>; Lori Williams <lwilliams@consoreng.com>; Belinda Lubben <blubben@consoreng.com>
Subject: RE: Change Order 4, Palmetto Ave, 435677-1-58-01, G2390

Kevin,

I am good with this. I assume we will be seeking state participation?

Thanks,

Mike Null
Assistant City Manager
City of Green Cove Springs
ph (904)297-7500, ext. 3324
fx (904)284-8609

From: Kevin Wagner <kwagner@consoreng.com>
Sent: Wednesday, May 3, 2023 11:46 AM
To: Mike Null <mnull@greencovesprings.com>
Cc: Steve Thomas <sthomas@greencovesprings.com>; Greg Bauer <gbauer@greencovesprings.com>; Jack Varndell <jack.varndell@consoreng.com>; Lori Williams <lwilliams@consoreng.com>; Belinda Lubben <blubben@consoreng.com>
Subject: Change Order 4, Palmetto Ave, 435677-1-58-01, G2390

CAUTION: This email originated from outside of the organization. . Do not click links or open attachments unless you recognize the sender and know the content is safe.

Mike,

Please see attached Change order 4 for the added driveways and flowable fill. Please review and let me know if you have any questions.

Kevin Wagner
PROJECT ADMINISTRATOR
o: +1.352.281.6857 Ext. 51061
m: +1.352.281.6857
consor

consoreng.com

The content of this email is confidential and intended for the recipient specified in message only. It is strictly forbidden to share any part of this message with any third party, without a written consent of the sender. If you received this message by mistake, please reply to this message and follow with its deletion, so that we can ensure such a mistake does not occur in the future.

Links contained in this email have been replaced. If you click on a link in the email above, the link will be analyzed for known threats. If a known threat is found, you will not be able to proceed to the destination. If suspicious content is detected, you will see a warning.

Links contained in this email have been replaced. If you click on a link in the email above, the link will be analyzed for known threats. If a known threat is found, you will not be able to proceed to the destination. If suspicious content is detected, you will see a warning.

Florida Department of Transportation

Item Average Unit Cost

From 2022/04/01 to 2023/03/31

Statewide

Contract Type: CC

Displaying: ITEMS WITH HITS

From: 0102 1 To: 9999999

Item	No. of Conts	Weighted Average	Total Amount	Total Quantity	Unit Meas	Obs?	Description
0120 6	156	$13.63	$98,696,862.02	7,242,611.000	CY	N	EMBANKMENT
0120 6106	1	$4.00	$394,500.00	98,625.000	CY	Y	EMBANKMENT, SPECIFIED A-3 SOIL, PROJECT 442764-1-52-01
0120 71	47	$38,657.10	$2,126,140.42	55.000	LS	N	REGULAR EXCAVATION (3-R PROJECTS ONLY)
0120 71100	1	$49,500.00	$49,500.00	1.000	LS	Y	REGULAR EXCAVATION (3-R PROJECTS ONLY) PROJECT 442906-1-52-01
0120 74	3	$22.50	$12,909,230.90	573,830.700	CY	N	SURCHARGE EMBANKMENT
0121 70	10	$487.80	$275,707.01	565.200	CY	N	FLOWABLE FILL
0125 1	2	$34.49	$3,918.50	113.600	CY	N	EXCAVATION FOR STRUCTURES
0125 3	1	$100.00	$8,740.00	87.400	CY	N	SELECT BEDDING MATERIAL
0141 70	3	$688.15	$124,555.39	181.000	AS	N	SETTLEMENT PLATE ASSEMBLY
0145 1	1	$5.04	$36,479.52	7,238.000	SF	N	GEOSYNTHETIC REINFORCED SOIL SLOPE
0145 2	14	$4.37	$814,737.08	186,486.000	SY	N	GEOSYNTHETIC REINFORCED FOUNDATION OVER SOFT SOIL
0145 71	2	$20.97	$62,731.12	2,992.000	SY	N	REINFORCEMENT GRID FOR SOIL STABILIZATION
0145 72	1	$59.00	$12,921.00	219.000	SY	N	CELLULAR CONFINEMENT FOR SOIL STABILIZATION
0160 4	168	$9.55	$27,109,527.81	2,837,505.000	SY	N	TYPE B STABILIZATION
0173 76	2	$37.61	$187,125.00	4,975.000	LF	N	GROUT PIPE INSTALLATION
0173 77 1	2	$515.15	$1,027,206.00	1,994.000	CY	N	SUBSURFACE PRESSURE GROUTING, SAND CEMENT
0173 77 2	1	$436.00	$295,172.00	677.000	CY	N	SUBSURFACE PRESSURE GROUTING, SAND CEMENT WITH CALCIUM CHLORIDE
0210 1 1	2	$12.16	$93,263.65	7,668.000	SY	N	REWORKING LIMEROCK BASE, 6"
0210 1 8	2	$25.90	$89,254.00	3,446.000	SY	N	REWORKING LIMEROCK BASE, 4"
0210 1 9	3	$.11	$5,688.96	53,007.000	SY	N	REWORKING LIMEROCK BASE, 3"

STAFF REPORT

CITY OF GREEN COVE SPRINGS, FLORIDA

TO: City Council **MEETING DATE:** May 16, 2023

FROM: Mike Null, Assistant City Manager

SUBJECT: Approval of Pay Application #8 from EltonAlan, Inc. for construction of the Palmetto Trail Project in the amount of $145,355.76 from the amended contract amount of $1,546,336.05, leaving a balance of $516,614.21. ***Mike Null***

BACKGROUND

At the July 5, 2022, Council awarded Bid # 2022-02, construction of the Palmetto Trail Project to EltonAlan, Inc. in the award amount of $1,544,374.81. This is a Local Area Project (LAP) project funded through an agreement with FDOT for the construction phase of project 43677-1-38-02, to construct a trail along Palmetto Ave from Oak St to Harbor Road and along MLK Jr. Blvd from Palmetto Ave to Vera Francis Hall Park. The FDOT construction budget is $1,611,250.00. Staff will be managing the project and FDOT will be funding the pay requests on a reimbursable basis.

At the October 17, 2022 Council Meeting, Council approved Pay App #1 in the amount of $80,705.77.

At the November 15, 2022 Council Meeting, Council approved Pay App #2 in the amount of $154,242.74.

At the December 13, 2022 Council Meeting, Council approved Pay App #3 in the amount of $123,474.08.

At the January 17, 2023 Council Meeting, Council approved Pay App #4 in the amount of $135,711.04.

At the February 21, 2023 Council Meeting, Council approved Pay App #5 in the amount of $132,315.18.

At the March 21, 2023 Council Meeting, Council approved Pay App #6 in the amount of $114,181.80.

At the April 18, 2023 Council Meeting, Council approved Pay App #7 in the amount of $143,735.47.

Attached for approval is Pay Application #8 in the amount of $145,355.76. The application has been approved by the contractor, the project engineer and City staff and found to be reasonable for the work completed to date.

FISCAL IMPACT

This project is funded by a FDOT LAP agreement on a reimbursable basis.

RECOMMENDATION

Approve Pay Application #8 from EltonAlan, Inc. for construction of the Palmetto Trail Project in the amount of $145,355.76 from the amended contract amount of $1,546,336.05, leaving a balance of $516,614.21.

consor

4140 NW 27 Lane, Suite G
Gainesville, FL 32606
Telephone: (352) 226-8447

MONTHLY INVOICE TRANSMITTAL No. 8:

Description: Palmetto Avenue, Green Cove Springs
Financial ID: 435677-1-58-01
Federal Aid No.: D221-019-B
Contract No.: G2390

Attached, please find the following items included in the Monthly Invoice Submittal Package for your review/further processing:

- Transmittal Letter
- Application and Certificate for Payment with Schedule
- Certification of Previous Payment to Subcontractor
- Construction Compliance with Specifications and Plans
- Channelizing Device Supplier Certification
- Cone Letter – N/A

Contract Time & Money Status Report

Begin Time: 9/1/22
Invoice Period: 4/1/23 to 4/30/23
Invoice No.: 8

MONEY		TIME	
Original Contract Amount:	$1,544,374.81	Substantial Completion Duration	266
Change Order No. 1	$633.19	Days Added by Change Order	1
Change Order No. 2	$1,328.05	Days Added by Weather/Holidays	26
Adjusted Amount:	$1,546,336.05	Days Allowed	293
Amount Due This Period:	$153,006.06	Days Used	242
Less Retainage (5%)	$7,650.30	Days Remaining	51
Amount Paid this Period:	$145,355.76	% Days Used	83%
Amount Previously Paid	$884,366.08	Final Completion Duration	30
Total Paid to Date:	$1,029,721.84	Days Used	0
Balance of Contract Amount:	$516,614.21	Days Remaining	30
% Paid:	67%	% Days Used	0%

Retainage Held	Amount
Invoice 1	$4,247.67
Invoice 2	$8,118.04
Invoice 3	$6,498.64
Invoice 4	$7,142.69
Invoice 5	$6,963.96
Invoice 6	$6,009.57
Invoice 7	$7,565.03
Invoice 8	$7,650.30
Total	$54,195.90

Elton Alan
Consulting Engineers | General Contractors

INVOICE

Project: Palmetto Avenue / Green Cove Springs
Green Cove Springs Contract No.: 2022-02
Financial Project No.: 435677-1-58-01
LAP Contract No.: G2390
Federal Aid Project No: D221-019-B
Attn: Kevin Wagner
1440 NW 27th Ln Suite G
Gainesville, FL 32606

Invoice Period: **April-2023**

Invoice Date: 4/30/2023
EltonAlan Project Number: 32-0090
Invoice Number: 202202 - 8

Original Contract Amount:	$ 1,544,374.81
Change Order Amount:	$ 1,961.24
Adjusted Contract Amount:	$ 1,546,336.05
Amount Due This Period	$ 153,006.06
Less Retainage (5%):	$ (7,650.30)
Amount Paid This Period:	**$ 145,355.76**
Amount Previously Paid:	$ 884,366.08
Amount Paid to Date:	$ 1,029,721.84
Contract Amount Remaining:	$ 516,614.21
% Paid:	66.68%

Contract Item	Unit	Current Contract Quantity	Total Quantity Invoiced to Date	Previously Invoiced Quantity	Quantity Invoiced This Period	Unit Cost	Amount Due This Period
0101 1 - MOBILIZATION	LS	1.0	1.0	1.0	0.0	$ 115,376.00	$ -
0102 1 - MAINTENANCE OF TRAFFIC	LS	1.0	0.8	0.7	0.1	$ 98,177.00	$ 8,835.93
0104 10 3 - SEDIMENT BARRIER	LF	2,598.0	909.0	909.0	0.0	$ 1.26	$ -
0104 18 - INLET PROTECTION SYSTEM	EA	47.0	5.0	5.0	0.0	$ 132.26	$ -
0110 1 1 - CLEARING & GRUBBING (AC = 2.91)	LS	1.0	0.9	0.7	0.1	$ 124,701.00	$ 17,458.14
0110 4 10 - REMOVAL OF EXISTING CONCRETE	SY	6,345.6	5,661.6	4,806.5	855.1	$ 12.82	$ 10,962.38
0110 7 1 - MAILBOX, F&I SINGLE	EA	11.0	11.0	0.0	11.0	$ 315.64	$ 3,472.04
0120 1 - REGULAR EXCAVATION	CY	1,014.9	640.2	571.2	69.0	$ 23.08	$ 1,592.52
0120 6 - EMBANKMENT	CY	558.7	494.6	390.3	104.3	$ 40.75	$ 4,250.23
0285 704 - OPTIONAL BASE, BASE GROUP 04	SY	198.0	0.0	0.0	0.0	$ 66.13	$ -
0334 1 13 - SUPERPAVE ASPHALTIC CONC, TRAFFIC C	TN	32.6	0.0	0.0	0.0	$ 165.31	$ -
0339 1 - SUMMARY OF MISCELLANEOUS ASPHALT PAVEMENT	TN	2.4	0.0	0.0	0.0	$ 165.42	$ -
0425 1201 - INLETS, CURB, TYPE 9, <10'	EA	1	1	0	1	$ 5,923.00	$ 5,923.00
0425 1421 - INLETS, CURB, TYPE J-2, <10'	EA	1	0	0	0	$ 7,091.00	$ -
0425 1521 - INLETS, DT BOT, TYPE C,<10'	EA	4	0	0	0	$ 5,377.50	$ -
0425 1543 - INLETS, DT BOT, TYPE D, J BOT, <10'	EA	1	0	0	0	$ 6,554.00	$ -
0425 1711 - INLETS, GUTTER, TYPE V, <10'	EA	2	1	0	1	$ 6,290.50	$ 6,290.50
0425 2 41 - MANHOLES, P-7, <10'	EA	1	1	0	1	$ 6,618.00	$ 6,618.00
0425 2 63 - MANHOLES, P-8, PARTIAL	EA	1	0	0	0	$ 4,863.00	$ -
0425 2 71 - MANHOLES, J-7, <10'	EA	1	0	0	0	$ 7,997.00	$ -
0425 5 - MANHOLE, ADJUST	EA	4	0	0	0	$ 901.00	$ -
0425 5 1 - MANHOLE, ADJUST, UTILITIES	EA	1	0	0	0	$ 902.00	$ -
0425 6 - VALVE BOXES, ADJUST	EA	44	36	31	5	$ 363.84	$ 1,819.20
430175118 - PIPE CULVERT,OPTIONAL MATERIAL,ROUND, 18"S/CD	LF	17	8	0	8	$ 120.24	$ 961.92
430175215 - PIPE CULVERT,OPTIONAL MATERIAL,OTHER-ELIP/ARCH, 15"S/CD	LF	238	0	0	0	$ 132.46	$ -

Contract Item	Unit	Current Contract Quantity	Total Quantity Invoiced to Date	Previously Invoiced Quantity	Quantity Invoiced This Period	Unit Cost	Amount Due This Period
430175218 - PIPE CULVERT,OPTIONAL MATERIAL,OTHER-ELIP/ARCH, 18"S/CD	LF	173	0	0	0	$ 146.29	$ -
0515 1 1 - PIPE HANDRAIL - GUIDERAIL, STEEL	LF	12	0	0	0	$ 164.75	$ -
0520 1 10 - CONCRETE CURB & GUTTER, TYPE F	LF	1643.0	1001.8	906.3	95.5	$ 31.64	$ 3,021.62
0520 1 12 - CONCRETE CURB & GUTTER, TYPE F WITH SPECIAL GUTTER PROFILE	LF	42.0	0.0	0.0	0.0	$ 41.07	$ -
0520 2 2 - CONCRETE CURB, TYPE B	LF	1053.0	877.8	877.8	0.0	$ 38.44	$ -
0520 2 4 - CONCRETE CURB, TYPE D	LF	332.0	41.6	12.6	29.0	$ 37.65	$ 1,091.85
0520 6 - SHOULDER GUTTER- CONCRETE	LF	71.0	71.2	71.2	0.0	$ 35.64	$ -
0522 1 - CONCRETE SIDEWALK AND DRIVEWAYS, 4" THICK	SY	9,155.0	8,040.7	7,032.7	1,008.0	$ 45.56	$ 45,924.48
0522 2 - CONCRETE SIDEWALK AND DRIVEWAYS, 6" THICK	SY	2,430.5	1,982.2	1,670.9	311.3	$ 59.19	$ 18,425.85
0527 2 - DETECTABLE WARNINGS	SF	1,322.0	739.7	658.7	81.0	$ 26.40	$ 2,138.40
0570 1 2 - PERFORMANCE TURF, SOD	SY	8,191.0	6,918.7	5,418.7	1,500.0	$ 9.48	$ 14,220.00
1080 21500 - UTILITY FIXTURE, VALVE/METER BOX, ADJUST	EA	36	0	0	0	$ 365.50	$ -
1644 800 - FIRE HYDRANT, (RELOCATE)	EA	8	0	0	0	$ 1,983.75	$ -
700 1 11 - SINGLE POST SIGN, F&I GROUND MOUNT, UP TO 12 SF	AS	34	0	0	0	$ 919.15	$ -
700 1 12 - SINGLE POST SIGN, F&I GROUND MOUNT, 12-20 SF	AS	13	0	0	0	$ 1,124.15	$ -
700 1 50 - SINGLE POST SIGN, RELOCATE	AS	8	0	0	0	$ 287.63	$ -
700 1 60 - SINGLE POST SIGN, REMOVE	AS	34	0	0	0	$ 77.94	$ -
700 3 601 - SINGLE POST SIGN, REMOVE	EA	7	0	0	0	$ 72.14	$ -
706 1 1 - RAISED PAVEMENT MARKER, TYPE B WITHOUT FINAL SURFACE MARKINGS	EA	21	0	0	0	$ 9.93	$ -
710 1 123 - PAINTED PAVEMENT MARKINGS, STANDARD, WHITE, SOLID FOR CROSSWALK, 12"	LF	91	0	0	0	$ 1.56	$ -
710 11 125 - PAINTED PAVEMENT MARKINGS, STANDARD, WHITE, SOLID FOR STOP LINE OR CROSSWALK, 24"	LF	13	0	0	0	$ 4.51	$ -
710 11 201 - PAINTED PAVEMENT MARKINGS, STANDARD, YELLOW, SOLID, 6"	GM	0.0050	0.0000	0.0000	0.0000	$ 3,070.00	$ -
711 11 123 - THERMOPLASTIC, STD, WHITE, SOLID, 12" FOR CROSSWALK	LF	1,998	0	0	0	$ 4.51	$ -
711 11 125 - THERMOPLASTIC, STD, WHITE, SOLID, 24" FOR STOP LINE	LF	1,928	0	0	0	$ 9.02	$ -
711 16 201 - THERMOPLASTIC, STANDARD-OTHER SURFACES, YELLOW, SOLID, 6"	GM	0.0050	0.0000	0.0000	0.0000	$ 12,030.00	$ -
711 17 1 - THERMOPLASTIC, REMOVE EXISTING THERMOPLASTIC PAVEMENT MARKINGS-SURFACE TO REMAIN	SF	1,065	0	0	0	$ 3.97	$ -
						AMOUNT DUE THIS PERIOD	**$ 153,006.06**

For questions regarding this invoice, please contact:

Mike Holcomb @ 904.891.0360 or email:

Please remit payment of this invoice to:

11420 Sweet Cherry Lane | Jacksonville, FL 32225

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

CERTIFICATION
DISBURSEMENT OF PREVIOUS PERIODIC PAYMENT TO SUBCONTRACTORS
(As required by Florida Transportation Code, Section 337.11, Subsection (11), F.S.)

CO... 10/10

DATE 4/30/2023

FIN PROJ. I.D. 435677-1-58-01

CONTRACT NO. G23909

TO RELEASE MONTHLY PAYMENT FOR April 2023

EltonAlan, Incorporated, prime contractor for the above referenced contract, hereby certifies that all subcontractors, except for those noted below, having interest in this contract have received their pro rata share of all previous periodic payments made to date by the Department for all work, materials and equipment furnished under the contract. The term "subcontractor", as used herein, shall also include persons or firms furnishing materials, services or equipment incorporated into the work or stockpiled in the vicinity of the project for which partial payment has been made by the Department and work done under equipment-rental agreements.

EXCEPTION:
The following subcontractors have not been paid and a copy of the notification sent to each, explaining the good cause why payment has not been made, is attached to this form:

Subcontractor name	Subcontractor name
Street Address	Street Address
City State Zip	City State Zip

State of Florida
County of Duval
Sworn to and subscribed before me this 8 day of May, 2023, by Paul Doherty
(Print name of person signing Certification)

Notary Public

7/2/2023
Commission Expires

PAUL DOHERTY
Commission # GG 351180
Expires July 2, 2023
Bonded Thru Budget Notary Services

Personally Known [X] OR Produced Identification [ ]
Type of Identification Produced _____

A false statement or omission made in connection with this certification is sufficient cause for suspension, revocation, or denial of qualification to bid, and a determination of non-responsibility, and may subject the person and/or entity making the false statement to any and all civil and criminal penalties available pursuant to applicable Federal and State Law.

EltonAlan, Inc.
Contractor

By

CEO
Title

Instructions:

1. Attach copy of the notification good cause sent to each applicable subcontractor.
2. List the subcontractors which have not been paid the proportionate share of payments received by the contractor and the date listed as exception.
3. A separate certification is required for each contract.
4. To be signed by an officer or director of the Contractor with the authority to bind the Contractor and notarized.
5. To avoid delay in payment, certification must be submitted to the Project Engineer no later than the Friday before the monthly estimate cutoff date (generally the 3rd Sunday of the month).

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

CONSTRUCTION COMPLIANCE WITH SPECIFICATIONS AND PLANS

CC

FIN PROJECT I.D.(s) 435677-1-58-01

Palmetto Ave / Green Cove Springs Sidewalk

DATE: 4/30/2023

CONTRACT NO: G23909

Monthly: ☒

Final: ☐

EltonAlan, Incorporated, Prime Contractor for the above referenced contract, hereby verifies based on personal knowledge or reasonable investigation and good faith belief, all Quality Control functions and Quality Control sampling and testing results are in substantial compliance with the contract specification requirements and the approved Quality Control Plan for this project. This includes the input of test results into the Department's LIMS database within 24 hours of results being received. This represents work done between 4/1/2023 and 4/30/2023. Exceptions to these requirements are listed below.

1.) Item No.: _____
Exception:

2.) Item No.: _____
Exception:

3.) Item No.: _____
Exception:

4.) Item No.: _____
Exception:

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

CONSTRUCTION COMPLIANCE WITH SPECIFICATIONS AND PLANS

5.) Item No.: _____
Exception:

_____

_____

_____

_____

6.) Item No.: _____
Exception:

_____

_____

_____

_____

A false statement or omission made in connection with this certification is sufficient cause for suspension, revocation, or denial of qualification to bid, and a determination of non-responsibility, and may subject the person and/or entity making the false statement to any and all civil and criminal penalties available pursuant to applicable Federal and State Law.

State of Florida
County of Duval
Sworn to and subscribed before me this 8 day
of May, 2023, by Paul Doherty
(Print name of person signing Certification)

Notary Public

7/2/2023
Commission Expires

PAUL DOHERTY
Commission # GG 351180
Expires July 2, 2023
Bonded Thru Budget Notary Services

Personally Known X or Produced Identification _____
Type of Identification Produced _____

Rachel Lewis
Quality Control Manager

By

EltonAlan, Incorporated
Company

State of Florida
County of Duval
Sworn to and subscribed before me this 8 day
of May, 2023, by Paul Doherty
(Print name of person signing Certification)

Notary Public

7/2/2023
Commission Expires

PAUL DOHERTY
Commission # GG 351180
Expires July 2, 2023
Bonded Thru Budget Notary Services

Personally Known X or Produced Identification _____
Type of Identification Produced _____

EltonAlan Inc
Contractor

By

CEO
Title

BOB'S BARRICADES, INC.
921 Shotgun Road, Sunrise, FL 33326
Tel. No. 954-423-2627 Fax No. 954-473-8737

STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION
MONTHLY CERTIFICATION OF MAINTENANCE
OF CHANNELIZING DEVICES

CONTRACTOR ELTON ALAN, INC.

CERTIFICATION NO. 8 STATE ROAD NO. PALMETTO AVE

FINANCIAL ID NUMBER: 435677-1-58-01 CONTRACT NO. G2390 MONTH OF: APRIL, 2023

I certifiy that I we have provided and maintained the following devices, Type II and/or III Barricades/Barrels in accordance with Pedestrian LCD Evaluation Guice and the ATSSA Quality Guidelines for Temporary Traffic Control Devices and Features.

Contractor's Authorized Agent (Print Name & Co.):

Contractor's Authorized Agent (Signature):

Deyecid M Berra

Digitally signed by Deyecid M Berra
Date: 2023.04.11 14:47:37 -04'00'

Docking Confirmation Summary - 2024

Dock Location: Green Cove Springs, FL - City Dock

This document contains three tabs below, including our full schedule for the year and any updates since it was sent last.
Please review the Docking Schedule on the next tab and alert us of any inaccuracies or issues.

Dock Information

Dock	Address	Dockings
City Dock	229 Walnut St Green Cove Springs, FL 32034	17

Dock Terms

$2.75 per ft./ night

Dock Notes

Floating Dock - Gangway1st Deck STBD - 1 Boat Capacity - Rec Boats often anchored off dock - Contact MarOps Staff to coord City and FL MarPatrol resources with anchored boats.

Dock Fees

Dock Fee	2.75
Trash Fee	
Water Fee	

City Dock Contact Information

Name	Title	Phone	Email
Mike Null	Assistant City Manager/Public Works Director		mnull@greencovesprings.com
Kimberly Thomas	City Event Coordinator	904-297-7054	kthomas@greencovesprings.com
Connie	Public Works Coordinator	904-297-7012	

American Cruise Lines Contact Information

Name	Title	Phone	Email
Marine Operations Team		203-453-6800	docking@americancruiselines.com

American Cruise Lines 2024 Docking Schedule at Green Cove Springs, FL - City Dock

Dockings marked "Confirmed" have been guaranteed by the port, while Dockings marked "Requested" or "Flagged" have not been guaranteed.

Company	Vessel	Arrival Date	Arrival Time	Departure Date	Departure Time	Hours
American Cruise Lines	American Eagle	Mon. Feb. 05, 2024	4:30PM	Tue. Feb. 06, 2024	12:00PM	20.0
American Cruise Lines	American Star	Thu. Feb. 08, 2024	4:30PM	Fri. Feb. 09, 2024	12:00PM	20.0
American Cruise Lines	American Eagle	Mon. Feb. 12, 2024	4:30PM	Tue. Feb. 13, 2024	12:00PM	20.0
American Cruise Lines	American Star	Thu. Feb. 15, 2024	4:30PM	Fri. Feb. 16, 2024	12:00PM	20.0
American Cruise Lines	American Eagle	Mon. Feb. 19, 2024	4:30PM	Tue. Feb. 20, 2024	12:00PM	20.0
American Cruise Lines	American Star	Thu. Feb. 22, 2024	4:30PM	Fri. Feb. 23, 2024	12:00PM	20.0
American Cruise Lines	American Eagle	Mon. Feb. 26, 2024	4:30PM	Tue. Feb. 27, 2024	12:00PM	20.0
American Cruise Lines	American Star	Thu. Feb. 29, 2024	4:30PM	Fri. Mar. 01, 2024	12:00PM	20.0
American Cruise Lines	American Eagle	Mon. Mar. 04, 2024	4:30PM	Tue. Mar. 05, 2024	12:00PM	20.0
American Cruise Lines	American Star	Thu. Mar. 07, 2024	4:30PM	Fri. Mar. 08, 2024	12:00PM	20.0
American Cruise Lines	American Star	Mon. Sep. 16, 2024	12:00PM	Tue. Sep. 17, 2024	6:00AM	18.0
American Cruise Lines	American Star	Sat. Sep. 21, 2024	8:00AM	Mon. Sep. 23, 2024	5:00AM	45.0
American Cruise Lines	American Eagle	Sun. Nov. 24, 2024	4:30PM	Mon. Nov. 25, 2024	12:00PM	20.0
American Cruise Lines	American Eagle	Sun. Dec. 01, 2024	4:30PM	Mon. Dec. 02, 2024	12:00PM	20.0
American Cruise Lines	American Star	Mon. Dec. 02, 2024	4:30PM	Tue. Dec. 03, 2024	12:00PM	20.0
American Cruise Lines	American Star	Mon. Dec. 09, 2024	4:30PM	Tue. Dec. 10, 2024	12:00PM	20.0
American Cruise Lines	American Star	Mon. Dec. 16, 2024	4:30PM	Tue. Dec. 17, 2024	12:00PM	20.0

Company	Vessel	Length
American Cruise Lines	American Eagle	241
	American Star	205

Status
Requested
Requested
Requested
Requested
Requested
Requested
Requested
Requested
Requested
Requested
Requested
Requested
Requested
Requested
Requested
Requested
Requested

STAFF REPORT

CITY OF GREEN COVE SPRINGS, FLORIDA

TO: City Council **MEETING DATE:** May 16, 2023

FROM: Michael Daniels

SUBJECT: Preliminary Plat and Improvement Plan for phase 1 of the Rookery Development for a portion of parcel #: 016515-008-00

PROPERTY DESCRIPTION

APPLICANT: Ellen Avery-Smith, Esq. of Rogers Tower, PA **OWNER:** Gustafson's Cattle, Inc.

PROPERTY LOCATION: CR 15 A

PARCEL NUMBER: 016515-008-00

FILE NUMBER: FLUS-22-001, ZON-22-001, FLUS-22-002, PUD-22-001, CDA-22-001

CURRENT ZONING*:* Recreation / PUD

FUTURE LAND USE DESIGNATION*:* Recreation / RLD

SURROUNDING LAND USE

NORTH: **FLU**: Recreation
Z: Recreation
Use: Undeveloped

SOUTH: **FLU**: RLD
Z: PUD
Use: Undeveloped

EAST: **FLU**: RLD/MUH/Industrial (County)
Z: PUD / Heavy Industrial (County)
Use: Undeveloped / Industrial

WEST: **FLU**: Industrial (County) / Recreation
Z: Heavy Industrial (County) / Recreation
Use: Commercial / Undeveloped

BACKGROUND

DEVELOPMENT DESCRIPTION:

The first phase of the Rookery Development is proposed for 231 units on 73.57 acres. The entire Rookery property, consisting of 560 acres was annexed into the City in 2021 and was approved for a Zoning designation of Planned Unit Development and a corresponding Development Agreement for the development of 2,100 residential dwelling units. The requirements set forth in the PUD and the Development Agreement are attached. As part of the approved Development Agreement, the applicant is required to construct Pearce Boulevard which shall traverse through the development and head north into property that is currently owned by the City and then head east over the railroad tracks and connect to US 17. In order to compensate the City for the acreage needed for the development of the roadway, the applicant has executed a land exchange where

the applicant will provide property to the City in exchange for the acreage needed for the development of the roadway. The City property was purchased as a part of a grant provided by the Florida Communities Trust for the development of a Regional Park. The deeds for this land transfer are set to be reviewed at this Council meeting under separate agenda items.

The enclosed plan set includes:

- Preliminary Plat
- Site Geometry Plans
- Roadway Improvement Plans
- Drainage Plans
- Water and Sewer Plans
- Stormwater Pollution Prevention Plans
- Landscape and Irrigation Plans
- Tree Mitigation Plans

The plans have been reviewed and approved by the Site Development Review Team on May 8, 2023.

STAFF RECOMMENDATION

Staff recommends approval of the Preliminary Plat and Improvement Plans for the Phase 1 of the Rookery Subdivision subject to the following conditions:

1. No site clearing shall take place until:
   a. A pre-site meeting and subsequent follow up inspection has taken place between city staff, the developer and contractors regarding installation of tree protection and erosion control requirements.
   b. An ERP permit is secured from the St Johns Water Management District
2. No utility improvements shall be initiated until a Performance Bond pursuant to the requirements set forth in Section 101-328 of the City's Land Development Code.

At project completion and prior to certificates of occupancy being issued, the items shown below will need to be completed and submitted to the City of Green Cove Springs:

3. Shall Comply with all requirements regarding Guarantees and Sureties set forth in the City Land Development Code Chapter 101, Article II Division 5, Subdivision V.
4. Within 6 months of the approval of the improvement plans, the applicant must submit an application for final plat for review.

RECOMMENDED MOTIONS:

Recommend approval of the Preliminary Plat and Improvement Plan subject to staff comments.

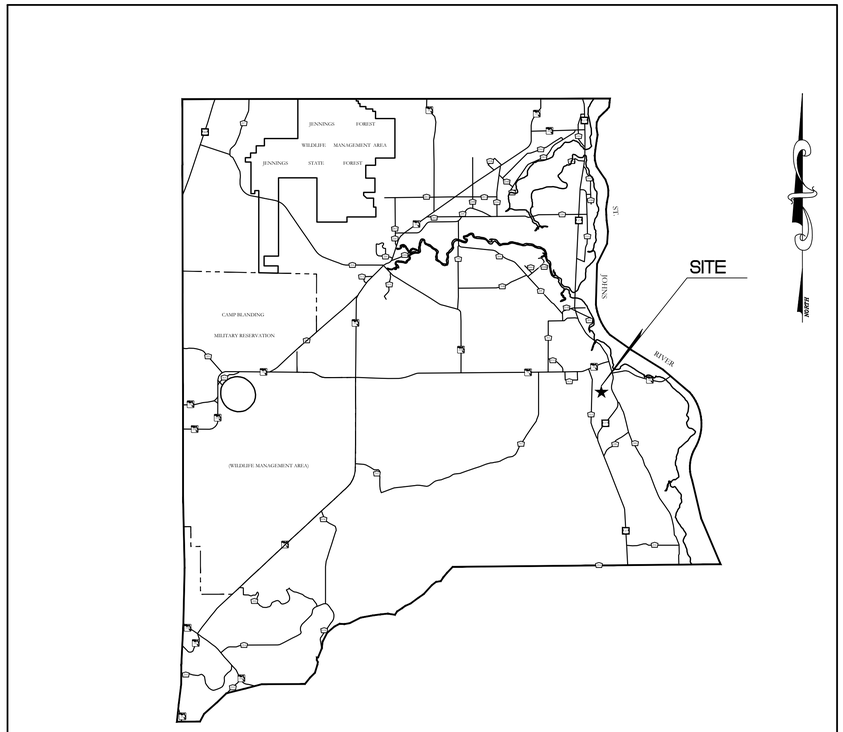
SITE ENGINEERING PLANS

THE ROOKERY - PHASE 1

Developed By:

D.R. HORTON, INC. - JACKSONVILLE

Project No. :2008-499



VICINITY MAP - CLAY COUNTY

THE ROOKERY - PHASE 1

SUBMITTAL SCHEDULE

SUBMITTAL No.	DATE	MUNICIPALITY
1st	5-12-22	GCS
1st	5-16-22	CCUA
1st	5-17-22	SJRWMD
1st	8-2-22	Clay County
2nd	12-8-22	GCS/SJRWMD
2nd	1-6-23	CCUA
2nd	2-15-23	Clay County
3rd	4-18-23	SJRWMD
3rd	4-19-23	GCS

Vincent J Dunn

Digitally signed by Vincent J Dunn
Date: 2023.04.19 14:39:34 -04'00'

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road Building 1, Suite 200
Jacksonville, Florida 32256
Phone: 363-8916 Fax: 363-8917
www.dunneng.com

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

CITY OF GREEN COVE SPRINGS GENERAL NOTES

GENERAL

1. CITY OF GREEN COVE SPRINGS DEPARTMENT OF ENGINEERING REQUIRES TWENTY-FOUR HOURS(24-HR) NOTICE ON ALL MEETINGS AND OR TESTING PROCEDURES.
2. CONSTRUCTION WARNING SIGNS ARE TO BE POST MOUNTED AND ERECTED BEFORE CONSTRUCTION CAN COMMENCE. THESE AND ALL TRAFFIC CONTROL DEVICES SHALL FOLLOW THE STANDARDS SET FORTH BY THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS AND DETAILS.
3. ALL CONSTRUCTION PROJECTS 1 ACRE OR MORE IN SIZE SHALL BE REQUIRED TO ABIDE BY THE PROVISIONS OF THE NATIONAL POLLUTANT DISCHARGE ELIMINATION (NPDES) PERMIT. THE OWNER OR CONTRACTOR IS RESPONSIBLE FOR PREPARING THE STORMWATER POLLUTION PREVENTION PLAN (SWPP) AND SUBMITTING THE NPDES "NOTICE OF INTENT" (NOI) AND "NOTICE OF TERMINATION" (NOT) TO THE EPA OR LOCAL STATE AGENCY HAVING JURISDICTION OVER THE NPDES PROGRAM. THE CONTRACTOR SHALL KEEP ONSITE COPIES OF THE SWPP, NOI, AND WATER MANAGEMENT DISTRICT PERMITS.
4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO RECOGNIZE AND ABIDE BY ALL OSHA SAFETY STANDARDS.
5. ALL DISTURBED CITY OF GREEN COVE SPRINGS RIGHTS-OF-WAY SHALL BE SODDED TO THE DISCRETION AND APPROVAL OF THE CLAY COUNTY ENGINEERING DIVISION.
6. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO EXCAVATION AND TAKE ALL MEASURES NECESSARY TO PROTECT UTILITIES DURING CONSTRUCTION. SHOULD ANY UTILITY LINE OR COMPONENT BECOME DAMAGED OR REQUIRE RELOCATION THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE RESPONSIBLE UTILITY COMPANY, THE ENGINEER, AND THE COUNTY.

CALL BEFORE YOU DIG
1-800-432-4770
&
904-269-6359

- CALL 800-432-4770 TWO FULL BUSINESS DAYS BEFORE DIGGING. CALL 10 DAYS BEFORE DIGGING WHEN DIGGING UNDER WATER.
- CALL 904-269-6359 (CITY OF GREEN COVE SPRINGS SIGNAL & MAINTENANCE DIVISION) TWO FULL DAYS BEFORE DIGGING.
- WAIT THE REQUIRED TIME FOR BURIED UTILITIES TO BE LOCATED AND MARKED.
- PROTECT THE MARKS DURING YOUR PROJECT. IF MARKS ARE DESTROYED, CALL AGAIN.
- DIG SAFELY, USING EXTREME CAUTION WHEN DIGGING WITHIN 24 INCHES ON EITHER SIDE OF THE MARKS TO AVOID HITTING THE BURIED UTILITY LINES.

7. BEFORE WORKING IN EXISTING COUNTY RIGHTS-OF-WAY, THE CONTRACTOR SHALL BE REQUIRED TO OBTAIN A RIGHT-OF-WAY PERMIT. THE PERMIT CAN BE OBTAINED AT THE CITY OF GREEN COVE SPRINGS ENGINEERING DIVISION, 477 HOUSTON STREET, 3RD FLOOR, GREEN COVE SPRINGS, FLORIDA.
8. ALL SWALE SECTIONS AND PONDS ARE TO BE SODDED WITHIN 15 DAYS OF THEIR FINAL GRADING.
9. ANY OFFSITE SWALES OR DITCHES IMPACTED BY THE DEVELOPMENT, THE CONTRACTOR SHALL RE-GRADE AND RESTORE, TO OBTAIN POSITIVE DRAINAGE.
10. A COPY OF THE CONTRACTORS GENERAL LICENSE AND OR UNDER GROUND UTILITY LICENSE SHALL BE PROVIDED AT THE TIME OF THE PRE-CONSTRUCTION CONFERENCE.
11. ANY APPLICABLE SAINT JOHNS RIVER WATER MANAGEMENT DISTRICT (SJRWMD), FDEP (GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES, ARMY CORP OF ENGINEERS, AND A FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT) PERMITS SHALL BE PROVIDED TO THE COUNTY BY THE PRE-CONSTRUCTION CONFERENCE. NO WORK SHALL BEGIN WITHOUT ALL APPLICABLE PERMITS ON FILE.
12. THE CONTRACTOR MUST OBTAIN APPROVAL FROM THE SAINT JOHNS RIVER WATER MANAGEMENT DISTRICT (SJRWMD) BEFORE THE COUNTY WILL ACCEPT THE PROJECT.
13. ALL STORM PIPES SHALL BE VIDEOED PRIOR TO FINAL INSPECTION AND ALL DATA SHALL BE RECORDED IN HIGH QUALITY DVD FORMAT WITH SOUND OR ANY EQUIPMENT APPROVED BY THE ENGINEERING DIVISION (REF. FDOT SSRBC LATEST EDITION).
14. THERE SHALL BE A MINIMUM FIVE (5) DAYS NOTICE GIVEN FOR SCHEDULING THE FINAL INSPECTION.
15. AT THE FINAL INSPECTION A LETTER OF COMPLIANCE WILL NEED TO BE FILLED OUT AND SIGNED BY THE STATE OF FLORIDA REGISTERED PROFESSIONAL ENGINEER OF RECORD FOR THE PROJECT. THE LETTER SHALL STATE THAT THE PROJECT HAS BEEN BUILT IN ACCORDANCE OF THE APPROVED DESIGN PLANS AND OTHER AGENCY PERMITS.
16. ALL SOIL AND DEBRIS TRACKED OUT OF THE PROJECT SHALL BE CLEANED IN ACCORDANCE WITH THE APPROVED SWPPP OR AT THE DISCRETION OF THE CITY OF GREEN COVE SPRINGS ENGINEERING DIVISION.
17. PRIOR TO ANY INSPECTION OR TESTING, ALL PIPE LINE, STRUCTURES, ROADWAY, ETC. SHALL BE CLEANED.

EROSION CONTROL:

18. PURSUANT TO COMPREHENSIVE PLAN POLICY 9: 1 OF THE CONSERVATION ELEMENT, THE USE OF ONE OR MORE EROSION CONTROL MEASURES AS REQUESTED BY THE CITY OF GREEN COVE SPRINGS ENGINEERING DIVISION, SHALL BE USED DURING CONSTRUCTION. THESE WILL BE, BUT NOT LIMITED TO, ITEMS SUCH AS TEMPORARY GRASS COVER, SEDIMENT BASINS OR PONDS, MULCHING, TEMPORARY FENCES, DIVERSION CHANNELS, AND HAY BALES.
19. PURSUANT TO COMPREHENSIVE PLAN POLICY 9: 1 OF THE CONSERVATION ELEMENT, SCHEDULING OF CONSTRUCTION SHALL BE GIVEN SPECIAL CONSIDERATION TO MINIMIZE EXPOSURE OF BARE SOIL. THE CONTRACT WILL FORMULATE ACONSTRUCTION SCHEDULE TO BE GIVEN TO THE COUNTY REPRESENTATIVE.
20. THE GOVERNING PUBLICATIONS FOR EROSION CONTROL ARE CURRENT FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS, INDEX 100-105, CURRENT FDOT STD. SPEC. FOR ROADWAY & BRIDGE CONST., SECTION 104, AND NPDES STORMWATER AND EROSION CONTROL MANUAL LATEST EDITION.
21. THE CONTRACTOR SHALL CHECK EACH DAY TO INSURE THAT ALL EROSION CONTROL DEVICES ARE IN PLACE AND WORKING PROPERLY.
22. ALL EROSION CONTROL MEASURES SHALL BE IN COMPLIANCE WITH THE RULES, REGULATIONS AND STANDARDS OF THE SAINT JOHNS RIVER WATER MANAGEMENT DISTRICT, THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION, AND THE UNITED STATES ARMY CORP OF ENGINEERS AND CITY OF GREEN COVE SPRINGS REGULATIONS AND ORDINANCES.
23. THE CONTRACTOR SHALL TAKE WHATEVER MEANS NECESSARY TO PREVENT THE EROSION OF SOIL AND DEPOSITION OF SEDIMENT ON ADJACENT AND DOWNSTREAM PROPERTIES.
24. ALL EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO COMMENCEMENT OF CONSTRUCTION. SEDIMENT CONTROL CONSISTS OF SILT FENCING, HAY BALES, AND FLOATING TURBIDITY BARRIERS PER FDOT INDEX NO. 102 & 103. EROSION CONTROL CONSISTS OF SEEDING AND MULCHING, SODDING, WETTING SURFACES, PLACEMENT OF COARSE AGGREGATE, TEMPORARY PAVING.
25. THE CONTRACTOR SHALL RESPOND TO EROSION AND SEDIMENT CONTROL MAINTENANCE WITHIN 24-HOURS OF BEING INFORMED BY CITY OF GREEN COVE SPRINGS, UNLESS THE SITUATION REQUIRES AN IMMEDIATE RESPONSE. THE CONTRACTOR WILL THEN RESPOND IMMEDIATELY AFTER NOTIFICATION BY THE COUNTY . THE CONTRACTORS EROSION INSPECTOR SHALL BE A QUALIFIED STORMWATER MANAGEMENT INSPECTOR BY THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION.
26. THE CONTRACTOR SHALL BE REQUIRED TO INCORPORATE PERMANENT EROSION CONTROL MEASURES AT THE EARLIEST PRACTICAL TIME SO AS TO MINIMIZE THE NEED FOR TEMPORARY CONTROLS.
27. THE EROSION AND SEDIMENT CONTROL MEASURES SHOWN ON THE PLANS ARE MINIMUM REQUIREMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADDITIONAL EROSION CONTROL MEASURES AS DETERMINED BY THE COUNTY OR THE CONTRACTOR TO INSURE QUALITY CONTROL.
28. ALL DISTURBED AREAS SHALL BE GRASSED WITHIN 7 DAYS OF THE INITIAL DISTURBANCE. TYPES OF GRASSING SHALL BE AS FOLLOWS: SODDING IS REQUIRED FOR AROUND ALL DRAINAGE STRUCTURES, RETENTION/DETENTION AREAS, SWALES, DITCHES, AND WHERE 4:1 SLOPES ARE EXCEEDED. SEED AND MULCH MAY BE USED AT ALL OTHER LOCATIONS UNLESS SPECIFICALLY CALLED OUT FOR ON THESE DRAWINGS. THERE SHALL BE A STANDING ROW OF GRASS AT THE TIME OF FINAL ACCEPTANCE. IF SEED AND MULCH HAS BEEN USED AND HAS NOT TAKEN TO, SOD WILL BE REQUIRED FOR ESTABLISHED GRASS.
29. THE CONTRACTOR SHALL INSPECT AND REPORT EROSION AND SEDIMENT CONTROL METHODS EVERY WEEK AND AFTER ½ INCH OF RAIN DURING CONSTRUCTION. THE CONTRACTOR SHALL REMOVE ANY SEDIMENT BUILD UP, REPAIR OR REINSTALL ANY CONTROL MEASURES.

P:\2008-499 AYRSHIRE\ENG PLANS\499 INDEX.DWG 4/19/2023 7:57 AM Mike Reilly

DRAINAGE STRUCTURES & PIPE INSTALLATION

30. THE COUNTY REQUIRES BACKGROUND TESTING OF LOCAL WATERWAYS AND ADDITIONAL PERIODIC TESTING DURING CONSTRUCTION FOR WATER QUALITY AND CONFORMITY WITH CITY OF GREEN COVE SPRINGS STANDARDS.
31. THE GOVERNING PUBLICATIONS FOR PIPE ARE THE CURRENT FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS, INDEX 205 AND THE CURRENT FDOT STD. SPEC. FOR ROADWAY & BRIDGE CONST. SECTION 430.
32. THE GOVERNING PUBLICATIONS FOR INLETS, JUNCTION BOXES AND MANHOLES ARE THE CURRENT FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS, INDEX 201, 209, 215 AND THE CURRENT FDOT STD. SPEC. FOR ROADWAY & BRIDGE CONST. SECTION 425.
33. ALL JOINTS OF PIPE REGARDLESS OF MATERIAL TYPE SHALL BE WRAPPED WITH FABRIC FILTER CLOTH PER FLORIDA DEPARTMENT OF TRANSPORTATION INDEX NUMBER 199, TYPE D-3, A.O.S. 70-100. THE FABRIC SHALL BE INSTALLED IN ACCORDANCE WITH FDOT INDEX NUMBER 280. THE CONTRACTOR WILL PROVIDE A MINIMUM 12" OVERLAP IN THE FABRIC.
34. ALL STORM SEWER PIPES ARE TO BE STEEL REINFORCED CONCRETE PIPE (SRCP) UNLESS OTHERWISE NOTED ON THESE DRAWINGS. ROUND CONCRETE PIPE SHALL COMPLY WITH ASTM C76. ELLIPTICAL PIPE SHALL COMPLY WITH ASTM C507. PIPE JOINTS AND O RING GASKETS SHALL COMPLY WITH ASTM C443.
35. ALL STORM SEWER PIPES SHALL BE SUBJECTED TO LEAKAGE TESTING AND SHALL BE VIDEOED/ TV AFTER LIMEROCK HAS BEEN COMPACTED AND PRIOR TO THE FINAL INSPECTION.
36. ALL STORM SEWER PIPES SHALL BE CUT FLUSH WITH THE INTERIOR WALL OF ANY TYPE MANHOLE OR CURB AND DITCH BOTTOM INLETS.
37. IF THE APPROVED DESIGN REQUIRES THE INLET OR STORM RUN BE SURCHARGED, ALL INLETS SHALL BE INSPECTED BEFORE BEING EXPOSED TO THE SYSTEM.
38. MITERED END SECTIONS SHALL MEET THE REQUIREMENTS UNDER THE CURRENT FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS, INDEX 272 & 273.
39. NO MANHOLE SHALL BE PLACED WITHIN 2.5' OF THE CURB.
40. NO BRICK ADJUSTMENT SHALL BE ALLOWED FOR MANHOLES UNDERNEATH THE PAVEMENT.
41. THE MAXIMUM THRESHOLD FOR MANHOLE ADJUSTMENT UNDERNEATH THE ROADWAY SHALL BE BETWEEN 0 TO 4".
42. FINAL PIPE INSPECTION IN THE RIGHT-OF-WAY OR COUNTY'S EASEMENT: AFTER THE FINAL BASE COURSE OPERATION, THE CONTRACTOR SHALL DEWATER AND VIDEO THE PIPE/CULVERT; THE COUNTY WILL ONLY REVIEW THE VIDEO DATA POST BASE COMPACTION AND SUPPLIED BY THE CONTRACTOR/DEVELOPER, AND THE TESTS AND DVD MUST MEET SECTION 430 OF THE LATEST EDITION OF THE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.

SIGNAGE & PAVEMENT MARKINGS

43. ALL SIGNS AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH MANUEL OF UNIFORM TRAFFIC CONTROL DEVICES AND THE LATEST IMPLEMENTED ADDITION OF THE FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT) STANDARDS INDEX NUMBERS: 9535, 11860, 11862, 11865, 17302, 17346 AND 17349.
44. ALL FINAL PAVEMENT MARKINGS WITHIN THE RIGHTS-OF-WAY SHALL BE THERMOPLASTIC.
45. ALL SIGNS SHALL BE ON A TEN-FOOT (10') POLE A MINIMUM SEVEN FEET (7') FROM THE GROUND.
46. STREET SIGNS SHALL BE MOUNTED WITH TEE CAPS.
47. STREET SIGNS SHALL BE A SIX INCH (6") WIDE WITH GREEN BACKINGS AND WHITE LETTERS AND BORDERING.
48. STOP SIGNS SHALL MEET THE MINIMUM SIZE REQUIREMENTS OF THE MUTCD.
49. STOP SIGNS ARE TO BE PLACED FOUR FEET (4') FROM BACK OF CURB, FOUR FEET (4') BEHIND CROSSWALKS AND IN THE RIGHT HAND SIDE OF THE ROAD.
50. ALL REGULATORY SIGNS SHALL BE BLACK AND WHITE. ALL CONSTRUCTION WARNING SIGNS SHALL BE ORANGE AND BLACK. ALL WARNING SIGNS SHALL BE YELLOW AND BLACK. ALL NO PARKING AND STOP SIGNS SHALL BE RED AND WHITE.
51. STOP BARS SHALL BE TWENTY-FOUR INCHES (24") WIDE AND LANE WIDTH. ALL STOP BARS SHALL BE THERMOPLASTIC.
52. ALL SIGNS MUST MEET FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT) STANDARDS FOR ENGINEERING GRADE SIGN FACES IN REFLECTIVITY.
53. FOR COUNTY MAINTAINED ROADS, STREET SIGNS SHALL BE COLORED WITH A GREEN BACKGROUND AND WHITE LETTERING. FOR PRIVATE ROADS, THE SIGN SHALL BE A WHITE BACKGROUND WITH GREEN LETTERING.
54. ALL PAVEMENT MARKINGS REQUIRE LAYOUT APPROVAL BY CITY OF GREEN COVE SPRINGS.

SIDEWALKS

55. THE GOVERNING PUBLICATIONS FOR SIDEWALK ARE THE CURRENT FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS, INDEX 304-310 AND THE CURRENT FDOT STD. SPEC. FOR ROADWAY & BRIDGE CONST. SECTION 522.
56. SIDEWALKS ARE A MINIMUM OF 5' IN WIDTH FOR A LOCAL ROAD AND 6' IN WIDTH FOR A RESIDENTIAL COLLECTOR. ALL OTHER ROADWAY CLASSIFICATIONS SHALL REFER TO THE DETAILS HEREIN. IN NO CASE SHALL THE SIDEWALK BE LESS THAN 5' WITHOUT WRITTEN APPROVAL FROM THE ENGINEERING DIVISION.
57. ALL SIDEWALKS THAT ARE NOT IN FRONT OF A BUILD ABLE LOT, SHALL BE INSTALLED PRIOR TO THE FINAL INSPECTION.
58. PEDESTRIAN CROSSING/HANDICAP RAMPS SHALL BE INSTALLED WHEREVER THE SIDEWALK MEETS THE CURB. THE RAMPS SHALL BE IN ACCORDANCE WITH FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD INDEX NUMBER 304. ALL ADA RAMPS SHALL BE INSTALLED PRIOR TO FINAL ACCEPTANCE UNLESS OTHERWISE APPROVED BY THE ENGINEERING DIVISION.
59. WHETHER DEPICTED ON THE PLANS OR NOT, A SIDEWALK IS TO BE INSTALLED AT THE SUBDIVISION ENTRANCE RUNNING
60. PARALLEL TO THE RIGHT OF WAY FOR THE EXTENT OF THE PROPERTY.
61. SIDEWALKS ARE TO BE PLACED, AT A MINIMUM, 3' FROM THE PROPERTY LINE OR AS OTHERWISE APPROVED BY THE ENGINEERING DIVISION.

MAINTENANCE OF TRAFFIC

62. THE GOVERNING PUBLICATIONS FOR MAINTENANCE OF TRAFFIC ARE THE CURRENT FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS, INDEX 600 AND THE CURRENT FDO STD. SPEC. FOR ROADWAY & BRIDGE CONST., SECTION 102, AND THE LATEST EDITION OF THE MUTCD.
63. WHEN FDOT STANDARD INDEXES DO NOT APPLY AND HAULING IS NECESSARY FOR THE CONSTRUCTION OF THE SITE, ADDITIONAL MOT MAYBE NECESSARY. INSTALLATION OF "TRUCKS ENTERING AND LEAVING HIGHWAY" SIGNS SHALL BE INSTALLED AND MAINTAINED THROUGHOUT THE LIMITS OF THE CONSTRUCTION SCHEDULE.

AS-BUILT REQUIREMENTS FOR PAVING AND DRAINAGE

GENERAL

SUBMIT TWO (2) SIGNED AND SEALED SETS OF PRINTS AND ONE DIGITAL COPY (AUTOCAD FORMAT; **PLEASE DO NOT USE REFERENCE FILES**; WITH THE DESIGN INFORMATION (ELEVATIONS, PIPE LENGTHS, STATIONING, ETC.) LINED THROUGH ~~(2640)~~ AND THE AS-BUILT INFORMATION PLACED ADJACENT TO IT.

THE FIRM OR LICENSED SURVEYOR SHALL USE THE ORIGINAL PAVING AND DRAINAGE SHEET(S)) SPECIFICALLY FOR AS-BUILT INFORMATION. THE DRAWING(S) ARE TO BE ON 24" X 36" SHEET(S) AND CONTAIN THE FOLLOWING IN ADDITION TO THE AS-BUILT INFORMATION:

- PROJECT NAME AS IT APPEARS ON THE PLAT
- PROJECT/DEVELOPMENT NUMBER
- STREET NAMES
- ALL COMMERCIAL SITES SHALL SHOW THE SITE PHYSICAL ADDRESS IN THE TITLE BLOCK
- DESIGN INFORMATION FOR ALL AS-BUILT INFORMATION PROVIDED LINED THROUGH
- NORTH ARROW
- SCALE
- SHOW AND LABEL ALL SURVEY-LINES USED FOR LOCATIONS
- THE WORDS "AS-BUILT" IN AT LEAST ONE-INCH HIGH LETTERS
- MATERIALS CERTIFICATION STATEMENT SIGNED BY THE CONTRACTOR
- SIGNED ENGINEER'S CERTIFICATION STATEMENT
- INFORMATION PERTAINING TO BENCHMARK(S) (LOCATION, ELEVATION, AND REFERENCE TYPE)
- SHOW **STATE PLANE COORDINATE (NAD. 83)**
- REFERENCES ON AT LEAST FOUR (4) BOUNDARY CORNERS AND ON ALL PRM(S) (ONE POSITION, TO BE KNOWN AS THE "NORTHING," SHALL GIVE THE POSITION IN A NORTH AND SOUTH DIRECTION; THE OTHER, TO BE KNOWN AS THE "EASTING," SHALL GIVE THE POSITION IN AN EAST AND WEST DIRECTION, REF. F.S CH. 177.151) FOR PLATS AND AS-BUILTS.

BENCHMARKS

PERMANENT BENCHMARKS ARE TO BE SITUATED AS TO **FACILITATE LOT GRADING** (I.E. TOP OF METAL CURB HOODS, MANHOLE RIMS, ETC.).

AT LEAST TWO (2) PERMANENT BENCHMARKS SHALL BE ESTABLISHED WITHIN A SUBDIVISION OR IN EACH PHASE OF A SUBDIVISION AND LOCATED SO THAT NO LOT IS MORE THAN ONE THOUSAND FEET (1,000') FROM A BENCHMARK. **PLEASE REFERENCE EACH BENCHMARK BY STATION.**

PAVING

STATIONS, OFFSETS, AND ELEVATIONS ON:

- CENTER-LINE OR PROFILE GRADE LINE
- TOP OF CURB
- GUTTER OR EDGE OF PAVEMENT (SPECIFY WHICH)
- BACK OF SIDEWALKS
- A MINIMUM OF EVERY 100 FEET AND AT THE FOLLOWING CHANGES IN VERTICAL AND HORIZONTAL ALIGNMENT:
- PVC, PC AND PVT
- LOW AND HIGH POINTS
- CURB RETURNS
- CENTERLINE INTERSECTIONS
- BEGIN AND END VALLEY GUTTER
- BEGIN AND END SUPERELEVATION TRANSITION
- BEGIN AND END FULL SUPERELEVATION
- BEGIN AND END ROADWAY TRANSITION
- GUTTER LINE (**CUL-DE-SAC EVERY 25'**)

DRAINAGE

LOCATION OF ALL DRAINAGE STRUCTURES. LOCATION SHOULD BE BY STATION AND OFFSET WHENEVER POSSIBLE, OTHERWISE STRUCTURES MUST BE TIED DOWN FROM AT LEAST TWO DIRECTIONS.

SIZES, LENGTHS, AND TYPES OF DRAINAGE PIPES INCLUDING UNDERDRAIN.

INFORMATION FOR ALL STRUCTURES TO INCLUDE:

- PIPE INVERT ELEVATIONS INCLUDING UNDERDRAIN
- TOP OR GRATE ELEVATIONS (SPECIFY WHICH)
- WEIR OR SLOT ELEVATIONS AND SIZES
- CROSS SECTIONS THROUGH ALL SWALE AND DITCH CONSTRUCTION A MINIMUM OF EVERY 25 FEET TO INCLUDE **ELEVATIONS** AND **LOCATIONS** OF THE CENTERLINE OR TOES OF SLOPE (SPECIFY WHICH) AND THE TOPS OF BANK.

INFORMATION FOR RETENTION / DETENTION BASINS TO INCLUDE:

- ELEVATIONS AND LOCATIONS ALONG THE TOP OF BANK A MINIMUM OF EVERY 100 FEET
- DATED ELEVATION OF THE WATER STAGE AT THE TIME OF AS-BUILT
- TIES FROM THE TOP OF BANK TO THE WATERS EDGE A MINIMUM OF EVERY 100 FEET
- ELEVATIONS ALONG THE BOTTOM OF BASIN (2 SHOTS PER AVERAGE POND ACREAGE)

INFORMATION FOR CONTROL STRUCTURE TO INCLUDE:

- LOCATION
- TOP ELEVATION
- WEIR OR SLOT ELEVATION AND SIZE
- ELEVATION AND SIZE OF DRAWDOWN ORIFICE
- LENGTH, SIZE, AND INVERTS (AT HIGH AND LOW POINTS) OF FILTER DRAIN
- INVERT OF OUTFALL PIPE

SHOW ALL DRAINAGE EASEMENTS, ENCROACHMENTS WITHIN THE EASEMENTS, AND ANY ENCROACHMENTS OF DRAINAGE OUTSIDE OF EASEMENTS.

SIGNAGE

THE LOCATION OF ALL STREET SIGNS SHALL BE SHOWN BY STATION AND OFFSET WHENEVER POSSIBLE, OTHERWISE, THE SIGNS MUST BE TIED DOWN FROM AT LEAST TWO DIRECTIONS.

ADDITIONAL NOTES

ALL PROPOSED ELEVATIONS SHALL BE CHECKED FOR APPROVAL; ADDITIONAL ELEVATIONS MAY BE REQUIRED TO CHECK FOR POSITIVE DRAINAGE.

ALL CUL-DE-SAC CURBING SHALL BE SURVEYED EVERY 25'.

SUBMIT THE BLUE-LINE OR BLACK-LINE (**THE FINAL SET MUST BE SIGNED AND SEALED BY A PROFESSIONAL LAND SURVEYOR, LICENSED BY THE STATE OF FLORIDA**) WITH THE CAD DISK FIVE (5) DAYS PRIOR TO SCHEDULING THE FINAL INSPECTION.

WATER MANAGEMENT APPROVALS ARE REQUIRED PRIOR TO FINAL ACCEPTANCE.

AS-BUILTS SHALL BE SIGNED IN, IF REVISIONS ARE REQUIRED, THE COMPANY WILL BE NOTIFIED TO PICK THEM UP AND SIGN THEM OUT. ONCE REVISIONS HAVE BEEN MADE, THE DOCUMENTS SHALL BE SIGNED BACK IN. **THE FILES ON THE CAD DISK SHOULD REFLECT THE SITE WITHOUT ADDITIONAL EDITING.**

REVISED - 12/9/15

CITY OF GREEN COVE SPRINGS SPECIFICATIONS

PROJECT DATUM ELEVATION

1. PROJECT DESIGN IS BASED ON XXXX DATUM SEE PLANS FOR BENCH MARK ELEVATION & LOCATION(S)

CONSTRUCTION ENTRANCE

2. A STABILIZED CONSTRUCTION ENTRANCE IS REQUIRED WITH ALL DEVELOPMENTS. WHERE THE DEVELOPMENT IS BUILT IN PHASES, A SECONDARY CONSTRUCTION ENTRANCE WILL BE REQUIRED THAT DOES NOT ALLOW CONSTRUCTION EQUIPMENT TO ACCESS THROUGH THE EXISTING DEVELOPMENT IF POSSIBLE.

PUBLIC SAFETY NOTES

3. A BLUE, ALL-DIRECTIONAL HIGHWAY-STYLE REFLECTIVE MARKERS SHALL BE PROVIDED ON ALL ROADWAYS, ALLEYS, ACCESS ROADS, AND ALL PAVED AREA IN FRONT OF EACH HYDRANT. SAID MARKERS SHALL BE LOCATED IN THE CENTER OF TRAVEL LANE ON THE SAME SIDE AS THE HYDRANT. THESE MARKERS SHALL BE IN PLACE AT THE TIME OF THE FINAL INSPECTION OR APPROVAL.
4. A DISK SHALL BE PROVIDED TO THE PUBLIC SAFETY DEPARTMENT, IN AUTOCAD FORMAT, SHOWING THE LOCATION OF ALL FIRE HYDRANTS BEFORE FINAL APPROVAL.

EXCAVATION & EMABANKMENTS NOTES

5. THE GOVERNING PUBLICATIONS FOR ROADWAY EXCAVATION AND EMBANKMENT ARE THE CURRENT FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS, INDEXES 500-505 AND SECTION 120 OF THE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION LATEST EDITION. ALL SOILS SHALL BE CLASSIFIED PER ASSHTO SOIL CLASSIFICATION SYSTEM.
6. THE CONTRACTOR IS TO ROUGH EXCAVATE AND GRADE ANY PROPOSED PONDS AT THE START OF THE SITE GRADING. THE CONTRACTOR WILL DIRECT SITE RUNOFF TO THE PONDS TO MINIMIZE RUNOFF TO OFFSITE AREAS. THESE PONDS WILL NOT BE ALLOWED TO DISCHARGE PRIOR TO THE GRASSING AND INSPECTION TO MAKE SURE THE WATER QUALITY IS ACCEPTABLE.
7. CONTRACTOR SHALL PROVIDE BARRIERS, WARNING LIGHTS AND OTHER PROTECTIVE DEVICES AT ALL EXCAVATIONS..
8. SIDEWALKS, ROADS, STREETS, OR ANY OTHER TYPE OF PEDESTRIAN OR VEHICULAR PATHWAYS SHALL NOT BE BLOCKED OR OBSTRUCTED BY EXCAVATED MATERIALS OR THE EXCAVATED TRENCH UNLESS APPROVED BY CITY OF GREEN COVE SPRINGS.
9. ALL UNSUITABLE MATERIAL SHALL BE REMOVED THREE FEET (3') BEYOND THE BACK OF THE CURB AND TWO FEET (2') BELOW THE BOTTOM OF THE 12" STABILIZED SUBGRADE. IT SHALL BE THE DETERMINATION OF CITY OF GREEN COVE SPRINGS IF MORE EXCAVATION SHALL BE REQUIRED DUE TO SOIL CONDITION EVALUATED IN THE FIELD.

TYPE "B" STABILIZED SUBGRADE

10. THE GOVERNING PUBLICATIONS FOR SUB-GRADE ARE THE CURRENT FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS, INDEX 505 AND THE CURRENT FDOT STD. SPEC. FOR ROADWAY & BRIDGE CONST. SECTION 160 AND SECTION 914.
11. LIMEROCK BEARING RATIOS FOR SUBGRADE SHALL BE A MINIMUM OF 40 WITH NO UNDER TOLERANCE.
12. ALL STABILIZED SUB-GRADE SHALL MEET FDOT TYPE "B" STABILIZATION AS DEFINED BY THE STANDARD SPECIFICATIONS.

BASE COURSE

13. THE GOVERNING PUBLICATIONS FOR BASE MATERIALS ARE THE CURRENT FDOT STD. SPEC. FOR ROADWAY & BRIDGE CONST.
14. THE LIMEROCK BEARING RATIO FOR BASE COURSE IS A MINIMUM OF 100 WITH NO UNDER TOLERANCE.
15. ALL LIMEROCK BASE COURSES SHALL BE PRIMED BEFORE PAVING. IF THE LIMEROCK IS NOT PAVED WITHIN ONE (1) DAY OF THE PRIMING, THE BASE SHALL BE REQUIRED TO BE COVERED WITH SAND.
16. ANY CONTAMINATED BASE MATERIAL SHALL BE REMOVED. ALL BASE MATERIAL SHALL BE IN ITS VIRGIN STATE.

ASPHALT

17. THE GOVERNING PUBLICATIONS FOR ASPHALT ARE FDOT 2002 ROADWAY AND TRAFFIC DESIGN STANDARDS OR THE CURRENT EDITION, INDEX 513 AND FDOT 2000 STD. SPEC. FOR ROADWAY & BRIDGE CONST OR CURRENT EDITION. SECTION 330, 331, AND 333.
18. THE MINIMUM ASPHALT THICKNESS FOR A LOCAL ROAD IS 1 ½"WITH NO UNDER TOLERANCE.
19. THE MINIMUM ASPHALT THICKNESS FOR A RESIDENTIAL COLLECTOR IS 2" WITH NO UNDER TOLERANCE.
20. THE ASPHALT SHALL BE CORED FOR THICKNESS…IF HOWEVER THE COUNTY'S REPRESENTATIVE IS PRESENT AT POUR AND FEELS COMFORTABLE WITH THE REQUIREMENTS THEN HE OR SHE MAY WAVE THIS POLICY WITH THE DIRECTION OF THE CONSTRUCTION PROJECT MANAGER.
21. THE MAXIMUM RECYCLED RAP ALLOWED IN ASPHALT MIXES IS 20%.

UNDERDRAIN

22. THE GOVERNING PUBLICATIONS FOR UNDERDRAIN ARE THE CURRENT FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS, INDEX 286 AND THE CURRENT FDOT STD., SPEC. FOR ROADWAY & BRIDGE CONST. SECTION 440.
23. ALL UNDERDRAIN LINES SHALL HAVE A FORTY-FIVE DEGREE CLEAN OUT AT TWO HUNDRED FEET INTERVALS AND AT THE END OF THE PIPE RUN. THE CURB SHALL BE MARKED WITH TEAL OR HUNTER GREEN PAINT AS TO THE LOCATION OF THE CLEAN OUT.
24. ALL UNDERDRAIN FILTER MATERIAL SHALL BE FULLY WRAPPED WITH FILTER CLOTH. THE COUNTY WILL NOT PERMIT ANY ½ OR ¾ WRAPPED PIPING.
25. UNDERDRAIN SHALL BE PLACED, AT A MINIMUM, 2' FROM BACK OFF CURBING.
26. A 20' STUB OUT IS REQUIRED FOR ALL DRAINAGE STRUCTURES. ALL STUB OUTS SHALL BE CAPPED WITH AN UNDERDRAIN CLEAN OUT.
27. NO TREE ROOT BARRIER OR ROOTS SHALL BE PLACED WITHIN A HORIZONTAL DISTANCE OF 2' FROM THE UNDERDRAIN.
28. IF UNSUITABLE MATERIAL IS FOUND WITHIN THE LIMITS OF THE ROAD OR IF MATERIAL IS HAULED IN FOR ROADWAY FILL AT A DEPTH GRATER THAN ONE-FOOT (1') THEN THE ENTIRE ROADWAY SHALL BE UNDERDRAINED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT AND INSTALLED PER THE APPROVED CITY OF GREEN COVE SPRINGS DETAIL.

CURB & MISCELLANEOUS CONCRETE

29. THE GOVERNING PUBLICATIONS FOR CURB ARE FDOT 2004 ROADWAY AND TRAFFIC DESIGN STANDARDS, INDEX 300-304 AND FDOT 2004 STD. SPEC. FOR ROADWAY & BRIDGE CONST. SECTION 520.
30. THE CURB SHALL BE CHECKED FOR FLOW AT ANY STAGE OF THE PROJECT. A WATER TRUCK IS TO BE PROVIDED AT THE PRE- FINAL INSPECTION IN ORDER TO CHECK FLOW FOR PROPER DRAINAGE.

THE ROOKERY – PHASE 1

RELEASED FOR CONSTRUCTION

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
–	–	–	–

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	N/A
DATE:	4/19/2023
PROJ. NO.:	2008-

ABBREVIATIONS

ABBREVIATION	DESCRIPTION
A	ARC
AC	ACRE
B&C	BOX AND COVER
B.O.C.	BACK OF CURB
BFP	BACK FLOW PREVENTER
BLDG	BUILDING
BM	BENCHMARK
BOT.	BOTTOM
℄	CENTERLINE
C&G	CURB AND GUTTER
C.I.	CURB INLET
C.O.	CLEAN OUT
CB	CHORD BEARING
CH	CHORD
CMP	CORRUGATED METAL PIPE
CONC.	CONCRETE
CONN.	CONNECT
CONST	CONSTRUCT
CONT.	CONTINUATION
COORD.	COORDINATE
DBL C.I.	DOUBLE CURB INLET
D.E.	DRAINAGE EASEMENT
DHW	DESIGN HIGH WATER
D.I.P.	DUCTILE IRON PIPE
△	DELTA
E	EAST
E.O.P.	EDGE OF PAVEMENT
EL.	ELEVATION
ERCP	ELLIPTICAL REINFORCED CONCRETE PIPE
ESMT	EASEMENT
EXIST	EXISTING
FDAE	FIRE DEPARTMENT ACCESS EASEMENT
F.F.	FINISHED FLOOR
FH	FIRE HYDRANT
FH-LS	LIMITED SPACE FIRE HYDRANT
F-L	FLOW LINE
FM	FORCE MAIN
F.P.	FIRE PROTECTION MAIN
FV	FLUSHING VALVE
GV	GATE VALVE
HDPE	HIGH DENSITY POLYETHYLENE
HDWL	HEADWALL
HWL	HIGH WATER LEVEL
INV.	INVERT
L	LENGTH
LF	LINEAR FEET
M.E.S.	MITERED END SECTION
MAX	MAXIMUM
MH	MANHOLE
MIN	MINIMUM
N	NORTH
N.I.C.	NOT IN CONTRACT
N.T.S.	NOT TO SCALE
NWL	NORMAL WATER LEVEL
ℙ	PROPERTY LINE
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVE
PI	POINT OF INTERSECTION
P.I.P.	POUR IN PLACE
POB	POINT OF BEGINNING
PRC	POINT OF REVERSE CURVE
PT	POINT OF TANGENCY
P.U.D.E.	PRIVATE UNOBSTRUCTED DRAINAGE EASEMENT
PVC	POINT OF VERTICAL CURVATURE
PVI	POINT OF VERTICAL INFLECTION
PVT	POINT OF VERTICAL TANGENCY
PVMT	PAVEMENT
PVC	POLYVINYL CHLORIDE PIPE
R	RADIUS
R.P.	RADIUS POINT
R/W	RIGHT OF WAY
RCP	REINFORCED CONCRETE PIPE
RED.	REDUCER
RPZBFP	REDUCED PRESSURE ZONE BACKFLOW PREVENTER
S	SOUTH
SAN.	SANITARY
SEP	SEPARATION
SL	SLOPE
S.P.	SAMPLE POINT
SHT	SHEET
STA	STATION
STB	STAKED TURBIDITY BARRIER
SWMF	STORM WATER MANAGEMENT FACILITY
T.O.B.	TOP OF BANK
SWR	SEWER
T.O.C.	TOP OF CURB
TRI C.I.	TRIPLE CURB INLET
TYP.	TYPICAL
U.A.D.E.	UNOBSTRUCTED ACCESS & DRAINAGE EASEMENT
U.D.E.	UNOBSTRUCTED DRAINAGE EASEMENT
U.E.	UTILITY EASEMENT
V.C.	VERTICAL CURVE
W	WEST
WM	WATER MAIN

GEOMETRY LEGEND

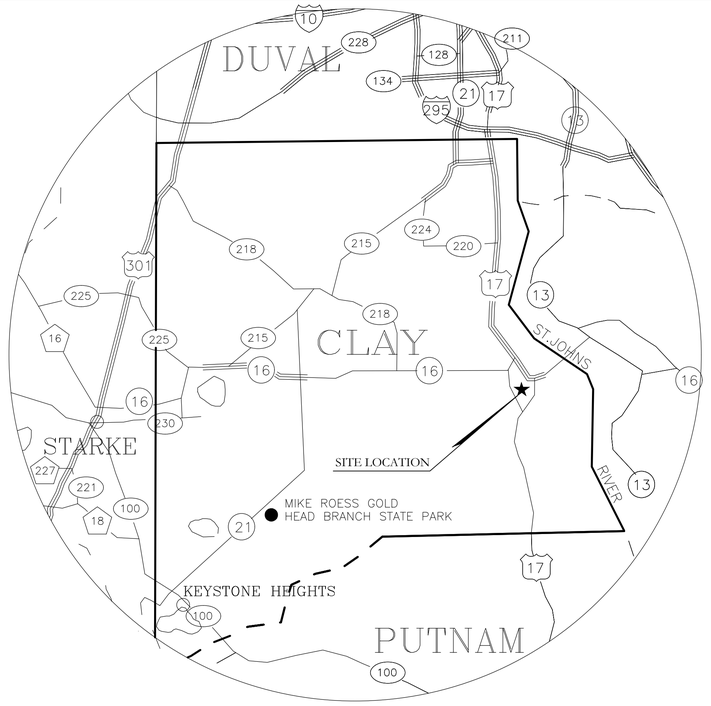
DESCRIPTION	SYMBOL
LINE NUMBER	L1
CURVE NUMBER	C1
BASELINE	℄
STATION NUMBER	12+00
LOT NUMBER	58
BUILDING NUMBER	2
NUMBER OF PARKING SPACES	5

PAVING AND DRAINAGE LEGEND

DESCRIPTION	SYMBOL
STORM PIPE	
UNDER DRAIN	UD
STORM WATER INLET	
CURB INLET	
MITERED END SECTION	
HEADWALL	
STORM SEWER MANHOLE	
STORM WATER STRUCTURE NUMBER	S-500
EXISTING SPOT ELEVATION	(28.5)
PROPOSED SPOT ELEVATION	28.7
EXISTING CONTOUR ELEVATION	21
PROPOSED CONTOUR ELEVATION	12
DRAINAGE DIVIDE	
DRAINAGE AREA (ACRES)	DA = 0.56 Ac
DRAINAGE FLOW DIRECTION	
SWALE FLOW DIRECTION	
ROAD SLOPE	0.3%
SILT FENCE	
STAKED TURBIDITY BARRIER	
BENCH MARK ELEVATION	BM23.75
PROPOSED ROADWAY ELEVATION	10.00

WATER AND SEWER LEGEND

DESCRIPTION	SYMBOL
PROPOSED WATER MAIN W/SIZE	W
EXISTING WATER MAIN W/SIZE	W
PROPOSED GATE VALVE W/BOX & COVER	
EXISTING GATE VALVE W/BOX & COVER	
PROPOSED REDUCER/INCREASER	
PROPOSED FIRE HYDRANT W/VALVE, BOX COVER	
PROPOSED LIMITED SPACE FIRE HYDRANT W/VALVE, BOX COVER	
SINGLE WATER SERVICE	
FLUSHING VALVE	
PROPOSED SANITARY SEWER MAIN	S
EXISTING SANITARY SEWER MAIN	S
PROPOSED SANITARY SEWER MANHOLE	
EXISTING SANITARY SEWER MANHOLE	
SANITARY SEWER CLEAN OUT	C.O.
SANITARY SEWER SERVICE LATERAL	
SANITARY SEWER MANHOLE NUMBER	1
PROPOSED SANITARY SEWER FORCE MAIN	FM
EXISTING SANITARY SEWER FORCE MAIN	FM
EXIST. FIRE HYDRANT	
PROPOSED FIRE PROTECTION MAIN	FP
EXISTING FIRE PROTECTION MAIN	FP
REDUCED PRESSURE ZONE BACK FLOW PREVENTER W/BY-PASS METER	
REDUCED PRESSURE ZONE BACK FLOW PREVENTER	
WATER MAIN CROSSING TYPE	B
SAMPLE POINT(S.P.)	S.P.
END OF WATER MAIN PLUG	
DUAL WATER SERVICE	



VICINITY MAP

LOCATION MAP

INDEX OF SHEETS

SHEET No.	DWG. No.	DESCRIPTIONS
1	CVR	COVER
2	I-1	INDEX - CLAY COUNTY NOTES
3	I-2	INDEX - LEGEND
4	I-3	INDEX - PROJECT NOTES
5 - 6	ECD-1 - ECD-2	EXISTING CONDITIONS AND DEMOLITION PLANS
7 - 11	WFP-1 - WFP-5	WETLAND FLAG PLANS
12	OSP-1	OVERALL SITE PLAN
13 - 18	G-1 - G-6	GEOMETRY PLANS
19	ENT-1	GEOMETRY PLAN - ENTRANCE ROAD & TURN LANES
20	AC-1	GEOMETRY PLAN - AMENITY PLAY AREA
21 - 25	RI-1 - RI-5	ROADWAY IMPROVEMENT PLANS
26 - 27	J1-1 - J1-2	SWMF J1 - CONSTRUCTION PLANS
28	PRE-1	PRE-DEVELOPMENT DRAINAGE PLAN - PHASE 1
29	PRE-2	PRE-DEVELOPMENT DRAINAGE PLAN - OVERALL
30	PST-1	POST DEVELOPMENT DRAINAGE PLAN - PHASE 1
31	PST-2	POST DEVELOPMENT DRAINAGE PLAN - OVERALL
32 - 38	MGP-1 -MGP-7	MASTER GRADING PLANS
39 - 45	PD-1 - PD-7	PAVING AND DRAINAGE PLANS
46	DST-1	DRAINAGE STRUCTURE TABLES
47	MWP-1	MASTER WATER PLAN
48	MRP-1	MASTER REUSE PLAN
49 - 54	WR-1- WR-6	WATER AND REUSE PLANS
55	MSP-1	MASTER SEWER PLAN
56 - 61	S-1 - S-6	SANITARY SEWER PLANS
62 - 63	OUP-1 - OUP-2	OFFSITE UTILITY PLAN AND PROFILES
64 - 68	RSP-1 - RSP-5	ROAD AND SEWER PROFILES
69	PS-1	PUMP STATION PLAN
70	PSD-1	PUMP STATION DETAILS
71	SPD-1	CCUA TECHNICAL SPECIFICATIONS
72 - 76	WD-1 - WD-5	CCUA WATER DETAILS
77 - 78	RD-1 - RD-2	CCUA REUSE DETAILS
79	SD-1	CCUA SANITARY SEWER DETAILS
80	UTC-1	CCUA UTILITY PLACEMENT DETAILS
81 - 86	PDD-1 - PDD-6	PAVING AND DRAINAGE DETAILS
87 - 88	SPP-1 - SPP-2	STORMWATER POLLUTION PREVENTION PLANS

ADDITIONAL PLANS

1 - 9	N/A	PUD BOUNDARY SURVEY AND LEGAL
1	KS-1	KEY SHEET
1-13	TM-1 - TM-13	TREE MITIGATION PLANS
1-13	LS-1 - LS-13	LANDSCAPE PLANS
		IRRIGATION PLANS

THE ROOKERY – PHASE 1

RELEASED FOR CONSTRUCTION

P:\2008-499 AYRSHIRE\ENG PLANS\499 INDEX.DWG 4/19/2023 7:57 AM Mike Reilly

REVISIONS

NO.	DATE	DESCRIPTION	BY:
–	–	–	–

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	N/A
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1

FOR:
D.R. HORTON, INC. – JACKSONVILLE

CLAY COUNTY, FLORIDA

INDEX – LEGEND

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 3 of 88

I–2

DWG. NO.

PROJECT SPECIFIC NOTES

GEOMETRY NOTES

1. BOUNDARY, TOPOGRAPHIC AND RIGHT OF WAY INFORMATION OBTAINED FROM SURVEY SUPPLIED BY OWNER
2. STATIONING REFERS TO CENTERLINE OF PAVEMENT.
3. ALL DIMENSIONING REFERS TO EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
4. ALL WORK WITHIN RIGHT OF WAY SHALL COMPLY WITH REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION.
5. CONTRACTOR SHALL VERIFY LOCATIONS OF EXISTING STRUCTURES, IMPROVEMENTS, UTILITIES, PROPERTY LINES AND SETBACKS AND CONFIRM ALL PROPOSED DIMENSIONS AND ELEVATIONS PRIOR TO COMMENCING ANY CONSTRUCTION ORDERING OF MATERIALS.
6. GEOMETRY INFORMATION SHOWN IS FOR REFERENCE ONLY. CONTRACTORS SURVEYOR SHALL RE-COMPUTE/CONFIRM GEOMETRIC INFORMATION SHOWN PRIOR TO FIELD STAKING.DISCREPANCIES, IF ANY, WITH THESE PLANS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION.

PAVING AND DRAINAGE NOTES

1. ALL GRADING AND PLACEMENT OF COMPACTED FILL SHALL BE IN ACCORDANCE WITH THE LATEST CLAY COUNTY SPECIFICATIONS.
2. ALL AREAS WITHIN THE PROPERTY SHALL BE CLEARED & GRUBBED TO REMOVE ALL ROOTS & MISCELLANEOUS VEGETATION EXCEPTING SPECIFIC TREES OR CLUSTERS OF TREES WHICH WILL BE FLAGGED BY THE OWNER & SHALL BE PROTECTED FROM DAMAGE.
3. ALL PIPE LENGTHS ARE APPROXIMATE DIMENSIONS. ALL DRAINAGE STRUCTURES SHALL BE CONSTRUCTED TO CONFORM WITH TYPICAL SECTIONS & DETAILS AS SHOWN ON THE PAVING & DRAINAGE DETAIL SHEETS & IN ACCORDANCE WITH THE LATEST CLAY COUNTY SPECIFICATIONS.
4. THE CONTRACTOR SHALL COORDINATE THE CONSTRUCTION OF PAVING & DRAINAGE WITH ALL OTHER CONSTRUCTION. FOR WATER & SEWER FACILITIES, SEE WATER & SEWER PLAN DRAWINGS.
5. LOCATION, EXISTENCE OR NONEXISTENCE OF ANY UTILITY DOES NOT CONSTITUTE RESPONSIBILITY OF THE ENGINEER.
6. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES PRIOR TO CONSTRUCTION FOR VERIFICATION & LOCATION OF ANY UTILITY.
7. ALL UNDERGROUND UTILITIES MUST BE INSTALLED PRIOR TO PREPARATION OF SUBGRADE FOR PAVEMENT.
8. GRADES SHOWN ON PLANS ARE FINISHED GRADES, UNLESS OTHERWISE NOTED.
9. CONTRACTORS SHALL SUBMIT SHOP DRAWINGS FOR ALL WATER & SEWER PIPES, FITTINGS, VALVES, MANHOLES, ETC,.
10. CONTRACTORS SHALL SUBMIT SHOP DRAWINGS FOR ALL STRUCTURES TO THE ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.
11. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE GRASSED & MULCHED IN ACCORDANCE WITH F.D.O.T. SPECIFICATIONS.
12. ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE PLANS & SPECIFICATIONS.
13. CONTRACTOR IS RESPONSIBLE FOR THE CONTROL OF SEDIMENT-LADEN RUNOFF RESULTING FROM STORM EVENTS DURING THE CONSTRICTION PHASE. EROSION CONTROL FACILITIES SHOULD BE INSTALLED EARLY DURING THE CONSTRUCTION PERIOD SO AS TO PREVENT THE TRANSPORT OF SEDIMENT INTO SURFACE WATERS. REVEGETATION & STABILIZATION OF DISTURBED AREAS SHOULD BE ACCOMPLISHED AS SOON AS POSSIBLE TO REDUCE THE POTENTIAL FOR FUTURE SOIL EROSION.
14. IN THE EVENT THAT UNSUITABLE MATERIAL IS ENCOUNTERED DURING ROADWAY EXCAVATION, THIS MATERIAL SHALL BE REMOVED AND REPLACED WITH PROPER ALLOWANCE FOR SUBSEQUENT COMPACTION. ALL SUBMERGE STUMPS ROOTS, MUCK, OR THERE PERISHABLE MATTER ENCOUNTERED IN THE PREPARATION OF THE SUBGRADE SHALL BE REMOVED TO A DEPTH OF AT LEAST THREE FEET BELOW FINISHED SUBGRADE AND 3' BEYOND PAVEMENT.
15. TWO SETS OF SIGNED AND SEALED AS-BUILTS ARE TO BE SUBMITTED FIVE (5) DAYS PRIOR TO THE FINAL INSPECTION WITH A COPY PROVIDED ON DISK IN AUTOCAD FORMAT.
16. CONSTRUCTION WARNING SIGNS ARE TO BE POST-MOUNTED AND ERECTED BEFORE CONSTRUCTION CAN COMMENCE THEY WILL FOLLOW THE STANDARDS SET FORTH BY THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
17. BENCH MARK DATUM (PROVIDED BY OWNERS SURVEYOR) INFORMATION FOR THIS PROJECT IS SHOWN UNDER THE "PROJECT DATUM ELEVATION" HEADING ON THIS SHEET. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY BENCHMARK ELEVATIONS SHOWN ON PLANS PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES IN ELEVATION PRIOR TO ANY CONSTRUCTION.
18. CLAY COUNTY REQUIRES 24-HR NOTICE ON ALL TESTING OR MEETINGS.
19. DENSITIES FOR ALL CROSSINGS ARE TO BE TAKEN AT 1' LIFTS.
20. THE CONTRACTOR SHALL NOT COMMENCE CONSTRUCTION UNTIL ALL APPLICABLE PERMITS ARE OBTAINED.
21. THE CONTRACTORS SHALL CALL SUNSHINE STATE ONE CALL OF FLORIDA, INC., AT 811 OR 1-800-432-4770, 48 HOURS PRIOR TO ANY EXCAVATION IN ANY ESTABLISHED / EXISTING RIGHT-OF-WAY OR EASEMENT.
22. THE CONTRACTOR SHALL PROVIDE 20LF OF 6" UNDERDRAIN STUBOUT EACH SIDE OF CURB INLET. UNLESS OTHERWISE NOTED ON PLANS.
23. UNDERDRAIN CLEANOUTS (C.O.) TO BE LOCATED AT THE UPSTREAM END, AT EACH 90° BEND AND EVERY 300LF ALONG UNDERDRAIN.
24. ALL UNSUITABLE MATERIAL SHALL BE REMOVED TWO FEET (2') BEYOND THE BACK OF THE CURB AND TWO FEET (2') BELOW FINISHED GRADE.
25. IF UNSUITABLE MATERIALS IS FOUND WITHIN THE LIMITS OF THE ROAD OR IF MATERIAL IS HAULED IN FOR ROADWAY FILL AT A DEPTH GREATER THAN ONE-FOOT (1') THEN THE ENTIRE ROADWAY SHALL BE UNDER DRAINED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT AND INSTALLED PER THE APPROVED CLAY COUNTY DETAIL.
26. ALL STORM SEWER PIPES SHALL BE CUT FLUSH WITH THE INTERIOR WALL OF ANY TYPE MANHOLE OR CURB AND DITCH BOTTOM INLETS.
27. COMPACTION DENSITY TEST FOR ALL STORM SEWER PIPE SHALL START AT THE SPRING LINE OF THE PIPE.
28. IF THE APPROVAL DESIGN REQUIRES THE INLET OR STORM RUN BE SURCHARGED ALL INLETS SHALL BE INSPECTED BEFORE BEING EXPOSED TO THE SYSTEM.
29. TEST CYLINDERS SHALL BE RUN FOR ALL CONCRETE STRUCTURES. THERE WILL BE THREE (3) TESTS PER EACH DAY POUR WITH A ONE (1) SEVEN (7) DAYBREAK AND TWO (2) TWENTY-EIGHT (28) DAYS BREAKS.
30. THE ASPHALT SHALL BE CORED FOR THICKNESS AND WILL BE GIVEN A ONE-QUARTER INCH ($\frac{1}{4}$") TOLERANCE. IF HOWEVER THE COUNTY'S REPRESENTATIVE IS PRESENT AT POUR AND FEELS COMFORTABLE WITH REQUIREMENTS THEN HE OR SHE MAY WAVE THIS POLICY.
31. LIMEROCK BEARING RATIOS FOR SUBGRADE AT FORTY (40) AND LIMEROCK OR ALTERNATIVE BASE COURSE AT ONE HUNDRED (100) THERE WILL BE NO UNDER TOLERANCE.

POND BANK COMPACTION/CONSTRUCTION NOTES

1. CONTRACTOR SHALL COMPACT ALL POND BANKS.
2. POND BANK FILL SHOULD CONSIST OF "CLEAN" FINE SAND WITH LESS THAN 5% SOIL FINES.
3. CONTRACTOR MAY USE FILL MATERIALS WITH SOIL FINES BETWEEN 5% & 12%, BUT STRICT MOISTURE CONTROL MAY BE REQUIRED.
4. TOP 2' OF SOIL UNDER BERM SHALL BE COMPACTED TO A MIN DENSITY OF 95% OF MODIFIED PROCTOR MAX. DENSITY
5. PLACE FILL IN UNIFORM 10"-12" LOOSE LIFTS AND COMPACT EACH LIFT TO A MIN. DENSITY OF 95% OF MODIFIED PROCTOR MAXIMUM DENSITY.
6. PERFORM COMPLIANCE TESTS WITHIN THE FILL AT THE FREQUENCY OF NOT LESS THAN ONE TEST PER 300 LF OF POND BANK, OR A MIN. OF 2 TESTS IN ANY AREA LESS THAN 300' IN LENGTH.

WATER AND SEWER NOTES

1. ALL ELEVATIONS ARE SHOWN IN FEET.
2. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE AND AVOID ALL UTILITIES, STRUCTURES AND OBSTRUCTIONS, BOTH NEW AND EXISTING, ABOVE AND BELOW THE GROUND SURFACE. ALL DAMAGES RESULTING FROM THE CONTRACTOR'S EXPENSE. CONTRACTOR SHALL CONTACT ENGINEER IF CONFLICT OCCURS PRIOR TO INSTALLATION OF NEW UTILITIES.
3. THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES IN THE AREA OF THIS PROJECT NOT LESS THAN ONE WEEK PRIOR TO CONSTRUCTION OF WATER AND SEWER FACILITIES.
4. WHERE WATER MAIN IS LAID UNDER DITCHES, CULVERTS OR OTHER PIPELINES WITHOUT FITTINGS, THE MAXIMUM DEFLECTION SHALL NOT EXCEED 50% OF THE MAXIMUM DEFLECTION RECOMMEND BY THE MANUFACTURER OF THE PIPE FURNISHED, UNLESS OTHERWISE SHOWN ON DRAWINGS.
5. THE CONTRACTOR SHALL NOT PROVIDE LESS THAN A 1.5' FT. VERTICAL CLEARANCE BETWEEN ALL UTILITIES UNLESS OTHERWISE DIRECTED. NO SPECIAL PAYMENT ALLOWED.
6. EXISTING TOPOGRAPHIC FEATURES AND UNDERGROUND UTILITIES SHOWN ON THE DRAWINGS WERE TAKEN FROM EXISTING RECORDS AND ARE TO BE USED FOR GENERAL INFORMATION ONLY. CONTRACTOR SHALL VERIFY PRIOR T CONSTRUCTION.
7. ALL NEW WATER PIPE SHALL HAVE A MINIMUM DEPTH OF COVER OF 36" IN PAVED AREAS AND 36" IN UNPAVED AREAS, MEASURED FROM THE TOP OF THE PIPE TO GROUND SURFACE, EXCEPT AS OTHERWISE NOTED ON DRAWINGS. VERTICAL AND HORIZONTAL ALIGNMENT MAY BE ADJUSTED TO MEET ADVERSE FIELD CONDITIONS UPON APPROVAL BY THE ENGINEER. ALL NEW REUSE MAIN SHALL HAVE A MINIMUM DEPTH OF 48". ALL NEW FORCE MAIN SHALL HAVE A MINIMUM DEPTH OF 60".
8. CLASS V, TYPE I BEDDING SHALL BE USED FOR THIS PROJECT UNLESS EXISTING SOILS ARE UNSUITABLE FOR USE A BEDDING, IN WHICH CASE CLASS B, TYPE II BEDDING WILL BE USED.
9. THE CONTRACTOR SHALL COORDINATE THE CONSTRUCTION OF WATER AND SEWER FACILITIES WITH ALL OTHER CONSTRUCTION AND PAVING AND DRAINAGE CONSTRUCTION, SEE DRAWINGS.
10. ALL SANITARY SEWER LINES TO MAINTAIN A MINIMUM OF 10' OFFSET FROM WATERMAINS AND TREES UNLESS OTHERWISE NOTED ON DRAWINGS OR UNLESS DIRECTED BY ENGINEER.
11. CLAY COUNTY UTILITY AUTHORITY STANDARD JOINT RESTRAINTS ARE REQUIRED AT ALL FITTINGS AND TERMINATION POINTS (SEE RESTRAINT SCHEDULE DWG NO. WD-3).
12. FOR WATER, RECLAIMED AND SEWER DETAILS SEE WD, RD, AND SD SHEETS.
13. SEWER LINES ARE DESIGNED TO FINISHED GRADE AND SHALL BE PROTECTED FROM DAMAGE UNTIL FINISH WORK IS COMPLETED.
14. AS-BUILT DRAWINGS SHALL BE FURNISHED TO THE CLAY COUNTY UTILITY AUTHORITY AND TO THE ENGINEER IN ACCORDANCE WITH THE LATEST CLAY COUNTY UTILITY AUTHORITY SPECIFICATIONS.
15. CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION TO FAMILIARIZE HIMSELF WITH THE FIELD CONDITIONS AT THE SITE PRIOR TO CONSTRUCTION.
16. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE PROPERTY LINES AND RIGHT-OF-WAY LINES PRIOR TO CONSTRUCTION.
17. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER ADD TO CLAY COUNTY UTILITY AUTHORITY PRIOR TO CONSTRUCTION OF WATER AND SEWER FACILITIES.
18. ENDS OF ALL SEWER CONNECTIONS TO BE NOTED ON "AS-BUILT" DRAWING.
19. WATER TO BE FLUSHED AND PRESSURE TESTED IN ACCORDANCE WITH THE CLAY COUNTY UTILITY AUTHORITY STANDARDS AND SPECIFICATIONS.
20. WATER MAIN TO BE MARKED ON PIPE IN ACCORDANCE WITH CLAY COUNTY UTILITY AUTHORITY STANDARDS AND SPECIFICATIONS.
21. SHOP DRAWINGS ON ALL BACKFLOW PREVENTERS SHALL BE SUBMITTED TO CLAY COUNTY UTILITY AUTHORITY DEPARTMENT PRIOR TO INSTALLATION.
22. ALL WATER AND SEWER CONSTRUCTION SHALL BE ACCOMPLISHED BY AN UNDERGROUND UTILITY CONTRACTOR LICENSED UNDER THE PROVISIONS OF CHAPTER 489 FLORIDA STATUES.
23. THE CONTRACTOR SHALL NOT COMMENCE CONSTRUCTION UNTIL ALL APPLICABLE PERMITS ARE OBTAINED
24. THE CONTRACTOR SHALL CALL SUNSHINE STATE ONE CALL OF FLORIDA, INC., AT 1-800-432-4770, 48 HOURS PRIOR TO ANY EXCAVATION IN ANY ESTABLISHED / EXISTING RIGHT-OF-WAY OR EASEMENT.
25. COMPACTION DENSITY TESTS FOR ALL WATER AND SEWER CROSSINGS SHALL BE IN ACCORDANCE WITH CCUA SPECIFICATIONS.

PROJECT DATUM ELEVATION

1. PROJECT DESIGN IS BASED ON NAVD 88 DATUM SEE PLANS FOR BENCH MARK ELEVATION & LOCATION(S)

MAINTENANCE OF TRAFFIC

1. MAINTENANCE OF TRAFFIC FOR SANITARY SEWER & DRIVEWAY CONNECTION CONSTRUCTION WORK AREAS TO BE IN ACCORDANCE WITH THE LATEST F.D.O.T. DESIGN STANDARD INDEX NO. 601, INDEX NO. 603 (SHEET 1 OF 3) AND ALL APPLICABLE SECTIONS OF INDEX NO. 600.

THE ROOKERY – PHASE 1

RELEASED FOR CONSTRUCTION

P:\2008-499 AYRSHIRE\ENG PLANS\499 INDEX.DWG4/19/2023 7:57 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
–	–	–	–

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	N/A
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1
FOR:
D.R. HORTON, INC. – JACKSONVILLE
CLAY COUNTY, FLORIDA
INDEX – PROJECT NOTES

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 4 of 88

I–3
DWG. NO.

EXISTING CONDITIONS NOTE:

1. THE EXISTING CONDITIONS PLAN IS A COMPOSITE MAP MADE UP OF SITE SURVEY, AERIAL MAPS AND SITE VISIT INFORMATION. THE INTENT OF THE PLAN IS TO DEPICT, AS ACCURATELY AS POSSIBLE, BELOW GRADE, AT GRADE AND ABOVE GRADE SITE FEATURES. ADDITIONAL SITE FEATURES MAY BE PRESENT AND NOT SHOWN ON PLANS.

GRAPHIC SCALE

300 0 150 300 600 1200

(IN FEET)
1 inch = 300 ft.

LEGEND

= TO BE REMOVED

= LIMITS OF CLEARING (SEE NOTE 6)

WELL (SEE NOTE 5)
REMOVE 503±LF BW FENCE
REMOVE ~11,260 SF CONC.
REMOVE 710±LF 24"PVC & 2 CATCH BASINS
REMOVE 34±LF 24"CMP
LIMITS OF CLEARING (SEE NOTE 6)
REMOVE ~128,942 SF BLDG
REMOVE ~18,270 SF CONC.
REMOVE 22±LF 12"CMP
REMOVE 39±LF 12"CMP
REMOVE ELECTRIC BOXES
REMOVE ~77,000 SF BLDG
FOR OFFSITE LIMITS OF CLEARING AND DEMOLITION ALONG UTILITY ROUTE SEE DWG NO. OUP–1&2
POWER POLE (TYP)(SEE NOTE 4)
LIMITS OF CLEARING (SEE NOTE 6)
REMOVE 100±LF 24"CMP
WELL (SEE NOTE 5)
REMOVE 233±LF 12"PVC & 4 CATCH BASINS
REMOVE ~17,136 SF BLDG
REMOVE DRAINAGE STRUCTURE
WELL (SEE NOTE 5)
POWER POLE (TYP)(SEE NOTE 4)
REMOVE 295±LF BLOCK WALL
REMOVE ~17,136 SF BLDG & SHED
REMOVE ~15,683 SF PVMT & SHED
REMOVE WEIGH SCALE
WELL (SEE NOTE 5)
REMOVE 57±LF 24"CMP
WELL (SEE NOTE 5)
POWER POLE (TYP)(SEE NOTE 4)
REMOVE WOOD PIER
REMOVE ELECTRIC BOXES
REMOVE ~18,270 SF CONC.
REMOVE 92±LF 12"PVC
REMOVE ELECTRIC BOXES
REMOVE ~109,873 SF BLDG
REMOVE 5,725±LF BW FENCE
REMOVE WATER TANK
REMOVE 40±LF 16"CMP 22±LF 8"CPP
REMOVE ~971 SF CONC.
REMOVE 4,365±LF BW FENCE
REMOVE SHED
WELL (SEE NOTE 5)
REMOVE ~335,223 SF CONC.
REMOVE 20±LF 24"CMP 94±LF 16"CMP 60±LF 12"CMP
WELL (SEE NOTE 5)
COORDINATE WITH UTILITY PROVIDER TO RELOCATE GUY WIRE
POWER POLE (TYP)(SEE NOTE 4)
REMOVE SHED & PUMP EQUIPMENT
REMOVE 90±LF 24"CMP 60±LF 10"CPP
POWER POLE (TYP)(SEE NOTE 4)
REMOVE 92±LF 24"CMP
REMOVE ~18,848 SF BLDG & SHED
LIMITS OF CLEARING (SEE NOTE 6)
FOR OFFSITE DEMOLITION AROUND SWMF J1 SEE DWG NO. J1–1&2
LIMITS OF CLEARING (SEE NOTE 6)
GUSTAFSON FARM ROAD
C.R. 15A (S. OAKRIDGE AVE)
JERSEY AVE

DEMOLITION NOTES:

1. THE SURVEY INCLUDED IN THE CONSTRUCTION PLANS IS FOR **REFERENCE ONLY**. ADDITIONAL SITE FEATURES MAY BE PRESENT THAT ARE NOT SHOWN ON THE SURVEY.
2. SEE DWG NO. OSP–1 FOR PROPOSED OVERALL SITE PLAN
3. SEE DWG NO RI–1 THRU RI–5 FOR DEMOLITION ALONG CR 15A.
4. POWER POLE: CONTRACTOR TO COORDINATE WITH UTILITY COMPANY TO REMOVE POLE, CONNECTED OVERHEAD OR UNDERGROUND POWER LINES AND ANY GUY WIRES THAT MAY BE PRESENT.
5. WELL: CONTRACTOR TO VERIFY WITH THE DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP) THE MONITORING STATUS OF ALL WELLS AND MONITORING WELLS BEFORE ABANDONMENT PROCEEDS. ALL WELLS SHALL BE PROPERLY AND LEGALLY ABANDONED VIA FILLING AND PLUGGING. CUT ALL WELL TOPS TO MINIMUM 4' BELOW GRADE. THE WORK MUST BE PERMITTED AND COMPLETED BY A PROPERLY LICENCED WATER WELL CONTRACTOR. THE WATER WELL CONTRACTOR MUST ADHERE TO THE STATE OF FLORIDA AND WATER MANAGEMENT DISTRICT GUIDELINES REGARDING ABANDONMENT PERMITTING AND SAFE PRACTICES.
6. LIMITS OF CLEARING: LIMITS OF CLEARING SHALL BE DELINEATED WITH EROSION CONTROL MEASURES PRIOR TO COMMENCEMENT OF CONSTRUCTION/DEMOLITION. **STAKED TURBIDITY BARRIER SHALL BE USED ABUTTING WETLAND AREAS**. SEE EROSION CONTROL NOTES DWG NO I–1 AND DETAILS DWG NO SPP–1&2.
7. ANY BUILDINGS, CONCRETE, FENCEING,OR OTHER ITEMS SHOWN TO BE DEMOLISHED OUTSIDE OF LIMITS OF CLEARING SHALL BE DONE WITH MINIMAL DAMAGE TO SURROUNDING VEGETATION.
8. LENGTHS, DIMENSIONS, SIZES AND AREAS TO BE DEMOLISHED AND/OR FILLED ARE APPROXIMATE. ADDITIONAL SITE FEATURES NOT SHOWN ON PLANS MAY BE REQUIRED TO BE DEMOLISHED OR REMOVED. THE CONTRACTOR TO FIELD VERIFY ALL ON SITE FEATURE QUANTITIES TO BE DEMOLISHED, REMOVED OR FILLED.
9. ALL MATERIALS IN, ON OR CREATED BY THE DEMOLITION OF ITEMS QUANTIFIED IN THIS PLAN SHALL BE DISPOSED OF IN AN APPROVED LANDFILL OR RECYCLED AS ALLOWED.

Always call 811 two full business days before you dig
Sunshine811.com

RELEASED FOR CONSTRUCTION

P:\2008-499 AYRSHIRE\ENG PLANS\499 ECD.DWG4/19/2023 7:57 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
–	–	–	–

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 300'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1

FOR:
D.R. HORTON, INC. – JACKSONVILLE

CLAY COUNTY, FLORIDA

EXISTING CONDITIONS AND DEMOLITION PLAN

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

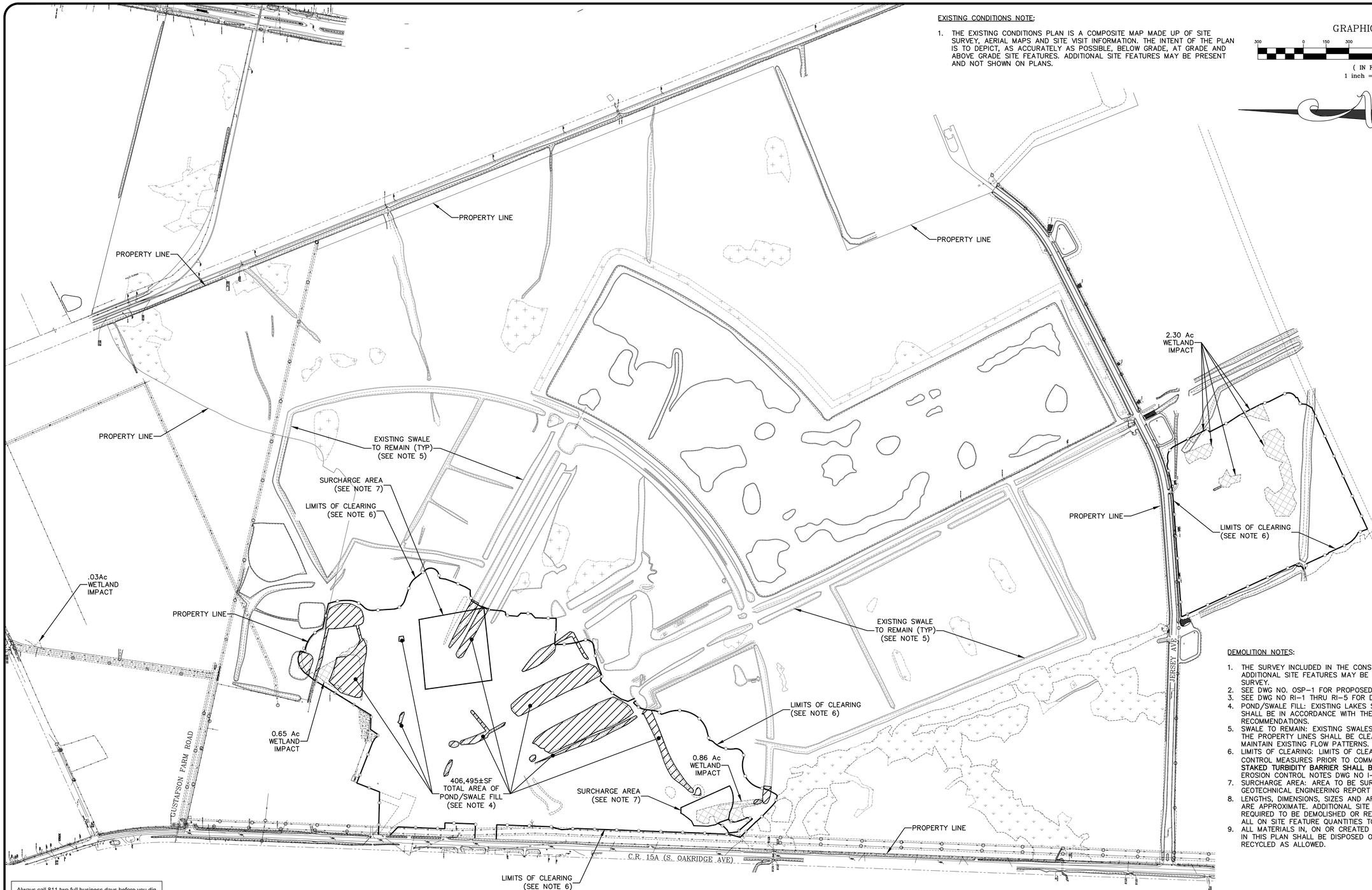
This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 5 of 88

ECD–1

DWG. NO.



EXISTING CONDITIONS NOTE:

1. THE EXISTING CONDITIONS PLAN IS A COMPOSITE MAP MADE UP OF SITE SURVEY, AERIAL MAPS AND SITE VISIT INFORMATION. THE INTENT OF THE PLAN IS TO DEPICT, AS ACCURATELY AS POSSIBLE, BELOW GRADE, AT GRADE AND ABOVE GRADE SITE FEATURES. ADDITIONAL SITE FEATURES MAY BE PRESENT AND NOT SHOWN ON PLANS.

GRAPHIC SCALE

300 0 150 300 600 1200

(IN FEET)
1 inch = 300 ft.

LEGEND

= WETLANDS (FLAGGED)
= WETLANDS (AERIAL INTERPRETATION)
= WETLAND IMPACTS
= POND/SWALE FILL (SEE NOTE 4)
= LIMITS OF CLEARING (SEE NOTE 6)

DEMOLITION NOTES:

1. THE SURVEY INCLUDED IN THE CONSTRUCTION PLANS IS FOR **REFERENCE ONLY**. ADDITIONAL SITE FEATURES MAY BE PRESENT THAT ARE NOT SHOWN ON THE SURVEY.
2. SEE DWG NO. OSP-1 FOR PROPOSED OVERALL SITE PLAN
3. SEE DWG NO RI-1 THRU RI-5 FOR DEMOLITION ALONG CR 15A.
4. POND/SWALE FILL: EXISTING LAKES SWALES AND OTHER AREAS TO BE FILLED SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL REPORT RECOMMENDATIONS.
5. SWALE TO REMAIN: EXISTING SWALES OUTSIDE THE LIMITS OF CLEARING WITHIN THE PROPERTY LINES SHALL BE CLEANED OF ALL VEGETATION AND GRADED TO MAINTAIN EXISTING FLOW PATTERNS.
6. LIMITS OF CLEARING: LIMITS OF CLEARING SHALL BE DELINEATED WITH EROSION CONTROL MEASURES PRIOR TO COMMENCEMENT OF CONSTRUCTION/DEMOLITION. **STAKED TURBIDITY BARRIER SHALL BE USED ABUTTING WETLAND AREAS**. SEE EROSION CONTROL NOTES DWG NO I-1 AND DETAILS DWG NO SPP-1&2.
7. SURCHARGE AREA: AREA TO BE SURCHARGED PER RECOMMENDATIONS IN GEOTECHNICAL ENGINEERING REPORT BY ECS FLORIDA, LLC.
8. LENGTHS, DIMENSIONS, SIZES AND AREAS TO BE DEMOLISHED AND/OR FILLED ARE APPROXIMATE. ADDITIONAL SITE FEATURES NOT SHOWN ON PLANS MAY BE REQUIRED TO BE DEMOLISHED OR REMOVED. THE CONTRACTOR TO FIELD VERIFY ALL ON SITE FEATURE QUANTITIES TO BE DEMOLISHED, REMOVED OR FILLED.
9. ALL MATERIALS IN, ON OR CREATED BY THE DEMOLITION OF ITEMS QUANTIFIED IN THIS PLAN SHALL BE DISPOSED OF IN AN APPROVED LANDFILL OR RECYCLED AS ALLOWED.

THE ROOKERY – PHASE 1

RELEASED FOR CONSTRUCTION

Always call 811 two full business days before you dig

Sunshine811.com

P:\2008-499 AYRSHIRE\ENG PLANS\499 ECD.DWG4/19/2023 7:58 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
–	–	–	–

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 300'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1

FOR:
D.R. HORTON, INC. – JACKSONVILLE

CLAY COUNTY, FLORIDA

EXISTING CONDITIONS AND DEMOLITION PLAN

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 6 of 88

ECD-2

DWG. NO.

THE ROOKERY – PHASE 1

RELEASED FOR CONSTRUCTION

LEGEND

= WETLANDS (FLAGGED)

= WETLANDS (AERIAL INTERPRETATION)

GRAPHIC SCALE

100 0 50 100 200 400

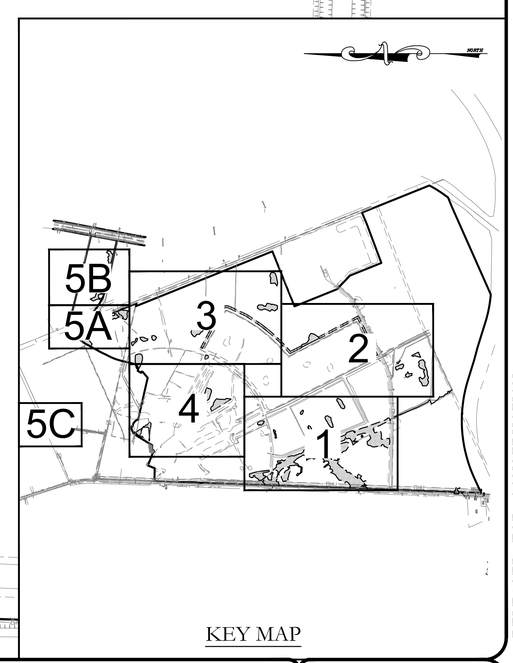
(IN FEET)
1 inch = 100 ft.

NORTH

FLOOD ZONE X

FLOOD ZONE X

KEY MAP



P:\2008-499 AYRSHIRE\ENG PLANS\499 WFP.DWG4/19/2023 7:58 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
–	–	–	–

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 100'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1

FOR:
D.R. HORTON, INC. – JACKSONVILLE

CLAY COUNTY, FLORIDA

WETLAND FLAG PLAN

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 7 of 88

WFP–1

DWG. NO.

GRAPHIC SCALE

100 0 50 100 200 400

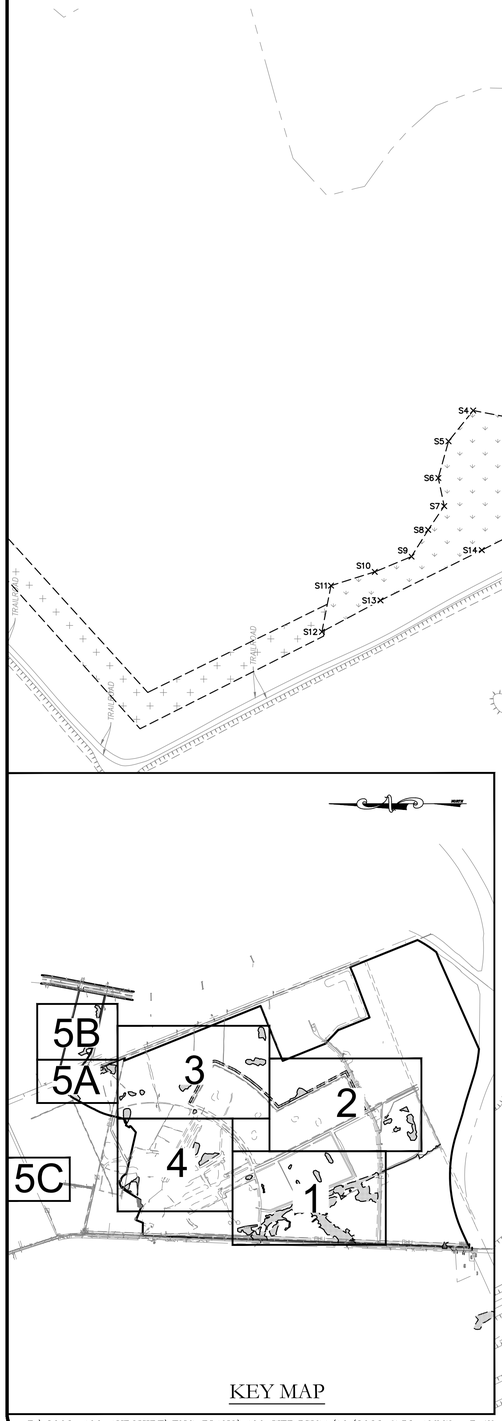
(IN FEET)
1 inch = 100 ft.

NORTH

LEGEND

= WETLANDS (FLAGGED)

= WETLANDS (AERIAL INTERPRETATION)



KEY MAP

P:\2008-499 AYRSHIRE\ENG PLANS\499 WFP.DWG4/19/2023 7:58 AMMike Reilly

REVISIONS

NO.	DATE	DESCRIPTION	BY:
-	-	-	-

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 100'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY - PHASE 1

FOR:
D.R. HORTON, INC. - JACKSONVILLE

CLAY COUNTY, FLORIDA

WETLAND FLAG PLAN

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 8 of 88

WFP-2

DWG. NO.

THE ROOKERY - PHASE 1

RELEASED FOR CONSTRUCTION

GRAPHIC SCALE

100 0 50 100 200 400

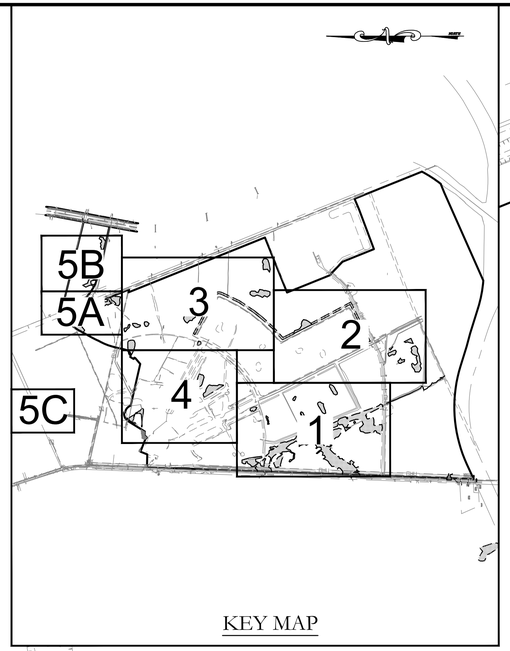
(IN FEET)
1 inch = 100 ft.

NORTH

LEGEND

= WETLANDS (FLAGGED)

= WETLANDS (AERIAL INTERPRETATION)



KEY MAP

FLOOD ZONE A

TRAILROAD

DITCH

TOE DITCH TOB

ROAD

POND

MONITORING WELL

ELECTRIC BOXES

RAMAD PER 24" CMP INV = 27.72 12" CMP INV = 31.21

28" CPP INV = 26.35

24" CMP 12" CPP INV = 33.50

CPP INV = 26.31

P:\2008-499 AYRSHIRE\ENG PLANS\499 WFP.DWG4/19/2023 7:58 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
–	–	–	–

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 100'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1

FOR:
D.R. HORTON, INC. – JACKSONVILLE

CLAY COUNTY, FLORIDA

WETLAND FLAG PLAN

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 61419

Sheet No. 9 of 88

WFP-3

DWG. NO.

RELEASED FOR CONSTRUCTION

GRAPHIC SCALE

100 0 50 100 200 400

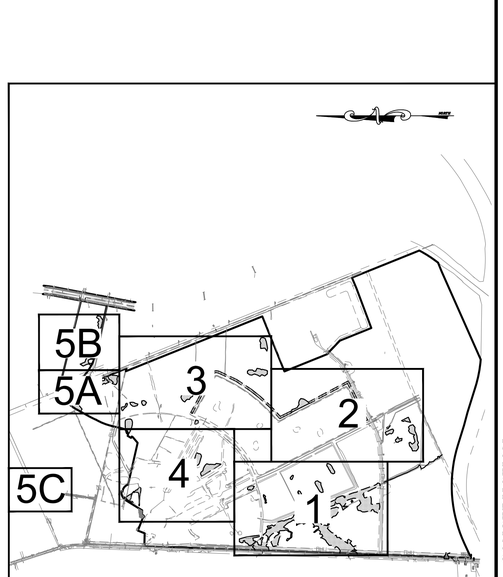
(IN FEET)
1 inch = 100 ft.

NORTH

LEGEND

= WETLANDS (FLAGGED)

= WETLANDS (AERIAL INTERPRETATION)



KEY MAP

P:\2008-499 AYRSHIRE\ENG PLANS\499 WFP.DWG4/19/2023 7:58 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
–	–	–	–

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 100'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1

FOR:
D.R. HORTON, INC. – JACKSONVILLE

CLAY COUNTY, FLORIDA

WETLAND FLAG PLAN

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 10 of 88

WFP-4

DWG. NO.

RELEASED FOR CONSTRUCTION

THE ROOKERY – PHASE 1

GRAPHIC SCALE

100 0 50 100 200 400

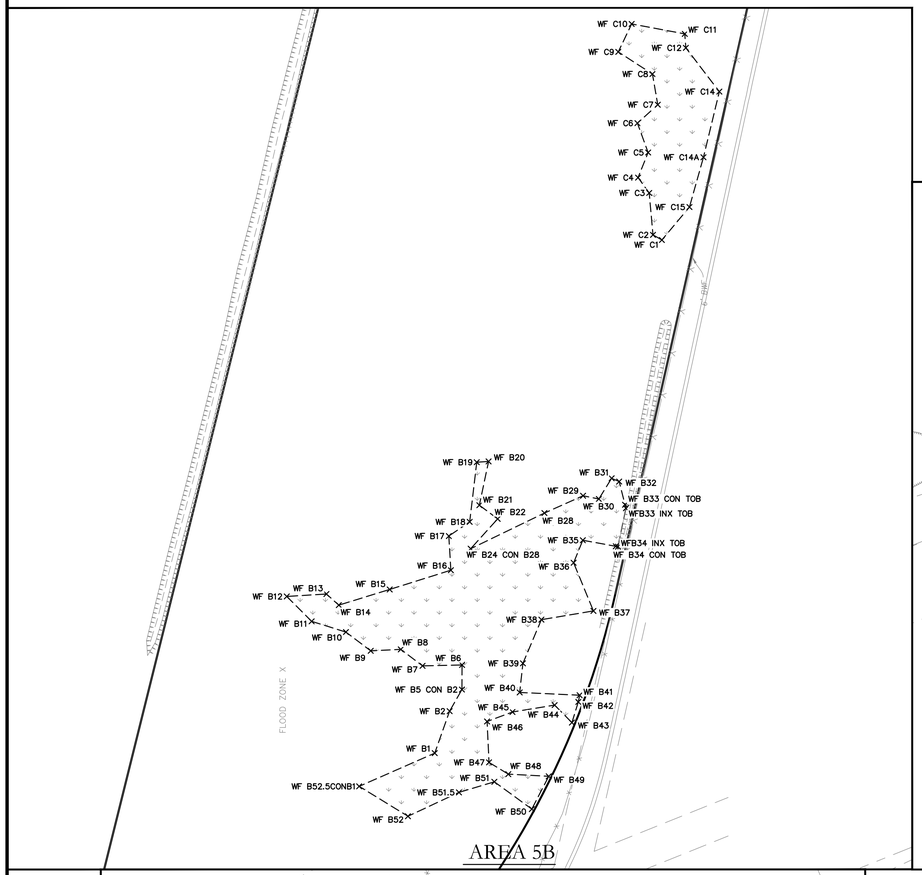
(IN FEET)
1 inch = 100 ft.

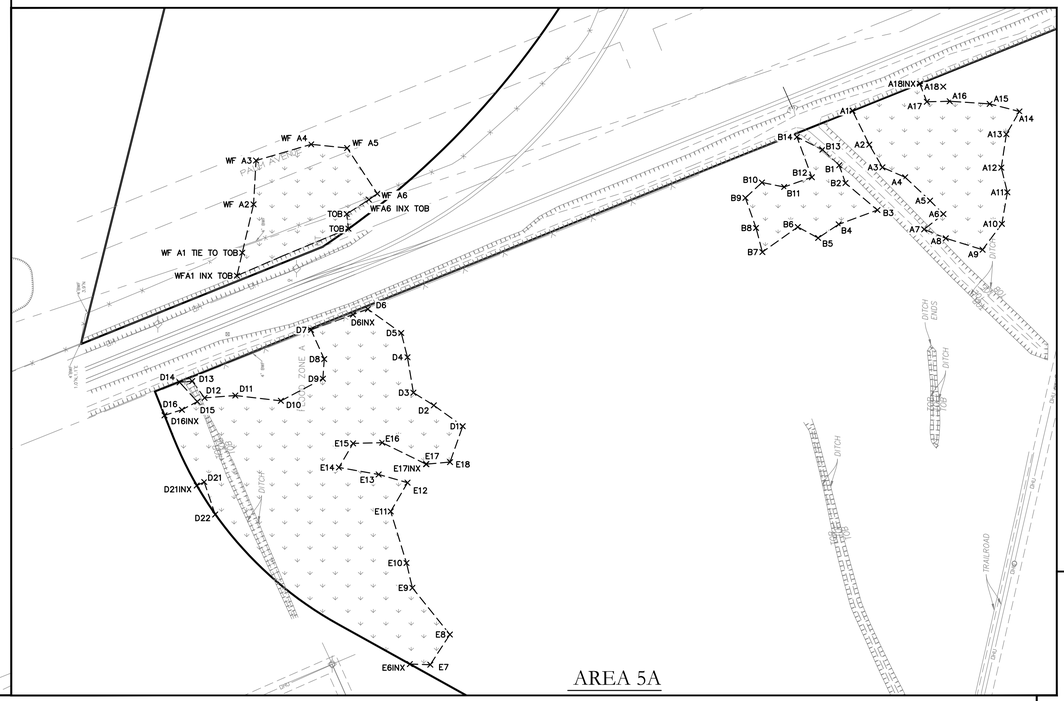
NORTH

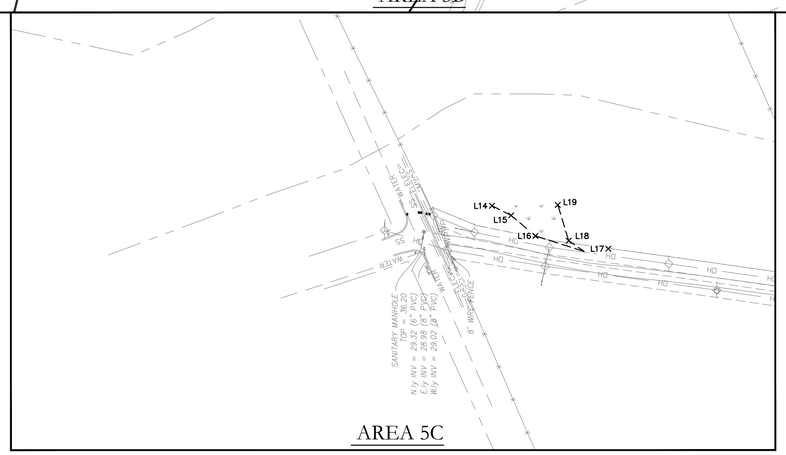
LEGEND

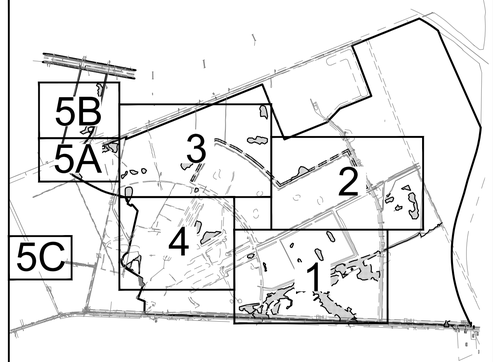
= WETLANDS (FLAGGED)

= WETLANDS (AERIAL INTERPRETATION)









KEY MAP

RELEASED FOR CONSTRUCTION

THE ROOKERY – PHASE 1

P:\2008-499 AYRSHIRE\ENG PLANS\499 WFP.DWG4/19/2023 7:58 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
–	–	–	–

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 100'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1

FOR:
D.R. HORTON, INC. – JACKSONVILLE

CLAY COUNTY, FLORIDA

WETLAND FLAG PLAN

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 11 of 88

WFP-5

DWG. NO.

THE ROOKERY – PHASE 1

RELEASED FOR CONSTRUCTION

LEGEND

- = WETLANDS
- = WETLANDS (AERIAL INTERPRETATION)
- = UPLAND BUFFER
- * = GENERAL ENTRY SIGNAGE LOCATION
- = WETLAND IMPACT
- O.S. = OPEN SPACE TRACT
- = RECREATION

GRAPHIC SCALE
300 0 150 300 600 1200
(IN FEET)
1 inch = 300 ft.

SITE SUMMARY

1. OWNER:
GUSTAFSON'S CATTLE, INC.
P.O. BOX 600337
JACKSONVILLE, FL. 32260

2. DEVELOPER:
D.R. HORTON, INC. – JACKSONVILLE
4220 RACE TRACK ROAD
ST JOHNS, FL 32259

3. ENGINEER:
DUNN & ASSOCIATES, INC.
8647 BAYPINE ROAD, SUITE 200
JACKSONVILLE, FL. 32256
PH: (904)363–8916
FA: (904)363–8917

4. SURVEYOR:
ETM SURVEYING & MAPPING, INC.
14775 OLD ST. AUGUSTINE RD,
JACKSONVILLE, FL. 32258
PH: (904) 642–8550

5. EXISTING/PROPOSED ZONING:
EXISTING PUD & REC
PROPOSED PUD

6. TOTAL SITE AREA SUMMARY:

MINIMUM LOT SIZES	=43' x 100'
MINIMUM SQUARE FOOTAGE	=4,300 SF
MINIMUM LOT WIDTH	=43'
FRONT SETBACK (FACE OF GARAGE):	=20'
(FACADE OF HOME):	=15'
SECOND FRONT (CORNER LOTS):	=10'
SIDE SETBACK (43' LOTS):	=6.5'
(WIDER LOTS)	=5'
REAR SETBACK:	=10'
MAX HEIGHT OF STRUCTURES:	=35'

7. FOR CORNER LOTS THE MIN. LOT WIDTH SHALL BE INCREASED BY 5'.
8. MIN. 50% OF SINGLE FAMILY LOTS SHALL BE MIN. 50' IN WIDTH.
9. MIN. FRONTAGE OF EACH LOT SHALL BE 80% OF ITS REQUIRED LOT WIDTH PROVIDED, HOWEVER THAT THE LOT FRONTAGE MAY BE REDUCED TO 25' ON CUL–DE–SACS AND CURVES.

11. WATER SUPPLY: =COGC(TEMP PH1) THEN CCUA
12. SEWER SERVICE =COGC(TEMP PH1) THEN CCUA
13. ELECTRICAL SERVICE: =CITY OF GREEN COVE
14. STORM WATER SYSTEM: WET DETENTION PONDS
15. FIRE PROTECTION: AS REQUIRED VIA HYDRANTS
16. SIGNAGE: TYPE, LOCATION AND DIMENSIONS TO BE IN ACCORDANCE WITH P.U.D.
17. SIDEWALKS: SHALL BE 5' WIDE ON ONE SIDE OF ALL INTERNAL ROADWAYS AND AN 8' MULTI–PURPOSE PATH FROM SR 17 TO CR 15A.

18. SITE DATA

TOTAL GROSS ACREAGE	= 569.93 Ac.
NUMBER OF RESIDENTIAL LOTS	= 2,100 D.U. MAX.
DENSITY	= 3.75 LOTS/ACRE
MAXIMUM COVERAGE OF BLDGS & STRUCTURES	= 60% OF LOT
WETLANDS	= 45.46 ±Ac.
WETLAND IMPACTS	= 25.23 ±Ac.
REMAINING UPLANDS	= 549.70 ±Ac.
EXIST POND	= 86.59 ±Ac.
LAKES	= 62.76 ±Ac.
PUBLIC R/W	= 81.53 ±Ac.
PERIMETER BUFFER	= 27.08 ±Ac.
PARK & RECREATION	= 28.10 ±Ac.
UPLAND BUFFER	= 8.02 ±Ac.
OPEN SPACE	= 11.05 ±Ac.
LANDSCAPE TRACT	= 6.01 ±Ac.

NOTE:
ALL ROADWAYS 60' R/W, 24' PVMT AND 5' SIDEWALK (ONE SIDE) UNLESS OTHERWISE NOTED.

NOTE:
FOR OVERALL SITE PLAN BOUNDARY INFORMATION SEE "PUD BOUNDARY SURVEY AND LEGAL" PREPARED BY ETM.

OVERALL SITE PLAN IS FOR REFERENCE ONLY – SEE GEOMETRY PLANS FOR DETAILED INFORMATION

FLOOD ZONE

DEVELOPED AREA LOCATED WITHIN FLOOD ZONE "X" & "A" PER FEMA MAP NO.'S 12019C0277E, 12019C0280E, 12019C0281E & 12019C0283E, DATED MAR 17, 2014. (NO BASE FLOOD ELEVATION ESTABLISHED PER FEMA).

P:\2008–499 AYRSHIRE\ENG PLANS\499 OSP.DWG4/19/2023 7:58 AMMike Reilly

REVISIONS

NO.	DATE	DESCRIPTION	BY:
–	–	–	–

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 300'
DATE:	4/19/2023
PROJ. NO.:	2008–499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363–8916 Fax: (904)363–8917
www.dunneng.com

THE ROOKERY – PHASE 1
FOR:
D.R. HORTON, INC. – JACKSONVILLE
CLAY COUNTY, FLORIDA
OVERALL SITE PLAN

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 12 of 88

OSP–1
DWG. NO.

OPEN SPACE NOTE:
THE WESTERNMOST 20' OF OPEN SPACE TRACTS FRONTING PROPOSED 95' BUFFER @ CR15A RIGHT-OF-WAY SHALL BE NATURAL AND/OR PLANTED AREA

ROADWAY IMPROVEMENTS NOTES:
- SEE DWG NO. RI-2 FOR S OAKRIDGE AVE (CR 15A) IMPROVEMENTS
- SEE DWG NO. G-7 FOR ENTRANCE DETAILS

LOT WIDTHS:
MIN. 50% OF SINGLE FAMILY LOTS SHALL BE MIN. 50' IN WIDTH.

PH1 LOTS 1,8,9,35,36,56,69,100,115 & 116-231 ARE 50' OR GREATER

PHASE #	1
<50' LOTS	106
50'+ LOTS	125
TOTAL LOTS	231

NOTES:

SIDEWALK: COMMON AREA SIDEWALK TO BE BUILT BY DEVELOPER (CONTRACTOR). ALL OTHER SIDEWALK TO BE BUILT BY HOME BUILDER.

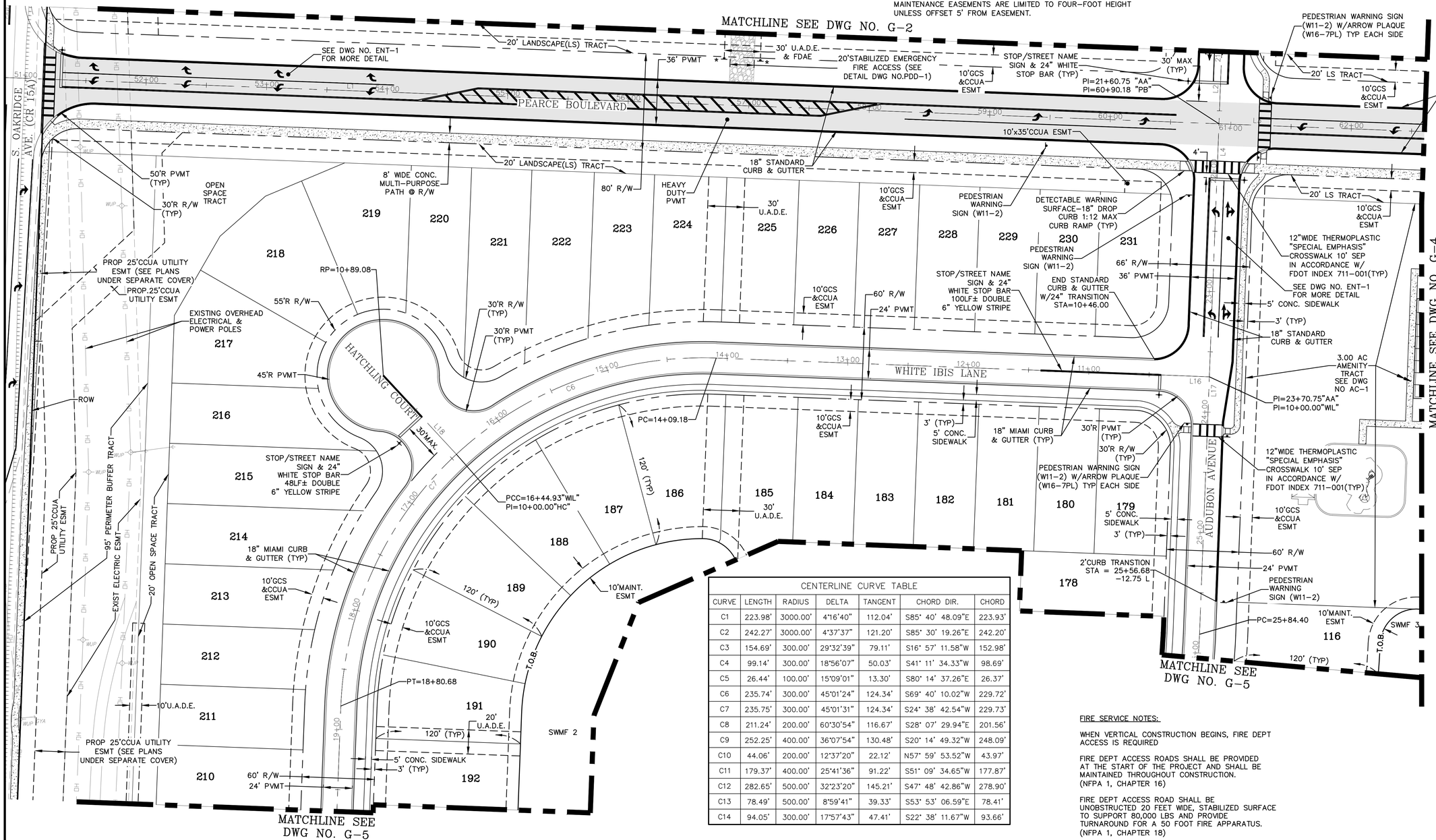
DRIVEWAY:
ALL DRIVEWAYS ON SINGLE FAMILY LOTS SHALL BE A MINIMUM OF 12' IN WIDTH.

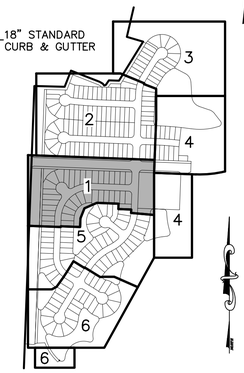
BOUNDARY:
FOR OVERALL SITE PLAN BOUNDARY INFORMATION SEE "PUD BOUNDARY SURVEY AND LEGAL" PREPARED BY ETM.

FENCING:
REAR YARD FENCING, IF ANY, PLACED ALONG THE 10' POND MAINTENANCE EASEMENTS ARE LIMITED TO FOUR-FOOT HEIGHT UNLESS OFFSET 5' FROM EASEMENT.

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

LEGEND
= WETLANDS
= UPLAND BUFFER
= WETLAND IMPACT
= COMMON AREA SIDEWALK (SEE NOTE)
* = "FIRE LANE NO PARKING" SIGN LOCATION





CENTERLINE LINE TABLE

LINE	LENGTH	BEARING
L1	1011.55'	S87°49'08"E
L2	230.00'	S02°10'52"W
L3	450.00'	S87°49'08"E
L4	210.00'	S02°10'52"W
L6	61.00'	S87°49'08"E
L7	652.65'	S87°49'09"E
L8	340.00'	S02°10'52"W
L9	175.94'	S87°49'08"E
L10	5.85'	S72°40'07"E
L11	376.80'	S87°49'10"E
L12	105.29'	S02°10'52"W
L13	159.61'	S31°43'31"W
L14	72.01'	S50°39'38"W
L15	66.18'	S83°11'31"E
L16	409.18'	N87°49'08"W
L17	213.65'	S02°10'52"W
L19	361.13'	S02°07'57"W
L20	134.85'	S58°22'57"E
L21	150.92'	N51°41'13"W
L22	34.46'	N64°18'34"W
L23	161.20'	S31°37'03"W
L24	162.35'	S58°22'57"E
L25	273.46'	S31°37'03"W
L26	65.00'	S49°23'16"E
L27	53.51'	S13°39'20"W
L28	210.00'	S02°10'52"W
L29	155.00'	S02°10'52"W

CENTERLINE CURVE TABLE

CURVE	LENGTH	RADIUS	DELTA	TANGENT	CHORD DIR.	CHORD
C1	223.98'	3000.00'	4°16'40"	112.04'	S85° 40' 48.09"E	223.93'
C2	242.27'	3000.00'	4°37'37"	121.20'	S85° 30' 19.26"E	242.20'
C3	154.69'	300.00'	29°32'39"	79.11'	S16° 57' 11.58"W	152.98'
C4	99.14'	300.00'	18°56'07"	50.03'	S41° 11' 34.33"W	98.69'
C5	26.44'	100.00'	15°09'01"	13.30'	S80° 14' 37.26"E	26.37'
C6	235.74'	300.00'	45°01'24"	124.34'	S69° 40' 10.02"W	229.72'
C7	235.75'	300.00'	45°01'31"	124.34'	S24° 38' 42.54"W	229.73'
C8	211.24'	200.00'	60°30'54"	116.67'	S28° 07' 29.94"E	201.56'
C9	252.25'	400.00'	36°07'54"	130.48'	S20° 14' 49.32"W	248.09'
C10	44.06'	200.00'	12°37'20"	22.12'	N57° 59' 53.52"W	43.97'
C11	179.37'	400.00'	25°41'36"	91.22'	S51° 09' 34.65"W	177.87'
C12	282.65'	500.00'	32°23'20"	145.21'	S47° 48' 42.86"W	278.90'
C13	78.49'	500.00'	8°59'41"	39.33'	S53° 53' 06.59"E	78.41'
C14	94.05'	300.00'	17°57'43"	47.41'	S22° 38' 11.67"W	93.66'

FIRE SERVICE NOTES:

WHEN VERTICAL CONSTRUCTION BEGINS, FIRE DEPT ACCESS IS REQUIRED

FIRE DEPT ACCESS ROADS SHALL BE PROVIDED AT THE START OF THE PROJECT AND SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION. (NFPA 1, CHAPTER 16)

FIRE DEPT ACCESS ROAD SHALL BE UNOBSTRUCTED 20 FEET WIDE, STABILIZED SURFACE TO SUPPORT 80,000 LBS AND PROVIDE TURNAROUND FOR A 50 FOOT FIRE APPARATUS. (NFPA 1, CHAPTER 18)

P:\2008-499 AYRSHIRE\ENG PLANS\499 GEO.DWG4/19/2023 7:59 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
-	-	-	-

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 40'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY - PHASE 1

FOR:
D.R. HORTON, INC. - JACKSONVILLE

CLAY COUNTY, FLORIDA

GEOMETRY PLAN

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 13 of 88

G-1
DWG. NO.

THE ROOKERY - PHASE 1

RELEASED FOR CONSTRUCTION

OPEN SPACE NOTE:
THE WESTERNMOST 20' OF OPEN SPACE TRACTS FRONTING PROPOSED 95' BUFFER @ CR15A RIGHT-OF-WAY SHALL BE NATURAL AND/OR PLANTED AREA

30'PERIMETER BUFFER TRACT
OPEN SPACE TRACT
30'PERIMETER BUFFER TRACT/U.A.D.E.
MATCHLINE SEE DWG NO. G-3
55'R R/W
30'R R/W (TYP)
30'R PVMT (TYP)
45'R PVMT
60' R/W
24' PVMT
10'GCS &CCUA ESMT
PC=3+80.93
PT=6+23.20
RP=3+14.75
LARK SPARROW STREET
PROP 25'CCUA UTILITY ESMT
EXISTING OVERHEAD ELECTRICAL & POWER POLES
DETECTABLE WARNING SURFACE-18" DROP CURB 1:12 MAX CURB RAMP (TYP)
18" MIAMI CURB & GUTTER (TYP)
5' CONC. SIDEWALK 3' (TYP)
STOP/STREET NAME SIGN & 24" WHITE STOP BAR & 100LF DOUBLE 6" YELLOW STRIPE (TYP)
AUDUBON AVENUE
PT=14+85.46
12" SOLID WHITE THERMOPLASTIC CROSSWALK 6' SEP (TYP)
PI=15+90.75"AA"
PI=10+00.00"LSS"
10'MAINT. ESMT
SWMF 1
T.O.B.
25' U.A.D.E.
PROP 25'CCUA UTILITY ESMT (SEE PLANS UNDER SEPARATE COVER)
OPEN SPACE TRACT
EXIST ELECTRIC ESMT
95' PERIMETER BUFFER TRACT
PT=3+47.35
RP=3+15.06
PC=3+20.90
LITTLE HERON PLACE
STOP SIGN & 24"WHITE STOP BAR
PROJECT SIGNAGE
20'STABILIZED EMERGENCY FIRE ACCESS (SEE DETAIL DWG NO.PDD-1)
30' U.A.D.E. & FDAE
END STANDARD CURB & GUTTER W/24" TRANSITION STA=9+54.00
END STANDARD CURB & GUTTER @ ADA RAMP(TYP)
5'CCUA ESMT
SEE DWG NO. ENT-1 FOR MORE DETAIL
36' PVMT
66' R/W
18" STANDARD CURB & GUTTER
PI=10+00.00 "LHP"
PI=19+30.75 "AA"
MATCHLINE SEE DWG NO. G-4
MATCHLINE SEE DWG NO. G-1

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

LEGEND

= WETLANDS
= UPLAND BUFFER
= WETLAND IMPACT
= COMMON AREA SIDEWALK (SEE NOTE)
* = "FIRE LANE NO PARKING" SIGN LOCATION

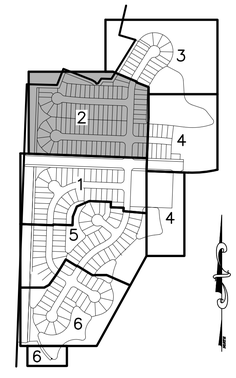
NOTES:

SIDEWALK: COMMON AREA SIDEWALK TO BE BUILT BY DEVELOPER (CONTRACTOR). ALL OTHER SIDEWALK TO BE BUILT BY HOME BUILDER.

DRIVEWAY:
ALL DRIVEWAYS ON SINGLE FAMILY LOTS SHALL BE A MINIMUM OF 12' IN WIDTH.

BOUNDARY:
FOR OVERALL SITE PLAN BOUNDARY INFORMATION SEE "PUD BOUNDARY SURVEY AND LEGAL" PREPARED BY ETM.

FENCING:
REAR YARD FENCING, IF ANY, PLACED ALONG THE 10' POND MAINTENANCE EASEMENTS ARE LIMITED TO FOUR-FOOT HEIGHT UNLESS OFFSET 5' FROM EASEMENT.



KEYMAP
NTS

FIRE SERVICE NOTES:

WHEN VERTICAL CONSTRUCTION BEGINS, FIRE DEPT ACCESS IS REQUIRED

FIRE DEPT ACCESS ROADS SHALL BE PROVIDED AT THE START OF THE PROJECT AND SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION. (NFPA 1, CHAPTER 16)

FIRE DEPT ACCESS ROAD SHALL BE UNOBSTRUCTED 20 FEET WIDE, STABILIZED SURFACE TO SUPPORT 80,000 LBS AND PROVIDE TURNAROUND FOR A 50 FOOT FIRE APPARATUS. (NFPA 1, CHAPTER 18)

THE ROOKERY - PHASE 1

RELEASED FOR CONSTRUCTION

P:\2008-499 AYRSHIRE\ENG PLANS\499 GEO.DWG4/19/2023 7:59 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
-	-	-	-

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 40'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY - PHASE 1

FOR:
D.R. HORTON, INC. - JACKSONVILLE

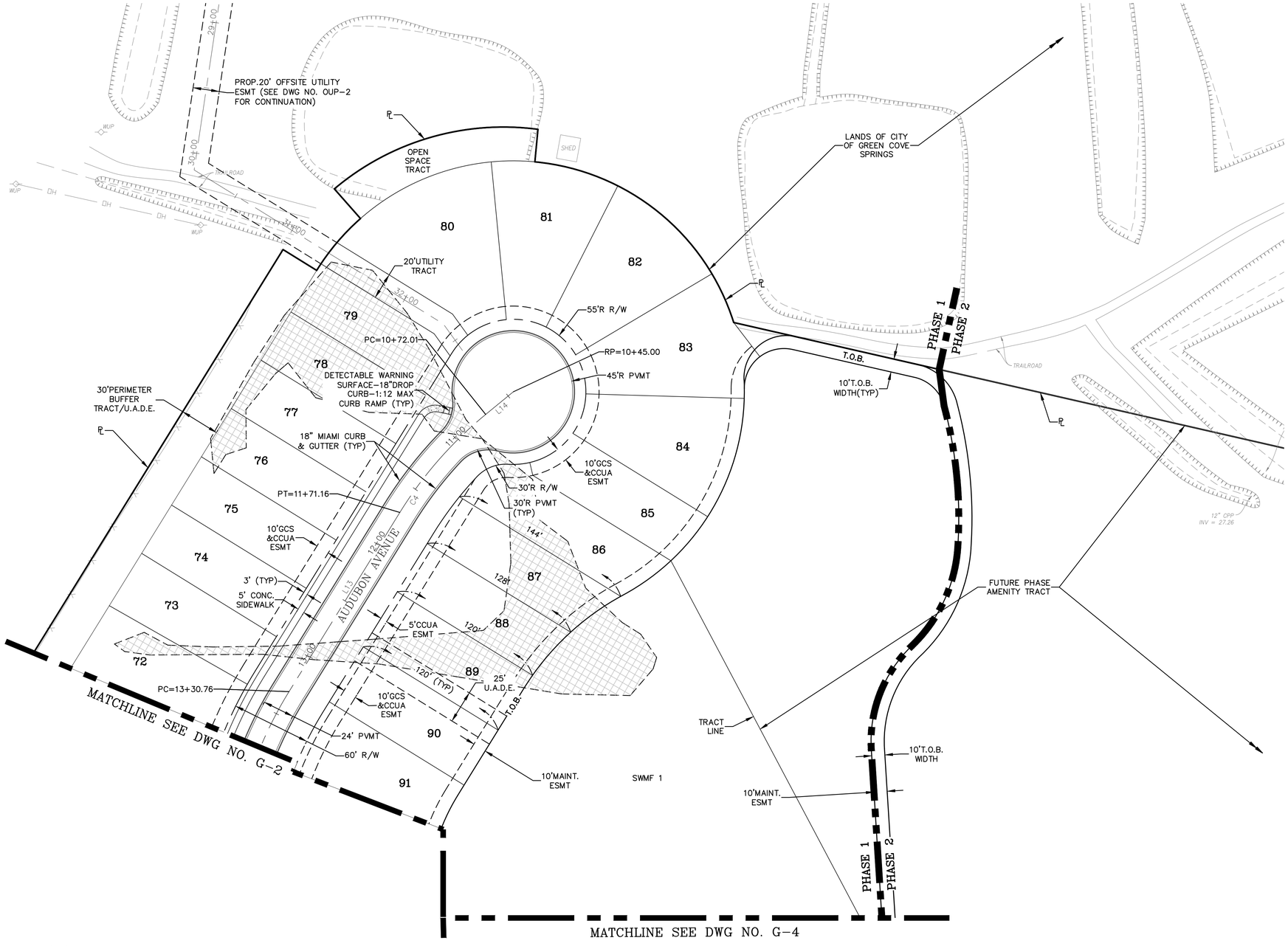
CLAY COUNTY, FLORIDA

GEOMETRY PLAN

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419



GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

LEGEND

= WETLANDS

= UPLAND BUFFER

= WETLAND IMPACT

= COMMON AREA SIDEWALK (SEE NOTE)

* = "FIRE LANE NO PARKING" SIGN LOCATION

NORTH

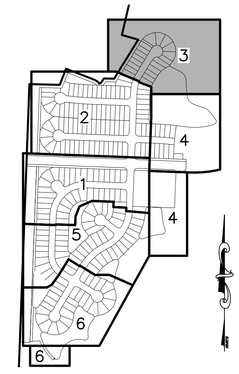
NOTES:

SIDEWALK: COMMON AREA SIDEWALK TO BE BUILT BY DEVELOPER (CONTRACTOR). ALL OTHER SIDEWALK TO BE BUILT BY HOME BUILDER.

DRIVEWAY:
ALL DRIVEWAYS ON SINGLE FAMILY LOTS SHALL BE A MINIMUM OF 12' IN WIDTH.

BOUNDARY:
FOR OVERALL SITE PLAN BOUNDARY INFORMATION SEE "PUD BOUNDARY SURVEY AND LEGAL" PREPARED BY ETM.

FENCING:
REAR YARD FENCING, IF ANY, PLACED ALONG THE 10' POND MAINTENANCE EASEMENTS ARE LIMITED TO FOUR-FOOT HEIGHT UNLESS OFFSET 5' FROM EASEMENT.



KEYMAP
NTS

FIRE SERVICE NOTES:

WHEN VERTICAL CONSTRUCTION BEGINS, FIRE DEPT ACCESS IS REQUIRED

FIRE DEPT ACCESS ROADS SHALL BE PROVIDED AT THE START OF THE PROJECT AND SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION. (NFPA 1, CHAPTER 16)

FIRE DEPT ACCESS ROAD SHALL BE UNOBSTRUCTED 20 FEET WIDE, STABILIZED SURFACE TO SUPPORT 80,000 LBS AND PROVIDE TURNAROUND FOR A 50 FOOT FIRE APPARATUS. (NFPA 1, CHAPTER 18)

THE ROOKERY - PHASE 1

RELEASED FOR CONSTRUCTION

P:\2008-499 AYRSHIRE\ENG PLANS\499 GEO.DWG4/19/2023 7:59 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
–	–	–	–

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 40'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY - PHASE 1

FOR:
D.R. HORTON, INC. - JACKSONVILLE

CLAY COUNTY, FLORIDA

GEOMETRY PLAN

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 15 of 88

G-3

DWG. NO.

MATCHLINE SEE DWG NO. G-3

MATCHLINE SEE DWG NO. G-2

MATCHLINE SEE DWG NO. G-1

MATCHLINE SEE RIGHT

TRACT LINE

FUTURE PHASE

10'TOB WIDTH(TYP)

T.O.B.

PHASE 2

PHASE 1

SWMF 1 (PH1)

10'MAINT. ESMT

25' U.A.D.E.

120' (TYP)

PC=11+75.94

60' R/W

24' PVMT

10'GCS &CCUA ESMT

103 104 105 106 107

LITTLE HERON PLACE

12+00 13+00 14+00

5' CONC. SIDEWALK 3' (TYP)

18" MIAMI CURB & GUTTER (TYP)

END PHASE 1 (PVMT, CURB & GUTTER AND SIDEWALK) STA=13+99.92

45'R TEMP CUL-DE-SAC (PHASE-1)

5'LANDSCAPE ESMT (TYP)

PUMP STATION NO.1 (50'x45' GRAVEL AREA)

DETECTABLE WARNING SURFACE-18" DROP CURB 1:12 MAX CURB RAMP (TYP)

TRAFFIC BARRICADE TYPE 1 (SEE DETAIL PDD-1)

OPEN SPACE TRACT

HEAVY DUTY PVMT

PEDESTRIAN WARNING SIGN (W11-2)

112 111 110 109 108

20' LANDSCAPE(LS) TRACT

80' R/W

36' PVMT

18" STANDARD CURB & GUTTER

PEARCE BOULEVARD

63+00 64+00 65+00 66+00 67+00 68+00 69+00

30'R PVMT (TYP)

50'R R/W (TYP)

20' LS TRACT

8' WIDE CONC. MULTI-PURPOSE PATH @ R/W

END PH1 (PVMT, CURB & GUTTER AND SIDEWALK) STA=66+01.18

SEE DWG NO. ENT-1.5 FOR MORE DETAIL

STREET NAME/STOP SIGN & 24" WHITE STOP BAR W/15LF 6" DOUBLE YELLOW STRIPE

PALM WARBLER RD

L6

24" CMP INV = 25.09

MATCHLINE SEE LEFT

WHITE LEFT TURN ARROW(TYP)

36' PVMT

6"SOLID DOUBLE YELLOW LANE LINE

18"STD C&G

30'

18'

66' R/W

WHITE RIGHT TURN ARROW(TYP)

6"SOLID WHITE LANE LINE

5'CONC. SIDEWALK

12'RIGHT TURN LANE

3'TYP DETECTABLE WARNING SURFACE-18" DROP CURB 1:12 MAX CURB RAMP (TYP)

STREET NAME/STOP SIGN & 24" WHITE STOP BAR W/14LF 6" DBL YELLOW STRIPE

PALM WARBLER RD

L28

3.00 AC AMENITY TRACT SEE DWG NO. AC-1

12'TRAVEL LANE

12'LEFT TURN LANE

END LANE LINES BEGIN LANE TRANSITION STA=11+68.00

24"VALLEY GUTTER (SEE DETAIL)

PI=12+10.00"PWR"

PI=10+00.00"AIL"

12"SOLID WHITE THERMOPLASTIC CROSSWALK 6'SEP.

END LANE TRANSITION STA=12+52.00

10'GCS &CCUA ESMT

5'CCUA ESMT

24'PVMT

60' R/W

L29

PHASE 1

PHASE 2

FUTURE PHASE

ANHINGA ISLAND LANE

END PHASE 1 (PVMT, C&G AND SIDEWALK) STA=10+61.00

3' (TYP)

5'CONC. SIDEWALK

30'R PVMT(TYP)

30'R R/W(TYP)

18"MIAMI C&G(TYP)

PHASE 1

PHASE 3

TRAFFIC BARRICADE TYPE 1 (TYP)(SEE DETAIL PDD-1)

END PHASE 1 (PVMT, C&G AND SIDEWALK) STA=13+65.00

POND

SWMF 3 (PH1)

10'TOB WIDTH(TYP)

FUTURE PHASE

11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

LEGEND

= WETLANDS

= UPLAND BUFFER

= WETLAND IMPACT

= COMMON AREA SIDEWALK (SEE NOTE)

* = "FIRE LANE NO PARKING" SIGN LOCATION

NORTH

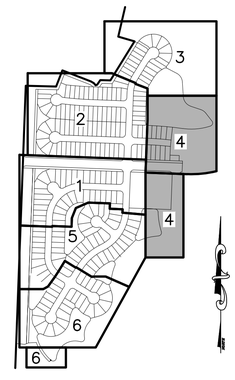
NOTES:

SIDEWALK: COMMON AREA SIDEWALK TO BE BUILT BY DEVELOPER (CONTRACTOR). ALL OTHER SIDEWALK TO BE BUILT BY HOME BUILDER.

DRIVEWAY:
ALL DRIVEWAYS ON SINGLE FAMILY LOTS SHALL BE A MINIMUM OF 12' IN WIDTH.

BOUNDARY:
FOR OVERALL SITE PLAN BOUNDARY INFORMATION SEE "PUD BOUNDARY SURVEY AND LEGAL" PREPARED BY ETM.

FENCING:
REAR YARD FENCING, IF ANY, PLACED ALONG THE 10' POND MAINTENANCE EASEMENTS ARE LIMITED TO FOUR-FOOT HEIGHT UNLESS OFFSET 5' FROM EASEMENT.



KEYMAP
NTS

FIRE SERVICE NOTES:

WHEN VERTICAL CONSTRUCTION BEGINS, FIRE DEPT ACCESS IS REQUIRED

FIRE DEPT ACCESS ROADS SHALL BE PROVIDED AT THE START OF THE PROJECT AND SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION. (NFPA 1, CHAPTER 16)

FIRE DEPT ACCESS ROAD SHALL BE UNOBSTRUCTED 20 FEET WIDE, STABILIZED SURFACE TO SUPPORT 80,000 LBS AND PROVIDE TURNAROUND FOR A 50 FOOT FIRE APPARATUS. (NFPA 1, CHAPTER 18)

THE ROOKERY - PHASE 1

RELEASED FOR CONSTRUCTION

P:\2008-499 AYRSHIRE\ENG PLANS\499 GEO.DWG4/19/2023 7:59 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
-	-	-	-

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 40'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY - PHASE 1

FOR:
D.R. HORTON, INC. - JACKSONVILLE

CLAY COUNTY, FLORIDA

GEOMETRY PLAN

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

OPEN SPACE NOTE:
THE WESTERNMOST 20' OF OPEN SPACE TRACTS FRONTING PROPOSED 95' BUFFER @ CR15A RIGHT-OF-WAY SHALL BE NATURAL AND/OR PLANTED AREA

OPEN SPACE NOTE:
THE WESTERNMOST 20' OF OPEN SPACE TRACTS FRONTING PROPOSED 95' BUFFER @ CR15A RIGHT-OF-WAY SHALL BE NATURAL AND/OR PLANTED AREA

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

MATCHLINE SEE DWG NO. G-1

MATCHLINE SEE DWG NO. G-4

MATCHLINE SEE DWG NO. G-6

MATCHLINE SEE DWG NO. G-6

LEGEND
= WETLANDS
= UPLAND BUFFER
= WETLAND IMPACT
= COMMON AREA SIDEWALK (SEE NOTE)
* = "FIRE LANE NO PARKING" SIGN LOCATION

PROP 25'CCUA UTILITY ESMT (SEE PLANS UNDER SEPARATE COVER)
EXISTING OVERHEAD ELECTRICAL & POWER POLES
PROP 25'CCUA UTILITY ESMT
95' PERIMETER BUFFER TRACT
20' OPEN SPACE TRACT
EXIST ELECTRIC ESMT
20'STABILIZED EMERGENCY FIRE ACCESS (SEE DETAIL DWG NO.PDD-1)
25' U.A.D.E. & FDAE
25'FDAE
10'U.A.D.E.
10'TOB WIDTH(TYP)
10'MAINT. ESMT
T.O.B.
SWMF 4
SWMF 2
SWMF 3
SWMF 5
WHITE IBIS LANE
AUDUBON AVENUE
HORNED LARK COURT
PC=22+41.81
PC=11+50.92
PT=11+94.98
PRC=30+16.02
PT=32+98.67
PCC=28+36.65 "AA"
PI=10+00.00 "HLC"
RP=12+29.44
120' (TYP)
24' PVMT
60' R/W
30'R PVMT (TYP)
30'R R/W (TYP)
45'R PVMT
55'R R/W
10'GCS &CCUA ESMT
CONC. 5' SIDEWALK
3' (TYP)
5' CONC. SIDEWALK
PEDESTRIAN WARNING SIGN(W11-2)
100LF DOUBLE 6" YELLOW STRIPE
STOP/STREET NAME SIGN & 24" WHITE STOP BAR
12" SOLID WHITE THERMOPLASTIC CROSSWALK 6' SEP (TYP)
DETECTABLE WARNING SURFACE-18" DROP CURB 1:12 MAX CURB RAMP (TYP)
18" MIAMI CURB & GUTTER (TYP)
30' MAX
25' U.A.D.E.
20' U.A.D.E.
FUTURE PHASE
PHASE 1
PHASE 3
POND
BERM
DITCH
SEE TYP.

KEYMAP
NTS

NOTES:

SIDEWALK: COMMON AREA SIDEWALK TO BE BUILT BY DEVELOPER (CONTRACTOR). ALL OTHER SIDEWALK TO BE BUILT BY HOME BUILDER.

DRIVEWAY:
ALL DRIVEWAYS ON SINGLE FAMILY LOTS SHALL BE A MINIMUM OF 12' IN WIDTH.

BOUNDARY:
FOR OVERALL SITE PLAN BOUNDARY INFORMATION SEE "PUD BOUNDARY SURVEY AND LEGAL" PREPARED BY ETM.

FENCING:
REAR YARD FENCING, IF ANY, PLACED ALONG THE 10' POND MAINTENANCE EASEMENTS ARE LIMITED TO FOUR-FOOT HEIGHT UNLESS OFFSET 5' FROM EASEMENT.

FIRE SERVICE NOTES:

WHEN VERTICAL CONSTRUCTION BEGINS, FIRE DEPT ACCESS IS REQUIRED

FIRE DEPT ACCESS ROADS SHALL BE PROVIDED AT THE START OF THE PROJECT AND SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION. (NFPA 1, CHAPTER 16)

FIRE DEPT ACCESS ROAD SHALL BE UNOBSTRUCTED 20 FEET WIDE, STABILIZED SURFACE TO SUPPORT 80,000 LBS AND PROVIDE TURNAROUND FOR A 50 FOOT FIRE APPARATUS. (NFPA 1, CHAPTER 18)

P:\2008-499 AYRSHIRE\ENG PLANS\499 GEO.DWG4/19/2023 8:00 AMMike Reilly

THE ROOKERY - PHASE 1

RELEASED FOR CONSTRUCTION

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
-	-	-	-

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 40'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY - PHASE 1

FOR:
D.R. HORTON, INC. - JACKSONVILLE

CLAY COUNTY, FLORIDA

GEOMETRY PLAN

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 17 of 88

G-5

DWG. NO.

THE ROOKERY – PHASE 1

RELEASED FOR CONSTRUCTION

OPEN SPACE NOTE:
THE WESTERNMOST 20' OF OPEN SPACE TRACTS FRONTING PROPOSED 95' BUFFER @ CR15A RIGHT-OF-WAY SHALL BE NATURAL AND/OR PLANTED AREA

FIRE SERVICE NOTES:

WHEN VERTICAL CONSTRUCTION BEGINS, FIRE DEPT ACCESS IS REQUIRED

FIRE DEPT ACCESS ROADS SHALL BE PROVIDED AT THE START OF THE PROJECT AND SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION. (NFPA 1, CHAPTER 16)

FIRE DEPT ACCESS ROAD SHALL BE UNOBSTRUCTED 20 FEET WIDE, STABILIZED SURFACE TO SUPPORT 80,000 LBS AND PROVIDE TURNAROUND FOR A 50 FOOT FIRE APPARATUS. (NFPA 1, CHAPTER 18)

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

LEGEND

= WETLANDS
= UPLAND BUFFER
= WETLAND IMPACT
= COMMON AREA SIDEWALK (SEE NOTE)
* = "FIRE LANE NO PARKING" SIGN LOCATION

NORTH

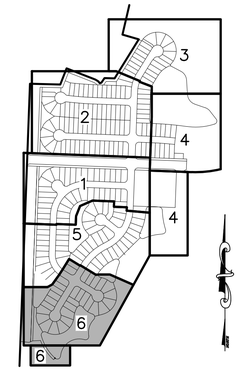
NOTES:

SIDEWALK: COMMON AREA SIDEWALK TO BE BUILT BY DEVELOPER (CONTRACTOR). ALL OTHER SIDEWALK TO BE BUILT BY HOME BUILDER.

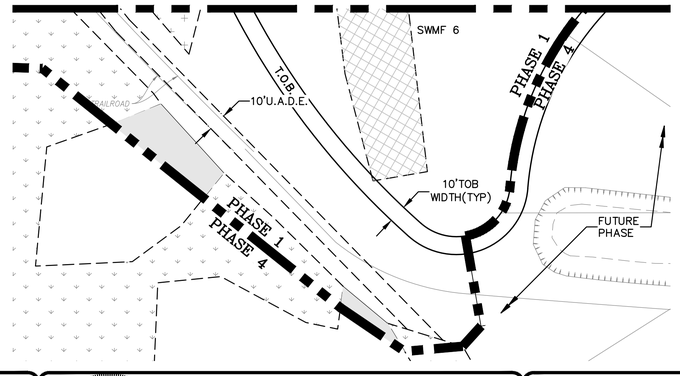
DRIVEWAY:
ALL DRIVEWAYS ON SINGLE FAMILY LOTS SHALL BE A MINIMUM OF 12' IN WIDTH.

BOUNDARY:
FOR OVERALL SITE PLAN BOUNDARY INFORMATION SEE "PUD BOUNDARY SURVEY AND LEGAL" PREPARED BY ETM.

FENCING:
REAR YARD FENCING, IF ANY, PLACED ALONG THE 10' POND MAINTENANCE EASEMENTS ARE LIMITED TO FOUR-FOOT HEIGHT UNLESS OFFSET 5' FROM EASEMENT.



KEYMAP
NTS



MATCHLINE SEE DWG NO. G-5

MATCHLINE SEE RIGHT

P:\2008-499 AYRSHIRE\ENG PLANS\499 GEO.DWG4/19/2023 8:00 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
–	–	–	–

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 40'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1
FOR:
D.R. HORTON, INC. – JACKSONVILLE
CLAY COUNTY, FLORIDA
GEOMETRY PLAN

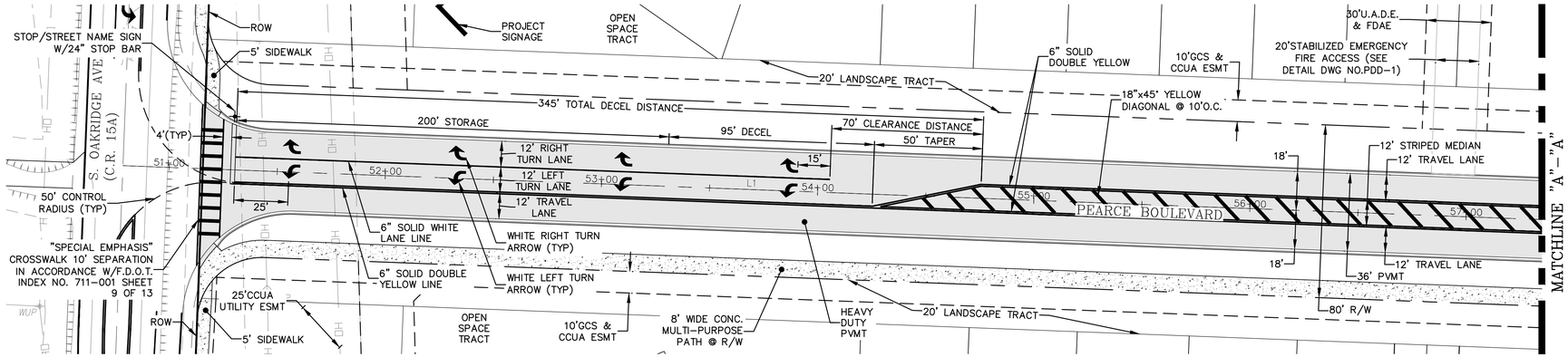
VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 18 of 88

G-6
DWG. NO.



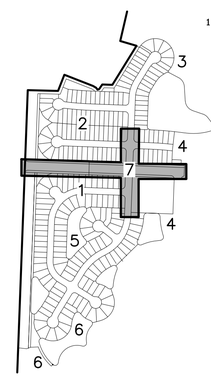
PEARCE BOULEVARD

SCALE: 1" = 30'

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.



LEGEND

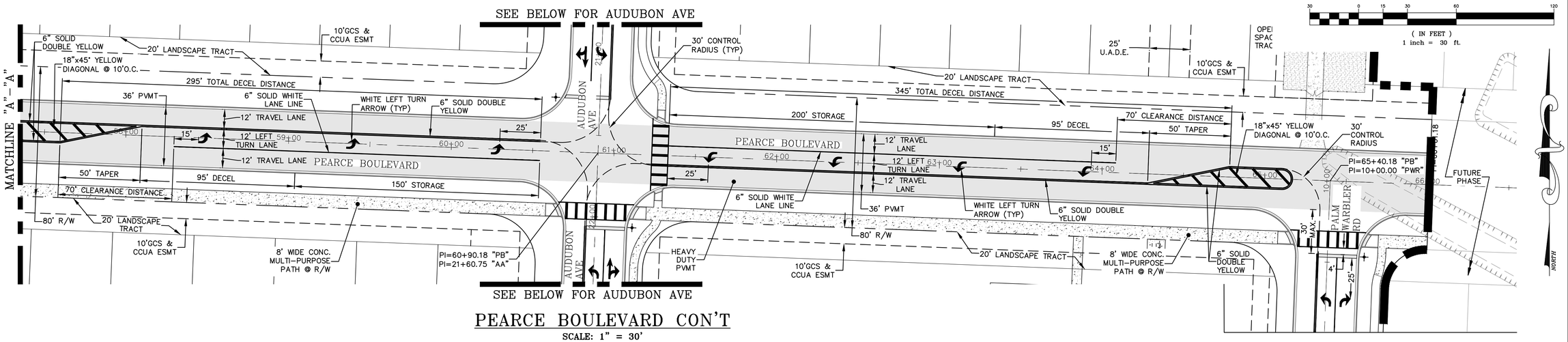
= COMMON AREA SIDEWALK (SEE NOTE)

SIDEWALK NOTE:
COMMON AREA SIDEWALK TO BE BUILT BY DEVELOPER (CONTRACTOR).

ROADWAY IMPROVEMENTS NOTE:
SEE DWG NO. RI-2 FOR S OAKRIDGE AVE (CR 15A) IMPROVEMENTS

KEYMAP

NTS



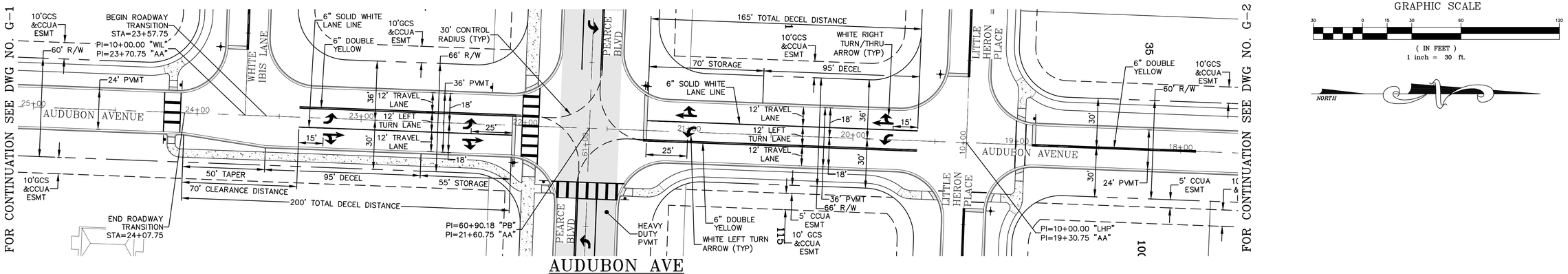
PEARCE BOULEVARD CON'T

SCALE: 1" = 30'

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.



AUDUBON AVE

SCALE: 1" = 30'

P:\2008-499 AYRSHIRE\ENG PLANS\499 GEO.DWG4/19/2023 8:00 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
-	-	-	-

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 30'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY - PHASE 1

FOR:
D.R. HORTON, INC. - JACKSONVILLE

CLAY COUNTY, FLORIDA

GEOMETRY PLAN - ENTRANCE ROAD & TURN LANES

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

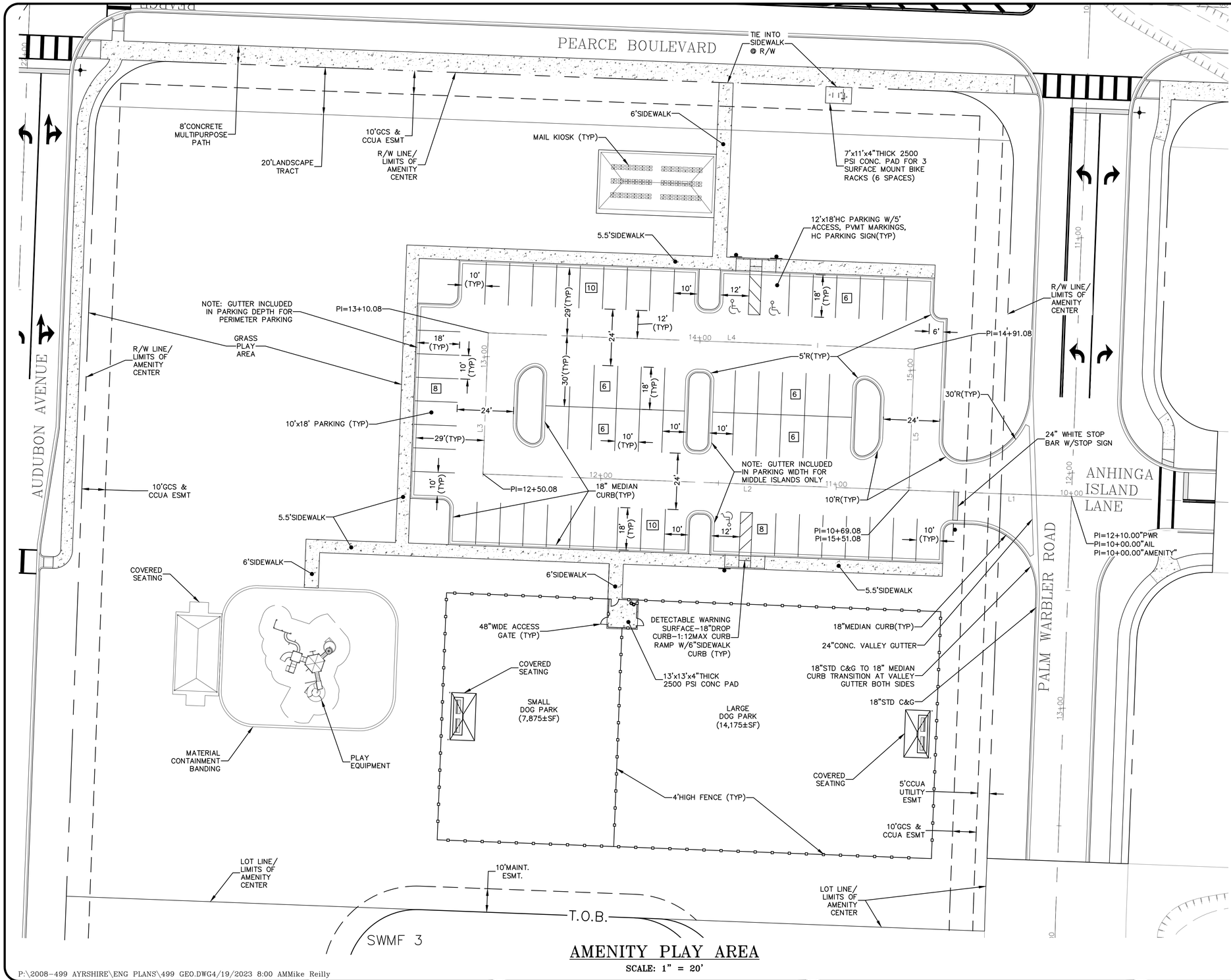
Sheet No. 19 of 88

ENT-1

DWG. NO.

THE ROOKERY - PHASE 1

RELEASED FOR CONSTRUCTION



AMENITY PLAY AREA

SCALE: 1" = 20'

GRAPHIC SCALE

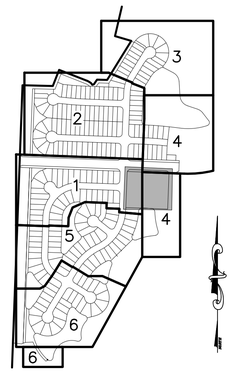
20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

LEGEND

= COMMON AREA SIDEWALK (SEE NOTE)

SIDEWALK NOTE:
COMMON AREA SIDEWALK TO BE BUILT BY DEVELOPER (CONTRACTOR).



KEYMAP

NTS

AMENITY CENTER NOTES:

1. FOR AMENITY CENTER COVERED STRUCTURES, PLAY AREA EQUIPMENT & ASSOCIATED SURFACE MATERIAL, MAIL KIOSK AND SAFETY/SECURITY FENCING SEE ARCHITECTURAL PLANS DESIGNED AND PERMITTED BY OTHERS
2. SIDEWALKS TO MAINTAIN 2% MAX CROSS SLOPE AND 5% MAX LONGITUDINAL SLOPE

PARKING SUMMARY:

PROVIDED: 70 STANDARD SPACES
3 HC SPACES (3 REQUIRED)
73 TOTAL SPACES

BICYCLE PARKING SUMMARY:

PROVIDED: 6 BICYCLE SPACES

CENTERLINE LINE TABLE

LINE	LENGTH	BEARING
L1	69.08'	N87°49'08"W
L2	181.00'	N87°49'08"W
L3	60.00'	N02°10'52"E
L4	181.00'	S87°49'08"E
L5	60.00'	S02°10'52"W

THE ROOKERY – PHASE 1

RELEASED FOR CONSTRUCTION

P:\2008-499 AYRSHIRE\ENG PLANS\499 GEO.DWG4/19/2023 8:00 AMMike Reilly

REVISIONS

NO.	DATE	DESCRIPTION	BY:
–	–	–	–

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 20'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1

FOR:
D.R. HORTON, INC. – JACKSONVILLE

CLAY COUNTY, FLORIDA

GEOMETRY PLAN – AMENITY PLAY AREA

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

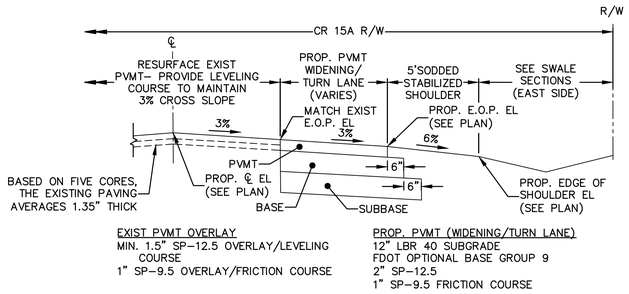
This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 61419

Sheet No. 20 of 88

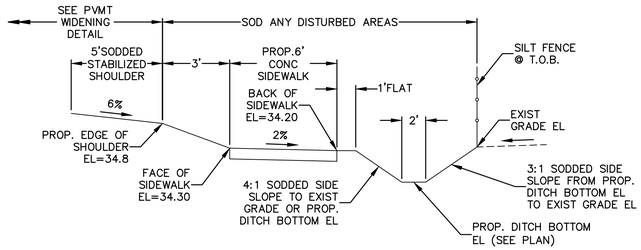
AC-1

DWG. NO.



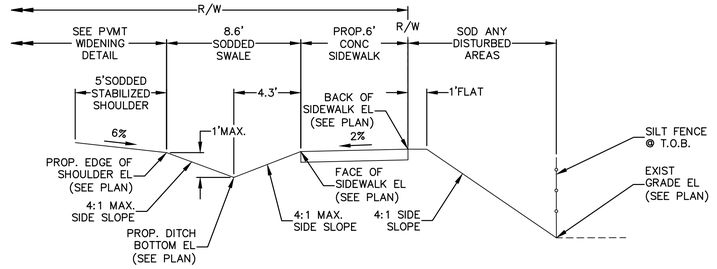
ROADWAY PAVEMENT WIDENING DETAIL

N.T.S.



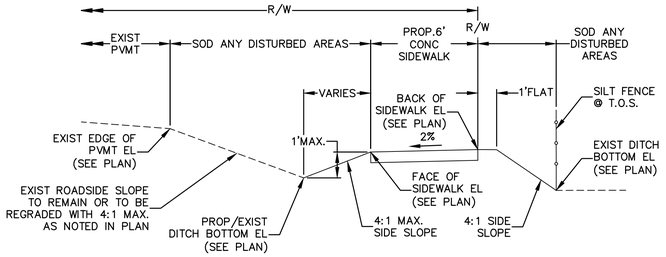
SWALE SECTION B–B

N.T.S.



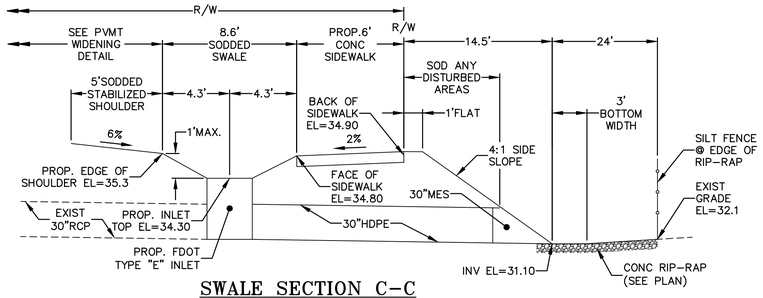
SWALE SECTION D–D

N.T.S.



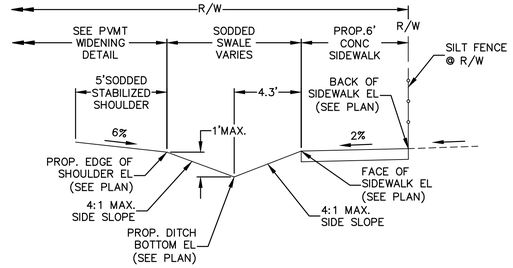
SWALE SECTION A–A

N.T.S.



SWALE SECTION C–C

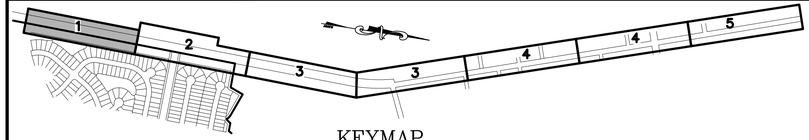
N.T.S.



SWALE SECTION E–E

N.T.S.

ROADWAY IMPROVEMENT SECTIONS

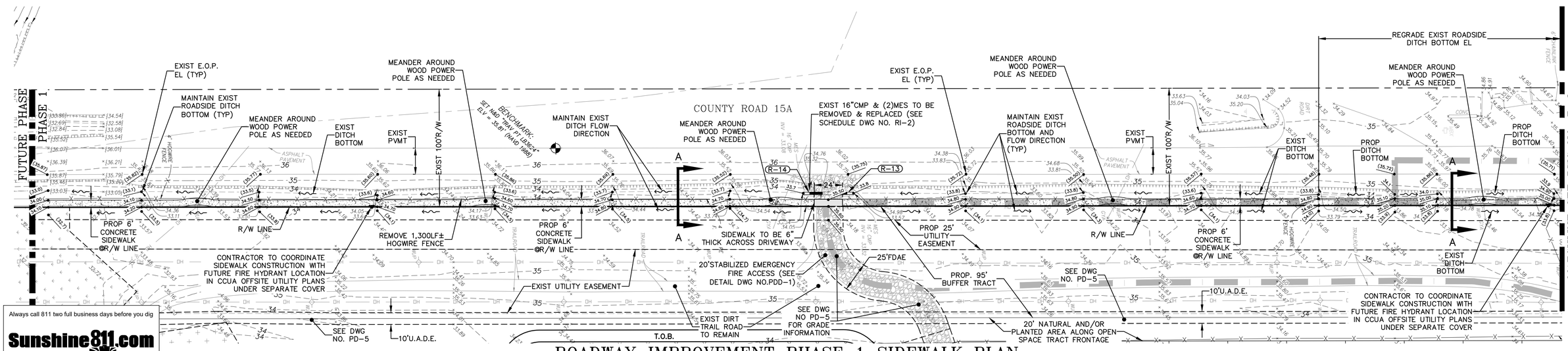


KEYMAP
NTS

EROSION CONTROL NOTE:
CONTRACTOR SHALL COMPLY WITH STORMWATER POLLUTION PREVENTION REQUIREMENTS SET FORTH IN ARTICLE II, CHAPTER 34 OF THE CITY LAND DEVELOPMENT REGULATIONS AND SPECIFICALLY, THE TEMPORARY EROSION/SEDIMENTATION CONTROLS SET FORTH IN SECTION 34–23.

SIDEWALK NOTES:
1. SIDEWALK TO BE 6'WIDEx4"THICK 2500 PSI CONCRETE WITH JOINTS AND SUBGRADE IN ACCORDANCE WITH FDOT INDEX 522–001.
2. LONGITUDINAL SLOPE NOT TO EXCEED 5%.
3. CROSS SLOPE NOT TO EXCEED 2%.
4. IN AREAS WHERE SIDEWALK MUST MEANDER AT POWER POLES, TREES, ETC AND 6'WIDTH IS NOT POSSIBLE MAINTAIN MINIMUM 36" WIDTH.

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.
NORTH



Always call 811 two full business days before you dig
Sunshine811.com

ROADWAY IMPROVEMENT PHASE 1 SIDEWALK PLAN

SCALE: 1" = 40'

P:\2008–499 AYRSHIRE\ENG PLANS\499 RI.DWG4/19/2023 8:01 AMMike Reilly

RELEASED FOR CONSTRUCTION

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
–	–	–	–

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 40'
DATE:	4/19/2023
PROJ. NO.:	2008–499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363–8916 Fax: (904)363–8917
www.dunneng.com

THE ROOKERY – PHASE 1
FOR:
D.R. HORTON, INC. – JACKSONVILLE
CLAY COUNTY, FLORIDA
ROADWAY IMPROVEMENT PLAN

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 21 of 88

RI–1
DWG. NO.

ROADWAY IMPROVEMENT BASELINE NOTES:
1. BASELINE IS NOT A SURVEYED LINE.
2. BASELINE POINTS "A" AND "B" ESTABLISHED AT THE MIDPOINT OF THE EXISTING PAVEMENT AT THAT LOCATION.
3. ROADWAY IMPROVEMENT BASELINE PROVIDED FROM BASELINE POINT "A" TO BASELINE POINT "B".

DRIVEWAY NOTE:
DRIVEWAY TO BE 3000 PSI CONCRETE x 6" THICK FROM EDGE OF PROPOSED PVMT TO RIGHT-OF-WAY LINE - TIE INTO EXIST DRIVEWAY LOCATION AT R/W LINE

LEGEND
PROPOSED = ADDITIONAL PAVEMENT

EROSION CONTROL NOTE:
CONTRACTOR SHALL COMPLY WITH STORMWATER POLLUTION PREVENTION REQUIREMENTS SET FORTH IN ARTICLE II, CHAPTER 34 OF THE CITY LAND DEVELOPMENT REGULATIONS AND SPECIFICALLY, THE TEMPORARY EROSION/SEDIMENTATION CONTROLS SET FORTH IN SECTION 34-23.

NOTE:
1. ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC MATERIAL AND SHALL BE IN ACCORDANCE WITH FDOT INDEX 711-01.
2. POSTED SPEED LIMIT IS 45 MPH.

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

NORTH

COUNTY ROAD 15A

MATCHLINE SEE DWG NO. R-1

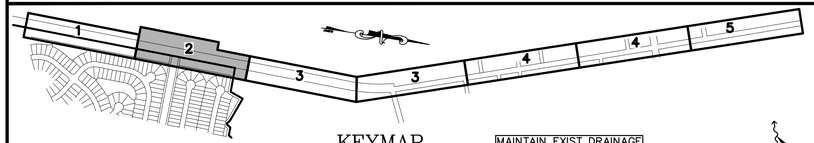
MATCHLINE SEE DWG NO. R-3

THE ROOKERY - PHASE 1

CONST. 12'WIDE CONC. DRIVEWAY W5'x5' FLARE (SEE DRIVEWAY NOTE)
1200'ROADWAY IMPROVEMENTS (SAWCUT "CLEAN" STRAIGHT EDGE OF PVMT, BOTH SIDES - OVERLAY EXIST WITH MIN 1.5"SP-12 PVMT AND 1"SP-9.5 PVMT TO PROVIDE 3% CROSS SLOPE)
396'SOUTH OF ENTRANCE
804'NORTH OF ENTRANCE
20'PVMT TRANSITION
300'TRANSITION (CENTER WIDENING)
100.00'
150'QUEUE LENGTH
440'LEFT TURN LANE TOTAL LENGTH
205'BRAKE TO STOP DISTANCE
85'CLEARANCE DISTANCE
300'TRANSITION (CENTER WIDENING)
20'PVMT TRANSITION
BASELINE POINT A (SEE NOTE)
CONST. 16'WIDE CONC. DRIVEWAY W5'x5' FLARE (SEE DRIVEWAY NOTE)
CONST. 12'WIDE CONC. DRIVEWAY W5'x5' FLARE (SEE DRIVEWAY NOTE)
CONST. 12'WIDE CONC. DRIVEWAY W5'x5' FLARE (SEE DRIVEWAY NOTE)
CONST. 23'WIDE CONC. DRIVEWAY W10'x10' FLARE (SEE DRIVEWAY NOTE)
SAWCUT & REMOVE 940SF± EXIST CONC. DRIVEWAY
REMOVE 23LF 18" RCP PIPE & (2) MES
18"x45° YELLOW DIAGONAL LINE @30' O.C.
REMOVE (2) CONC. HEADWALL
6" SOLID DOUBLE YELLOW LINE
6" WHITE LANE LINE
6" WHITE EDGE LINE
5'GRASS SHOULDER (TYP)
EXIST PVMT
EXIST 100'R/W
62.51'
22.74'
37.45'
64.15'
22.40'
35.85'
12' TRAVEL LANE
12' RIGHT TURN LANE
12' LEFT TURN LANE
50'R (TYP)
50'TAPER
WHITE RIGHT TURN ARROW (TYP)
290'RIGHT TURN TOTAL LENGTH
PROP 25' UTILITY EASEMENT
REMOVE 490LF± HOGWIRE FENCE
EXIST ELECTRIC EASEMENT
PROP.25' CCUA UTILITY ESMT
SIDEWALK ESMT 2'BEYOND SIDEWALK WHEN NOT IN R/W
PROP. 80'R/W
6'CONC. SIDEWALK(TYP)
R/W LINE
ROADWAY IMPROVEMENT BASELINE (SEE NOTE)
END 5' GRASS SHOULDER AT R/W (TYP)
REMOVE 55LF 14" CMP PIPE & (2) MES
WHITE LEFT TURN ARROW (TYP)
EXIST ELECTRIC EASEMENT
REMOVE EXIST DIRT DRIVE TO R/W
PROP 25' UTILITY EASEMENT
PROP. 95' BUFFER TRACT
REMOVE 30LF 16" CMP PIPE AND (2) MES
REMOVE 115LF 16" CMP PIPE & (2) MES
TIE INTO EXIST PVMT
BASELINE POINT B (SEE NOTE)
PROP. 95' BUFFER TRACT
20' NATURAL AND/OR PLANTED AREA ALONG OPEN SPACE TRACT FRONTAGE
PROPOSED ENTRANCE ℄
PROJECT SIGNAGE
REMOVE EXIST DIRT DRIVE TO R/W
20' NATURAL AND/OR PLANTED AREA ALONG OPEN SPACE TRACT FRONTAGE
CONST. 17'WIDE CONC. DRIVEWAY W5'x5' FLARE (SEE DRIVEWAY NOTE)
PEARCE BLVD

ROADWAY IMPROVEMENT GEOMETRY / DEMOLITION PLAN

SCALE: 1" = 40'



KEYMAP
NTS

MAINTENANCE OF TRAFFIC TO BE IN ACCORDANCE WITH F.D.O.T. STANDARD PLANS INDEX 102-603 AND ALL APPLICABLE SECTIONS OF INDEX 102-600

MAINTAIN EXIST DRAINAGE PATTERNS WITHIN R/W WEST SIDE OF PROPOSED PVMT - SOD ANY DISTURBED AREAS (TYP)

LEGEND
PROPOSED = ADDITIONAL PAVEMENT

DRAINAGE STRUCTURE SCHEDULE

STR NO.	STRUCT. TYPE	TOP EL.	INVERT EL. PIPES IN:	INVERT EL. PIPES OUT
R-3A	* TYPE "E"	34.30	31.00 (E)	
R-5	* TYPE "C"	32.60		30.40 (N)

* TRAVERSABLE INLET IN ACCORDANCE WITH FDOT STANDARD INDEX NO. 425-052, SHEETS 1 OF 14, 4 OF 14, 7 OF 14 AND 10 OF 14

MES & HEADWALL SCHEDULE

STR NO.	STRUCT. TYPE	INVERT EL. PIPES IN:	INVERT EL. PIPES OUT
R-1	TPL M.E.S.(24")		32.70 (N)
R-2	TRL M.E.S.(24")	32.40 (S)	
R-3	M.E.S.(30")		31.10 (W)
R-4	30"HDWL	30.79 (E)	
R-6	M.E.S.(18")	30.30 (S)	
R-7	12"x18"HDWL	33.40 (W)	
R-8	12"x18"HDWL		33.40 (E)
R-9	M.E.S.(18")		32.80 (N)
R-10	M.E.S.(18")	32.50 (S)	
R-13	M.E.S.(14"x23")		33.80 (S)
R-14	M.E.S.(14"x23")	33.70 (N)	

PIPE SCHEDULE

STRUCT. NO. TO STRUCT. NO.	LENGTH FT.	SIZE IN.	TYPE	UP STREAM EL.	DOWN STREAM EL.	SLOPE
EXIST - R-4	6	30	RCP	30.81	30.79	0.35%
R-1 - R-2	130	(3)24	RCP	32.70	32.40	0.23%
R-3 - R-3A	14	30	RCP	31.10	31.00	0.69%
R-5 - R-6	72	18	RCP	30.40	30.30	0.14%
R-8 - R-7	13	12 x 18	ERCP	33.40	33.40	0.00%
R-9 - R-10	23	18	RCP	32.80	32.50	1.32%
R-13 - R-14	32	14 x 23	ERCP	33.80	33.70	0.32%

NOTE: PIPE R-13 - R-14 TO BE CLASS HE-III

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

NORTH

COUNTY ROAD 15A

EXIST DITCH
EXIST DITCH BOTTOM
TIE INTO EXIST DRIVEWAY EL AT R/W(TYP)
GRADE FROM PROP. GRASS SHOULDER EL TO EXIST EL=35.0
MAINTAIN EXIST E.O.P. EL. (TYP)
GRADE FROM PROP. GRASS SHOULDER EL TO EXIST EL=33.5 (4:1 MAX SIDE SLOPE)(TYP)
BENCHMARK: SET 5/8" RB&C "TRAV PT LB#6904" ELV = 36.48 (NAVD 1988)
GRADE FROM PROP. GRASS SHOULDER EL TO EXIST EL=34.0 (4:1 MAX SIDE SLOPE)(TYP)
MAINTAIN EXIST GRADE AT ELECTRIC METER & SERVICE CABINET
PROVIDE 4:1 SODDED SIDE SLOPE FROM PROP. DITCH BOTTOM EL. TO EXIST GRADE EL.(TYP)
GRADE FROM PROP. GRASS SHOULDER EL TO PROP. DITCH BOTTOM EL (4:1 MAX SODDED SIDE SLOPE)(TYP)
REMOVE EXISTING SWALE BREAK AND CULVERT IF PRESENT-GRADE FROM PROP. GRASS SHOULDER EL TO PROP. DITCH BOTTOM (4:1 MAX SIDE SLOPE)
TOP/HDWL EL=35.65 (TYP)
T.O.S. @ EL.=34.0
PROP. DITCH BOTTOM
EXIST PVMT
EXIST 100'R/W
330LF± DITCH
REGRADE EXIST ROADSIDE DITCH BOTTOM EL
PROP 25' UTILITY EASEMENT
PROP. 95' BUFFER TRACT
EXIST ELECTRIC EASEMENT
PROP.25' CCUA UTILITY ESMT
650±SF RIP RAP
100±SF RIP RAP
PROP. 80'R/W
PROPOSED ENTRANCE ℄
20' NATURAL AND/OR PLANTED AREA ALONG OPEN SPACE TRACT FRONTAGE
REGRADE EXIST ROADSIDE DITCH ON WEST SIDE OF PROP. SIDEWALK TO MAINTAIN FLOW DIRECTION TO PROP. INLET
REGRADE EXIST ROADSIDE DITCH/ MAINTAIN EXIST FLOW DIRECTION TO PROP. INLET
PROP. DITCH BOTTOM (TYP)
EXIST ELECTRIC EASEMENT
PROP 25' UTILITY EASEMENT
PROP. 95' BUFFER TRACT
20' NATURAL AND/OR PLANTED AREA ALONG OPEN SPACE TRACT FRONTAGE
PROVIDE 4:1 MAX. SODDED SIDE SLOPE FROM PROP. DITCH BOTTOM EL.TO EXIST GRADE EL.
EXIST DITCH BOTTOM
EXIST PVMT
R/W LINE
PEARCE BLVD

ROADWAY IMPROVEMENT PAVING AND DRAINAGE PLAN

SCALE: 1" = 40'

RELEASED FOR CONSTRUCTION

Always call 811 two full business days before you dig
Sunshine811.com

P:\2008-499 AYRSHIRE\ENG PLANS\499 RI.DWG4/19/2023 8:02 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
-	-	-	-

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 40'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY - PHASE 1
FOR:
D.R. HORTON, INC. - JACKSONVILLE
CLAY COUNTY, FLORIDA
ROADWAY IMPROVEMENT PLAN

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 22 of 88

RI-2
DWG. NO.

SIDEWALK NOTES:
1. SIDEWALK TO BE 6'WIDEx4"THICK 2500 PSI CONCRETE WITH JOINTS AND SUBGRADE IN ACCORDANCE WITH FDOT INDEX 522-001.
2. FINISH GRADE TO MATCH EXISTING GRADE AS CLOSELY AS POSSIBLE.
3. LONGITUDINAL SLOPE NOT TO EXCEED 5%.
4. CROSS SLOPE NOT TO EXCEED 2%.
5. IN AREAS WHERE SIDEWALK MUST MEANDER AT POWER POLES, TREES, ETC AND 6'WIDTH IS NOT POSSIBLE MAINTAIN MINIMUM 36" WIDTH.
6. IN AREAS WHERE SIDEWALK/ PEDESTRIAN ROUTE CROSSES EXISTING DRIVEWAYS THE 2% MAXIMUM CROSS SLOPE SHALL BE MAINTAINED. NOTIFY ENGINEER OF ANY DISCREPANCIES.

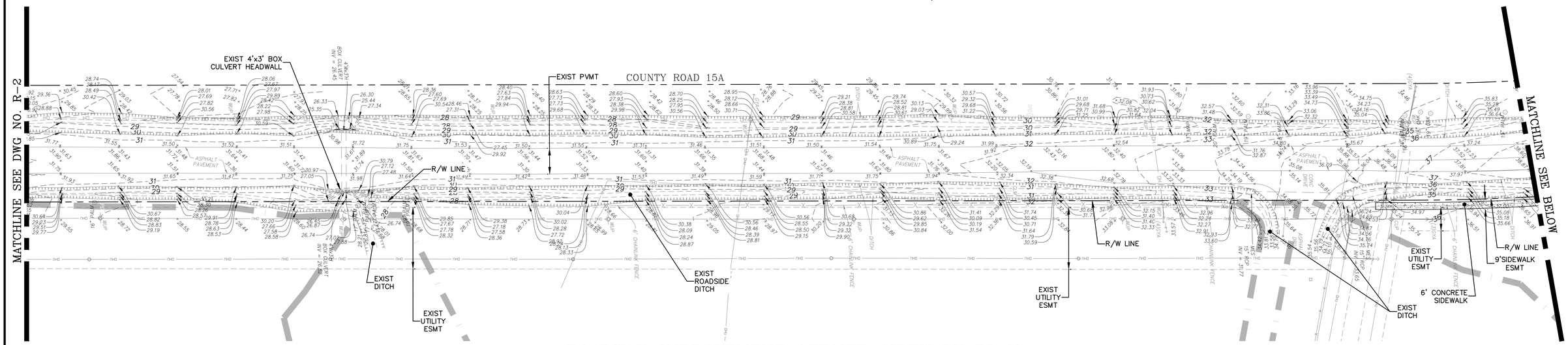
SIGNAGE NOTE:
1. ALL ROADWAY SIGNING SHALL HAVE DIAMOND GRADE HIGH REFLECTIVITY SHEETING.

PAVEMENT MARKINGS NOTE:
ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC MATERIAL AND SHALL BE IN ACCORDANCE WITH FDOT INDEX 711-01

CROSSWALK NOTE:
ALL PEDESTRIAN CROSSWALKS ACROSS ROADWAYS SHALL BE MARKED/STRIPED UTILIZING "SPECIAL EMPHASIS" CROSSWALK MARKINGS IN ACCORDANCE WITH FDOT INDEX 711-001, SHEET 9 OF 13.

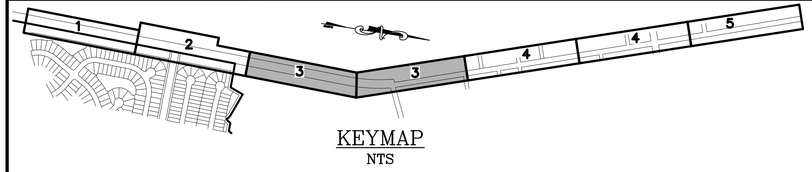
EROSION CONTROL NOTE:
CONTRACTOR SHALL COMPLY WITH STORMWATER POLLUTION PREVENTION REQUIREMENTS SET FORTH IN ARTICLE II, CHAPTER 34 OF THE CITY LAND DEVELOPMENT REGULATIONS AND SPECIFICALLY, THE TEMPORARY EROSION/SEDIMENTATION CONTROLS SET FORTH IN SECTION 34-23.

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.
NORTH



ROADWAY IMPROVEMENT OFFSITE SIDEWALK PLAN

SCALE: 1" = 40'



KEYMAP
NTS

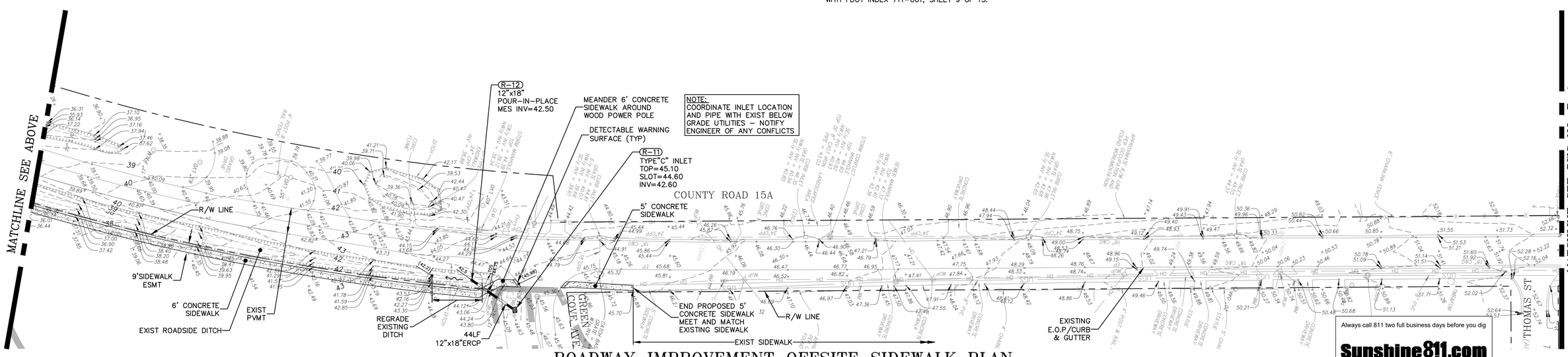
SIDEWALK NOTES:
1. SIDEWALK TO BE 6'WIDEx4"THICK 2500 PSI CONCRETE WITH JOINTS AND SUBGRADE IN ACCORDANCE WITH FDOT INDEX 522-001.
2. FINISH GRADE TO MATCH EXISTING GRADE AS CLOSELY AS POSSIBLE.
3. LONGITUDINAL SLOPE NOT TO EXCEED 5%.
4. CROSS SLOPE NOT TO EXCEED 2%.
5. IN AREAS WHERE SIDEWALK MUST MEANDER AT POWER POLES, TREES, ETC AND 6'WIDTH IS NOT POSSIBLE MAINTAIN MINIMUM 36" WIDTH.
6. IN AREAS WHERE SIDEWALK/ PEDESTRIAN ROUTE CROSSES EXISTING DRIVEWAYS THE 2% MAXIMUM CROSS SLOPE SHALL BE MAINTAINED. NOTIFY ENGINEER OF ANY DISCREPANCIES.

SIGNAGE NOTE:
1. ALL ROADWAY SIGNING SHALL HAVE DIAMOND GRADE HIGH REFLECTIVITY SHEETING.

PAVEMENT MARKINGS NOTE:
ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC MATERIAL AND SHALL BE IN ACCORDANCE WITH FDOT INDEX 711-01

CROSSWALK NOTE:
ALL PEDESTRIAN CROSSWALKS ACROSS ROADWAYS SHALL BE MARKED/STRIPED UTILIZING "SPECIAL EMPHASIS" CROSSWALK MARKINGS IN ACCORDANCE WITH FDOT INDEX 711-001, SHEET 9 OF 13.

NORTH
GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.



ROADWAY IMPROVEMENT OFFSITE SIDEWALK PLAN

SCALE: 1" = 40'

Always call 811 two full business days before you dig
Sunshine811.com

RELEASED FOR CONSTRUCTION

P:\2008-499 AYRSHIRE\ENG PLANS\499 RI.DWG4/19/2023 8:02 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
-	-	-	-

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 40'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY - PHASE 1
FOR:
D.R. HORTON, INC. - JACKSONVILLE
CLAY COUNTY, FLORIDA
ROADWAY IMPROVEMENT PLAN

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 23 of 88

RI-3
DWG. NO.

EROSION CONTROL NOTE:
CONTRACTOR SHALL COMPLY WITH STORMWATER POLLUTION PREVENTION REQUIREMENTS SET FORTH IN ARTICLE II, CHAPTER 34 OF THE CITY LAND DEVELOPMENT REGULATIONS AND SPECIFICALLY, THE TEMPORARY EROSION/SEDIMENTATION CONTROLS SET FORTH IN SECTION 34-23.

SIDEWALK NOTES:
1. SIDEWALK TO BE 6'WIDEx4"THICK 2500 PSI CONCRETE WITH JOINTS AND SUBGRADE IN ACCORDANCE WITH FDOT INDEX 522-001.
2. FINISH GRADE TO MATCH EXISTING GRADE AS CLOSELY AS POSSIBLE.
3. LONGITUDINAL SLOPE NOT TO EXCEED 5%.
4. CROSS SLOPE NOT TO EXCEED 2%.
5. IN AREAS WHERE SIDEWALK MUST MEANDER AT POWER POLES, TREES, ETC AND 6'WIDTH IS NOT POSSIBLE MAINTAIN MINIMUM 36" WIDTH.
6. IN AREAS WHERE SIDEWALK/ PEDESTRIAN ROUTE CROSSES EXISTING DRIVEWAYS THE 2% MAXIMUM CROSS SLOPE SHALL BE MAINTAINED. NOTIFY ENGINEER OF ANY DISCREPANCIES.

SIGNAGE NOTE:
1. ALL ROADWAY SIGNING SHALL HAVE DIAMOND GRADE HIGH REFLECTIVITY SHEETING.

PAVEMENT MARKINGS NOTE:
ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC MATERIAL AND SHALL BE IN ACCORDANCE WITH FDOT INDEX 711-01.

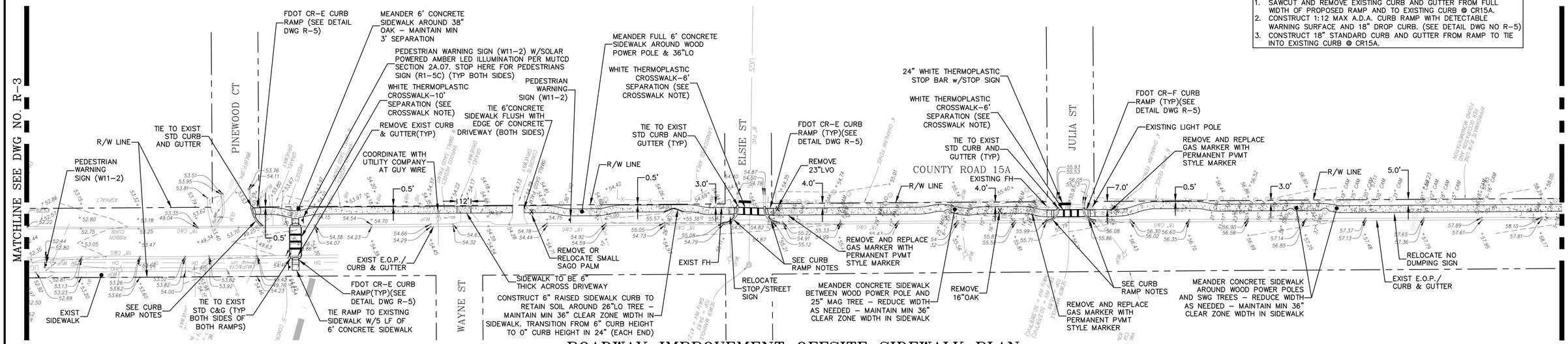
CROSSWALK NOTE:
ALL PEDESTRIAN CROSSWALKS ACROSS ROADWAYS SHALL BE MARKED/STRIPED UTILIZING "SPECIAL EMPHASIS" CROSSWALK MARKINGS IN ACCORDANCE WITH FDOT INDEX 711-001, SHEET 9 OF 13.

NORTH

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

CURB RAMP NOTES:
1. SAWCUT AND REMOVE EXISTING CURB AND GUTTER FROM FULL WIDTH OF PROPOSED RAMP AND TO EXISTING CURB @ CR15A.
2. CONSTRUCT 1:12 MAX A.D.A. CURB RAMP WITH DETECTABLE WARNING SURFACE AND 18" DROP CURB. (SEE DETAIL DWG NO R-5)
3. CONSTRUCT 18" STANDARD CURB AND GUTTER FROM RAMP TO TIE INTO EXISTING CURB @ CR15A.

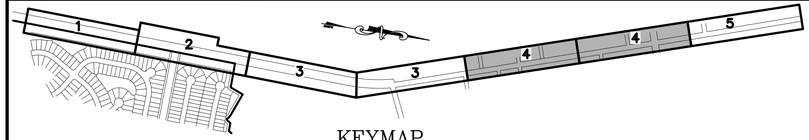
MATCHLINE SEE DWG NO. R-3



MATCHLINE SEE BELOW

ROADWAY IMPROVEMENT OFFSITE SIDEWALK PLAN

SCALE: 1" = 40'



KEYMAP
NTS

SIDEWALK NOTES:
1. SIDEWALK TO BE 6'WIDEx4"THICK 2500 PSI CONCRETE WITH JOINTS AND SUBGRADE IN ACCORDANCE WITH FDOT INDEX 522-001.
2. FINISH GRADE TO MATCH EXISTING GRADE AS CLOSELY AS POSSIBLE.
3. LONGITUDINAL SLOPE NOT TO EXCEED 5%.
4. CROSS SLOPE NOT TO EXCEED 2%.
5. IN AREAS WHERE SIDEWALK MUST MEANDER AT POWER POLES, TREES, ETC AND 6'WIDTH IS NOT POSSIBLE MAINTAIN MINIMUM 36" WIDTH.
6. IN AREAS WHERE SIDEWALK/ PEDESTRIAN ROUTE CROSSES EXISTING DRIVEWAYS THE 2% MAXIMUM CROSS SLOPE SHALL BE MAINTAINED. NOTIFY ENGINEER OF ANY DISCREPANCIES.

SIGNAGE NOTE:
1. ALL ROADWAY SIGNING SHALL HAVE DIAMOND GRADE HIGH REFLECTIVITY SHEETING.

PAVEMENT MARKINGS NOTE:
ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC MATERIAL AND SHALL BE IN ACCORDANCE WITH FDOT INDEX 711-01.

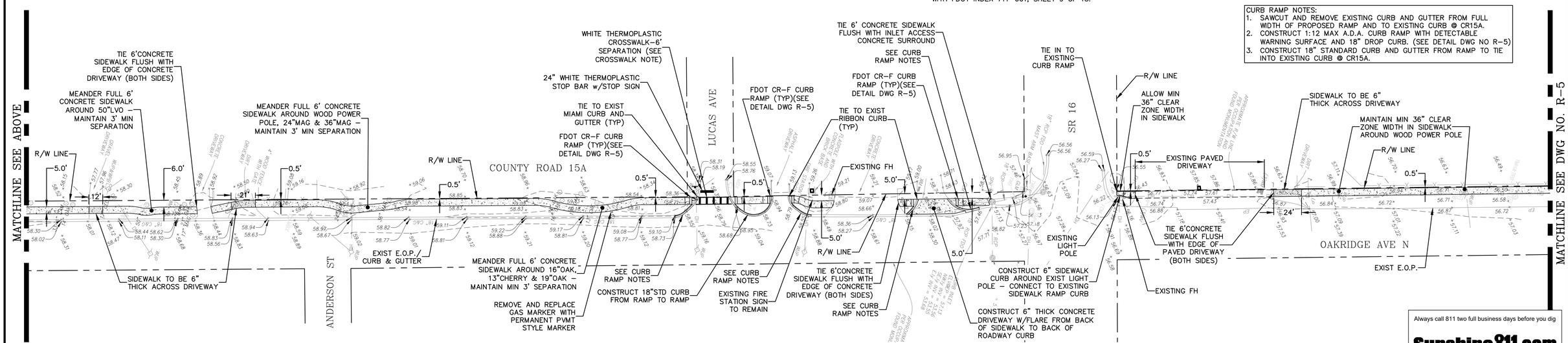
CROSSWALK NOTE:
ALL PEDESTRIAN CROSSWALKS ACROSS ROADWAYS SHALL BE MARKED/STRIPED UTILIZING "SPECIAL EMPHASIS" CROSSWALK MARKINGS IN ACCORDANCE WITH FDOT INDEX 711-001, SHEET 9 OF 13.

NORTH

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

CURB RAMP NOTES:
1. SAWCUT AND REMOVE EXISTING CURB AND GUTTER FROM FULL WIDTH OF PROPOSED RAMP AND TO EXISTING CURB @ CR15A.
2. CONSTRUCT 1:12 MAX A.D.A. CURB RAMP WITH DETECTABLE WARNING SURFACE AND 18" DROP CURB. (SEE DETAIL DWG NO R-5)
3. CONSTRUCT 18" STANDARD CURB AND GUTTER FROM RAMP TO TIE INTO EXISTING CURB @ CR15A.

MATCHLINE SEE ABOVE



MATCHLINE SEE DWG NO. R-5

RELEASED FOR CONSTRUCTION

ROADWAY IMPROVEMENT OFFSITE SIDEWALK PLAN

SCALE: 1" = 40'

Always call 811 two full business days before you dig
Sunshine811.com

P:\2008-499 AYRSHIRE\ENG PLANS\499 RI.DWG4/19/2023 8:03 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
-	-	-	-

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 40'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY - PHASE 1
FOR:
D.R. HORTON, INC. - JACKSONVILLE

CLAY COUNTY, FLORIDA

ROADWAY IMPROVEMENT PLAN

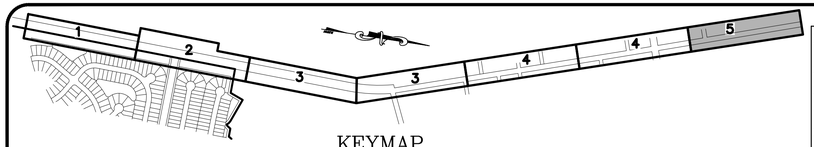
VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 24 of 88

RI-4
DWG. NO.



KEYMAP
NTS

SIDEWALK NOTES:
1. SIDEWALK TO BE 6'WIDEx4"THICK 2500 PSI CONCRETE WITH JOINTS AND SUBGRADE IN ACCORDANCE WITH FDOT INDEX 522–001.
2. FINISH GRADE TO MATCH EXISTING GRADE AS CLOSELY AS POSSIBLE.
3. LONGITUDINAL SLOPE NOT TO EXCEED 5%.
4. CROSS SLOPE NOT TO EXCEED 2%.
5. IN AREAS WHERE SIDEWALK MUST MEANDER AT POWER POLES, TREES, ETC AND 6'WIDTH IS NOT POSSIBLE MAINTAIN MINIMUM 36" WIDTH.
6. IN AREAS WHERE SIDEWALK/ PEDESTRIAN ROUTE CROSSES EXISTING DRIVEWAYS THE 2% MAXIMUM CROSS SLOPE SHALL BE MAINTAINED. NOTIFY ENGINEER OF ANY DISCREPANCIES.

SIGNAGE NOTE:
1. ALL ROADWAY SIGNING SHALL HAVE DIAMOND GRADE HIGH REFLECTIVITY SHEETING.

PAVEMENT MARKINGS NOTE:
ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC MATERIAL AND SHALL BE IN ACCORDANCE WITH FDOT INDEX 711–01.

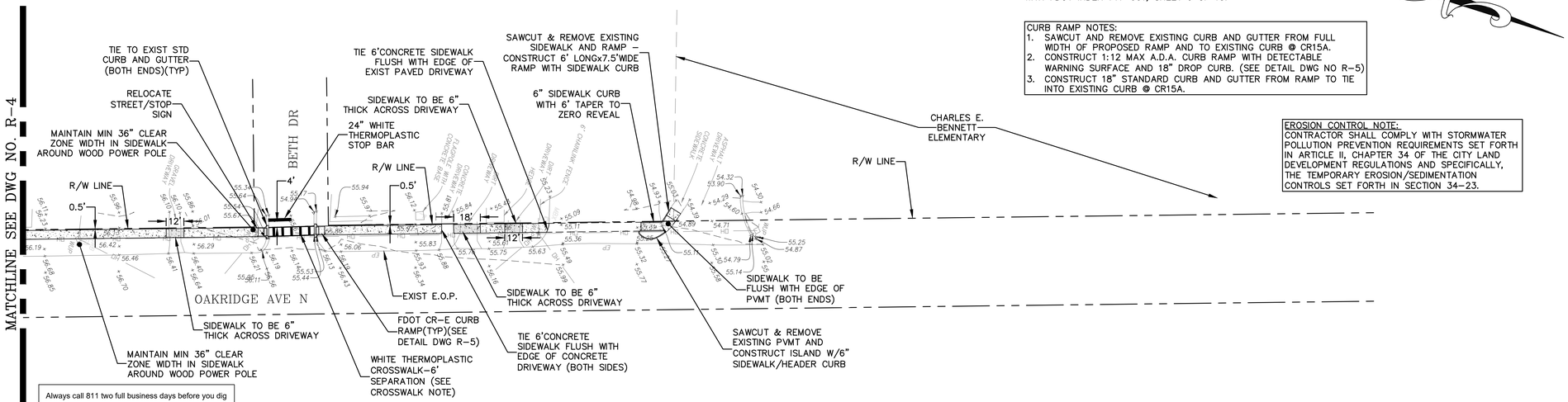
CROSSWALK NOTE:
ALL PEDESTRIAN CROSSWALKS ACROSS ROADWAYS SHALL BE MARKED/STRIPED UTILIZING "SPECIAL EMPHASIS" CROSSWALK MARKINGS IN ACCORDANCE WITH FDOT INDEX 711–001, SHEET 9 OF 13.

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

NORTH

CURB RAMP NOTES:
1. SAWCUT AND REMOVE EXISTING CURB AND GUTTER FROM FULL WIDTH OF PROPOSED RAMP AND TO EXISTING CURB @ CR15A.
2. CONSTRUCT 1:12 MAX A.D.A. CURB RAMP WITH DETECTABLE WARNING SURFACE AND 18" DROP CURB. (SEE DETAIL DWG NO R–5)
3. CONSTRUCT 18" STANDARD CURB AND GUTTER FROM RAMP TO TIE INTO EXISTING CURB @ CR15A.

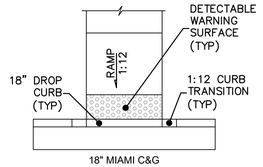
EROSION CONTROL NOTE:
CONTRACTOR SHALL COMPLY WITH STORMWATER POLLUTION PREVENTION REQUIREMENTS SET FORTH IN ARTICLE II, CHAPTER 34 OF THE CITY LAND DEVELOPMENT REGULATIONS AND SPECIFICALLY, THE TEMPORARY EROSION/SEDIMENTATION CONTROLS SET FORTH IN SECTION 34–23.

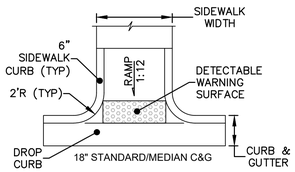


Always call 811 two full business days before you dig
Sunshine811.com

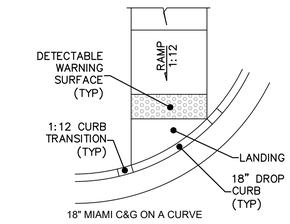
ROADWAY IMPROVEMENT OFFSITE SIDEWALK PLAN
SCALE: 1" = 40'

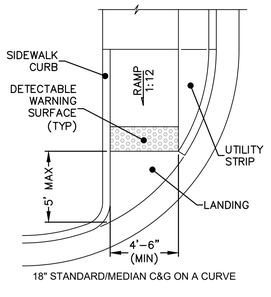
NOTES:
1. SEE PLANS FOR SIDEWALK WIDTH AND LOCATION.
2. SEE STANDARD CURB TEMPLATE DETAILS FOR ADDITIONAL INFORMATION.
3. ADA RAMP TO BE 1:12 MAXIMUM SLOPE.
4. DETECTABLE WARNING SURFACE TO BE FULL WIDTH OF RAMP OR LANDING AND A DEPTH OF 2'.
5. DETECTABLE WARNING SURFACE SHALL NOT BE "STAMPED" OR "CAST" IN THE CONCRETE.
6. FOR ADDITIONAL ADA RAMP AND DETECTABLE WARNING SURFACE INFORMATION SEE THE LATEST FDOT STANDARDS.





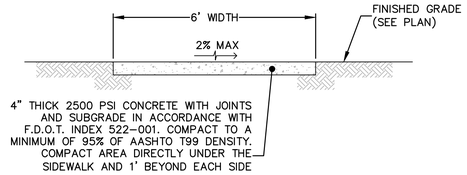
CR-E





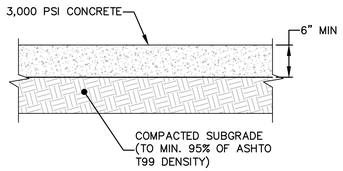
CR-F

SIDEWALK A.D.A. RAMP DETAILS
N.T.S.

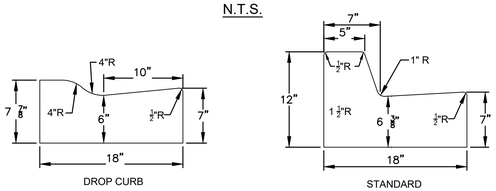


NOTE: 6" THICK AT DIRT/GRAVEL DRIVEWAY CROSSINGS (SEE PLAN FOR LOCATION)

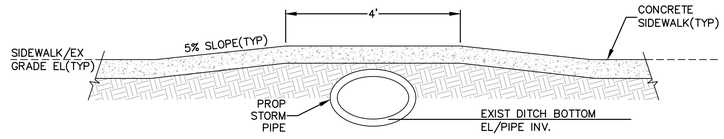
CONCRETE SIDEWALK
N.T.S.



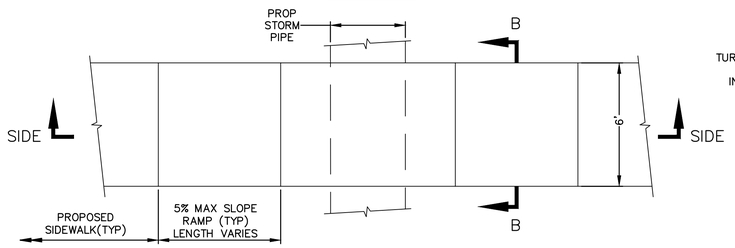
CONCRETE DRIVEWAY SECTION
N.T.S.



CONCRETE CURB & GUTTER
N.T.S.



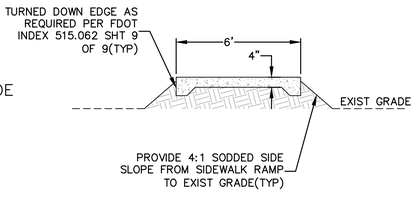
SIDE SECTION



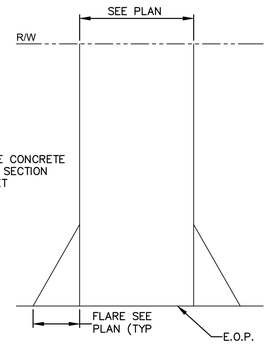
PLAN

SIDEWALK CULVERT DETAIL
N.T.S.

NOTE:
1. SOD ANY DISTURBED AREAS.
2. PROVIDE SILT FENCE AROUND WORK AREAS
3. PROVIDE SYNTHETIC SEDIMENT BALES DOWN STREAM IN EXISTING DITCHES.



SECTION B–B



NOTE: SEE CONCRETE DRIVEWAY SECTION THIS SHEET

CONCRETE DRIVEWAY
N.T.S.

THE ROOKERY – PHASE 1

RELEASED FOR CONSTRUCTION

P:\2008–499 AYRSHIRE\ENG PLANS\499 RI.DWG4/19/2023 8:03 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
–	–	–	–

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 40'
DATE:	4/19/2023
PROJ. NO.:	2008–499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363–8916 Fax: (904)363–8917
www.dunneng.com

THE ROOKERY – PHASE 1
FOR:
D.R. HORTON, INC. – JACKSONVILLE
CLAY COUNTY, FLORIDA
ROADWAY IMPROVEMENT PLAN

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 25 of 88

RI–5
DWG. NO.

PIPE SCHEDULE						
STRUCT. NO. TO STRUCT. NO.	LENGTH FT.	SIZE IN.	TYPE	UP STREAM EL.	DOWN STREAM EL.	SLOPE
S-J1 - S-J2	65	15	HDPE	26.00	25.80	0.31%
S-J3 - S-J4	41	15	HDPE	26.00	25.80	0.49%
S-J5 - S-J6	54	15	HDPE	28.00	27.85	0.28%
S-J7 - S-J6	37	15	HDPE	27.85	27.65	0.55%
S-J8 - S-J9	30	15	HDPE	28.60	28.50	0.34%
S-J10 - S-J11	21	30	HDPE	28.00	28.00	0.00%

DRAINAGE STRUCTURE SCHEDULE				
STR NO.	STRUCT. TYPE	TOP EL.	INVERT EL. PIPES IN:	INVERT EL. PIPES OUT
S-J1	MH	32.53	29.57 (N)	26.00 (S)
S-J3	MH	32.00	28.98 (N)	26.00 (S)
S-J6	MH	32.00	27.65 (S) 27.85 (W) 28.96 (N)	

MH = MANHOLE

NOTE 1: SEE DWG NO. PDD-5 FOR HDPE ANCHOR DETAIL
NOTE 2: SEE DWG NO. PDD-6 FOR CONTROL STRUCTURE DETAILS (S-J9)

MITERED END SECTION SCHEDULE			
STR NO.	STRUCT. TYPE	INVERT EL. PIPES IN:	INVERT EL. PIPES OUT
S-J2	M.E.S.(15")	25.80 (N)	
S-J4	M.E.S.(15")	25.80 (N)	
S-J5	M.E.S.(15")		28.00 (E)
S-J7	M.E.S.(15")		27.85 (N)
S-J9	M.E.S.(15")	28.50 (W)	
S-J10	M.E.S.(30")		28.00 (SE)
S-J11	M.E.S.(30")	28.00 (NW)	

NOTE 3: MITERED END SECTIONS GREATER THAN 36" ARE TO BE POUR-IN-PLACE (INCLUDING ERCP)

CONTRACTOR NOTES:

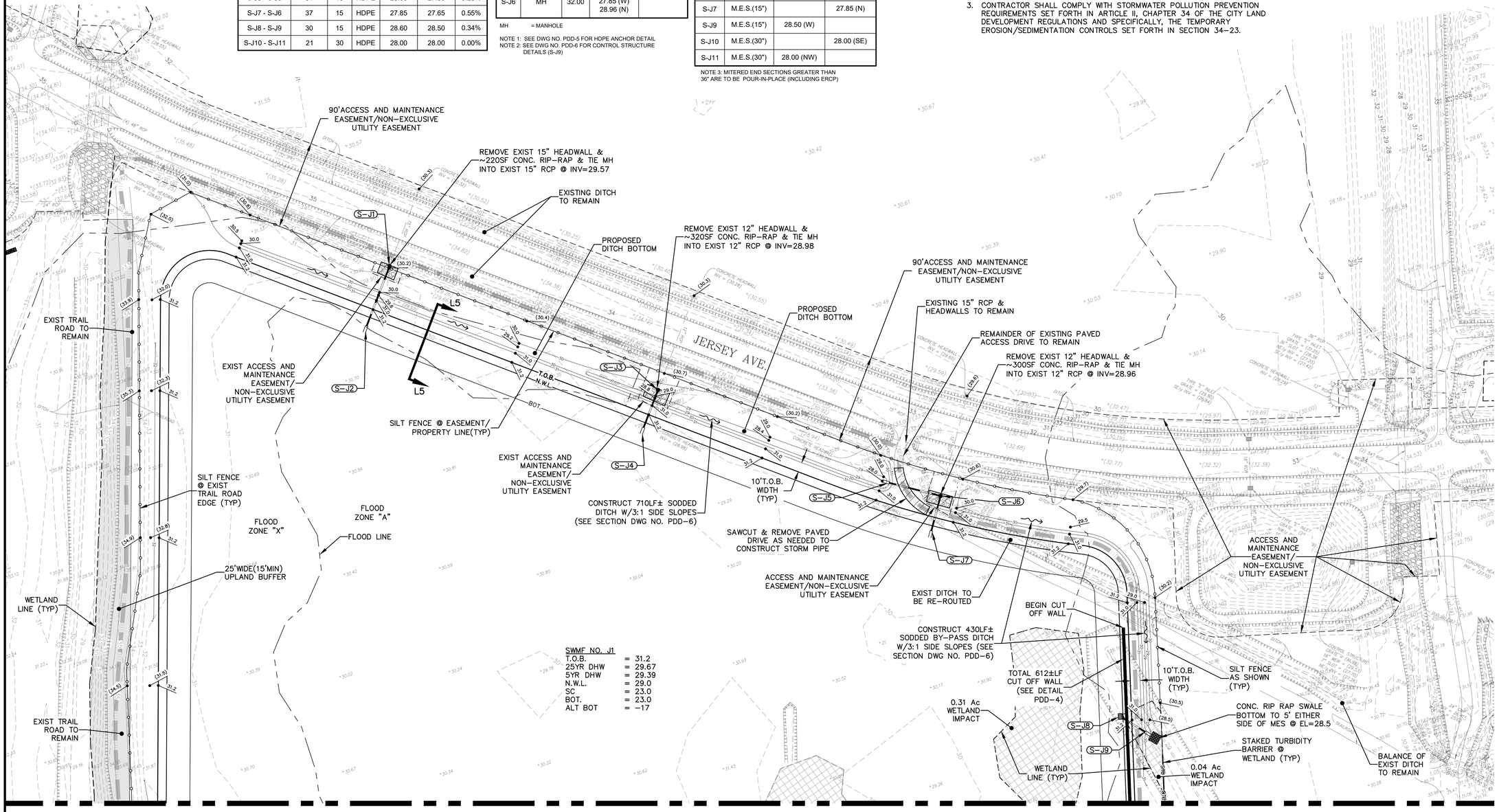
1. THE CONTRACTOR SHALL PROVIDE A COPY OF THE DEP NPDES PERMIT AND SHALL INSTALL SILT FENCE PRIOR TO ANY CONSTRUCTION ACTIVITIES INCLUDING TREE REMOVAL. UPON COMPLETION OF SILT FENCE INSTALLATION CONTRACTOR SHALL NOTIFY ENGINEER OF RECORD TO SCHEDULE AN EROSION CONTROL INSPECTION.
2. THE CONTRACTOR IS RESPONSIBLE FOR PUBLIC WORKS VERIFYING THAT ALL INVERTS ARE PLACED PRIOR TO SURCHARGING THE DRAINAGE SYSTEM.
3. CONTRACTOR SHALL COMPLY WITH STORMWATER POLLUTION PREVENTION REQUIREMENTS SET FORTH IN ARTICLE II, CHAPTER 34 OF THE CITY LAND DEVELOPMENT REGULATIONS AND SPECIFICALLY, THE TEMPORARY EROSION/SEDIMENTATION CONTROLS SET FORTH IN SECTION 34-23.

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

NORTH



SWMF NO. J1
T.O.B. = 31.2
25YR DHW = 29.67
5YR DHW = 29.39
N.W.L. = 29.0
SC = 23.0
BOT. = 23.0
ALT BOT = -17

MATCHLINE SEE DWG NO J1-2

LEGEND

- = WETLANDS
- = UPLAND BUFFER
- = WETLAND IMPACT
- 30.5 = PROPOSED GRADE EL.

THE ROOKERY - PHASE 1

RELEASED FOR CONSTRUCTION

Always call 811 two full business days before you dig
Sunshine811.com

P:\2008-499 AYRSHIRE\ENG PLANS\499 J1.DWG4/19/2023 8:04 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
-	-	-	-

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 50'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY - PHASE 1

FOR:
D.R. HORTON, INC. - JACKSONVILLE

CLAY COUNTY, FLORIDA

SWMF J1 - CONSTRUCTION PLAN

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 26 of 88

J1-1

DWG. NO.

CONTRACTOR NOTES:

1. THE CONTRACTOR SHALL PROVIDE A COPY OF THE DEP NPDES PERMIT AND SHALL INSTALL SILT FENCE PRIOR TO ANY CONSTRUCTION ACTIVITIES INCLUDING TREE REMOVAL. UPON COMPLETION OF SILT FENCE INSTALLATION CONTRACTOR SHALL NOTIFY ENGINEER OF RECORD TO SCHEDULE AN EROSION CONTROL INSPECTION.
2. THE CONTRACTOR IS RESPONSIBLE FOR PUBLIC WORKS VERIFYING THAT ALL INVERTS ARE PLACED PRIOR TO SURCHARGING THE DRAINAGE SYSTEM.
3. CONTRACTOR SHALL COMPLY WITH STORMWATER POLLUTION PREVENTION REQUIREMENTS SET FORTH IN ARTICLE II, CHAPTER 34 OF THE CITY LAND DEVELOPMENT REGULATIONS AND SPECIFICALLY, THE TEMPORARY EROSION/SEDIMENTATION CONTROLS SET FORTH IN SECTION 34-23.

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

NORTH

MATCHLINE SEE DWG NO J1-1

SILT FENCE @ EXIST TRAIL ROAD EDGE (TYP)
25'WIDE(15'MIN) UPLAND BUFFER
WETLAND LINE (TYP)
EXIST TRAIL ROAD TO REMAIN
EXIST STORMWATER CONVEYANCE PIPE TO BE REMOVED AND REPLACED IN NEW LOCATION
S-J10
S-J11
FLOOD ZONE X
FLOOD ZONE "A"
FLOOD LINE
FLOOD ZONE "X"
SWMF NO. J1
T.O.B. = 31.2
25YR DHW = 29.67
5YR DHW = 29.39
N.W.L. = 29.0
SC = 23.0
BOT. = 23.0
ALT BOT = -17
0.21 Ac WETLAND IMPACT
1.50 Ac WETLAND IMPACT
0.24 Ac WETLAND IMPACT
SILT FENCE AS SHOWN (TYP)
10'WIDTH @ EL. 32.0 (TYP)
L4
EXIST TRAIL ROAD TO REMAIN
FLOOD ZONE "X"
FLOOD LINE
FLOOD ZONE "A"
SILT FENCE @ T.O.B. (TYP)
CONSTRUCT 1,275LF± SODDED DITCH W/20' BOTTOM WIDTH & 3:1 SIDE SLOPES
BOT.
N.W.L.
T.O.B.
25'WIDE(15'MIN) UPLAND BUFFER (MEASURED FROM OFFSITE WETLAND LINE)
EXISTING 50'JEA GAS PIPELINE EASEMENT
SILT FENCE AS SHOWN (TYP)
STAKED TURBIDITY BARRIER ACROSS DITCH
BALANCE OF EXIST DITCH TO REMAIN
EXISTING 50'JEA GAS PIPELINE EASEMENT
STAKED TURBIDITY BARRIER @ WETLAND(TYP)
SHWL EL=28.93
SHWL EL=28.98
TOTAL 612±LF CUT OFF WALL (SEE DETAIL PDD-4)
SILT FENCE AS SHOWN (TYP)
L1
10'T.O.B. WIDTH (TYP)
STAKED TURBIDITY BARRIER @ WETLAND(TYP)
END CUT OFF WALL
SILT FENCE AS SHOWN (TYP)

LEGEND

- = WETLANDS
- = UPLAND BUFFER
- = WETLAND IMPACT
- 30.5 = PROPOSED GRADE EL.

Always call 811 two full business days before you dig

Sunshine811.com

RELEASED FOR CONSTRUCTION

P:\2008-499 AYRSHIRE\ENG PLANS\499 J1.DWG4/19/2023 8:05 AMMike Reilly

REVISIONS

NO.	DATE	DESCRIPTION	BY:
-	-	-	-

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 50'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY - PHASE 1

FOR:
D.R. HORTON, INC. - JACKSONVILLE

CLAY COUNTY, FLORIDA

SWMF J1 - CONSTRUCTION PLAN

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

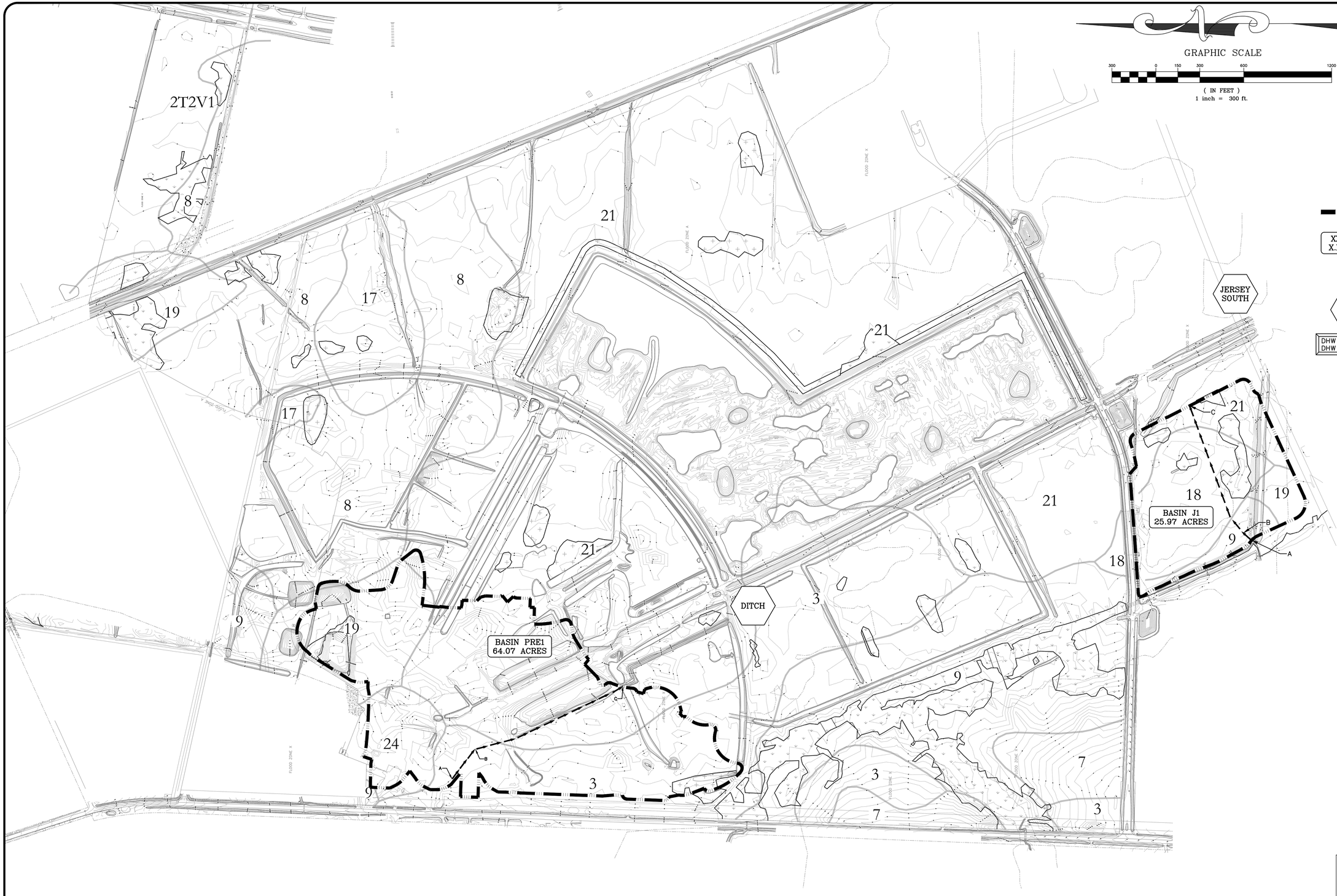
VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 27 of 88

J1-2

DWG. NO.

THE ROOKERY - PHASE 1



THE ROOKERY – PHASE 1

RELEASED FOR CONSTRUCTION

Always call 811 two full business days before you dig

Sunshine811.com

P:\2008-499 AYRSHIRE\ENG PLANS\499 PRE-PST.DWG4/19/2023 8:05 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
–	–	–	–

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 300'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1

FOR:
D.R. HORTON, INC. – JACKSONVILLE

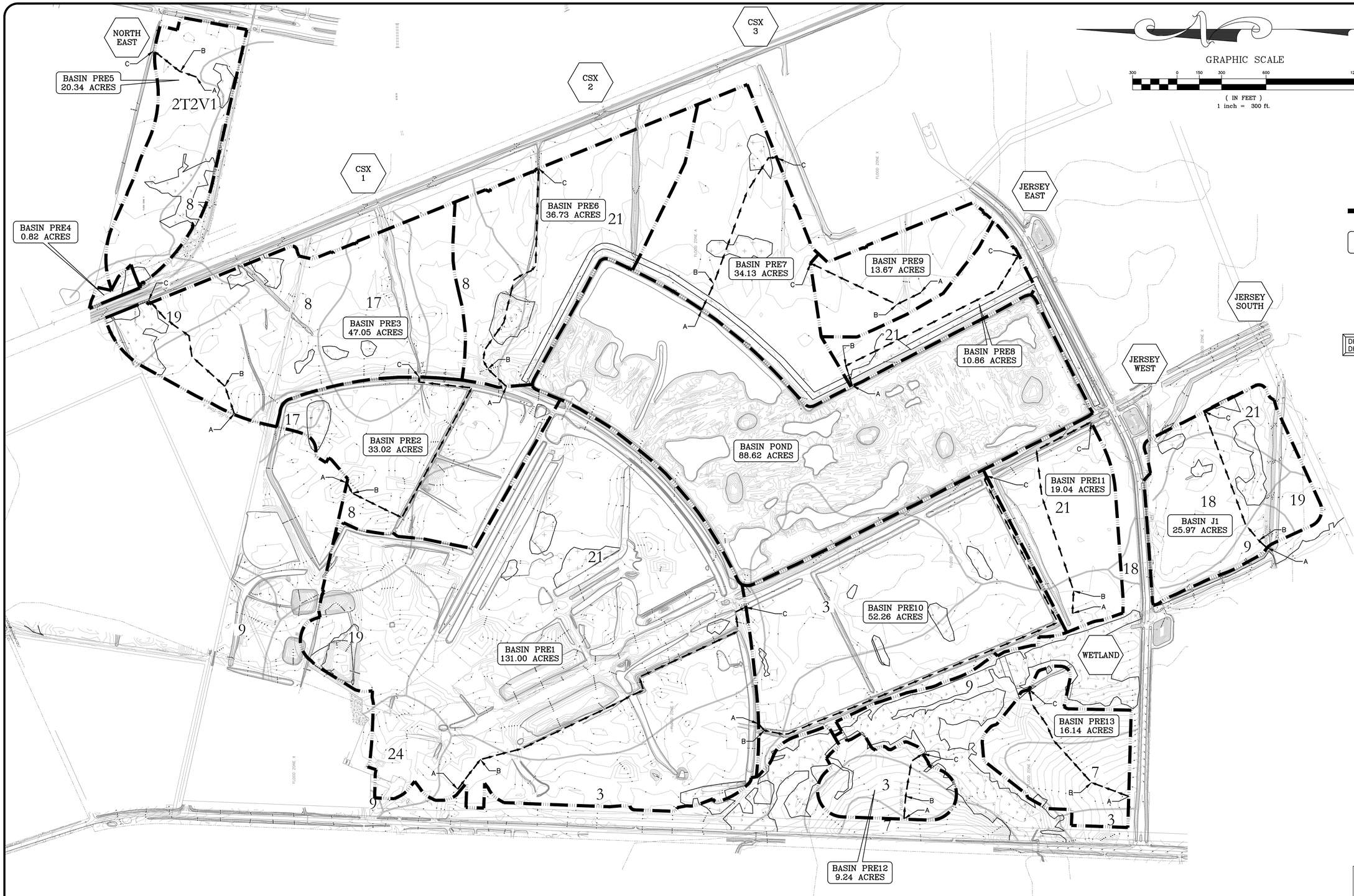
CLAY COUNTY, FLORIDA

PRE-DEVELOPMENT DRAINAGE PLAN – PHASE 1

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419



THE ROOKERY – PHASE 1

RELEASED FOR CONSTRUCTION

Always call 811 two full business days before you dig
Sunshine811.com

P:\2008-499 AYRSHIRE\ENG PLANS\499 PRE-PST.DWG4/19/2023 8:05 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
–	–	–	–

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 300'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1

FOR:
D.R. HORTON, INC. – JACKSONVILLE

CLAY COUNTY, FLORIDA

PRE-DEVELOPMENT DRAINAGE PLAN – OVERALL

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

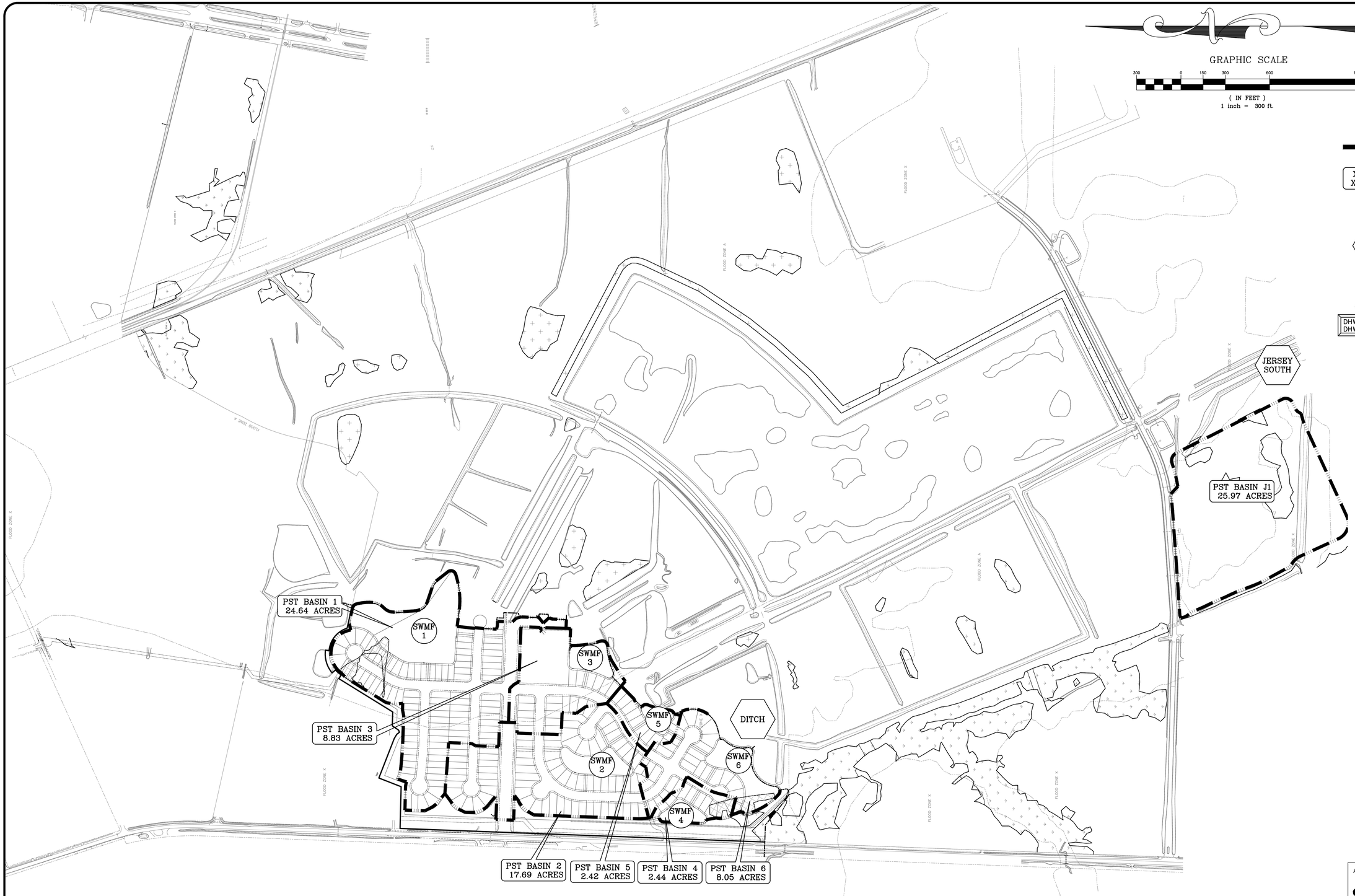
This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 29 of 88

PRE-2

DWG. NO.



THE ROOKERY – PHASE 1

RELEASED FOR CONSTRUCTION

Always call 811 two full business days before you dig
Sunshine811.com

P:\2008-499 AYRSHIRE\ENG PLANS\499 PRE-PST.DWG4/19/2023 8:05 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
–	–	–	–

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 300'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1

FOR:
D.R. HORTON, INC. – JACKSONVILLE

CLAY COUNTY, FLORIDA

POST DEVELOPMENT DRAINAGE PLAN – PHASE 1

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

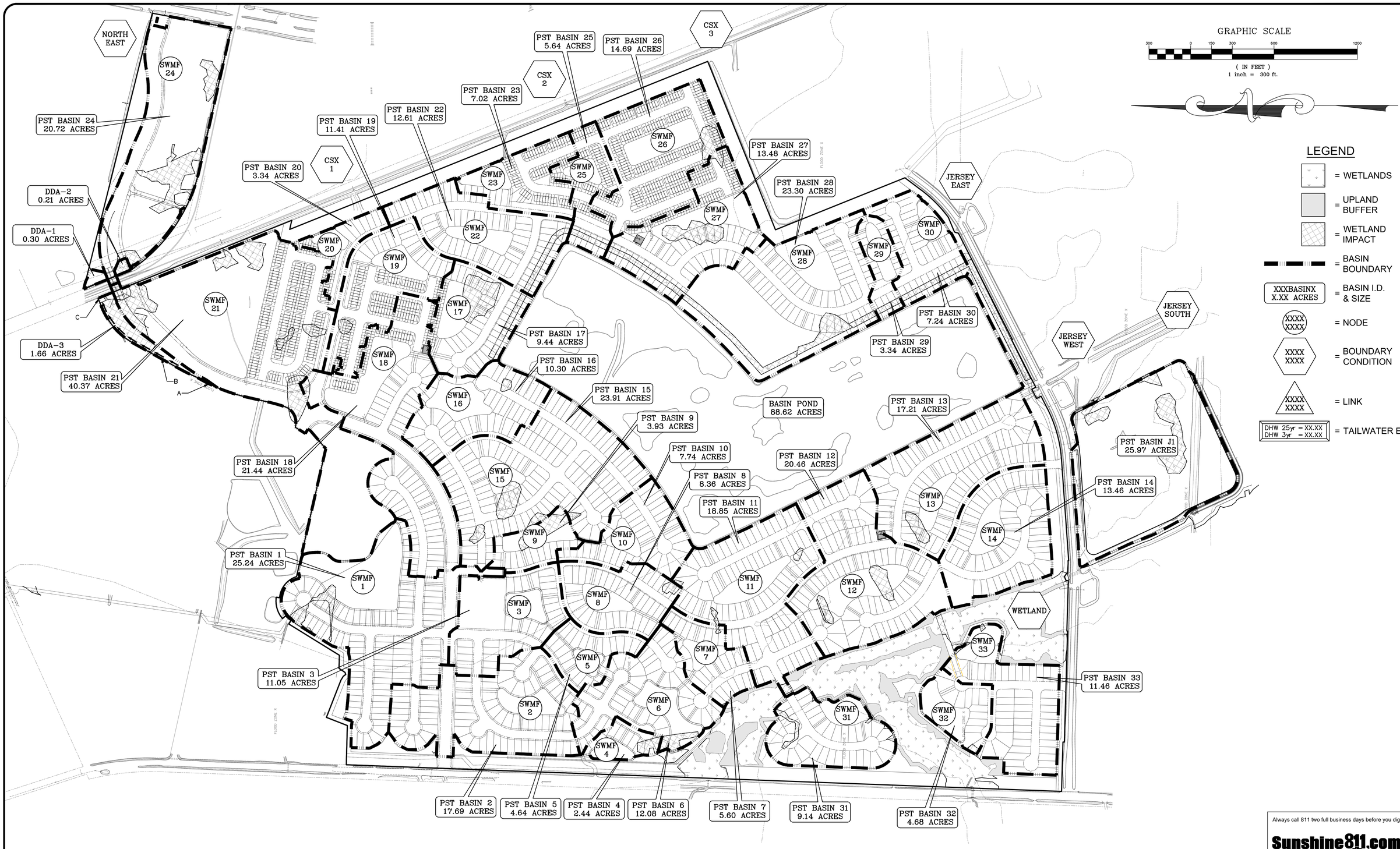
This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 30 of 88

PST-1

DWG. NO.



THE ROOKERY – PHASE 1

RELEASED FOR CONSTRUCTION

Always call 811 two full business days before you dig

Sunshine811.com

P:\2008–499 AYRSHIRE\ENG PLANS\499 PRE–PST.DWG4/19/2023 8:06 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
–	–	–	–

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 300'
DATE:	4/19/2023
PROJ. NO.:	2008–499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363–8916 Fax: (904)363–8917
www.dunneng.com

THE ROOKERY – PHASE 1

FOR:
D.R. HORTON, INC. – JACKSONVILLE

CLAY COUNTY, FLORIDA

POST DEVELOPMENT DRAINAGE PLAN – OVERALL

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 31 of 88

PST–2

DWG. NO.

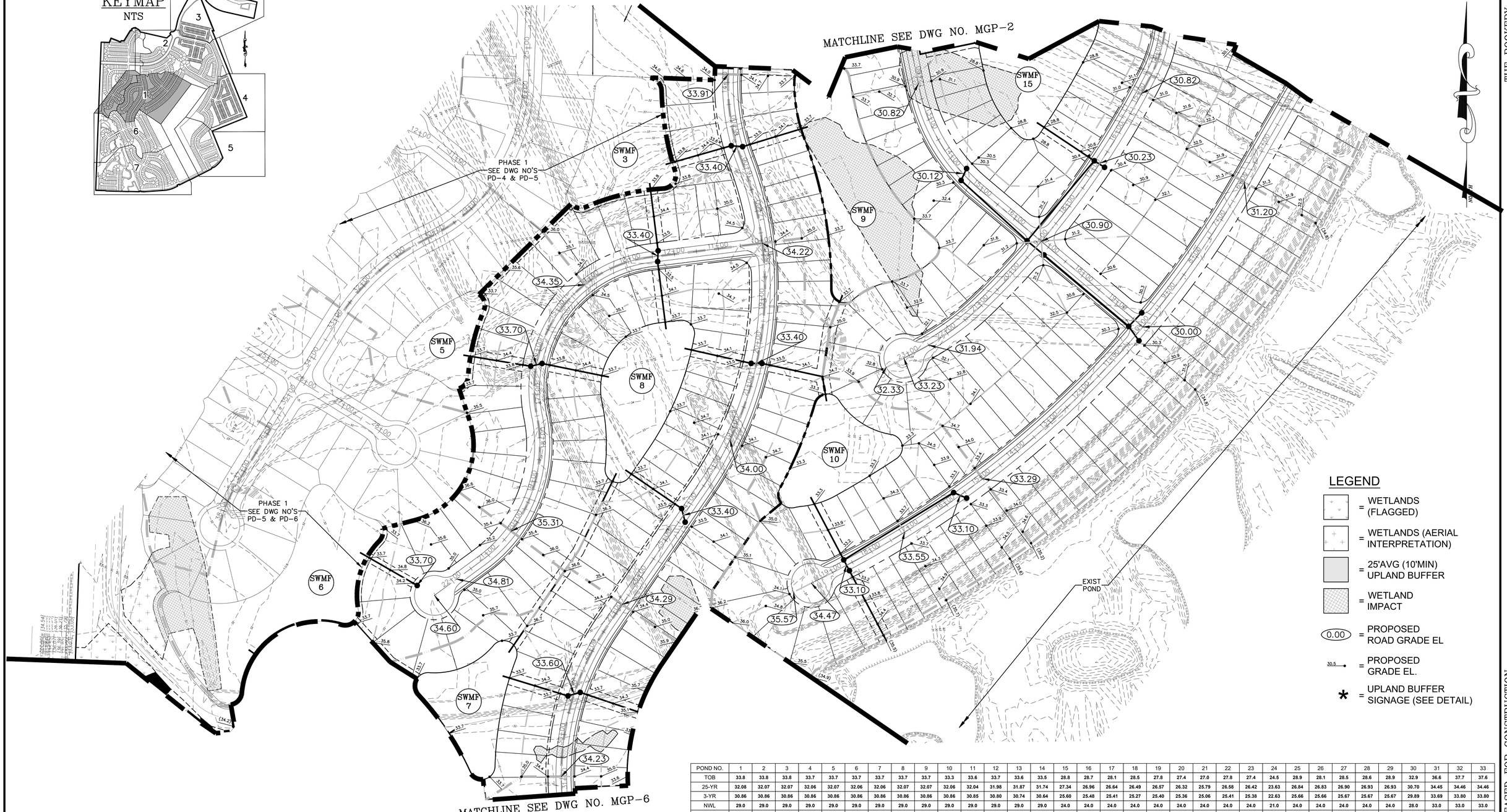
GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

NORTH

KEYMAP
NTS



LEGEND

- = WETLANDS (FLAGGED)
- = WETLANDS (AERIAL INTERPRETATION)
- = 25'AVG (10'MIN) UPLAND BUFFER
- = WETLAND IMPACT
- 0.00 = PROPOSED ROAD GRADE EL
- 30.5 = PROPOSED GRADE EL.
- * = UPLAND BUFFER SIGNAGE (SEE DETAIL)

POND NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
TOB	33.8	33.8	33.8	33.7	33.7	33.7	33.7	33.7	33.7	33.3	33.6	33.7	33.6	33.5	28.8	28.7	28.1	28.5	27.8	27.4	27.0	27.8	27.4	24.5	28.9	28.1	28.5	28.6	28.9	32.9	36.6	37.7	37.6
25-YR	32.08	32.07	32.07	32.06	32.07	32.06	32.06	32.07	32.07	32.06	32.04	31.98	31.87	31.74	27.34	26.96	26.64	26.49	26.57	26.32	25.79	26.58	26.42	23.63	26.84	26.83	26.90	26.93	26.93	30.70	34.45	34.46	34.46
3-YR	30.86	30.86	30.86	30.86	30.86	30.86	30.86	30.86	30.86	30.86	30.85	30.80	30.74	30.64	25.60	25.48	25.41	25.27	25.40	25.36	25.06	25.41	25.38	22.63	25.66	25.66	25.67	25.67	25.67	29.89	33.69	33.80	33.80
NWL	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	21.0	24.0	24.0	24.0	24.0	24.0	28.0	33.0	33.0	33.0
SC	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	15.0	18.0	18.0	18.0	18.0	18.0	22.0	27.0	27.0	27.0
BOT	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	18.0	18.0	18.0	18.0	18.0	18.0	-15.0	18.0	18.0	-15.0	18.0	18.0	18.0	18.0	18.0	22.0	27.0	27.0	27.0
ALT BOT	-17.0	11.0	7.0	15.0	15.0	12.0	13.0	9.0	5.0	10.0	11.0	4.0	16.0	4.0	0.0	-8.0	-6.0	-2.0	3.0	10.0		6.0	3.0		9.0	4.0	-3.0	-9.0		12.0	7.0	11.0	3.0

P:\2008-499 AYRSHIRE\ENG PLANS\499 MGP.DWG4/19/2023 8:06 AMMike Reilly

RELEASED FOR CONSTRUCTION

REVISIONS

NO.	DATE	DESCRIPTION	BY:

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 100'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1

FOR:
D.R. HORTON, INC. – JACKSONVILLE

CLAY COUNTY, FLORIDA

MASTER GRADING PLAN

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 61419

Sheet No. 32 of 88

MGP-1

DWG. NO.

POND NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
TOB	33.8	33.8	33.8	33.7	33.7	33.7	33.7	33.7	33.7	33.3	33.6	33.7	33.6	33.5	28.8	28.7	28.1	28.5	27.8	27.4	27.0	27.8	27.4	24.5	28.9	28.1	28.5	28.6	28.9	32.9	36.6	37.7	37.6
25-YR	32.08	32.07	32.07	32.06	32.07	32.06	32.06	32.07	32.07	32.06	32.04	31.98	31.87	31.74	27.34	26.96	26.64	26.49	26.57	26.32	25.79	26.58	26.42	23.63	26.84	26.83	26.90	26.93	26.93	30.70	34.45	34.46	34.46
3-YR	30.86	30.86	30.86	30.86	30.86	30.86	30.86	30.86	30.86	30.86	30.85	30.80	30.74	30.64	25.60	25.48	25.41	25.27	25.40	25.36	25.06	25.41	25.38	22.63	25.66	25.66	25.67	25.67	25.67	29.89	33.69	33.80	33.80
NWL	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	21.0	24.0	24.0	24.0	24.0	24.0	28.0	33.0	33.0	33.0
SC	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	15.0	18.0	18.0	18.0	18.0	18.0	22.0	27.0	27.0	27.0
BOT	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	18.0	18.0	18.0	18.0	18.0	18.0	-15.0	18.0	18.0	-15.0	18.0	18.0	18.0	18.0	18.0	22.0	27.0	27.0	27.0
ALT BOT	-17.0	11.0	7.0	15.0	15.0	12.0	13.0	9.0	5.0	10.0	11.0	4.0	16.0	4.0	0.0	-8.0	-6.0	-2.0	3.0	10.0		6.0	3.0		9.0	4.0	-3.0	-9.0		12.0	7.0	11.0	3.0

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)

1 inch = 100 ft.

MATCHLINE SEE DWG NO. MGP-3

SILT FENCE @ ℄ (TYP)

PHASE 1 SEE DWG NO'S PD-3 & PD-4

24"RCP E.ly INV=21.07' W.ly INV=21.21'

SILT FENCE @ T.O.S. (TYP)

RAILROAD TRACKS

SWMF 1

SWMF 9

SWMF 15

SWMF 16

SWMF 17

SWMF 18

SWMF 19

SWMF 22

SWMF 23

EXIST POND

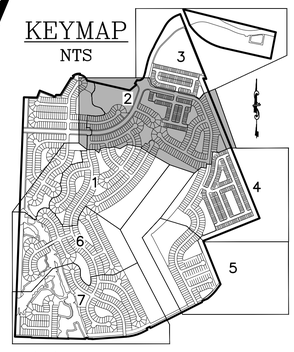
MATCHLINE SEE DWG NO. MGP-1

MATCHLINE SEE DWG NO. MGP-4

NORTH

KEYMAP

NTS



LEGEND

= WETLANDS (FLAGGED)

= WETLANDS (AERIAL INTERPRETATION)

= 25'AVG (10'MIN) UPLAND BUFFER

= WETLAND IMPACT

0.00 = PROPOSED ROAD GRADE EL

30.5 = PROPOSED GRADE EL.

* = UPLAND BUFFER SIGNAGE (SEE DETAIL)

P:\2008-499 AYRSHIRE\ENG PLANS\499 MGP.DWG4/19/2023 8:07 AMMike Reilly

RELEASED FOR CONSTRUCTION

THE ROOKERY - PHASE 1

REVISIONS

NO.	DATE	DESCRIPTION	BY:

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 100'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY - PHASE 1

FOR:
D.R. HORTON, INC. - JACKSONVILLE

CLAY COUNTY, FLORIDA

MASTER GRADING PLAN

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 33 of 88

MGP-2

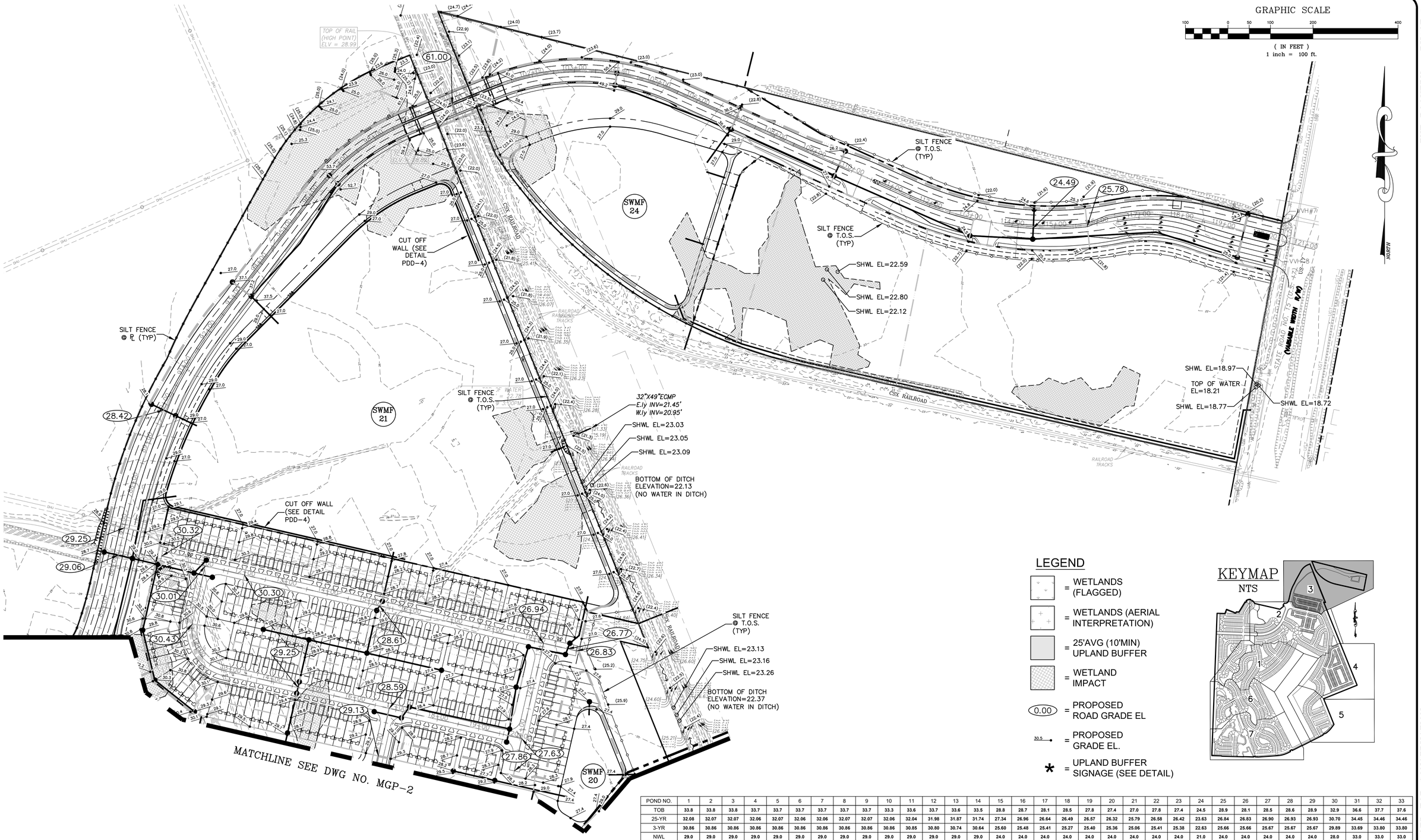
DWG. NO.

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

NORTH



LEGEND

- = WETLANDS (FLAGGED)
- = WETLANDS (AERIAL INTERPRETATION)
- = 25'AVG (10'MIN) UPLAND BUFFER
- = WETLAND IMPACT
- 0.00 = PROPOSED ROAD GRADE EL
- 30.5 = PROPOSED GRADE EL.
- * = UPLAND BUFFER SIGNAGE (SEE DETAIL)

KEYMAP
NTS

POND NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
TOB	33.8	33.8	33.8	33.7	33.7	33.7	33.7	33.7	33.7	33.3	33.6	33.7	33.6	33.5	28.8	28.7	28.1	28.5	27.8	27.4	27.0	27.8	27.4	24.5	28.9	28.1	28.5	28.6	28.9	32.9	36.6	37.7	37.6
25-YR	32.08	32.07	32.07	32.06	32.07	32.06	32.06	32.07	32.07	32.06	32.04	31.98	31.87	31.74	27.34	26.96	26.64	26.49	26.57	26.32	25.79	26.58	26.42	23.63	26.84	26.83	26.90	26.93	26.93	30.70	34.45	34.46	34.46
3-YR	30.86	30.86	30.86	30.86	30.86	30.86	30.86	30.86	30.86	30.86	30.85	30.80	30.74	30.64	25.60	25.48	25.41	25.27	25.40	25.36	25.06	25.41	25.38	22.63	25.66	25.66	25.67	25.67	25.67	29.89	33.69	33.80	33.80
NWL	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	21.0	24.0	24.0	24.0	24.0	24.0	28.0	33.0	33.0	33.0
SC	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	15.0	18.0	18.0	18.0	18.0	18.0	22.0	27.0	27.0	27.0
BOT	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	18.0	18.0	18.0	18.0	18.0	18.0	-15.0	18.0	18.0	-15.0	18.0	18.0	18.0	18.0	18.0	22.0	27.0	27.0	27.0
ALT BOT	-17.0	11.0	7.0	15.0	15.0	12.0	13.0	9.0	5.0	10.0	11.0	4.0	16.0	4.0	0.0	-8.0	-6.0	-2.0	3.0	10.0		6.0	3.0		9.0	4.0	-3.0	-9.0		12.0	7.0	11.0	3.0

RELEASED FOR CONSTRUCTION

P:\2008-499 AYRSHIRE\ENG PLANS\499 MGP.DWG4/19/2023 8:07 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 100'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1

FOR:
D.R. HORTON, INC. – JACKSONVILLE

CLAY COUNTY, FLORIDA

MASTER GRADING PLAN

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452
DAVID M. TAYLOR ENGINEER NO. 44164
GLEN R. WIEGER ENGINEER NO. 81419

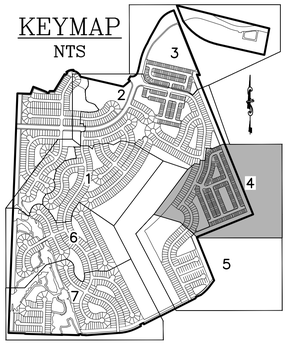
Sheet No. 34 of 88

MGP-3

DWG. NO.

POND NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
TOB	33.8	33.8	33.8	33.7	33.7	33.7	33.7	33.7	33.7	33.3	33.6	33.7	33.6	33.5	28.8	28.7	28.1	28.5	27.8	27.4	27.0	27.8	27.4	24.5	28.9	28.1	28.5	28.6	28.9	32.9	36.6	37.7	37.6
25-YR	32.08	32.07	32.07	32.06	32.07	32.06	32.06	32.07	32.07	32.06	32.04	31.98	31.87	31.74	27.34	26.96	26.64	26.49	26.57	26.32	25.79	26.58	26.42	23.63	26.84	26.83	26.90	26.93	26.93	30.70	34.45	34.46	34.46
3-YR	30.86	30.86	30.86	30.86	30.86	30.86	30.86	30.86	30.86	30.86	30.85	30.80	30.74	30.64	25.60	25.48	25.41	25.27	25.40	25.36	25.06	25.41	25.38	22.63	25.66	25.66	25.67	25.67	25.67	29.89	33.69	33.80	33.80
NWL	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	21.0	24.0	24.0	24.0	24.0	24.0	28.0	33.0	33.0	33.0
SC	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	15.0	18.0	18.0	18.0	18.0	18.0	22.0	27.0	27.0	27.0
BOT	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	18.0	18.0	18.0	18.0	18.0	18.0	-15.0	18.0	18.0	-15.0	18.0	18.0	18.0	18.0	18.0	22.0	27.0	27.0	27.0
ALT BOT	-17.0	11.0	7.0	15.0	15.0	12.0	13.0	9.0	5.0	10.0	11.0	4.0	16.0	4.0	0.0	-8.0	-6.0	-2.0	3.0	10.0		6.0	3.0		9.0	4.0	-3.0	-9.0		12.0	7.0	11.0	3.0

KEYMAP
NTS



GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

LEGEND

= WETLANDS (FLAGGED)

= WETLANDS (AERIAL INTERPRETATION)

= 25'AVG (10'MIN) UPLAND BUFFER

= WETLAND IMPACT

0.00 = PROPOSED ROAD GRADE EL

30.5 = PROPOSED GRADE EL.

* = UPLAND BUFFER SIGNAGE (SEE DETAIL)

MATCHLINE SEE DWG NO. MGP-2

MATCHLINE SEE DWG NO. MGP-5

EXIST POND

SWMF 25

SWMF 26

SWMF 27

42"CMP E.ly INV=18.51' W.ly INV=19.19'

42"CMP E.ly INV=18.90' W.ly INV=19.60'

SILT FENCE @ T.O.S. (TYP)

BOTTOM OF DITCH EL=19.81 (NO WATER IN DITCH)

SHWL EL=20.35

SHWL EL=20.43

SHWL EL=20.34

100' BUFFER

BOTTOM OF DITCH ELEVATION EL=23.01 (NO WATER IN DITCH)

SHWL EL=23.18

SHWL EL=23.23

SHWL EL=23.23

BOTTOM OF DITCH ELEVATION EL=23.54 (NO WATER IN DITCH)

SHWL EL=23.81

SHWL EL=23.74

SHWL EL=23.77

RAILROAD TRACKS

CSX RAILROAD

THE ROOKERY – PHASE 1

RELEASED FOR CONSTRUCTION

P:\2008-499 AYRSHIRE\ENG PLANS\499 MGP.DWG4/19/2023 8:07 AMMike Reilly

REVISIONS

NO.	DATE	DESCRIPTION	BY:

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 100'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1

FOR:
D.R. HORTON, INC. – JACKSONVILLE

CLAY COUNTY, FLORIDA

MASTER GRADING PLAN

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

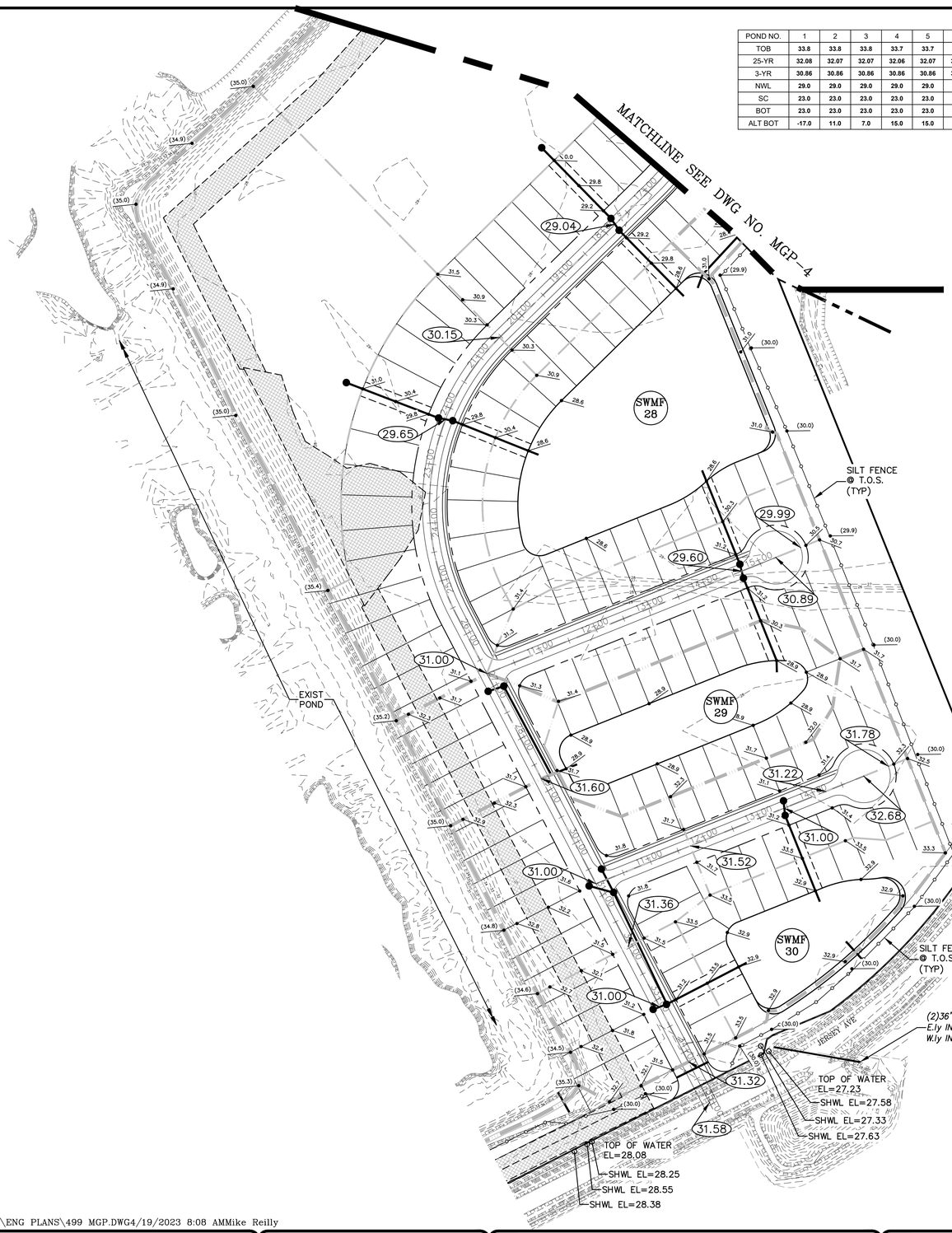
VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 35 of 88

MGP-4

DWG. NO.

POND NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
TOB	33.8	33.8	33.8	33.7	33.7	33.7	33.7	33.7	33.7	33.3	33.6	33.7	33.6	33.5	28.8	28.7	28.1	28.5	27.8	27.4	27.0	27.8	27.4	24.5	28.9	28.1	28.5	28.6	28.9	32.9	36.6	37.7	37.6
25-YR	32.08	32.07	32.07	32.06	32.07	32.06	32.06	32.07	32.07	32.06	32.04	31.98	31.87	31.74	27.34	26.96	26.64	26.49	26.57	26.32	25.79	26.58	26.42	23.63	26.84	26.83	26.90	26.93	26.93	30.70	34.45	34.46	34.46
3-YR	30.86	30.86	30.86	30.86	30.86	30.86	30.86	30.86	30.86	30.86	30.85	30.80	30.74	30.64	25.60	25.48	25.41	25.27	25.40	25.36	25.06	25.41	25.38	22.63	25.66	25.66	25.67	25.67	25.67	29.89	33.69	33.80	33.80
NWL	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	21.0	24.0	24.0	24.0	24.0	24.0	28.0	33.0	33.0	33.0
SC	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	15.0	18.0	18.0	18.0	18.0	18.0	22.0	27.0	27.0	27.0
BOT	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	18.0	18.0	18.0	18.0	18.0	18.0	-15.0	18.0	18.0	-15.0	18.0	18.0	18.0	18.0	18.0	22.0	27.0	27.0	27.0
ALT BOT	-17.0	11.0	7.0	15.0	15.0	12.0	13.0	9.0	5.0	10.0	11.0	4.0	16.0	4.0	0.0	-8.0	-6.0	-2.0	3.0	10.0		6.0	3.0		9.0	4.0	-3.0	-9.0		12.0	7.0	11.0	3.0



GRAPHIC SCALE

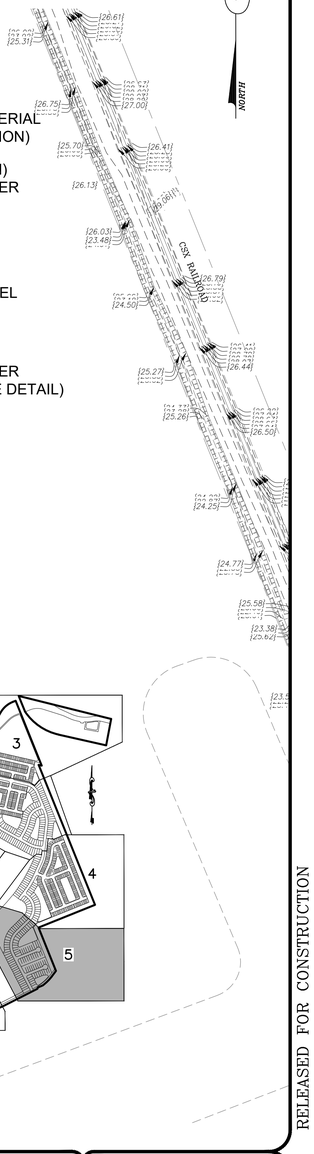
100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

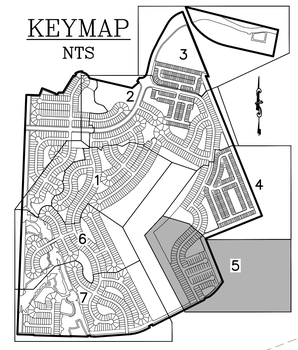
NORTH

LEGEND

- = WETLANDS (FLAGGED)
- = WETLANDS (AERIAL INTERPRETATION)
- = 25'AVG (10'MIN) UPLAND BUFFER
- = WETLAND IMPACT
- (0.00) = PROPOSED ROAD GRADE EL
- 30.5 = PROPOSED GRADE EL.
- * = UPLAND BUFFER SIGNAGE (SEE DETAIL)



KEYMAP
NTS



THE ROOKERY – PHASE 1

RELEASED FOR CONSTRUCTION

P:\2008-499 AYRSHIRE\ENG PLANS\499 MGP.DWG4/19/2023 8:08 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 100'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1

FOR:
D.R. HORTON, INC. – JACKSONVILLE

CLAY COUNTY, FLORIDA

MASTER GRADING PLAN

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

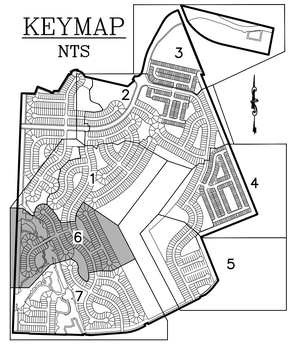
VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 36 of 88

MGP-5

DWG. NO.

THE ROOKERY – PHASE 1



GRAPHIC SCALE

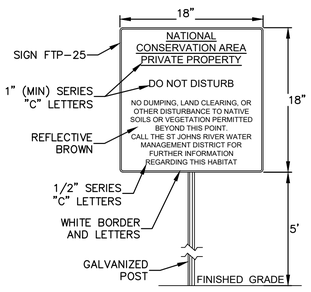
100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

NORTH

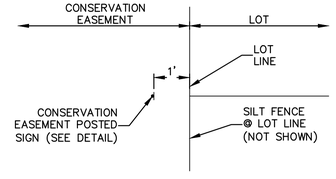
LEGEND

- = WETLANDS (FLAGGED)
- = WETLANDS (AERIAL INTERPRETATION)
- = 25'AVG (10'MIN) UPLAND BUFFER
- = WETLAND IMPACT
- 0.00 = PROPOSED ROAD GRADE EL
- 30.5 = PROPOSED GRADE EL.
- * = UPLAND BUFFER SIGNAGE (SEE DETAIL)



SIGN NOTE:

1. SIGN CONSTRUCTION, DESIGN AND PLACEMENT SHALL COMPLY WITH STATE AND LOCAL STATUTES.



CONSERVATION EASEMENT POSTED SIGN AND PLACEMENT DETAIL

POND NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
TOB	33.8	33.8	33.8	33.7	33.7	33.7	33.7	33.7	33.7	33.3	33.6	33.7	33.6	33.5	28.8	28.7	28.1	28.5	27.8	27.4	27.0	27.8	27.4	24.5	28.9	28.1	28.5	28.6	28.9	32.9	36.6	37.7	37.6
25-YR	32.08	32.07	32.07	32.06	32.07	32.06	32.06	32.07	32.07	32.06	32.04	31.98	31.87	31.74	27.34	26.96	26.64	26.49	26.57	26.32	25.79	26.58	26.42	23.63	26.84	26.83	26.90	26.93	26.93	30.70	34.45	34.46	34.46
3-YR	30.86	30.86	30.86	30.86	30.86	30.86	30.86	30.86	30.86	30.86	30.85	30.80	30.74	30.64	25.60	25.48	25.41	25.27	25.40	25.36	25.06	25.41	25.38	22.63	25.66	25.66	25.67	25.67	25.67	29.89	33.69	33.80	33.80
NWL	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	21.0	24.0	24.0	24.0	24.0	24.0	28.0	33.0	33.0	33.0
SC	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	15.0	18.0	18.0	18.0	18.0	18.0	22.0	27.0	27.0	27.0
BOT	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	18.0	18.0	18.0	18.0	18.0	18.0	-15.0	18.0	18.0	-15.0	18.0	18.0	18.0	18.0	18.0	22.0	27.0	27.0	27.0
ALT BOT	-17.0	11.0	7.0	15.0	15.0	12.0	13.0	9.0	5.0	10.0	11.0	4.0	16.0	4.0	0.0	-8.0	-6.0	-2.0	3.0	10.0		6.0	3.0		9.0	4.0	-3.0	-9.0		12.0	7.0	11.0	3.0

P:\2008-499 AYRSHIRE\ENG PLANS\499 MGP.DWG4/19/2023 8:08 AMMike Reilly

REVISIONS

NO.	DATE	DESCRIPTION	BY:

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 100'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1
FOR:
D.R. HORTON, INC. – JACKSONVILLE
CLAY COUNTY, FLORIDA
MASTER GRADING PLAN

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 37 of 88

MGP-6
DWG. NO.

RELEASED FOR CONSTRUCTION

POND NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
TOB	33.8	33.8	33.8	33.7	33.7	33.7	33.7	33.7	33.7	33.3	33.6	33.7	33.6	33.5	28.8	28.7	28.1	28.5	27.8	27.4	27.0	27.8	27.4	24.5	28.9	28.1	28.5	28.6	28.9	32.9	36.6	37.7	37.6
25-YR	32.08	32.07	32.07	32.06	32.07	32.06	32.06	32.07	32.07	32.06	32.04	31.98	31.87	31.74	27.34	26.96	26.64	26.49	26.57	26.32	25.79	26.58	26.42	23.63	26.84	26.83	26.90	26.93	26.93	30.70	34.45	34.46	34.46
3-YR	30.86	30.86	30.86	30.86	30.86	30.86	30.86	30.86	30.86	30.86	30.85	30.80	30.74	30.64	25.60	25.48	25.41	25.27	25.40	25.36	25.06	25.41	25.38	22.63	25.66	25.66	25.67	25.67	25.67	29.89	33.69	33.80	33.80
NWL	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	21.0	24.0	24.0	24.0	24.0	24.0	28.0	33.0	33.0	33.0
SC	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	15.0	18.0	18.0	18.0	18.0	18.0	22.0	27.0	27.0	27.0
BOT	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	18.0	18.0	18.0	18.0	18.0	18.0	-15.0	18.0	18.0	-15.0	18.0	18.0	18.0	18.0	18.0	22.0	27.0	27.0	27.0
ALT BOT	-17.0	11.0	7.0	15.0	15.0	12.0	13.0	9.0	5.0	10.0	11.0	4.0	16.0	4.0	0.0	-8.0	-6.0	-2.0	3.0	10.0		6.0	3.0		9.0	4.0	-3.0	-9.0		12.0	7.0	11.0	3.0

LEGEND

- = WETLANDS (FLAGGED)
- = WETLANDS (AERIAL INTERPRETATION)
- = 25'AVG (10'MIN) UPLAND BUFFER
- = WETLAND IMPACT
- (0.00) = PROPOSED ROAD GRADE EL
- 30.5 = PROPOSED GRADE EL.
- * = UPLAND BUFFER SIGNAGE (SEE DETAIL)

MATCHLINE SEE DWG NO. MGP-6

CUT OFF WALL (SEE DETAIL PDD-4)

STB @ WETLANDS

SILT FENCE @ BUFFER LINE (TYP)

SWMF 32

SWMF 33

SWMF 13

SWMF 14

TOP OF WATER EL=30.17

SHWL EL=30.70

SHWL EL=30.82

SHWL EL=30.53

SILT FENCE @ T.O.S. (TYP)

EXIST POND

SHWL EL=28.67

SHWL EL=28.46

(2)54"RCP N.Iy INV=26.81' S.Iy INV=26.83'

(4)48"RCP N.Iy INV=28.55' S.Iy INV=26.62'

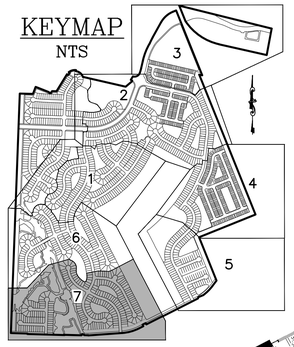
PHASE 1 SEE DWG NO'S J1-1 & J1-2

SOUTH OAKRIDGE AVE (C.R. 15A)

JERSEY AVE

KEYMAP

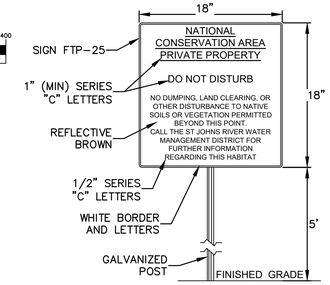
NTS



GRAPHIC SCALE

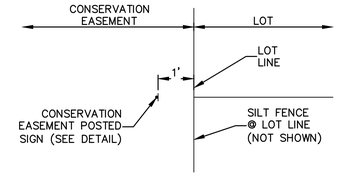
100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.



SIGN NOTE:

1. SIGN CONSTRUCTION, DESIGN AND PLACEMENT SHALL COMPLY WITH STATE AND LOCAL STATUTES.



CONSERVATION EASEMENT POSTED SIGN AND PLACEMENT DETAIL

THE ROOKERY – PHASE 1

RELEASED FOR CONSTRUCTION

P:\2008-499 AYRSHIRE\ENG PLANS\499 MGP.DWG4/19/2023 8:09 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 100'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1

FOR:
D.R. HORTON, INC. – JACKSONVILLE

CLAY COUNTY, FLORIDA

MASTER GRADING PLAN

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 38 of 88

MGP-7

DWG. NO.

CONTRACTOR NOTES:

1. THE CONTRACTOR SHALL PROVIDE A COPY OF THE DEP NPDES PERMIT AND SHALL INSTALL SILT FENCE PRIOR TO ANY CONSTRUCTION ACTIVITIES INCLUDING TREE REMOVAL. UPON COMPLETION OF SILT FENCE INSTALLATION CONTRACTOR SHALL NOTIFY ENGINEER OF RECORD TO SCHEDULE AN EROSION CONTROL INSPECTION.
2. THE CONTRACTOR IS RESPONSIBLE FOR PUBLIC WORKS VERIFYING THAT ALL INVERTS ARE PLACED PRIOR TO SURCHARGING THE DRAINAGE SYSTEM.
3. CONTRACTOR SHALL COMPLY WITH STORMWATER POLLUTION PREVENTION REQUIREMENTS SET FORTH IN ARTICLE II, CHAPTER 34 OF THE CITY LAND DEVELOPMENT REGULATIONS AND SPECIFICALLY, THE TEMPORARY EROSION/SEDIMENTATION CONTROLS SET FORTH IN SECTION 34-23.

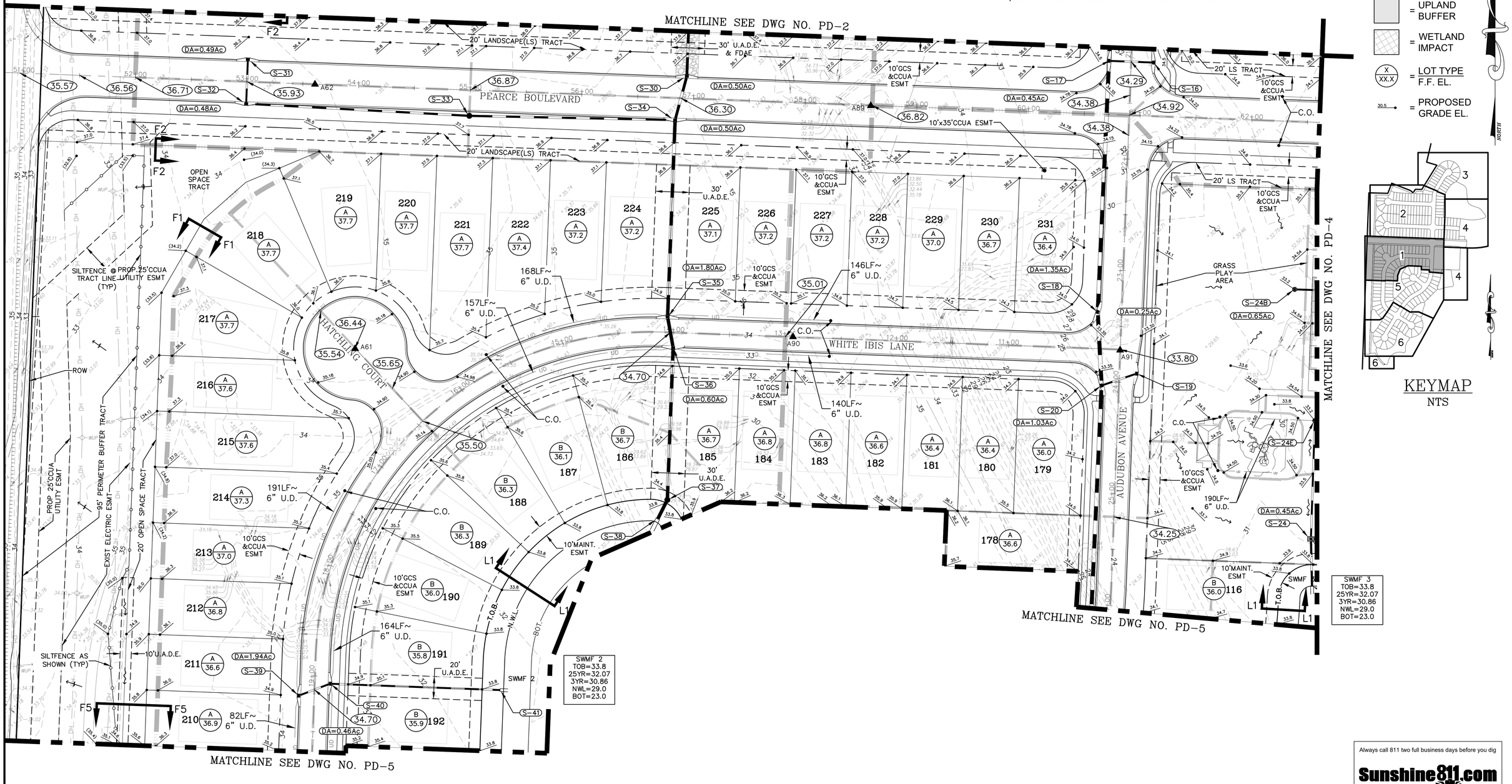
GRAPHIC SCALE

40 0 40 40 80 160

(IN FEET)
1 inch = 40 ft.

LEGEND

= WETLANDS (FLAGGED)
= UPLAND BUFFER
= WETLAND IMPACT
X XX.X = LOT TYPE F.F. EL.
30.5 = PROPOSED GRADE EL.



KEYMAP
NTS

NORTH

THE ROOKERY – PHASE 1

RELEASED FOR CONSTRUCTION

Always call 811 two full business days before you dig
Sunshine811.com

P:\2008-499 AYRSHIRE\ENG PLANS\499 PD.DWG4/19/2023 8:10 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
–	–	–	–

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 40'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1

FOR:
D.R. HORTON, INC. – JACKSONVILLE

CLAY COUNTY, FLORIDA

PAVING AND DRAINAGE PLAN

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 39 of 88

PD-1

DWG. NO.

GRAPHIC SCALE

40 0 40 40 80 160

(IN FEET)
1 inch = 40 ft.

LEGEND

= WETLANDS (FLAGGED)

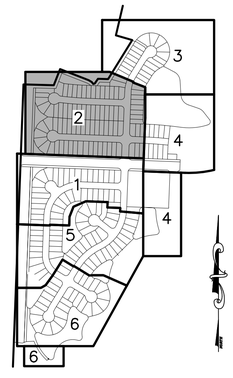
= UPLAND BUFFER

= WETLAND IMPACT

X / XX.X = LOT TYPE / F.F. EL.

30.5 = PROPOSED GRADE EL.

NORTH



KEYMAP
NTS

MATCHLINE SEE DWG NO. PD-3

MATCHLINE SEE DWG NO. PD-4

MATCHLINE SEE DWG NO. PD-1

LARK SPARROW STREET

LITTLE HERON PLACE

AUDUBON AVENUE

30'PERIMETER BUFFER TRACT

SILTFENCE @ ℄ (TYP)

OPEN SPACE TRACT

BENCHMARK:
SET N&D "BENCHMARK LB3624"
ELV = 33.86' (NAVD 1988)

373LF~ 6" U.D.

380LF~ 6" U.D.

358LF~ 6" U.D.

350LF~ 6" U.D.

363LF~ 6" U.D.

376LF~ 6" U.D.

20LF~ 6" U.D.

79LF~ 6" U.D.

56LF~ 6" U.D.

76LF~ 6" U.D.

50LF~ 6" U.D.

46LF~ 6" U.D.

DA=1.89Ac

DA=0.66Ac

DA=2.45Ac

DA=0.75Ac

DA=0.35Ac

DA=1.64Ac

DA=1.49Ac

DA=1.70Ac

DA=1.41Ac

DA=0.19Ac

10'GCS &CCUA ESMT

5'CCUA ESMT

10'MAINT. ESMT

C.O.

T.O.B.

25' U.A.D.E.

30' U.A.D.E. & FDAE

PROP 25'CCUA UTILITY ESMT

EXIST ELECTRIC ESMT

95' PERIMETER BUFFER TRACT

SILTFENCE @ TRACT LINE (TYP)

4:1 MIN. SIDE SLOPES FROM PROPOSED SIGN GRADES TO SURROUNDING EXIST GRADES

SWMF 1
TOB=33.8
25YR=32.08
3YR=30.86
NWL=29.0
BOT=23.0

CONTRACTOR NOTES:

1. THE CONTRACTOR SHALL PROVIDE A COPY OF THE DEP NPDES PERMIT AND SHALL INSTALL SILT FENCE PRIOR TO ANY CONSTRUCTION ACTIVITIES INCLUDING TREE REMOVAL. UPON COMPLETION OF SILT FENCE INSTALLATION CONTRACTOR SHALL NOTIFY ENGINEER OF RECORD TO SCHEDULE AN EROSION CONTROL INSPECTION.
2. THE CONTRACTOR IS RESPONSIBLE FOR PUBLIC WORKS VERIFYING THAT ALL INVERTS ARE PLACED PRIOR TO SURCHARGING THE DRAINAGE SYSTEM.
3. CONTRACTOR SHALL COMPLY WITH STORMWATER POLLUTION PREVENTION REQUIREMENTS SET FORTH IN ARTICLE II, CHAPTER 34 OF THE CITY LAND DEVELOPMENT REGULATIONS AND SPECIFICALLY, THE TEMPORARY EROSION/SEDIMENTATION CONTROLS SET FORTH IN SECTION 34-23.

Always call 811 two full business days before you dig
Sunshine811.com

RELEASED FOR CONSTRUCTION

THE ROOKERY – PHASE 1

P:\2008-499 AYRSHIRE\ENG PLANS\499 PD.DWG4/19/2023 8:11 AMMike Reilly

REVISIONS

NO.	DATE	DESCRIPTION	BY:
–	–	–	–

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 40'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1
FOR:
D.R. HORTON, INC. – JACKSONVILLE
CLAY COUNTY, FLORIDA
PAVING AND DRAINAGE PLAN

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 40 of 88

PD-2
DWG. NO.

CONTRACTOR NOTES:

1. THE CONTRACTOR SHALL PROVIDE A COPY OF THE DEP NPDES PERMIT AND SHALL INSTALL SILT FENCE PRIOR TO ANY CONSTRUCTION ACTIVITIES INCLUDING TREE REMOVAL. UPON COMPLETION OF SILT FENCE INSTALLATION CONTRACTOR SHALL NOTIFY ENGINEER OF RECORD TO SCHEDULE AN EROSION CONTROL INSPECTION.
2. THE CONTRACTOR IS RESPONSIBLE FOR PUBLIC WORKS VERIFYING THAT ALL INVERTS ARE PLACED PRIOR TO SURCHARGING THE DRAINAGE SYSTEM.
3. CONTRACTOR SHALL COMPLY WITH STORMWATER POLLUTION PREVENTION REQUIREMENTS SET FORTH IN ARTICLE II, CHAPTER 34 OF THE CITY LAND DEVELOPMENT REGULATIONS AND SPECIFICALLY, THE TEMPORARY EROSION/SEDIMENTATION CONTROLS SET FORTH IN SECTION 34-23.

GRAPHIC SCALE

40 0 40 40 80 160

(IN FEET)
1 inch = 40 ft.

LEGEND

= WETLANDS (FLAGGED)

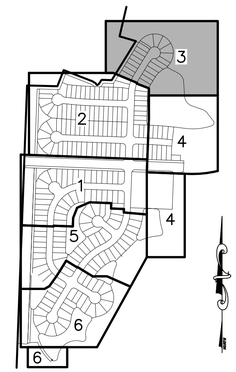
= UPLAND BUFFER

= WETLAND IMPACT

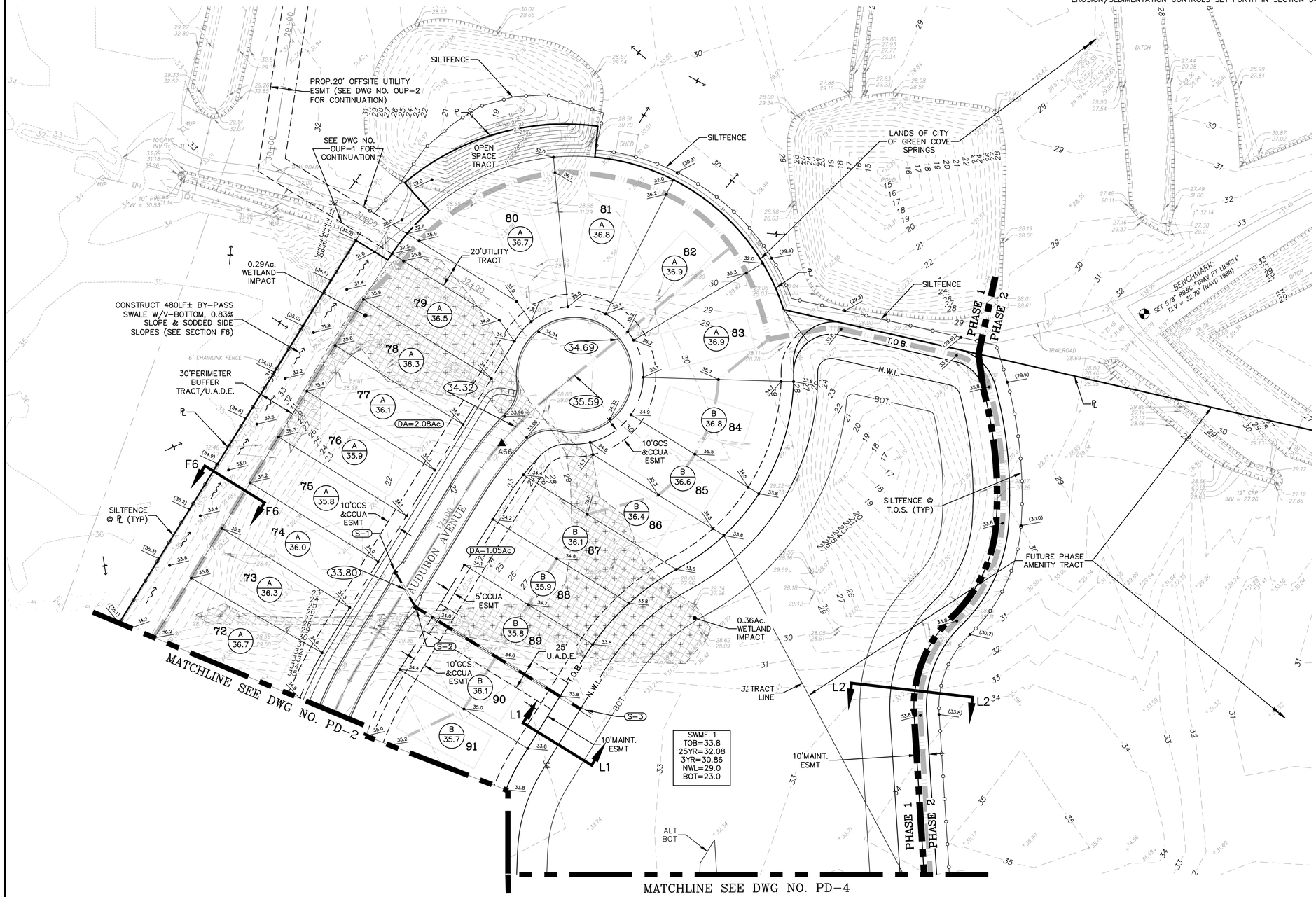
X / XX.X = LOT TYPE / F.F. EL.

30.5 = PROPOSED GRADE EL.

NORTH



KEYMAP
NTS



Always call 811 two full business days before you dig

Sunshine811.com

RELEASED FOR CONSTRUCTION

THE ROOKERY - PHASE 1

P:\2008-499 AYRSHIRE\ENG PLANS\499 PD.DWG4/19/2023 8:12 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
-	-	-	-

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 40'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY - PHASE 1

FOR:
D.R. HORTON, INC. - JACKSONVILLE

CLAY COUNTY, FLORIDA

PAVING AND DRAINAGE PLAN

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

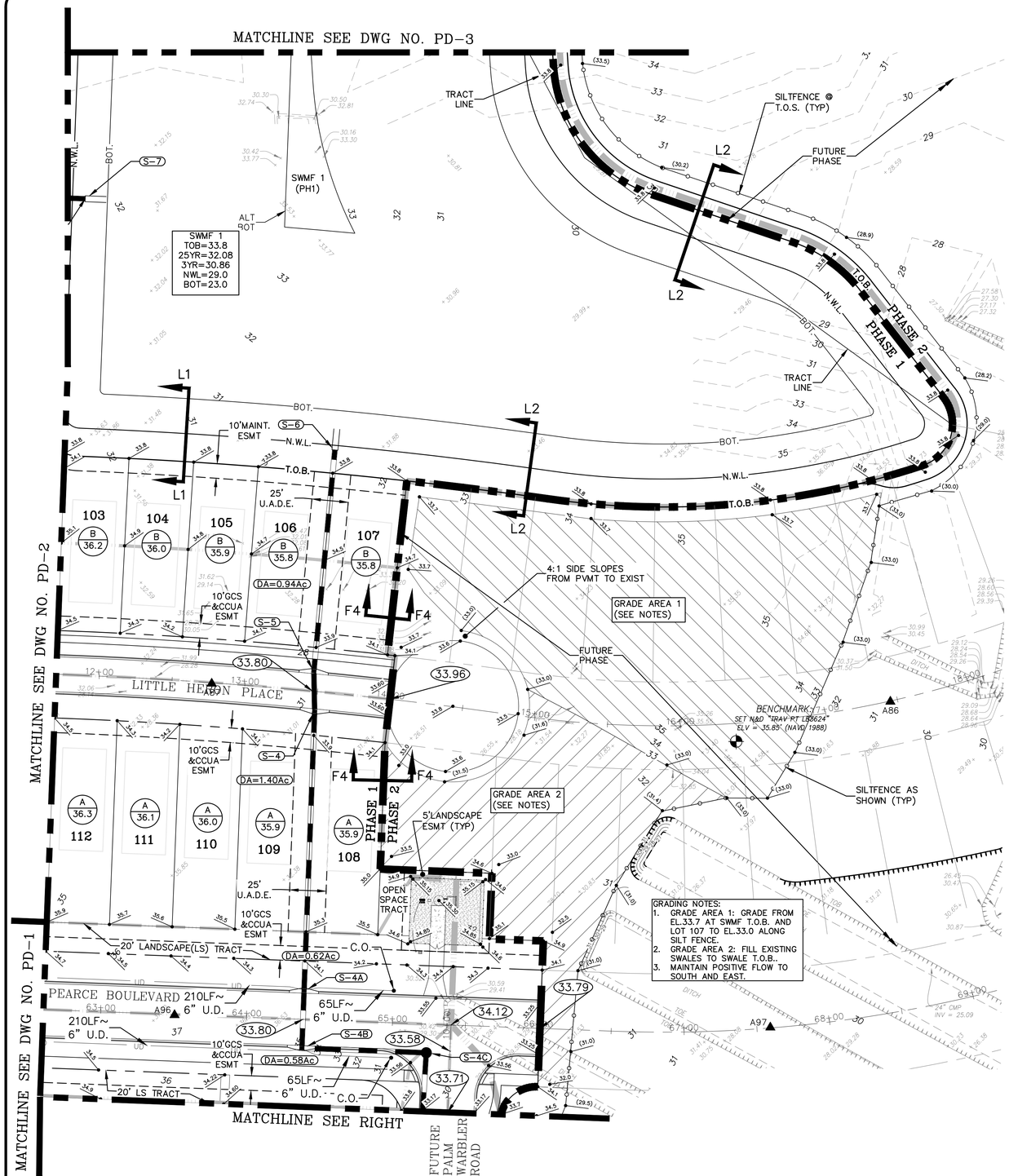
This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

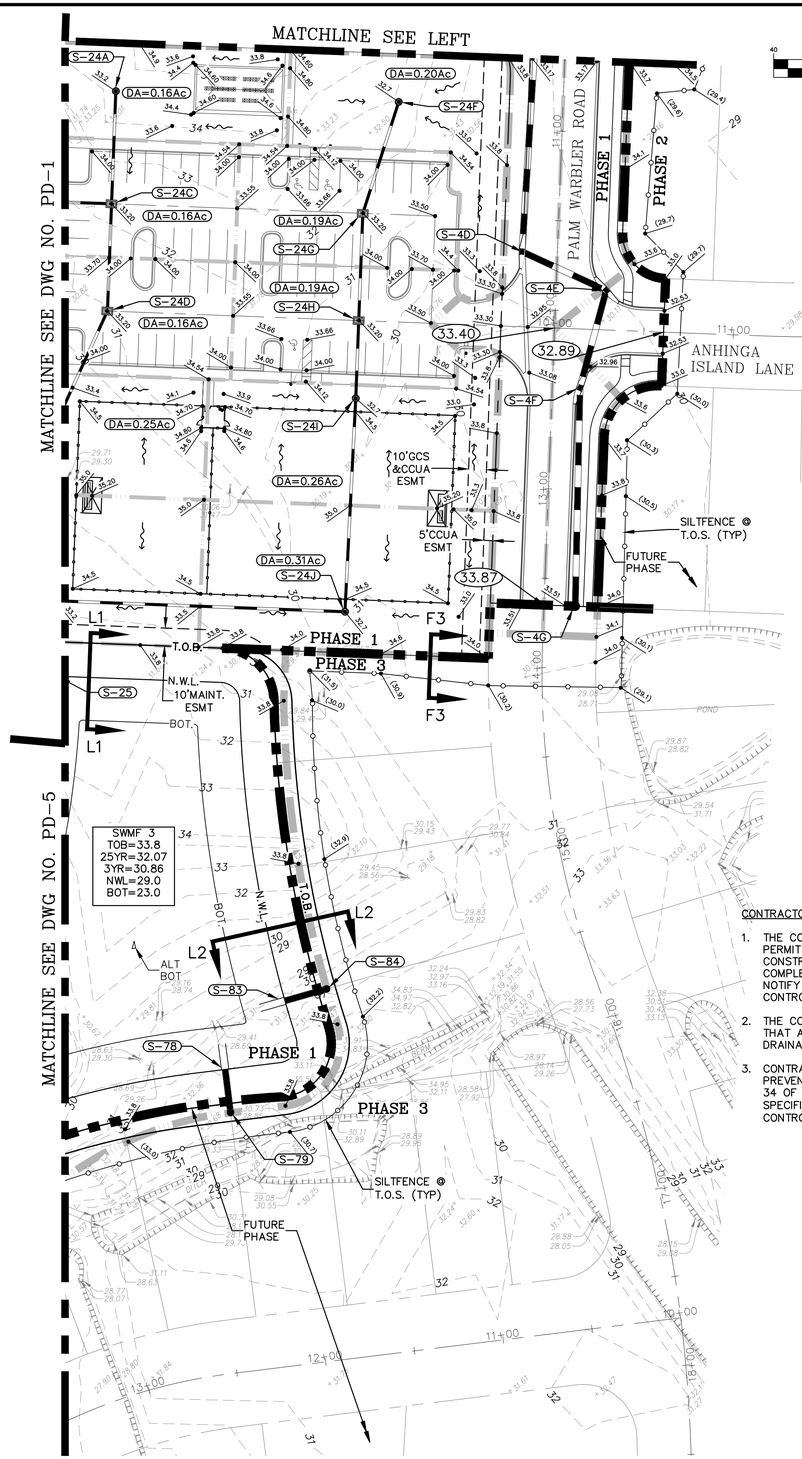
VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 41 of 88

PD-3

DWG. NO.





GRAPHIC SCALE

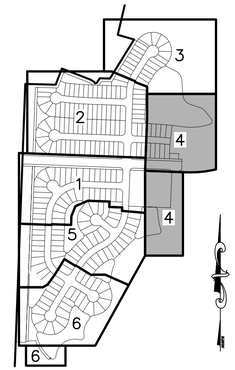
40 0 40 80 160

(IN FEET)
1 inch = 40 ft.

LEGEND

- = WETLANDS (FLAGGED)
- = UPLAND BUFFER
- = WETLAND IMPACT
- (X / XX.X) = LOT TYPE F.F. EL.
- 30.5 = PROPOSED GRADE EL.

NORTH



KEYMAP
NTS

CONTRACTOR NOTES:

1. THE CONTRACTOR SHALL PROVIDE A COPY OF THE DEP NPDES PERMIT AND SHALL INSTALL SILT FENCE PRIOR TO ANY CONSTRUCTION ACTIVITIES INCLUDING TREE REMOVAL. UPON COMPLETION OF SILT FENCE INSTALLATION CONTRACTOR SHALL NOTIFY ENGINEER OF RECORD TO SCHEDULE AN EROSION CONTROL INSPECTION.
2. THE CONTRACTOR IS RESPONSIBLE FOR PUBLIC WORKS VERIFYING THAT ALL INVERTS ARE PLACED PRIOR TO SURCHARGING THE DRAINAGE SYSTEM.
3. CONTRACTOR SHALL COMPLY WITH STORMWATER POLLUTION PREVENTION REQUIREMENTS SET FORTH IN ARTICLE II, CHAPTER 34 OF THE CITY LAND DEVELOPMENT REGULATIONS AND SPECIFICALLY, THE TEMPORARY EROSION/SEDIMENTATION CONTROLS SET FORTH IN SECTION 34-23.

Always call 811 two full business days before you dig

Sunshine811.com

THE ROOKERY - PHASE 1

RELEASED FOR CONSTRUCTION

P:\2008-499 AYRSHIRE\ENG PLANS\499 PD.DWG4/19/2023 8:13 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
–	–	–	–

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 40'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1

FOR:
D.R. HORTON, INC. – JACKSONVILLE

CLAY COUNTY, FLORIDA

PAVING AND DRAINAGE PLAN

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 42 of 88

PD-4

DWG. NO.

GRAPHIC SCALE

40 0 40 40 80 160

(IN FEET)
1 inch = 40 ft.

LEGEND

= WETLANDS (FLAGGED)

= UPLAND BUFFER

= WETLAND IMPACT

X / XX.X = LOT TYPE / F.F. EL.

30.5 = PROPOSED GRADE EL.

NORTH

THE ROOKERY – PHASE 1

MATCHLINE SEE DWG NO. PD–1

MATCHLINE SEE DWG NO. PD–4

MATCHLINE SEE DWG NO. PD–6

HORNED LARK COURT

AUDUBON AVENUE

WHITE IBIS LANE

PHASE 1

PHASE 3

FUTURE PHASE

SWMF 2
TOB=33.8
25YR=32.07
3YR=30.86
NWL=29.0
BOT=23.0

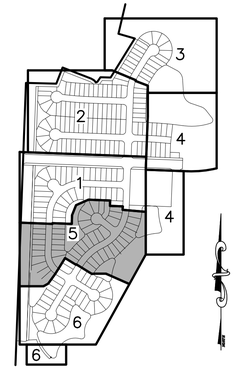
SWMF 3
TOB=33.8
25YR=32.07
3YR=30.86
NWL=29.0
BOT=23.0

SWMF 4
TOB=33.7(MIN)
25YR=32.06
3YR=30.86
NWL=29.0
BOT=23.0

SWMF 5
TOB=33.7
25YR=32.07
3YR=30.86
NWL=29.0
BOT=23.0

BENCHMARK:
SET N&D "TRAV PT LB3624"
ELV = 35.81' (NAVD 1988)

KEYMAP
NTS



CONTRACTOR NOTES:

1. THE CONTRACTOR SHALL PROVIDE A COPY OF THE DEP NPDES PERMIT AND SHALL INSTALL SILT FENCE PRIOR TO ANY CONSTRUCTION ACTIVITIES INCLUDING TREE REMOVAL. UPON COMPLETION OF SILT FENCE INSTALLATION CONTRACTOR SHALL NOTIFY ENGINEER OF RECORD TO SCHEDULE AN EROSION CONTROL INSPECTION.
2. THE CONTRACTOR IS RESPONSIBLE FOR PUBLIC WORKS VERIFYING THAT ALL INVERTS ARE PLACED PRIOR TO SURCHARGING THE DRAINAGE SYSTEM.
3. CONTRACTOR SHALL COMPLY WITH STORMWATER POLLUTION PREVENTION REQUIREMENTS SET FORTH IN ARTICLE II, CHAPTER 34 OF THE CITY LAND DEVELOPMENT REGULATIONS AND SPECIFICALLY, THE TEMPORARY EROSION/SEDIMENTATION CONTROLS SET FORTH IN SECTION 34–23.

Always call 811 two full business days before you dig

Sunshine811.com

RELEASED FOR CONSTRUCTION

P:\2008-499 AYRSHIRE\ENG PLANS\499 PD.DWG4/19/2023 8:15 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
–	–	–	–

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 40'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1

FOR:
D.R. HORTON, INC. – JACKSONVILLE

CLAY COUNTY, FLORIDA

PAVING AND DRAINAGE PLAN

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 43 of 88

PD–5

DWG. NO.

CONTRACTOR NOTES:

1. THE CONTRACTOR SHALL PROVIDE A COPY OF THE DEP NPDES PERMIT AND SHALL INSTALL SILT FENCE PRIOR TO ANY CONSTRUCTION ACTIVITIES INCLUDING TREE REMOVAL. UPON COMPLETION OF SILT FENCE INSTALLATION CONTRACTOR SHALL NOTIFY ENGINEER OF RECORD TO SCHEDULE AN EROSION CONTROL INSPECTION.
2. THE CONTRACTOR IS RESPONSIBLE FOR PUBLIC WORKS VERIFYING THAT ALL INVERTS ARE PLACED PRIOR TO SURCHARGING THE DRAINAGE SYSTEM.
3. CONTRACTOR SHALL COMPLY WITH STORMWATER POLLUTION PREVENTION REQUIREMENTS SET FORTH IN ARTICLE II, CHAPTER 34 OF THE CITY LAND DEVELOPMENT REGULATIONS AND SPECIFICALLY, THE TEMPORARY EROSION/SEDIMENTATION CONTROLS SET FORTH IN SECTION 34-23.

GRAPHIC SCALE

40 0 40 40 80 160

(IN FEET)
1 inch = 40 ft.

LEGEND

= WETLANDS (FLAGGED)
= UPLAND BUFFER
= WETLAND IMPACT
= WETLANDS (AERIAL INTERPRETATION)
X / XX.X = LOT TYPE / F.F. EL.
30.5 = PROPOSED GRADE EL.

NORTH

KEYMAP
NTS

MATCHLINE SEE DWG NO. PD-5

MATCHLINE SEE RIGHT

MATCHLINE SEE LEFT

SWMF 4
TOB=33.7(MIN)
25YR=32.06
3YR=30.86
NWL=29.0
BOT=23.0

SWMF 5
TOB=33.7
25YR=32.07
3YR=30.86
NWL=29.0
BOT=23.0

SWMF 6
TOB=33.7(MIN)
25YR=32.06
3YR=30.86
NWL=29.0
BOT=23.0

WHITE IBIS LANE

AUDUBON AVENUE

PHASE 1
PHASE 4

PHASE 1
PHASE 3

FUTURE PHASE

SILTFENCE @ T.O.S. (TYP)

SILTFENCE @ ESMT LINE (TYP)

CUT OFF WALL

ALT BOT

10'GCS &CCUA ESMT

10'MAINT. ESMT

25' U.A.D.E.

10'U.A.D.E.

PROP 25'CCUA UTILITY ESMT

EXIST ELECTRIC ESMT

95' PERIMETER BUFFER TRACT

OPEN SPACE TRACT

0.86Ac. WETLAND IMPACT

S.T.B. @ WETLAND

CONSTRUCT 340LF± BY-PASS SWALE W/V-BOTTOM, 0.18% SLOPE & SODDED SIDE SLOPES (SEE SECTION S1)

FOR CONTINUATION SEE DWG NO PD-7

FOR CONTINUATION SEE DWG NO PD-7

SILTFENCE AS SHOWN (TYP)

Always call 811 two full business days before you dig

Sunshine811.com

RELEASED FOR CONSTRUCTION

P:\2008-499 AYRSHIRE\ENG PLANS\499 PD.DWG4/19/2023 8:17 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
–	–	–	–

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 40'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1

FOR:
D.R. HORTON, INC. – JACKSONVILLE

CLAY COUNTY, FLORIDA

PAVING AND DRAINAGE PLAN

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

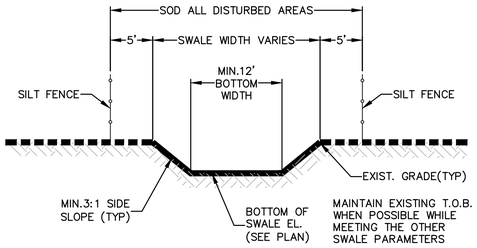
This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 44 of 88

PD-6

DWG. NO.



SWALE SECTION

EXISTING SWALE CLEAN AND REGRADE
N.T.S.

CONTRACTOR NOTES:

1. THE CONTRACTOR SHALL PROVIDE A COPY OF THE DEP NPDES PERMIT AND SHALL INSTALL SILT FENCE PRIOR TO ANY CONSTRUCTION ACTIVITIES INCLUDING TREE REMOVAL. UPON COMPLETION OF SILT FENCE INSTALLATION CONTRACTOR SHALL NOTIFY ENGINEER OF RECORD TO SCHEDULE AN EROSION CONTROL INSPECTION.
2. THE CONTRACTOR IS RESPONSIBLE FOR PUBLIC WORKS VERIFYING THAT ALL INVERTS ARE PLACED PRIOR TO SURCHARGING THE DRAINAGE SYSTEM.
3. CONTRACTOR SHALL COMPLY WITH STORMWATER POLLUTION PREVENTION REQUIREMENTS SET FORTH IN ARTICLE II, CHAPTER 34 OF THE CITY LAND DEVELOPMENT REGULATIONS AND SPECIFICALLY, THE TEMPORARY EROSION/SEDIMENTATION CONTROLS SET FORTH IN SECTION 34-23.

GRAPHIC SCALE

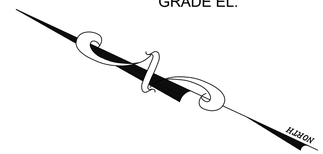
100 0 50 100 200 400

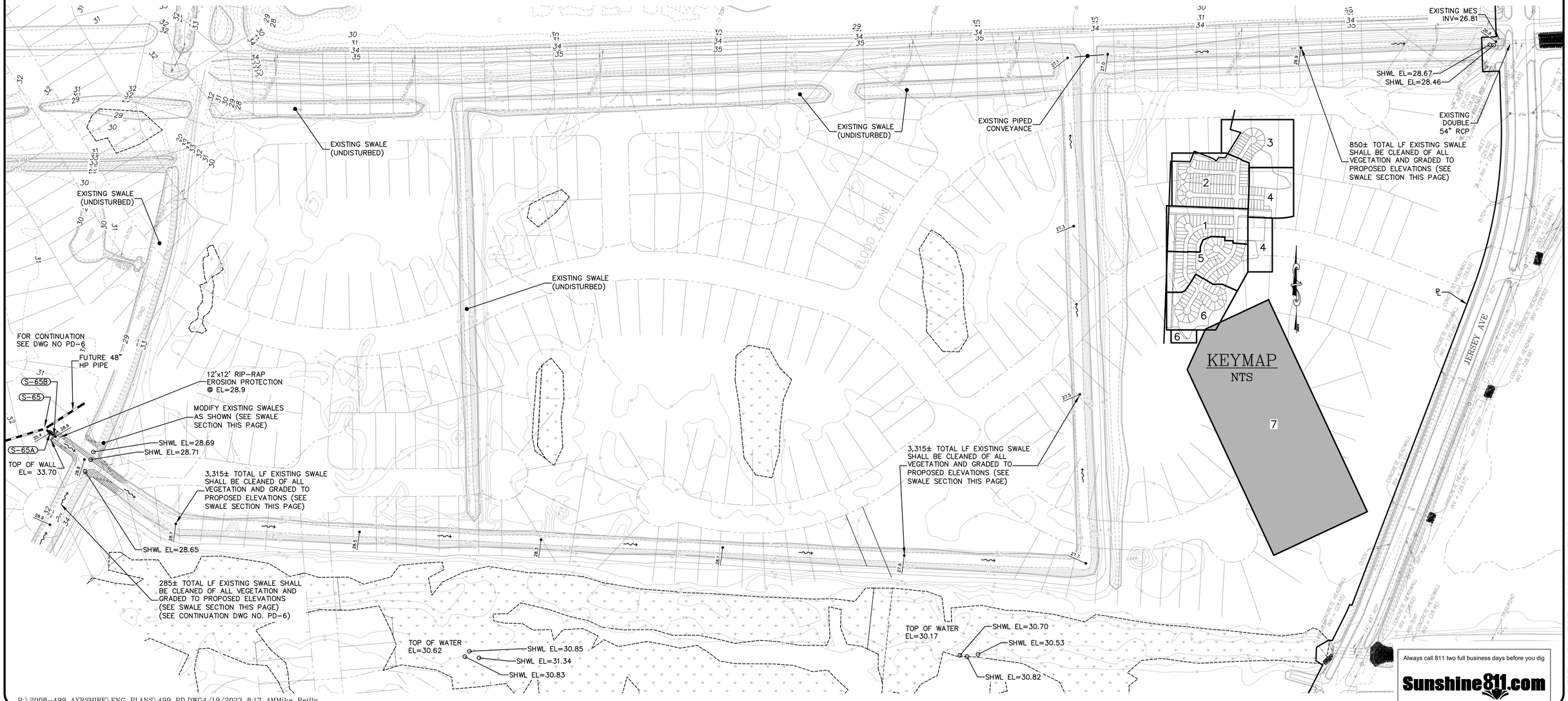
(IN FEET)
1 inch = 100 ft.

LEGEND

= WETLANDS (FLAGGED)

30.5 = PROPOSED GRADE EL.





Always call 811 two full business days before you dig
Sunshine811.com

P:\2008-499 AYRSHIRE\ENG PLANS\499 PD.DWG4/19/2023 8:17 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
–	–	–	–

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 100'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1

FOR:
D.R. HORTON, INC. – JACKSONVILLE

CLAY COUNTY, FLORIDA

PAVING AND DRAINAGE PLAN

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 45 of 88

PD-7

DWG. NO.

RELEASED FOR CONSTRUCTION

DRAINAGE STRUCTURE SCHEDULE				
STR NO.	STRUCT. TYPE	TOP EL.	INVERT EL. PIPES IN:	INVERT EL. PIPES OUT
S-1	D.C.I.	33.44		30.40 (SE)
S-2	C.I.	33.44	30.30 (NW)	27.50 (SE)
S-4	D.C.I.	33.44		26.00 (N) 26.00 (S)
S-4A	C.I.	33.26	26.00 (N)	26.00 (S)
S-4B	C.I.	33.26	26.00 (N)	26.00 (E)
S-4C	MH	33.74	26.00 (W)	26.00 (S)
S-4D	C.I.	32.73	26.00 (N)	26.00 (SE)
S-4E	C.I.	32.90	26.00 (NW)	26.00 (S)
S-4F	C.I.	32.90	26.00 (N)	26.00 (S)
S-4G	MH	33.90	26.00 (N)	26.00 (E)
S-5	C.I.	33.44	26.00 (S)	26.00 (N)
S-8	C.I.	34.57	24.50 (W)	24.50 (E)
S-9	C.I.	34.57		31.30 (S)
S-10	D.C.I.	34.96		31.70 (S)
S-11	C.I.	34.96	31.60 (N)	30.85 (E)
S-12	C.I.	34.57	31.20 (N) 30.40 (W)	24.50 (S) 24.50 (E)
S-13	MH	35.20	24.50 (N)	24.50 (S)
S-14	D.C.I.	34.38	24.50 (N)	24.50 (S)
S-15	D.C.I.	34.17	24.50 (N)	24.50 (S)
S-16	C.I.	33.75		30.05 (W)
S-17	C.I.	33.75	29.95 (E) 24.50 (N)	24.50 (S)

DRAINAGE STRUCTURE SCHEDULE				
STR NO.	STRUCT. TYPE	TOP EL.	INVERT EL. PIPES IN:	INVERT EL. PIPES OUT
S-18	D.C.I.	33.29	24.50 (N)	24.50 (S)
S-19	C.I.	33.20		29.00 (W)
S-20	C.I.	33.29	28.90 (E) 24.50 (N)	24.50 (S)
S-21	C.I.	33.41	24.50 (N)	24.50 (SE)
S-22	C.I.	33.41	24.50 (NW)	24.50 (E)
S-24	TYPE "C"	33.20	29.25 (N) 28.80 (E)	28.00 (S)
S-24A	18"x15" INLINE DRAIN	33.20		29.95 (S)
S-24B	18"x15" INLINE DRAIN	33.20		29.95 (E)
S-24C	TYPE "C"	33.20	29.80 (W) 29.80 (N)	29.80 (S)
S-24D	TYPE "C"	33.20	29.65 (N)	29.65 (SW)
S-24E	18"x15" DRAIN BASIN	33.20	29.50 (NE)	29.50 (S)
S-24F	18"x15" INLINE DRAIN	32.70		29.95 (S)
S-24G	TYPE "C"	33.20	29.80 (N)	29.80 (S)
S-24H	TYPE "C"	33.20	29.65 (N)	29.65 (S)
S-24I	18"x15" DRAIN BASIN	32.70	29.50 (N)	29.50 (S)
S-24J	18"x15" DRAIN BASIN	32.70	29.20 (N)	29.20 (W)
S-28	D.C.I.	35.64		33.00 (SW)
S-29	D.C.I.	35.64	32.90 (NE)	32.15 (S)
S-30	C.I.	35.76	31.75 (N)	31.75 (S)
S-31	C.I.	35.39		32.15 (S)
S-32	C.I.	35.39	32.05 (N)	31.80 (E)

DRAINAGE STRUCTURE SCHEDULE				
STR NO.	STRUCT. TYPE	TOP EL.	INVERT EL. PIPES IN:	INVERT EL. PIPES OUT
S-33	MH	37.40	31.20 (W)	31.20 (E)
S-34	C.I.	35.76	31.70 (N) 30.65 (W)	29.65 (S)
S-35	D.C.I.	34.34	29.40 (N)	29.40 (S)
S-36	C.I.	34.34	29.35 (N)	29.35 (S)
S-37	MH	33.90	28.90 (N)	26.60 (SW)
S-39	D.C.I.	34.34		31.55 (E)
S-40	C.I.	34.34	31.45 (W)	28.25 (E)
S-43	C.I.	33.44		29.25 (SW)
S-44	C.I.	33.44	29.15 (NE)	28.90 (SW)
S-45	MH	34.50	28.75 (NE)	28.75 (SW)
S-46	MH	34.00	25.00 (W) 28.50 (NE)	25.00 (SE)
S-47	C.I.	33.44	25.00 (NW)	25.00 (S)
S-48	C.I.	33.44	25.00 (N)	25.00 (SE)
S-53	C.I.	33.34	24.30 (NE) 26.75 (NW)	24.30 (SW)
S-53A	C.I.	33.25		30.05 (NE)
S-53B	C.I.	33.25	29.95 (SW)	29.70 (SE)
S-53C	C.I.	33.25		29.70 (NE)
S-53D	C.I.	33.25	29.60 (SW) 29.60 (NW)	27.00 (SE)
S-54	C.I.	33.34	24.30 (NE)	24.30 (SW)
S-56	C.I.	34.17		31.20 (SW)
S-57	C.I.	34.17	31.10 (NE)	31.10 (W)

DRAINAGE STRUCTURE SCHEDULE				
STR NO.	STRUCT. TYPE	TOP EL.	INVERT EL. PIPES IN:	INVERT EL. PIPES OUT
S-58	MH	35.80	30.70 (E)	28.00 (S)
S-61	C.I.	33.34	24.10 (NW)	24.10 (SE)
S-62	C.I.	33.34	24.10 (NW)	24.10 (SE)
S-65	MH	36.20	25.00 (NW)	25.00 (SE) 25.00 (S)
S-68	MH	33.90	27.55 (SE)	27.55 (NW)
S-71	MH	33.90	27.55 (SE)	27.55 (NW)
S-74	MH	33.90	26.50 (W)	26.50 (E)
S-79	MH	34.00	26.00 (N)	25.00 (S)
S-84	MH	34.00	26.00 (W)	25.00 (E)

C.I. = CURB INLET
D.C.I. = DOUBLE CURB INLET
T.C.I. = TRIPLE CURB INLET
MH = MANHOLE

NOTE 1: SEE DWG NO. PDD-5 FOR HDPE ANCHOR DETAIL
NOTE 2: SEE DWG NO. PDD-6 FOR CONTROL STRUCTURE DETAILS (S-65A AND S-J8)
NOTE 3: USE H-10 PEDESTRIAN RATED LOCKING GRATE ON ALL INLINE DRAINS AND DRAIN BASINS
NOTE 4: STRUCTURE S-65 PROVIDE KNOCKOUT FOR FUTURE 48" HP PIPE @ INV = 25.00 (SE)

MITERED END SECTION & HEADWALL SCHEDULE			
STR NO.	STRUCT. TYPE	INVERT EL. PIPES IN:	INVERT EL. PIPES OUT
S-3	M.E.S.(24")	27.00 (NW)	
S-6	M.E.S.(36")	26.00 (S)	
S-7	M.E.S.(36")	24.50 (W)	
S-23	M.E.S.(36")	24.50 (W)	
S-25	M.E.S.(18")	27.50 (N)	
S-38	M.E.S.(30")	26.50 (NE)	
S-41	M.E.S.(15")	27.75 (W)	
S-42	M.E.S.(48")		25.00 (E)
S-49	M.E.S.(48")	25.00 (NW)	
S-50	M.E.S.(36")		25.00 (SW)
S-51	M.E.S.(36")	25.00 (NE)	
S-52	M.E.S.(36")		24.30 (SW)
S-55	M.E.S.(36")	24.30 (NE)	
S-59	M.E.S.(15")	27.75 (N)	
S-60	M.E.S.(36")		24.10 (SE)
S-63	M.E.S.(36")	24.10 (NW)	
S-64	M.E.S.(48")		25.00 (SE)
S-65B	SAND/CEMENT HEADWALL (48")	28.90 (N)	
S-69	M.E.S.(18")	27.50 (SE)	
S-72	M.E.S.(18")	27.50 (SE)	
S-73	M.E.S.(30")		26.50 (E)
S-78	M.E.S.(36")		26.00 (S)
S-83	M.E.S.(36")		26.00 (E)
S-85	M.E.S.(18")		33.70 (S)
S-86	M.E.S.(18")	33.60 (N)	

NOTE 5: MITERED END SECTIONS GREATER THAN 36" ARE TO BE POUR-IN-PLACE (INCLUDING ERCP)

NOTE 6: PIPE S-85 - S-86 TO BE CLASS HE-III

NOTE 7: FOR STRUCTURES AND PIPES ALONG CR-15A ROADWAY IMPROVEMENTS SEE DWG NO. RI-2

NOTE 8: FOR STRUCTURES AND PIPES AROUND SWMF J1 SEE DWG NO. J1 & J2

PIPE SCHEDULE						
STRUCT. NO. TO STRUCT. NO.	LENGTH FT.	SIZE IN.	TYPE	UP STREAM EL.	DOWN STREAM EL.	SLOPE
S-1 - S-2	32	15	HP	30.40	30.30	0.32%
S-2 - S-3	155	24	HP	27.50	27.00	0.32%
S-4 - S-4A	191	36	HP	26.00	26.00	0.00%
S-4 - S-5	28	36	HP	26.00	26.00	0.00%
S-4A - S-4B	40	36	HP	26.00	26.00	0.00%
S-4B - S-4C	85	36	HP	26.00	26.00	0.00%
S-4C - S-4D	148	36	HP	26.00	26.00	0.00%
S-4D - S-4E	52	36	HP	26.00	26.00	0.00%
S-4E - S-4F	56	36	HP	26.00	26.00	0.00%
S-4F - S-4G	122	36	HP	26.00	26.00	0.00%
S-5 - S-6	152	36	HP	26.00	26.00	0.00%
S-8 - S-7	164	36	HP	24.50	24.50	0.00%
S-9 - S-12	42	15	HP	31.30	31.20	0.24%
S-10 - S-11	28	15	HP	31.70	31.60	0.36%
S-11 - S-12	358	24	HP	30.85	30.40	0.13%
S-12 - S-8	39	36	HP	24.50	24.50	0.00%
S-12 - S-13	31	36	HP	24.50	24.50	0.00%
S-13 - S-14	265	36	HP	24.50	24.50	0.00%
S-14 - S-15	67	36	HP	24.50	24.50	0.00%
S-15 - S-17	140	36	HP	24.50	24.50	0.00%
S-16 - S-17	40	15	HDPE	30.05	29.95	0.25%
S-17 - S-18	225	36	HP	24.50	24.50	0.00%
S-18 - S-20	66	36	HP	24.50	24.50	0.00%
S-19 - S-20	33	15	HDPE	29.00	28.90	0.30%
S-20 - S-21	231	36	HP	24.50	24.50	0.00%
S-21 - S-22	33	36	HP	24.50	24.50	0.00%
S-22 - S-23	152	36	HP	24.50	24.50	0.00%

PIPE SCHEDULE						
STRUCT. NO. TO STRUCT. NO.	LENGTH FT.	SIZE IN.	TYPE	UP STREAM EL.	DOWN STREAM EL.	SLOPE
S-24 - S-25	42	18	HP	28.00	27.50	1.17%
S-24A - S-24C	63	15	HP	29.95	29.80	0.23%
S-24B - S-24C	46	15	HP	29.95	29.80	0.33%
S-24C - S-24D	60	15	HP	29.80	29.65	0.24%
S-24D - S-24E	62	15	HP	29.65	29.50	0.25%
S-24E - S-24	106	15	HP	29.50	29.25	0.24%
S-24F - S-24G	65	15	HP	29.95	29.80	0.23%
S-24G - S-24H	60	15	HP	29.80	29.65	0.25%
S-24H - S-24I	44	15	HP	29.65	29.50	0.34%
S-24I - S-24J	120	15	HP	29.50	29.20	0.25%
S-24J - S-24	162	15	HP	29.20	28.80	0.25%
S-28 - S-29	31	15	HP	33.00	32.90	0.32%
S-29 - S-30	196	24	HP	32.15	31.75	0.20%
S-30 - S-34	41	24	HP	31.75	31.70	0.12%
S-31 - S-32	40	15	HP	32.15	32.05	0.25%
S-32 - S-33	200	18	HP	31.80	31.20	0.30%
S-33 - S-34	184	18	HP	31.20	30.65	0.30%
S-34 - S-35	176	30	HP	29.65	29.40	0.14%
S-35 - S-36	28	30	HP	29.40	29.35	0.18%
S-36 - S-37	136	30	HP	29.35	28.90	0.33%
S-37 - S-38	19	30	HP	26.60	26.50	0.53%
S-39 - S-40	30	15	HP	31.55	31.45	0.33%
S-40 - S-41	152	15	HP	28.25	27.75	0.33%
S-42 - S-46	49	48	HP	25.00	25.00	0.00%
S-43 - S-44	28	15	HP	29.25	29.15	0.36%
S-44 - S-45	65	18	HP	28.90	28.75	0.23%
S-45 - S-46	114	18	HP	28.75	28.50	0.22%

PIPE SCHEDULE						
STRUCT. NO. TO STRUCT. NO.	LENGTH FT.	SIZE IN.	TYPE	UP STREAM EL.	DOWN STREAM EL.	SLOPE
S-46 - S-47	145	48	HP	25.00	25.00	0.00%
S-47 - S-48	29	48	HP	25.00	25.00	0.00%
S-48 - S-49	168	48	HP	25.00	25.00	0.00%
S-50 - S-51	323	36	HP	25.00	25.00	0.00%
S-52 - S-53	163	36	HP	24.30	24.30	0.00%
S-53 - S-54	28	36	HP	24.30	24.30	0.00%
S-53A - S-53B	44	15	HP	30.05	29.95	0.23%
S-53B - S-53D	53	18	HP	29.70	29.60	0.19%
S-53C - S-53D	40	15	HP	29.70	29.60	0.25%
S-53D - S-53	167	24	HP	27.00	26.75	0.15%
S-54 - S-55	179	36	HP	24.30	24.30	0.00%
S-56 - S-57	33	15	HP	31.20	31.10	0.30%
S-57 - S-58	152	15	HP	31.10	30.70	0.26%
S-58 - S-59	82	15	HP	28.00	27.75	0.31%
S-60 - S-61	156	36	HP	24.10	24.10	0.00%
S-61 - S-62	29	36	HP	24.10	24.10	0.00%
S-62 - S-63	165	36	HP	24.10	24.10	0.00%
S-64 - S-65	156	48	HP	25.00	25.00	0.00%
S-65 - S-65A	15	48	HP	25.00	25.00	0.00%
S-65A - S-65B	10	48	HP	28.95	28.90	0.52%
S-68 - S-69	24	18	HP	27.55	27.50	0.21%
S-71 - S-72	24	18	HP	27.55	27.50	0.21%
S-73 - S-74	24	30	HP	26.50	26.50	0.00%
S-78 - S-79	24	36	HP	26.00	26.00	0.00%
S-83 - S-84	24	36	HP	26.00	26.00	0.00%
S-85 - S-86	42	12 x 18	ERCP	33.70	33.60	0.24%

RELEASED FOR CONSTRUCTION

P:\2008-499 AYRSHIRE\ENG PLANS\499 PD.DWG4/19/2023 8:17 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
–	–	–	–

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	N.T.S.
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1
FOR:
D.R. HORTON, INC. – JACKSONVILLE
CLAY COUNTY, FLORIDA
DRAINAGE STRUCTURE TABLES

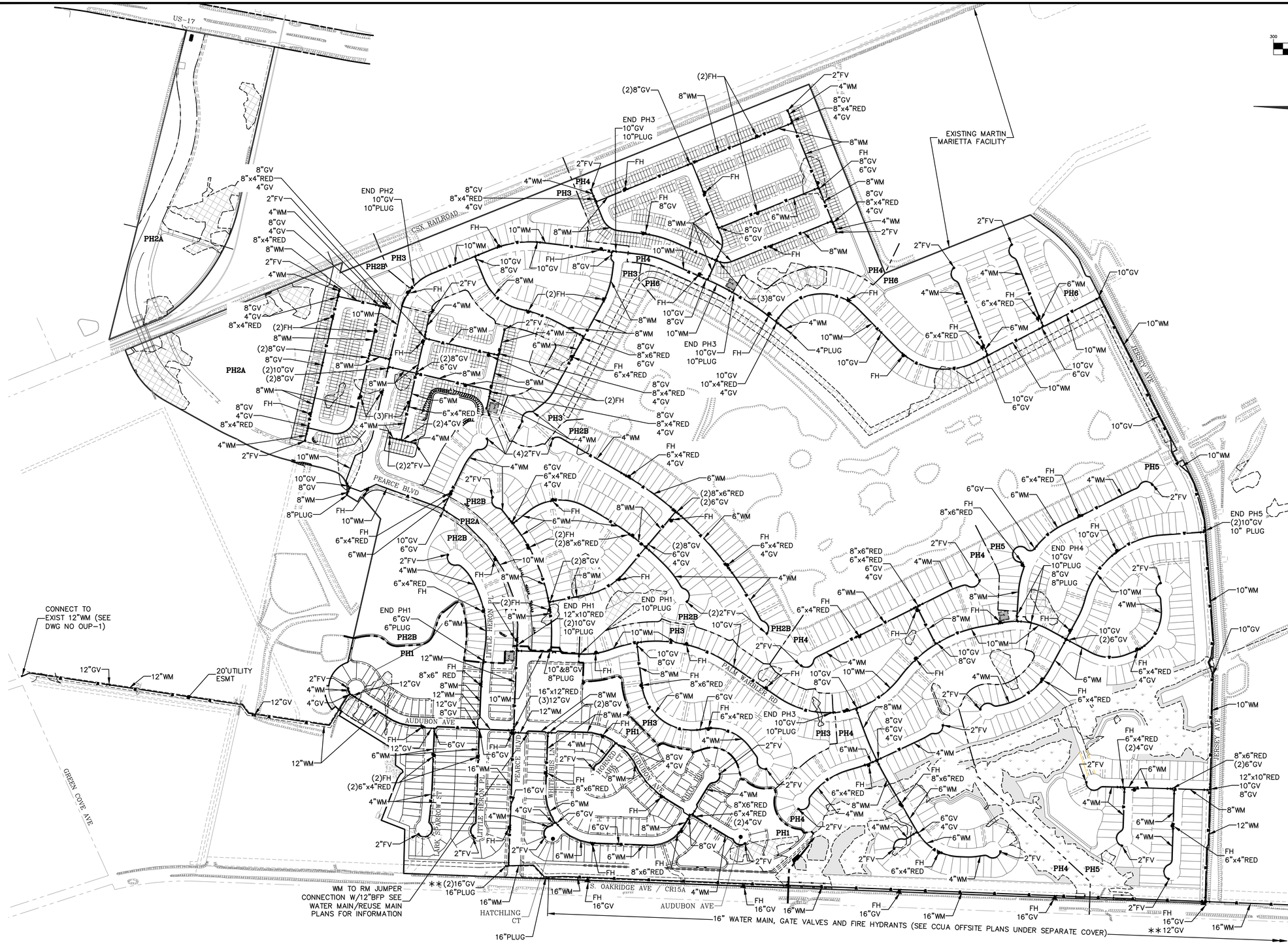
VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 46 of 88

DST-1
DWG. NO.



GRAPHIC SCALE

300 0 150 300 600 1200

(IN FEET)
1 inch = 300 ft.

LEGEND

= WETLANDS (FLAGGED)

= WETLANDS (AERIAL INTERPRETATION)

= UPLAND BUFFER

= WETLAND IMPACT

FH = FIRE HYDRANT ASSEMBLY
WM = WATER MAIN
GV = GATE VALVE
RED = REDUCER

** NOTE: A PRESSURE REDUCING VALVE WILL BE NEEDED ON WATER MAIN AT THE PROJECT ENTRANCE/ CONNECTION POINTS

MASTER WATER PLAN DEPICTS OVERALL WATER MAIN LOCATION & SIZE, VALVE & FIRE HYDRANT LOCATIONS & GENERAL INFORMATION. FOR PHASE 1 DETAILED INFORMATION SEE WATER AND REUSE PLANS. FUTURE PHASE DETAILED INFORMATION WILL BE PROVIDED AT THE TIME OF SUBMITTAL.

Always call 811 two full business days before you dig

Sunshine811.com

THE ROOKERY – PHASE 1

RELEASED FOR CONSTRUCTION

P:\2008-499 AYRSHIRE\ENG PLANS\499 MWP.DWG4/19/2023 8:18 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
–	–	–	–

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 300'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1

FOR:
D.R. HORTON, INC. – JACKSONVILLE

CLAY COUNTY, FLORIDA

MASTER WATER PLAN

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

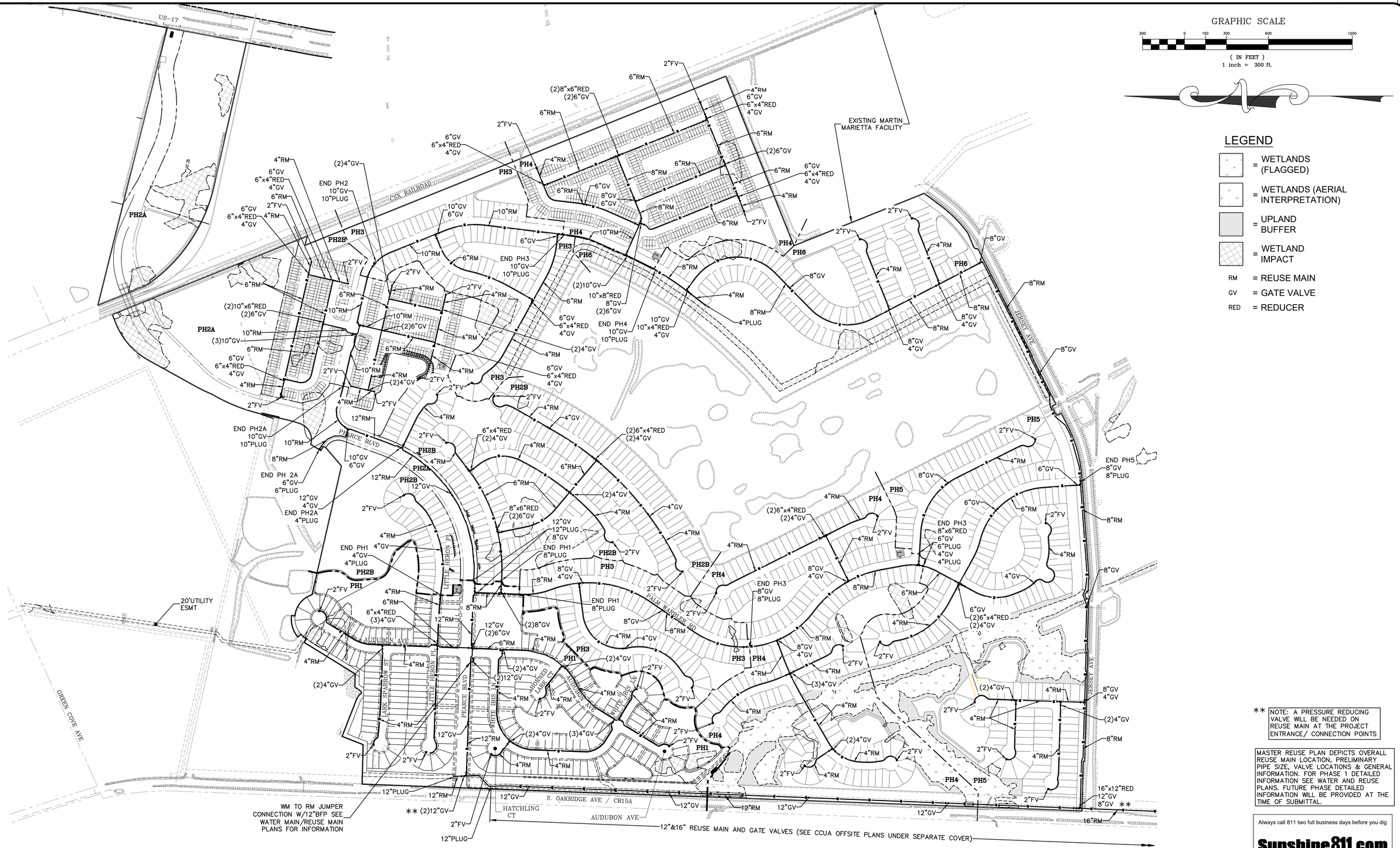
This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 47 of 88

MWP–1

DWG. NO.



GRAPHIC SCALE

300 0 150 300 600 1200

(IN FEET)
1 inch = 300 ft.

LEGEND

- = WETLANDS (FLAGGED)
- = WETLANDS (AERIAL INTERPRETATION)
- = UPLAND BUFFER
- = WETLAND IMPACT

RM = REUSE MAIN
GV = GATE VALVE
RED = REDUCER

** NOTE: A PRESSURE REDUCING VALVE WILL BE NEEDED ON REUSE MAIN AT THE PROJECT ENTRANCE/ CONNECTION POINTS

MASTER REUSE PLAN DEPICTS OVERALL REUSE MAIN LOCATION, PRELIMINARY PIPE SIZE, VALVE LOCATIONS & GENERAL INFORMATION. FOR PHASE 1 DETAILED INFORMATION SEE WATER AND REUSE PLANS. FUTURE PHASE DETAILED INFORMATION WILL BE PROVIDED AT THE TIME OF SUBMITTAL.

Always call 811 two full business days before you dig
Sunshine811.com

THE ROOKERY – PHASE 1

RELEASED FOR CONSTRUCTION

P:\2008-499 AYRSHIRE\ENG PLANS\499 MRP.DWG4/19/2023 8:18 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
–	–	–	–

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 300'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1

FOR:
D.R. HORTON, INC. – JACKSONVILLE

CLAY COUNTY, FLORIDA

MASTER REUSE PLAN

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 48 of 88

MRP-1

DWG. NO.

GRAPHIC SCALE

40 0 40 80 160

(IN FEET)
1 inch = 40 ft.

LEGEND

= WETLANDS (FLAGGED)

= UPLAND BUFFER

= WETLAND IMPACT

SP-1 = SAMPLE POINT

NORTH

MATCHLINE SEE DWG NO. WR-2

MATCHLINE SEE DWG NO. WR-4

MATCHLINE SEE DWG NO. WR-5

MATCHLINE SEE DWG NO. WR-5

PEARCE BOULEVARD

HATCHLING COURT

WHITE IBIS LANE

AUDUBON AVENUE

20' LANDSCAPE(LS) TRACT

30' U.A.D.E. & FDAE

10'GCS &CCUA ESMT

20' LS TRACT

OPEN SPACE TRACT

PROP.25'CCUA UTILITY ESMT

95' PERIMETER BUFFER TRACT

EXIST ELECTRIC ESMT

3.00 AC AMENITY TRACT

10'MAINT. ESMT

SWMF 2

T.O.B.

KEYMAP

NTS

UTILITY CROSSING LEGEND

(1) = CONSTRUCT REUSE MAIN BELOW WATER MAIN - MAINTAIN 12" SEPARATION

(2) = CONSTRUCT FORCE MAIN BELOW WATER MAIN OR REUSE MAIN- MAINTAIN 12" SEPARATION

(A) = CONSTRUCT MAIN 6" ABOVE(MIN)/12" ABOVE (PREFERRED) OUTSIDE WALL OF SEWER/STORM PIPE IN ACCORDANCE W/CCUA

(B) = CONSTRUCT MAIN 12" BELOW OUTSIDE WALL OF SEWER/STORM PIPE IN ACCORDANCE W/CCUA

(C) = MAINTAIN VERTICAL AND HORIZONTAL SEPARATION IN ACCORDANCE W/CCUA

Always call 811 two full business days before you dig

Sunshine811.com

NOTE:
NO SIDEWALK SHALL BE CONSTRUCTED OVER GATE VALVES. MEANDER SIDEWALKS AS NECESSARY TO AVOID CONFLICTS. FIRE HYDRANTS TO BE LOCATED IN ACCORDANCE W/CCUA. MEANDER SIDEWALKS WITHIN R/W TO AVOID CONFLICTS. SIDEWALK WIDTH AT FIRE HYDRANTS CAN BE REDUCED TO 3'MIN TO AVOID CONFLICTS.

NOTES:

1. WATER MAIN, REUSE MAIN AND FORCE MAIN TO BE INSTALLED WITH TRACER WIRE, SEE DETAIL DWG. NO. WD-5.
2. THE MINIMUM COVER OVER TOP OF WATER MAIN SHALL BE 36".
3. THE MINIMUM COVER OVER TOP OF REUSE MAIN SHALL BE 48".
4. FOR UTILITIES (CLAY ELECTRIC, BELL SOUTH & CABLE, T.V.) LOCATIONS SEE DETAILS 50' R/W AND 60' R/W DWG. NO. UTC-2.
5. IN LOCATIONS WHERE WATER MAIN (WM) & REUSE MAIN (RM) CROSS, IF RM MUST BE ABOVE WM MAINTAIN 18" MIN VERTICAL SEPARATION.
6. IN LOCATIONS WHERE WATER MAIN (WM) IS NEAR STORM PIPES OR STRUCTURES MAINTAIN 3' MIN HORIZONTAL CLEARANCE BETWEEN THEM WITH BENDS OR DEFLECTION AS DEPICTED.
7. IN LOCATIONS WHERE WATER MAIN (WM) IS NEAR SANITARY PIPES OR STRUCTURES MAINTAIN 6' MIN HORIZONTAL CLEARANCE BETWEEN THEM WITH BENDS OR DEFLECTION AS DEPICTED.
8. IN LOCATIONS WHERE REUSE MAIN (RM) IS NEAR STORM OR SANITARY PIPES OR STRUCTURES MAINTAIN 3' MIN HORIZONTAL CLEARANCE BETWEEN THEM WITH BENDS OR DEFLECTION AS DEPICTED.
9. NO SIDEWALK SHALL BE CONSTRUCTED OVER GATE VALVES. CONSTRUCT SIDEWALK TO AVOID GATE VALVES.
10. POTABLE WATER AND REUSE MAINS TO BE PLACED AS CLOSE AS POSSIBLE TO CENTER OF SIDEWALK.
11. WATER/REUSE METERS MUST BE LOCATED IN THE R/W OR UTILITY EASEMENT OUTSIDE OF THE SIDEWALK & DRIVEWAY.
12. FOR WATER AND REUSE MAINS – A&B CROSSINGS & FITTINGS SHALL NOT BE LOCATED UNDER PAVEMENT.
13. WATER & REUSE MAIN VALVES & VALVE BOXES SHALL NOT BE LOCATED WITHIN THE PAVEMENT.
14. FIRE HYDRANTS ARE TO BE LOCATED AT THE PROPERTY LINE.
15. WATER MAIN SHALL BE 5.5' FROM PROPERTY LINE TO NEAREST POINT OF THE MAIN.
16. MAINTAIN 10' MIN. BETWEEN WATER AND RECLAIMED SERVICES/ METER BOXES.

RELEASED FOR CONSTRUCTION

P:\2008-499 AYRSHIRE\ENG PLANS\499 WR.DWG4/19/2023 8:19 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
–	–	–	–

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 40'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1

FOR:
D.R. HORTON, INC. – JACKSONVILLE

CLAY COUNTY, FLORIDA

WATER AND REUSE PLAN

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 49 of 88

WR-1

DWG. NO.

Always call 811 two full business days before you dig

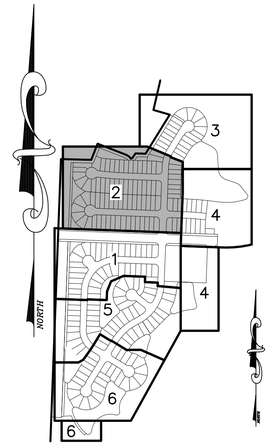
Sunshine811.com

NOTE:
NO SIDEWALK SHALL BE CONSTRUCTED OVER GATE VALVES. MEANDER SIDEWALKS AS NECESSARY TO AVOID CONFLICTS. FIRE HYDRANTS TO BE LOCATED IN ACCORDANCE W/CCUA. MEANDER SIDEWALKS WITHIN R/W TO AVOID CONFLICTS. SIDEWALK WIDTH AT FIRE HYDRANTS CAN BE REDUCED TO 3'MIN TO AVOID CONFLICTS.

GRAPHIC SCALE
40 0 40 80 160
(IN FEET)
1 inch = 40 ft.

LEGEND

= WETLANDS (FLAGGED)
= UPLAND BUFFER
= WETLAND IMPACT
SP-1 = SAMPLE POINT



KEYMAP
NTS

UTILITY CROSSING LEGEND

1 = CONSTRUCT REUSE MAIN BELOW WATER MAIN - MAINTAIN 12" SEPARATION
2 = CONSTRUCT FORCE MAIN BELOW WATER MAIN OR REUSE MAIN- MAINTAIN 12" SEPARATION
A = CONSTRUCT MAIN 6" ABOVE(MIN)/12" ABOVE (PREFERRED) OUTSIDE WALL OF SEWER/STORM PIPE IN ACCORDANCE W/CCUA
B = CONSTRUCT MAIN 12" BELOW OUTSIDE WALL OF SEWER/STORM PIPE IN ACCORDANCE W/CCUA
C = MAINTAIN VERTICAL AND HORIZONTAL SEPARATION IN ACCORDANCE W/CCUA

NOTES:

1. WATER MAIN, REUSE MAIN AND FORCE MAIN TO BE INSTALLED WITH TRACER WIRE, SEE DETAIL DWG. NO. WD-5.
2. THE MINIMUM COVER OVER TOP OF WATER MAIN SHALL BE 36".
3. THE MINIMUM COVER OVER TOP OF REUSE MAIN SHALL BE 48".
4. FOR UTILITIES (CLAY ELECTRIC, BELL SOUTH & CABLE, T.V.) LOCATIONS SEE DETAILS 50' R/W AND 60' R/W DWG. NO. UTC-2.
5. IN LOCATIONS WHERE WATER MAIN (WM) & REUSE MAIN (RM) CROSS, IF RM MUST BE ABOVE WM MAINTAIN 18" MIN VERTICAL SEPARATION.
6. IN LOCATIONS WHERE WATER MAIN (WM) IS NEAR STORM PIPES OR STRUCTURES MAINTAIN 3' MIN HORIZONTAL CLEARANCE BETWEEN THEM WITH BENDS OR DEFLECTION AS DEPICTED.
7. IN LOCATIONS WHERE WATER MAIN (WM) IS NEAR SANITARY PIPES OR STRUCTURES MAINTAIN 6' MIN HORIZONTAL CLEARANCE BETWEEN THEM WITH BENDS OR DEFLECTION AS DEPICTED.
8. IN LOCATIONS WHERE REUSE MAIN (RM) IS NEAR STORM OR SANITARY PIPES OR STRUCTURES MAINTAIN 3' MIN HORIZONTAL CLEARANCE BETWEEN THEM WITH BENDS OR DEFLECTION AS DEPICTED.
9. NO SIDEWALK SHALL BE CONSTRUCTED OVER GATE VALVES. CONSTRUCT SIDEWALK TO AVOID GATE VALVES.
10. POTABLE WATER AND REUSE MAINS TO BE PLACED AS CLOSE AS POSSIBLE TO CENTER OF SIDEWALK.
11. WATER/REUSE METERS MUST BE LOCATED IN THE R/W OR UTILITY EASEMENT OUTSIDE OF THE SIDEWALK & DRIVEWAY.
12. FOR WATER AND REUSE MAINS – A&B CROSSINGS & FITTINGS SHALL NOT BE LOCATED UNDER PAVEMENT.
13. WATER & REUSE MAIN VALVES & VALVE BOXES SHALL NOT BE LOCATED WITHIN THE PAVEMENT.
14. FIRE HYDRANTS ARE TO BE LOCATED AT THE PROPERTY LINE.
15. WATER MAIN SHALL BE 5.5' FROM PROPERTY LINE TO NEAREST POINT OF THE MAIN.
16. MAINTAIN 10' MIN. BETWEEN WATER AND RECLAIMED SERVICES/ METER BOXES.

MATCHLINE SEE DWG NO. WR-3
MATCHLINE SEE DWG NO. WR-4
MATCHLINE SEE DWG NO. WR-1

P:\2008-499 AYRSHIRE\ENG PLANS\499 WR.DWG4/19/2023 8:19 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
–	–	–	–

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 40'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1

FOR:
D.R. HORTON, INC. – JACKSONVILLE

CLAY COUNTY, FLORIDA

WATER AND REUSE PLAN

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 50 of 88

WR-2

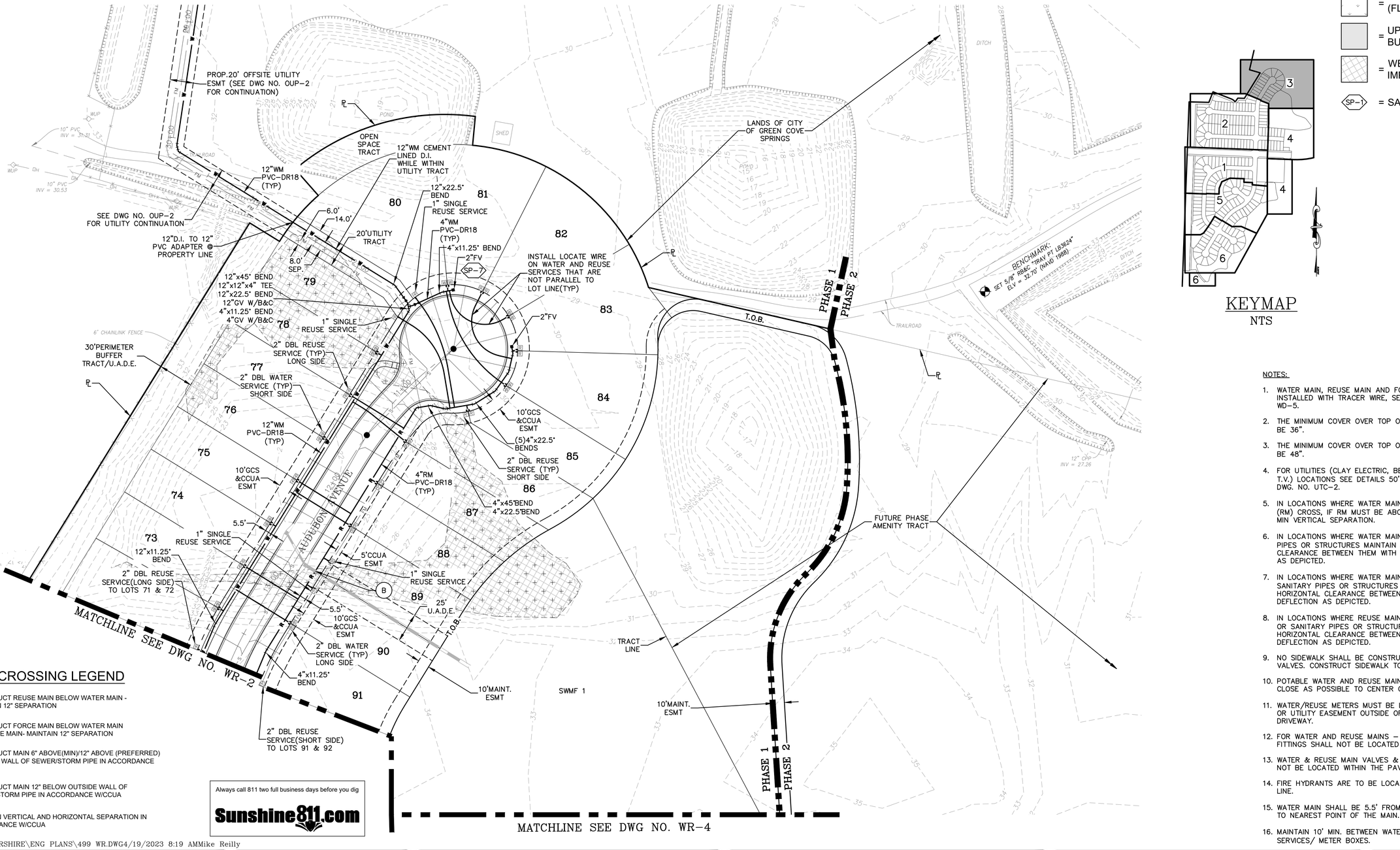
DWG. NO.

THE ROOKERY – PHASE 1

RELEASED FOR CONSTRUCTION

NOTE:
NO SIDEWALK SHALL BE CONSTRUCTED OVER GATE VALVES. MEANDER SIDEWALKS AS NECESSARY TO AVOID CONFLICTS. FIRE HYDRANTS TO BE LOCATED IN ACCORDANCE W/CCUA. MEANDER SIDEWALKS WITHIN R/W TO AVOID CONFLICTS. SIDEWALK WIDTH AT FIRE HYDRANTS CAN BE REDUCED TO 3'MIN TO AVOID CONFLICTS.

GRAPHIC SCALE
40 0 40 40 80 160
(IN FEET)
1 inch = 40 ft.



UTILITY CROSSING LEGEND

(1) = CONSTRUCT REUSE MAIN BELOW WATER MAIN - MAINTAIN 12" SEPARATION

(2) = CONSTRUCT FORCE MAIN BELOW WATER MAIN OR REUSE MAIN- MAINTAIN 12" SEPARATION

(A) = CONSTRUCT MAIN 6" ABOVE(MIN)/12" ABOVE (PREFERRED) OUTSIDE WALL OF SEWER/STORM PIPE IN ACCORDANCE W/CCUA

(B) = CONSTRUCT MAIN 12" BELOW OUTSIDE WALL OF SEWER/STORM PIPE IN ACCORDANCE W/CCUA

(C) = MAINTAIN VERTICAL AND HORIZONTAL SEPARATION IN ACCORDANCE W/CCUA

Always call 811 two full business days before you dig
Sunshine811.com

LEGEND

= WETLANDS (FLAGGED)
= UPLAND BUFFER
= WETLAND IMPACT
SP-1 = SAMPLE POINT

KEYMAP
NTS

NOTES:

1. WATER MAIN, REUSE MAIN AND FORCE MAIN TO BE INSTALLED WITH TRACER WIRE, SEE DETAIL DWG. NO. WD-5.
2. THE MINIMUM COVER OVER TOP OF WATER MAIN SHALL BE 36".
3. THE MINIMUM COVER OVER TOP OF REUSE MAIN SHALL BE 48".
4. FOR UTILITIES (CLAY ELECTRIC, BELL SOUTH & CABLE, T.V.) LOCATIONS SEE DETAILS 50' R/W AND 60' R/W DWG. NO. UTC-2.
5. IN LOCATIONS WHERE WATER MAIN (WM) & REUSE MAIN (RM) CROSS, IF RM MUST BE ABOVE WM MAINTAIN 18" MIN VERTICAL SEPARATION.
6. IN LOCATIONS WHERE WATER MAIN (WM) IS NEAR STORM PIPES OR STRUCTURES MAINTAIN 3' MIN HORIZONTAL CLEARANCE BETWEEN THEM WITH BENDS OR DEFLECTION AS DEPICTED.
7. IN LOCATIONS WHERE WATER MAIN (WM) IS NEAR SANITARY PIPES OR STRUCTURES MAINTAIN 6' MIN HORIZONTAL CLEARANCE BETWEEN THEM WITH BENDS OR DEFLECTION AS DEPICTED.
8. IN LOCATIONS WHERE REUSE MAIN (RM) IS NEAR STORM OR SANITARY PIPES OR STRUCTURES MAINTAIN 3' MIN HORIZONTAL CLEARANCE BETWEEN THEM WITH BENDS OR DEFLECTION AS DEPICTED.
9. NO SIDEWALK SHALL BE CONSTRUCTED OVER GATE VALVES. CONSTRUCT SIDEWALK TO AVOID GATE VALVES.
10. POTABLE WATER AND REUSE MAINS TO BE PLACED AS CLOSE AS POSSIBLE TO CENTER OF SIDEWALK.
11. WATER/REUSE METERS MUST BE LOCATED IN THE R/W OR UTILITY EASEMENT OUTSIDE OF THE SIDEWALK & DRIVEWAY.
12. FOR WATER AND REUSE MAINS – A&B CROSSINGS & FITTINGS SHALL NOT BE LOCATED UNDER PAVEMENT.
13. WATER & REUSE MAIN VALVES & VALVE BOXES SHALL NOT BE LOCATED WITHIN THE PAVEMENT.
14. FIRE HYDRANTS ARE TO BE LOCATED AT THE PROPERTY LINE.
15. WATER MAIN SHALL BE 5.5' FROM PROPERTY LINE TO NEAREST POINT OF THE MAIN.
16. MAINTAIN 10' MIN. BETWEEN WATER AND RECLAIMED SERVICES/ METER BOXES.

RELEASED FOR CONSTRUCTION

THE ROOKERY – PHASE 1

P:\2008-499 AYRSHIRE\ENG PLANS\499 WR.DWG4/19/2023 8:19 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
–	–	–	–

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 40'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1
FOR:
D.R. HORTON, INC. – JACKSONVILLE
CLAY COUNTY, FLORIDA
WATER AND REUSE PLAN

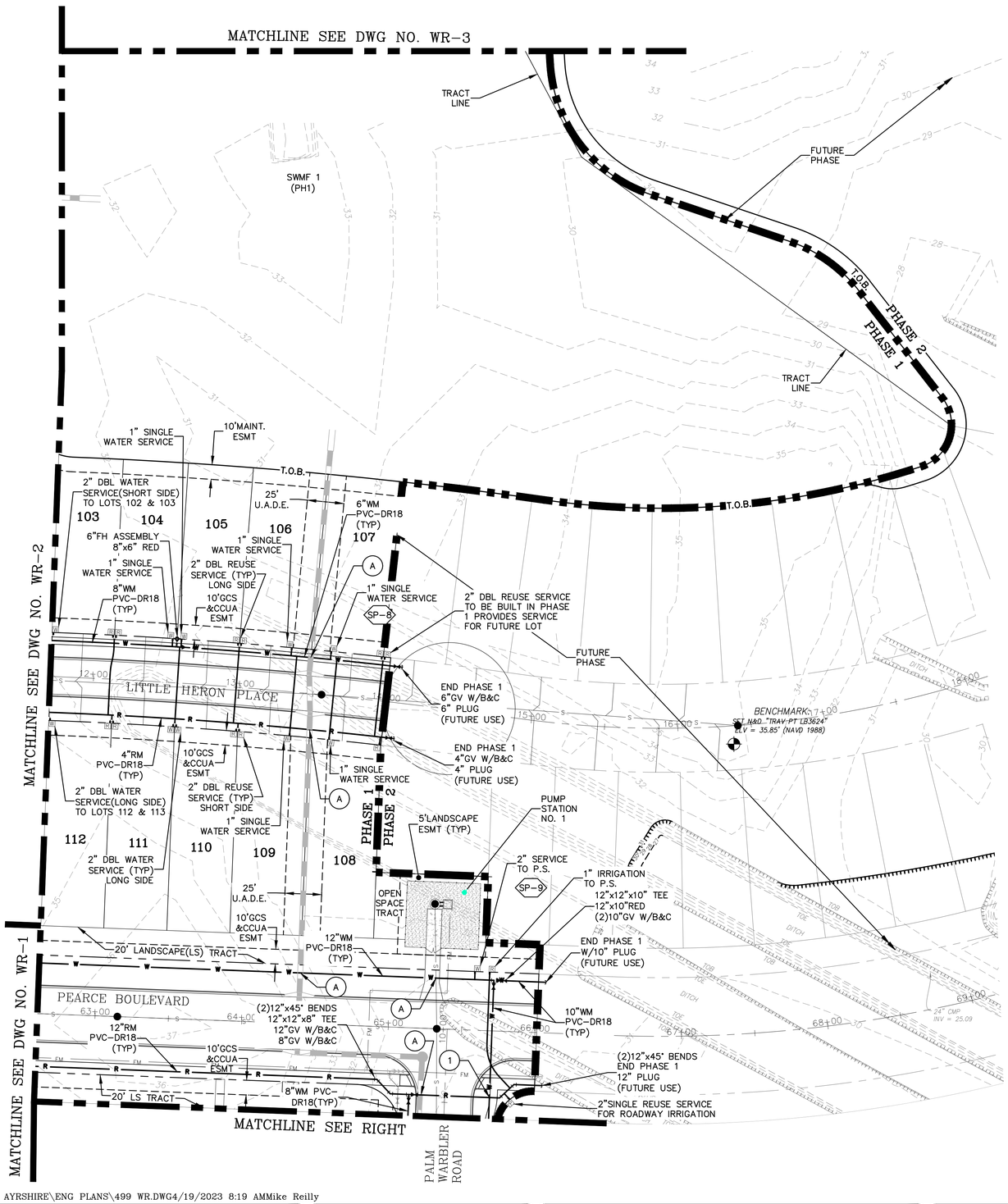
VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

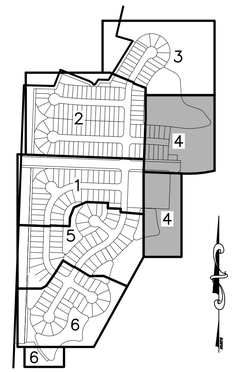
This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

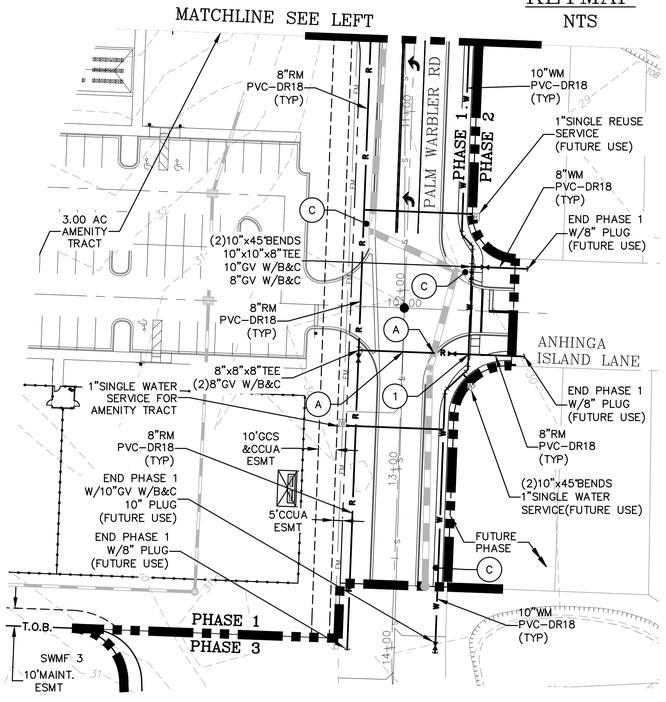
Sheet No. 51 of 88

WR-3
DWG. NO.





KEYMAP
NTS



GRAPHIC SCALE

40 0 40 40 80 160

(IN FEET)
1 inch = 40 ft.

LEGEND

= WETLANDS (FLAGGED)

= UPLAND BUFFER

= WETLAND IMPACT

SP-1 = SAMPLE POINT

NORTH

UTILITY CROSSING LEGEND

1 = CONSTRUCT REUSE MAIN BELOW WATER MAIN - MAINTAIN 12" SEPARATION

2 = CONSTRUCT FORCE MAIN BELOW WATER MAIN OR REUSE MAIN- MAINTAIN 12" SEPARATION

A = CONSTRUCT MAIN 6" ABOVE(MIN)/12" ABOVE (PREFERRED) OUTSIDE WALL OF SEWER/STORM PIPE IN ACCORDANCE W/CCUA

B = CONSTRUCT MAIN 12" BELOW OUTSIDE WALL OF SEWER/STORM PIPE IN ACCORDANCE W/CCUA

C = MAINTAIN VERTICAL AND HORIZONTAL SEPARATION IN ACCORDANCE W/CCUA

NOTES:

1. WATER MAIN, REUSE MAIN AND FORCE MAIN TO BE INSTALLED WITH TRACER WIRE, SEE DETAIL DWG. NO. WD-5.
2. THE MINIMUM COVER OVER TOP OF WATER MAIN SHALL BE 36".
3. THE MINIMUM COVER OVER TOP OF REUSE MAIN SHALL BE 48".
4. FOR UTILITIES (CLAY ELECTRIC, BELL SOUTH & CABLE, T.V.) LOCATIONS SEE DETAILS 50' R/W AND 60' R/W DWG. NO. UTC-2.
5. IN LOCATIONS WHERE WATER MAIN (WM) & REUSE MAIN (RM) CROSS, IF RM MUST BE ABOVE WM MAINTAIN 18" MIN VERTICAL SEPARATION.
6. IN LOCATIONS WHERE WATER MAIN (WM) IS NEAR STORM PIPES OR STRUCTURES MAINTAIN 3' MIN HORIZONTAL CLEARANCE BETWEEN THEM WITH BENDS OR DEFLECTION AS DEPICTED.
7. IN LOCATIONS WHERE WATER MAIN (WM) IS NEAR SANITARY PIPES OR STRUCTURES MAINTAIN 6' MIN HORIZONTAL CLEARANCE BETWEEN THEM WITH BENDS OR DEFLECTION AS DEPICTED.
8. IN LOCATIONS WHERE REUSE MAIN (RM) IS NEAR STORM OR SANITARY PIPES OR STRUCTURES MAINTAIN 3' MIN HORIZONTAL CLEARANCE BETWEEN THEM WITH BENDS OR DEFLECTION AS DEPICTED.
9. NO SIDEWALK SHALL BE CONSTRUCTED OVER GATE VALVES. CONSTRUCT SIDEWALK TO AVOID GATE VALVES.
10. POTABLE WATER AND REUSE MAINS TO BE PLACED AS CLOSE AS POSSIBLE TO CENTER OF SIDEWALK.
11. WATER/REUSE METERS MUST BE LOCATED IN THE R/W OR UTILITY EASEMENT OUTSIDE OF THE SIDEWALK & DRIVEWAY.
12. FOR WATER AND REUSE MAINS – A&B CROSSINGS & FITTINGS SHALL NOT BE LOCATED UNDER PAVEMENT.
13. WATER & REUSE MAIN VALVES & VALVE BOXES SHALL NOT BE LOCATED WITHIN THE PAVEMENT.
14. FIRE HYDRANTS ARE TO BE LOCATED AT THE PROPERTY LINE.
15. WATER MAIN SHALL BE 5.5' FROM PROPERTY LINE TO NEAREST POINT OF THE MAIN.
16. MAINTAIN 10' MIN. BETWEEN WATER AND RECLAIMED SERVICES/ METER BOXES.

NOTE:
NO SIDEWALK SHALL BE CONSTRUCTED OVER GATE VALVES. MEANDER SIDEWALKS AS NECESSARY TO AVOID CONFLICTS. FIRE HYDRANTS TO BE LOCATED IN ACCORDANCE W/CCUA. MEANDER SIDEWALKS WITHIN R/W TO AVOID CONFLICTS. SIDEWALK WIDTH AT FIRE HYDRANTS CAN BE REDUCED TO 3'MIN TO AVOID CONFLICTS.

Always call 811 two full business days before you dig

Sunshine811.com

THE ROOKERY – PHASE 1

RELEASED FOR CONSTRUCTION

P:\2008-499 AYRSHIRE\ENG PLANS\499 WR.DWG4/19/2023 8:19 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
–	–	–	–

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 40'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1

FOR:
D.R. HORTON, INC. – JACKSONVILLE

CLAY COUNTY, FLORIDA

WATER AND REUSE PLAN

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 52 of 88

WR-4

DWG. NO.

UTILITY CROSSING LEGEND

(1) = CONSTRUCT REUSE MAIN BELOW WATER MAIN - MAINTAIN 12" SEPARATION

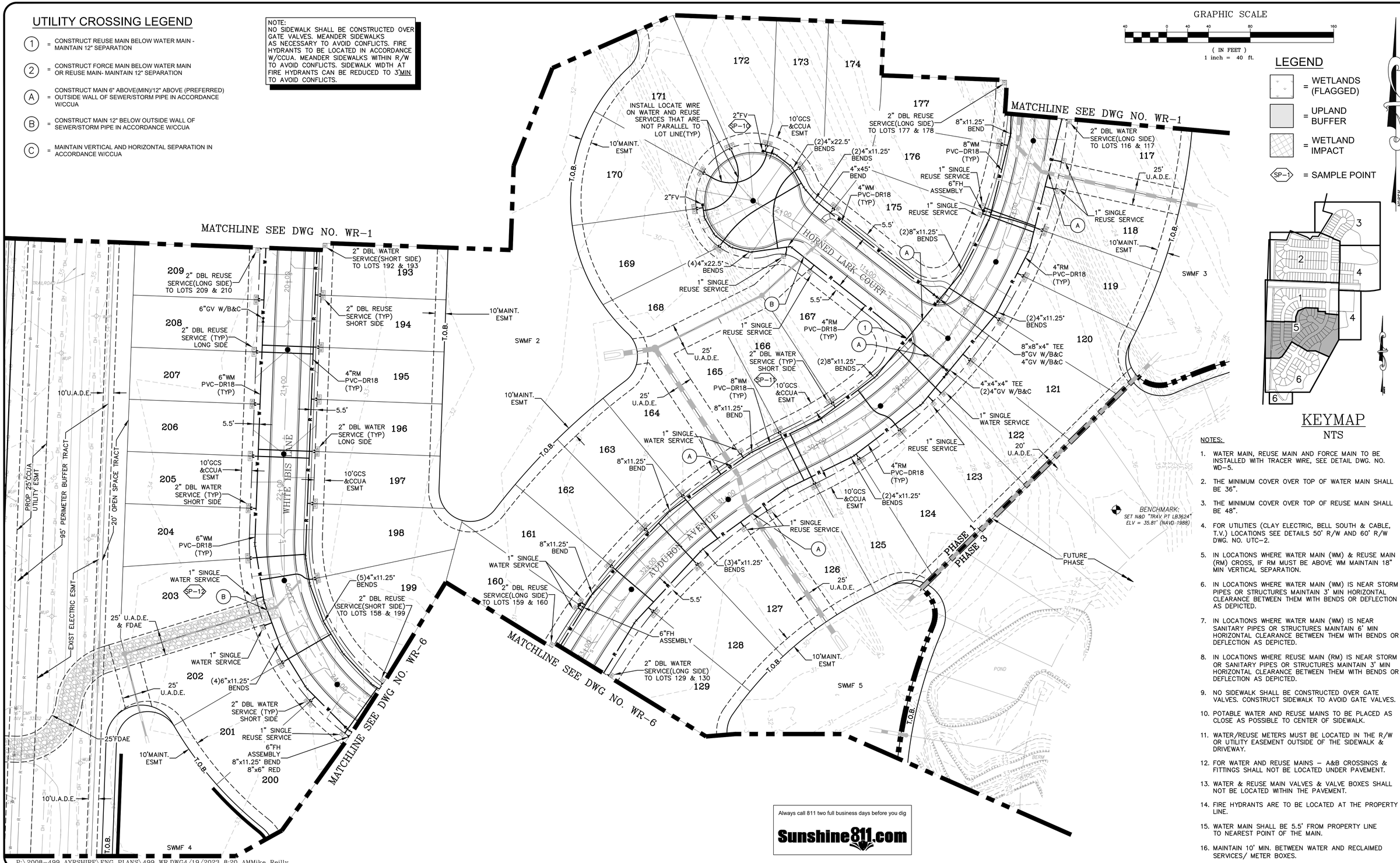
(2) = CONSTRUCT FORCE MAIN BELOW WATER MAIN OR REUSE MAIN- MAINTAIN 12" SEPARATION

(A) = CONSTRUCT MAIN 6" ABOVE(MIN)/12" ABOVE (PREFERRED) OUTSIDE WALL OF SEWER/STORM PIPE IN ACCORDANCE W/CCUA

(B) = CONSTRUCT MAIN 12" BELOW OUTSIDE WALL OF SEWER/STORM PIPE IN ACCORDANCE W/CCUA

(C) = MAINTAIN VERTICAL AND HORIZONTAL SEPARATION IN ACCORDANCE W/CCUA

NOTE:
NO SIDEWALK SHALL BE CONSTRUCTED OVER GATE VALVES. MEANDER SIDEWALKS AS NECESSARY TO AVOID CONFLICTS. FIRE HYDRANTS TO BE LOCATED IN ACCORDANCE W/CCUA. MEANDER SIDEWALKS WITHIN R/W TO AVOID CONFLICTS. SIDEWALK WIDTH AT FIRE HYDRANTS CAN BE REDUCED TO 3'MIN TO AVOID CONFLICTS.



KEYMAP
NTS

NOTES:

1. WATER MAIN, REUSE MAIN AND FORCE MAIN TO BE INSTALLED WITH TRACER WIRE, SEE DETAIL DWG. NO. WD-5.
2. THE MINIMUM COVER OVER TOP OF WATER MAIN SHALL BE 36".
3. THE MINIMUM COVER OVER TOP OF REUSE MAIN SHALL BE 48".
4. FOR UTILITIES (CLAY ELECTRIC, BELL SOUTH & CABLE, T.V.) LOCATIONS SEE DETAILS 50' R/W AND 60' R/W DWG. NO. UTC-2.
5. IN LOCATIONS WHERE WATER MAIN (WM) & REUSE MAIN (RM) CROSS, IF RM MUST BE ABOVE WM MAINTAIN 18" MIN VERTICAL SEPARATION.
6. IN LOCATIONS WHERE WATER MAIN (WM) IS NEAR STORM PIPES OR STRUCTURES MAINTAIN 3' MIN HORIZONTAL CLEARANCE BETWEEN THEM WITH BENDS OR DEFLECTION AS DEPICTED.
7. IN LOCATIONS WHERE WATER MAIN (WM) IS NEAR SANITARY PIPES OR STRUCTURES MAINTAIN 6' MIN HORIZONTAL CLEARANCE BETWEEN THEM WITH BENDS OR DEFLECTION AS DEPICTED.
8. IN LOCATIONS WHERE REUSE MAIN (RM) IS NEAR STORM OR SANITARY PIPES OR STRUCTURES MAINTAIN 3' MIN HORIZONTAL CLEARANCE BETWEEN THEM WITH BENDS OR DEFLECTION AS DEPICTED.
9. NO SIDEWALK SHALL BE CONSTRUCTED OVER GATE VALVES. CONSTRUCT SIDEWALK TO AVOID GATE VALVES.
10. POTABLE WATER AND REUSE MAINS TO BE PLACED AS CLOSE AS POSSIBLE TO CENTER OF SIDEWALK.
11. WATER/REUSE METERS MUST BE LOCATED IN THE R/W OR UTILITY EASEMENT OUTSIDE OF THE SIDEWALK & DRIVEWAY.
12. FOR WATER AND REUSE MAINS – A&B CROSSINGS & FITTINGS SHALL NOT BE LOCATED UNDER PAVEMENT.
13. WATER & REUSE MAIN VALVES & VALVE BOXES SHALL NOT BE LOCATED WITHIN THE PAVEMENT.
14. FIRE HYDRANTS ARE TO BE LOCATED AT THE PROPERTY LINE.
15. WATER MAIN SHALL BE 5.5' FROM PROPERTY LINE TO NEAREST POINT OF THE MAIN.
16. MAINTAIN 10' MIN. BETWEEN WATER AND RECLAIMED SERVICES/ METER BOXES.

Always call 811 two full business days before you dig
Sunshine811.com

RELEASED FOR CONSTRUCTION

P:\2008-499 AYRSHIRE\ENG PLANS\499 WR.DWG4/19/2023 8:20 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
–	–	–	–

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 40'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1
FOR:
D.R. HORTON, INC. – JACKSONVILLE

CLAY COUNTY, FLORIDA

WATER AND REUSE PLAN

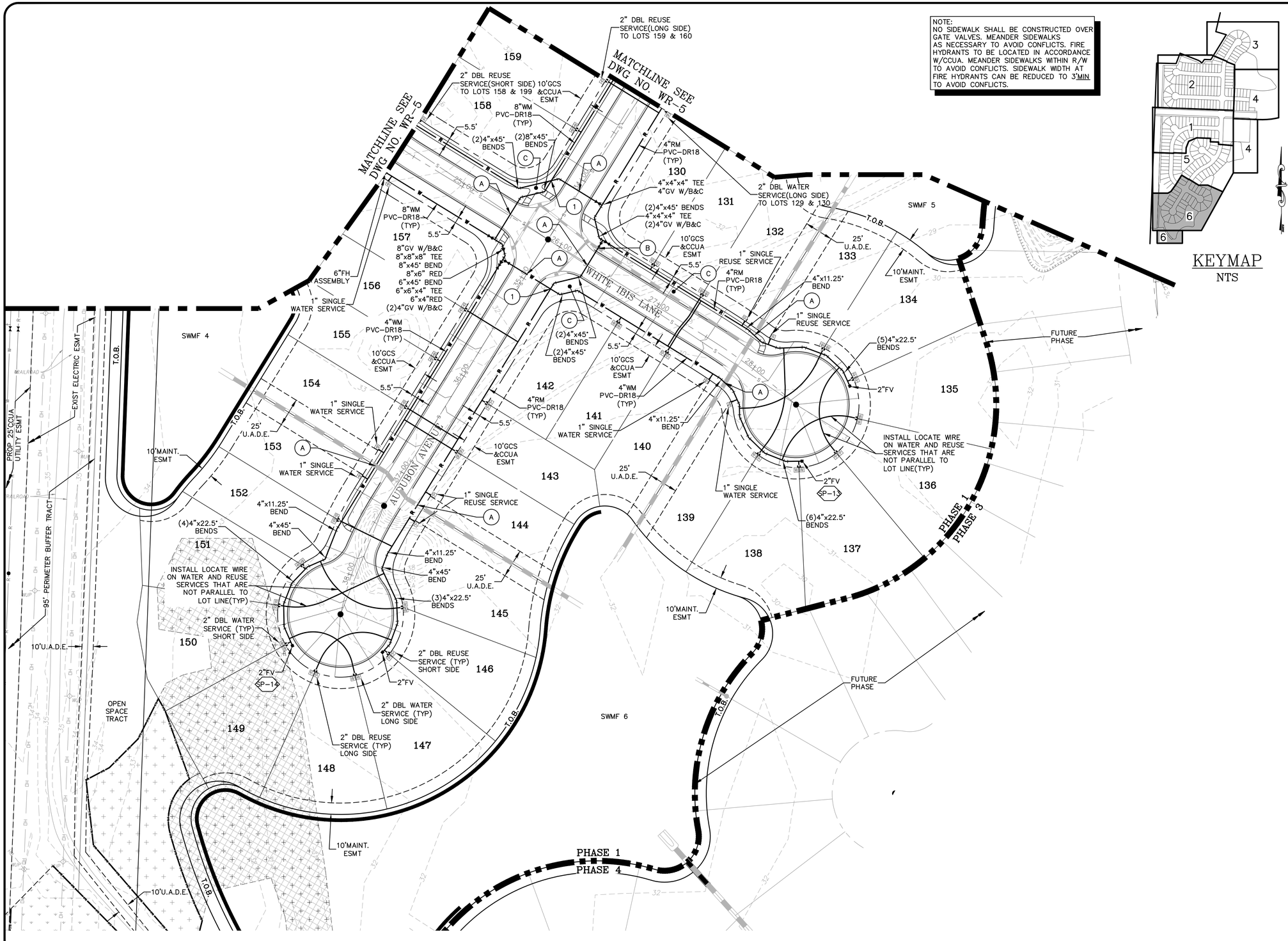
VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 53 of 88

WR-5
DWG. NO.



NOTE:
NO SIDEWALK SHALL BE CONSTRUCTED OVER GATE VALVES. MEANDER SIDEWALKS AS NECESSARY TO AVOID CONFLICTS. FIRE HYDRANTS TO BE LOCATED IN ACCORDANCE W/CCUA. MEANDER SIDEWALKS WITHIN R/W TO AVOID CONFLICTS. SIDEWALK WIDTH AT FIRE HYDRANTS CAN BE REDUCED TO 3'MIN TO AVOID CONFLICTS.

KEYMAP
NTS

GRAPHIC SCALE
40 0 40 40 80 160
(IN FEET)
1 inch = 40 ft.

LEGEND

- = WETLANDS (FLAGGED)
- = UPLAND BUFFER
- = WETLAND IMPACT
- SP-1 = SAMPLE POINT
- = WETLANDS (AERIAL INTERPRETATION)

NORTH

UTILITY CROSSING LEGEND

- (1) = CONSTRUCT REUSE MAIN BELOW WATER MAIN - MAINTAIN 12" SEPARATION
- (2) = CONSTRUCT FORCE MAIN BELOW WATER MAIN OR REUSE MAIN- MAINTAIN 12" SEPARATION
- (A) = CONSTRUCT MAIN 6" ABOVE(MIN)/12" ABOVE (PREFERRED) OUTSIDE WALL OF SEWER/STORM PIPE IN ACCORDANCE W/CCUA
- (B) = CONSTRUCT MAIN 12" BELOW OUTSIDE WALL OF SEWER/STORM PIPE IN ACCORDANCE W/CCUA
- (C) = MAINTAIN VERTICAL AND HORIZONTAL SEPARATION IN ACCORDANCE W/CCUA

NOTES:

1. WATER MAIN, REUSE MAIN AND FORCE MAIN TO BE INSTALLED WITH TRACER WIRE, SEE DETAIL DWG. NO. WD-5.
2. THE MINIMUM COVER OVER TOP OF WATER MAIN SHALL BE 36".
3. THE MINIMUM COVER OVER TOP OF REUSE MAIN SHALL BE 48".
4. FOR UTILITIES (CLAY ELECTRIC, BELL SOUTH & CABLE, T.V.) LOCATIONS SEE DETAILS 50' R/W AND 60' R/W DWG. NO. UTC-2.
5. IN LOCATIONS WHERE WATER MAIN (WM) & REUSE MAIN (RM) CROSS, IF RM MUST BE ABOVE WM MAINTAIN 18" MIN VERTICAL SEPARATION.
6. IN LOCATIONS WHERE WATER MAIN (WM) IS NEAR STORM PIPES OR STRUCTURES MAINTAIN 3' MIN HORIZONTAL CLEARANCE BETWEEN THEM WITH BENDS OR DEFLECTION AS DEPICTED.
7. IN LOCATIONS WHERE WATER MAIN (WM) IS NEAR SANITARY PIPES OR STRUCTURES MAINTAIN 6' MIN HORIZONTAL CLEARANCE BETWEEN THEM WITH BENDS OR DEFLECTION AS DEPICTED.
8. IN LOCATIONS WHERE REUSE MAIN (RM) IS NEAR STORM OR SANITARY PIPES OR STRUCTURES MAINTAIN 3' MIN HORIZONTAL CLEARANCE BETWEEN THEM WITH BENDS OR DEFLECTION AS DEPICTED.
9. NO SIDEWALK SHALL BE CONSTRUCTED OVER GATE VALVES. CONSTRUCT SIDEWALK TO AVOID GATE VALVES.
10. POTABLE WATER AND REUSE MAINS TO BE PLACED AS CLOSE AS POSSIBLE TO CENTER OF SIDEWALK.
11. WATER/REUSE METERS MUST BE LOCATED IN THE R/W OR UTILITY EASEMENT OUTSIDE OF THE SIDEWALK & DRIVEWAY.
12. FOR WATER AND REUSE MAINS – A&B CROSSINGS & FITTINGS SHALL NOT BE LOCATED UNDER PAVEMENT.
13. WATER & REUSE MAIN VALVES & VALVE BOXES SHALL NOT BE LOCATED WITHIN THE PAVEMENT.
14. FIRE HYDRANTS ARE TO BE LOCATED AT THE PROPERTY LINE.
15. WATER MAIN SHALL BE 5.5' FROM PROPERTY LINE TO NEAREST POINT OF THE MAIN.
16. MAINTAIN 10' MIN. BETWEEN WATER AND RECLAIMED SERVICES/ METER BOXES.

Always call 811 two full business days before you dig
Sunshine811.com

THE ROOKERY – PHASE 1

RELEASED FOR CONSTRUCTION

P:\2008-499 AYRSHIRE\ENG PLANS\499 WR.DWG4/19/2023 8:20 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
–	–	–	

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 40'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1

FOR:
D.R. HORTON, INC. – JACKSONVILLE

CLAY COUNTY, FLORIDA

WATER AND REUSE PLAN

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 54 of 88

WR-6
DWG. NO.

GRAPHIC SCALE

300 0 150 300 600 1200

(IN FEET)
1 inch = 300 ft.

LEGEND

- = WETLANDS (FLAGGED)
- = WETLANDS (AERIAL INTERPRETATION)
- = UPLAND BUFFER
- = WETLAND IMPACT
- = MANHOLE
- = DIRECTION OF FLOW
- —FM— = FORCE MAIN
- —S— = SANITARY SEWER MAIN

NOTES:

1. TERMINAL MANHOLES WITH MORE THAN 1 SERVICE LATERAL SHALL BE 5' DIAMETER.
2. ALL SANITARY SEWER MAINS ARE 8" UNLESS OTHERWISE NOTED.

MASTER SEWER PLAN DEPICTS GRAVITY SEWER & FORCE MAIN LOCATIONS, SIZES, PUMP STATION LOCATION & GENERAL INFORMATION. FOR PHASE 1 DETAILED INFORMATION SEE SANITARY SEWER PLANS. FUTURE PHASES DETAILED INFORMATION WILL BE PROVIDED AT THE TIME OF SUBMITTAL.

Always call 811 two full business days before you dig

Sunshine811.com

THE ROOKERY – PHASE 1

RELEASED FOR CONSTRUCTION

P:\2008-499 AYRSHIRE\ENG PLANS\499 MSP.DWG4/19/2023 8:20 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
–	–	–	–

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 300'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1

FOR:
D.R. HORTON, INC. – JACKSONVILLE

CLAY COUNTY, FLORIDA

MASTER SEWER PLAN

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 55 of 88

MSP–1

DWG. NO.

GRAPHIC SCALE

40 0 40 40 80 160

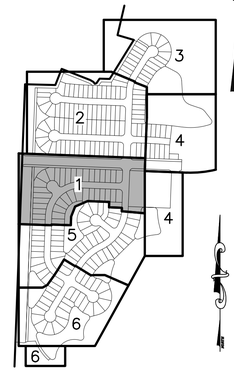
(IN FEET)
1 inch = 40 ft.

LEGEND

= WETLANDS (FLAGGED)

= UPLAND BUFFER

= WETLAND IMPACT



KEYMAP
NTS

MATCHLINE SEE DWG NO. S-2

20' LANDSCAPE(LS) TRACT
30' U.A.D.E. & FDAE
10'GCS &CCUA ESMT
MH-103
TOP EL.=34.9±
INV. IN=18.87(S)
INV. IN=20.19(N)
INV. OUT=18.77(E)
PEARCE BOULEVARD
(2)12"x45°BENDS
6"(TYP)
10'(TYP)
12"GV W/B&C
OPEN SPACE TRACT
6"FM PVC DR-18(TYP)
10'x35'CCUA ESMT
20' LS TRACT
(2)6"x45°BENDS
225LF ~ 8"PVC @ S= 0.40% SDR-26
12"FM PVC DR-18(TYP)
12"X12"X6"TEE
12"GV W/B&C
6"GV W/B&C
12"x45°BEND
7.0'(TYP)
5.5'(TYP)
PROP.25'CCUA UTILITY ESMT
MH-120
TOP EL.=36.4±
INV. OUT=30.89(SE)
(3)SER.LAT.INV.=31.06
MH-115
TOP EL.=35.1±
INV. IN=27.94(SW)
INV. OUT=27.84(E)
126LF ~ 8"PVC @ S= 0.40% SDR-26
6"SEWER SERVICE 48"MIN COVER(TYP)
391LF ~ 8"PVC @ S= 1.43% SDR-26
210LF ~ 8"PVC @ S= 0.40% SDR-26
3.00 AC AMENITY TRACT
HATCHLING COURT
WHITE IBIS LANE
12"x45°BEND 12"PLUG
ROW
FUTURE 12"FM (SEE CCUA OFFSITE PLANS UNDER SEPARATE COVER)
MH-104
TOP EL.=33.8±
INV. IN=19.81(S)
INV. IN=21.66(W)
INV. OUT=19.71(N)
MH-114
TOP EL.=34.7±
INV. IN=27.34(W)
INV. OUT=27.24(E)
89LF ~ 8"PVC @ S= 0.55% SDR-26
MH-116
TOP EL.=35.5±
INV. IN=28.55(SW)
INV. IN=30.40(NW)
INV. OUT=28.45(NE)
MH-117
TOP EL.=35.1±
INV. IN=29.20(S)
INV. OUT=29.10(NE)
PROP 25'CCUA UTILITY ESMT
95' PERIMETER BUFFER ESMT
EXIST ELECTRIC ESMT
20' OPEN SPACE TRACT
137LF ~ 8"PVC @ S= 0.40% SDR-26
10'MAINT. ESMT
30' U.A.D.E.
CONST. SEWER SERVICE ABOVE STORM LOT 178
AUDUBON AVENUE
257LF ~ 8"PVC @ S= 0.40% SDR-26
6"SEWER SERVICE TO LOT 177
10'U.A.D.E.
20' U.A.D.E.
SWMF 2
MH-118
TOP EL.=34.8±
INV. IN=29.90(S)
INV. OUT=29.75(N)
T.O.B.
MATCHLINE SEE DWG NO. S-5
MATCHLINE SEE DWG NO. S-4

UTILITY CROSSING LEGEND

(1) = CONSTRUCT REUSE MAIN BELOW WATER MAIN - MAINTAIN 12" SEPARATION

(2) = CONSTRUCT FORCE MAIN BELOW WATER MAIN OR REUSE MAIN- MAINTAIN 12" SEPARATION

(A) = CONSTRUCT MAIN 6" ABOVE(MIN)/12" ABOVE (PREFERRED) OUTSIDE WALL OF SEWER/STORM PIPE IN ACCORDANCE W/CCUA

(B) = CONSTRUCT MAIN 12" BELOW OUTSIDE WALL OF SEWER/STORM PIPE IN ACCORDANCE W/CCUA

* = CONSTRUCT 6" SEWER SERVICE ABOVE STORM PIPE.

\# = CONSTRUCT 6" SEWER SERVICE BELOW STORM PIPE.

FORCE MAIN NOTES

1. FOR FORCE MAINS – FITTINGS SHALL NOT BE LOCATED UNDER THE PAVEMENT.
2. NO VALVES / VALVE BOXES SHALL BE LOCATED IN THE ROADWAY.

Always call 811 two full business days before you dig

Sunshine811.com

RELEASED FOR CONSTRUCTION

P:\2008-499 AYRSHIRE\ENG PLANS\499 SEW.DWG4/19/2023 8:21 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
–	–	–	–

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 40'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1

FOR:
D.R. HORTON, INC. – JACKSONVILLE

CLAY COUNTY, FLORIDA

SANITARY SEWER PLAN

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 56 of 88

S-1

DWG. NO.

GRAPHIC SCALE

40 0 40 40 80 160

(IN FEET)
1 inch = 40 ft.

LEGEND

= WETLANDS (FLAGGED)

= UPLAND BUFFER

= WETLAND IMPACT

UTILITY CROSSING LEGEND

(1) = CONSTRUCT REUSE MAIN BELOW WATER MAIN - MAINTAIN 12" SEPARATION

(2) = CONSTRUCT FORCE MAIN BELOW WATER MAIN OR REUSE MAIN- MAINTAIN 12" SEPARATION

(A) = CONSTRUCT MAIN 6" ABOVE(MIN)/12" ABOVE (PREFERRED) OUTSIDE WALL OF SEWER/STORM PIPE IN ACCORDANCE W/CCUA

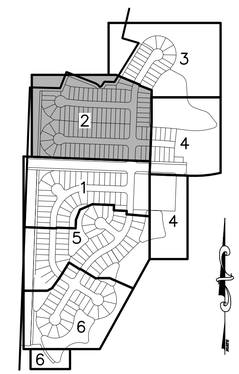
(B) = CONSTRUCT MAIN 12" BELOW OUTSIDE WALL OF SEWER/STORM PIPE IN ACCORDANCE W/CCUA

* = CONSTRUCT 6" SEWER SERVICE ABOVE STORM PIPE.

\# = CONSTRUCT 6" SEWER SERVICE BELOW STORM PIPE.

FORCE MAIN NOTES

1. FOR FORCE MAINS – FITTINGS SHALL NOT BE LOCATED UNDER THE PAVEMENT.
2. NO VALVES / VALVE BOXES SHALL BE LOCATED IN THE ROADWAY.



KEYMAP
NTS

MATCHLINE SEE DWG NO. S-3

MATCHLINE SEE DWG NO. S-4

MATCHLINE SEE DWG NO. S-1

LARK SPARROW STREET

LITTLE HERON PLACE

AUDUBON AVENUE

30'PERIMETER BUFFER TRACT

30'PERIMETER BUFFER TRACT/U.A.D.E.

OPEN SPACE TRACT

BENCHMARK:
SET N&D "BENCHMARK LB3624"
ELV = 33.86' (NAVD 1988)

MH-134
TOP EL.=37.3±
INV. OUT=30.85(E)
(3)SER.LAT.INV.=31.02

285LF ~ 8"PVC
@ S= 0.50%
SDR-26

400LF ~ 8"PVC
@ S= 0.40%
SDR-26

MH-127
TOP EL.=35.0±
INV. IN=27.15(N)
INV. IN=27.20(W)
INV. OUT=22.57(S)

182LF ~ 8"PVC
@ S= 0.40%
SDR-26

6"SEWER SERVICE 48"MIN COVER(TYP)

6"x11.25°BEND

10'GCS &CCUA ESMT

25' U.A.D.E.

T.O.B.

6"FM PVC DR-18(TYP)

3'(TYP)

10'MAINT. ESMT

MH-133
TOP EL.=35.4±
INV. IN=29.42(W)
INV. OUT=28.80(E)

CONST. SEWER SERVICES BELOW STORM LOTS 36-43

340LF ~ 8"PVC
@ S= 0.40%
SDR-26

5'CCUA ESMT

SWMF 1

MH-132
TOP EL.=37.7±
INV. OUT=31.70(E)
(3)SER.LAT.INV.=31.87

MH-131
TOP EL.=36.0±
INV. IN=30.28(W)
INV. OUT=30.18(E)

MH-126
TOP EL.=34.8±
INV. IN=21.21(N)
INV. IN=28.58(W)
INV. IN=21.91(E)
INV. OUT=21.11(S)

284LF ~ 8"PVC
@ S= 0.50%
SDR-26

230LF ~ 8"PVC
@ S= 0.40%
SDR-26

30' U.A.D.E. & FDAE

EXIST ELECTRIC ESMT

95' PERIMETER BUFFER TRACT

PROP 25'CCUA UTILITY ESMT

MONITORING WELL

NORTH

RELEASED FOR CONSTRUCTION

Always call 811 two full business days before you dig
Sunshine811.com

P:\2008-499 AYRSHIRE\ENG PLANS\499 SEW.DWG4/19/2023 8:21 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
–	–	–	–

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 40'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1

FOR:
D.R. HORTON, INC. – JACKSONVILLE

CLAY COUNTY, FLORIDA

SANITARY SEWER PLAN

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 61419

Sheet No. 57 of 88

S-2

DWG. NO.

GRAPHIC SCALE

40 0 40 40 80 160

(IN FEET)
1 inch = 40 ft.

LEGEND

= WETLANDS (FLAGGED)

= UPLAND BUFFER

= WETLAND IMPACT

UTILITY CROSSING LEGEND

(1) = CONSTRUCT REUSE MAIN BELOW WATER MAIN - MAINTAIN 12" SEPARATION

(2) = CONSTRUCT FORCE MAIN BELOW WATER MAIN OR REUSE MAIN- MAINTAIN 12" SEPARATION

(A) = CONSTRUCT MAIN 6" ABOVE(MIN)/12" ABOVE (PREFERRED) OUTSIDE WALL OF SEWER/STORM PIPE IN ACCORDANCE W/CCUA

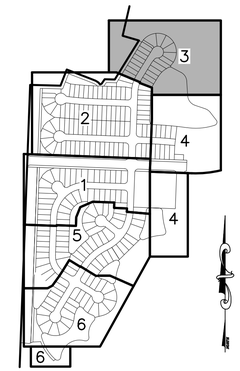
(B) = CONSTRUCT MAIN 12" BELOW OUTSIDE WALL OF SEWER/STORM PIPE IN ACCORDANCE W/CCUA

* = CONSTRUCT 6" SEWER SERVICE ABOVE STORM PIPE.

\# = CONSTRUCT 6" SEWER SERVICE BELOW STORM PIPE.

FORCE MAIN NOTES

1. FOR FORCE MAINS – FITTINGS SHALL NOT BE LOCATED UNDER THE PAVEMENT.
2. NO VALVES / VALVE BOXES SHALL BE LOCATED IN THE ROADWAY.



KEYMAP
NTS

NORTH

THE ROOKERY – PHASE 1

RELEASED FOR CONSTRUCTION

Always call 811 two full business days before you dig
Sunshine811.com

P:\2008-499 AYRSHIRE\ENG PLANS\499 SEW.DWG4/19/2023 8:22 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
–	–	–	–

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 40'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1

FOR:
D.R. HORTON, INC. – JACKSONVILLE

CLAY COUNTY, FLORIDA

SANITARY SEWER PLAN

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 58 of 88

S-3
DWG. NO.

MATCHLINE SEE DWG NO. S-3

MATCHLINE SEE DWG NO. S-2

MATCHLINE SEE DWG NO. S-1

MATCHLINE SEE RIGHT

MATCHLINE SEE LEFT

TRACT LINE

FUTURE PHASE

SWMF 1 (PH1)

SILT FENCE @ T.O.B.(TYP)

T.O.B.

PHASE 1

PHASE 2

10'MAINT. ESMT

25' U.A.D.E.

SILT FENCE @ LOT LINE

103 104 105 106 107

MH-135
TOP EL.=33.8±
INV. IN=23.43(E)
INV. OUT=23.33(W)

356LF ~ 8"PVC @ S= 0.40% SDR-26

10'GCS &CCUA ESMT

GRADE NOTE:
AREAS ABOVE SEWER MAIN AND SERVICES OUTSIDE PHASE 1 THAT ARE TO BE BUILT IN PHASE 1 SHALL BE FILLED/CUT 20' WIDE TO WITHIN 6" OF PROPOSED CENTERLINE GRADES SHOWN IN PROFILE. PROVIDE 4:1 SIDE SLOPES TO EXISTING

END PHASE 1 SANITARY SEWER SERVICES AT MH 136 – PROVIDE 5' TEMP STUBOUT AT INV TO BE REMOVED WITH FUTURE PHASE SEWER CONSTRUCTION

BENCHMARK:
SET NAIL "TRAV PT LB3624"
ELEV = 35.85' (NAVD 1988)

SAW CUT&REMOVE TEMP 45'R CUL-DE-SAC

MEET&MATCH EXIST GRADE (FIELD VERIFY)

285LF ~ 8"PVC @ S= 0.40% SDR-26

MH-136
TOP EL.=32.9±
INV. IN=24.57(E)
INV. OUT=24.47(W)

6"SEWER SERVICE 48"MIN COVER(TYP)

MH-102
TOP EL.=34.2±
INV. IN=17.87(W)
INV. OUT=17.77(E)

112 111 110 109 108

(2)6"x90°BENDS

6"FM PVC DR-18(TYP)

OMP 3.3.1 NO.1 (50'x45' GRAVEL AREA)

OPEN SPACE TRACT

85LF ~ 10"PVC @ S= 0.40% SDR-26

MH-104 LINED MH
TOP EL.=34.1±
INV. IN=16.90(W)
INV. IN=16.87(S)
INV. OUT=16.70(N)

20' LANDSCAPE(LS) TRACT

218LF ~ 8"PVC @ S= 0.40% SDR-26

12"X12"X6"TEE
6"GV W/B&C

12"FM PVC DR-18(TYP)

PEARCE BOULEVARD

10"FM PVC DR-18(TYP)

10"PLUG (FUTURE USE)

8"FM PVC DR-18(TYP)

20' LS TRACT

12"x12"x8"TEE
12"x10"RED
10"GV W/B&C
(2)8"x45°BENDS
8"GV W/B&C

PALM WARBLER ROAD

LITTLE HERON PLACE

PA35 B82 A85 A97 A95

F1

A35.1 A34.9 A34.8 A34.6 A34.4 A35.3 A35.5 A35.2

B35.8 B35.6 B35.5

210LF ~ 8"PVC @ S= 0.40% SDR-26 (NO SERVICES THIS RUN)

3.00 AC AMENITY TRACT

MH-140
TOP EL.=33.4±
INV. IN=17.81(S)
INV. OUT=17.71(N)

216LF ~ 8"PVC @ S= 0.40% SDR-26

5'CCUA ESMT

END PHASE 1 SANITARY SEWER AT MH 141 – PROVIDE 5' TEMP STUBOUT AT SOUTH INV TO BE REMOVED WITH FUTURE PHASE SEWER CONSTRUCTION

SWMF 3
10'MAINT.

8"PLUG (FUTURE USE)

CONST. 6"SEWER SERVICE W/PH1

EX-4F

MH-141
TOP EL.=33.8±
INV. IN=18.78(S)
INV. OUT=18.68(N)

MEET&MATCH EXIST GRADE (FIELD VERIFY)

SILT FENCE @ ROW

SILT FENCE @ LOT LINE

SILT FENCE @ T.O.B.(TYP)

GRAPHIC SCALE

40 0 40 40 80 160

(IN FEET)
1 inch = 40 ft.

LEGEND

= WETLANDS (FLAGGED)

= UPLAND BUFFER

= WETLAND IMPACT

UTILITY CROSSING LEGEND

(1) = CONSTRUCT REUSE MAIN BELOW WATER MAIN - MAINTAIN 12" SEPARATION

(2) = CONSTRUCT FORCE MAIN BELOW WATER MAIN OR REUSE MAIN- MAINTAIN 12" SEPARATION

(A) = CONSTRUCT MAIN 6" ABOVE(MIN)/12" ABOVE (PREFERRED) OUTSIDE WALL OF SEWER/STORM PIPE IN ACCORDANCE W/CCUA

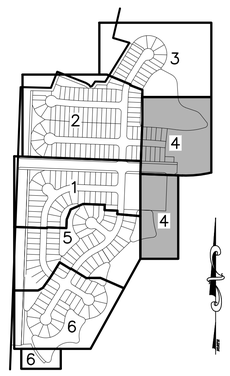
(B) = CONSTRUCT MAIN 12" BELOW OUTSIDE WALL OF SEWER/STORM PIPE IN ACCORDANCE W/CCUA

* = CONSTRUCT 6" SEWER SERVICE ABOVE STORM PIPE.

\# = CONSTRUCT 6" SEWER SERVICE BELOW STORM PIPE.

FORCE MAIN NOTES

1. FOR FORCE MAINS – FITTINGS SHALL NOT BE LOCATED UNDER THE PAVEMENT.
2. NO VALVES / VALVE BOXES SHALL BE LOCATED IN THE ROADWAY.



KEYMAP
NTS

Always call 811 two full business days before you dig
Sunshine811.com

THE ROOKERY – PHASE 1

RELEASED FOR CONSTRUCTION

P:\2008-499 AYRSHIRE\ENG PLANS\499 SEW.DWG4/19/2023 8:22 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
–	–	–	–

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 40'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1

FOR:
D.R. HORTON, INC. – JACKSONVILLE

CLAY COUNTY, FLORIDA

SANITARY SEWER PLAN

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 59 of 88

S-4

DWG. NO.

GRAPHIC SCALE

40 0 40 40 80 160

(IN FEET)
1 inch = 40 ft.

MATCHLINE SEE DWG NO. S-1

MATCHLINE SEE DWG NO. S-4

MATCHLINE SEE DWG NO. S-6

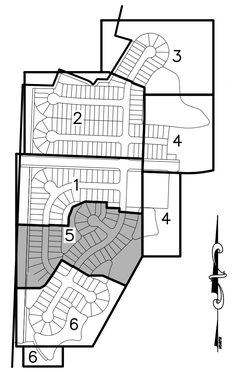
MATCHLINE SEE DWG NO. S-1

LEGEND

= WETLANDS (FLAGGED)

= UPLAND BUFFER

= WETLAND IMPACT



KEYMAP
NTS

HORNED LARK COURT

WHITE IBIS LANE

AVOCET AVENUE

PHASE 3

FUTURE PHASE

SWMF 2

SWMF 3

SWMF 4

SWMF 5

POND

PA28

BENCHMARK:
SET N&D "TRAV PT LB3624"
ELV = 35.74 (NAVD 1988)

95' PERIMETER BUFFER TRACT

20' OPEN SPACE TRACT

PROP 25'CCUA UTILITY ESMT

EXIST ELECTRIC ESMT

TRAILROAD

FORCE MAIN NOTES

1. FOR FORCE MAINS – FITTINGS SHALL NOT BE LOCATED UNDER THE PAVEMENT.
2. NO VALVES / VALVE BOXES SHALL BE LOCATED IN THE ROADWAY.

UTILITY CROSSING LEGEND

(1) = CONSTRUCT REUSE MAIN BELOW WATER MAIN - MAINTAIN 12" SEPARATION

(2) = CONSTRUCT FORCE MAIN BELOW WATER MAIN OR REUSE MAIN- MAINTAIN 12" SEPARATION

(A) = CONSTRUCT MAIN 6" ABOVE(MIN)/12" ABOVE (PREFERRED) OUTSIDE WALL OF SEWER/STORM PIPE IN ACCORDANCE W/CCUA

(B) = CONSTRUCT MAIN 12" BELOW OUTSIDE WALL OF SEWER/STORM PIPE IN ACCORDANCE W/CCUA

* = CONSTRUCT 6" SEWER SERVICE ABOVE STORM PIPE.

\# = CONSTRUCT 6" SEWER SERVICE BELOW STORM PIPE.

Always call 811 two full business days before you dig

Sunshine811.com

RELEASED FOR CONSTRUCTION

P:\2008-499 AYRSHIRE\ENG PLANS\499 SEW.DWG4/19/2023 8:22 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
–	–	–	–

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 40'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1
FOR:
D.R. HORTON, INC. – JACKSONVILLE

CLAY COUNTY, FLORIDA

SANITARY SEWER PLAN

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

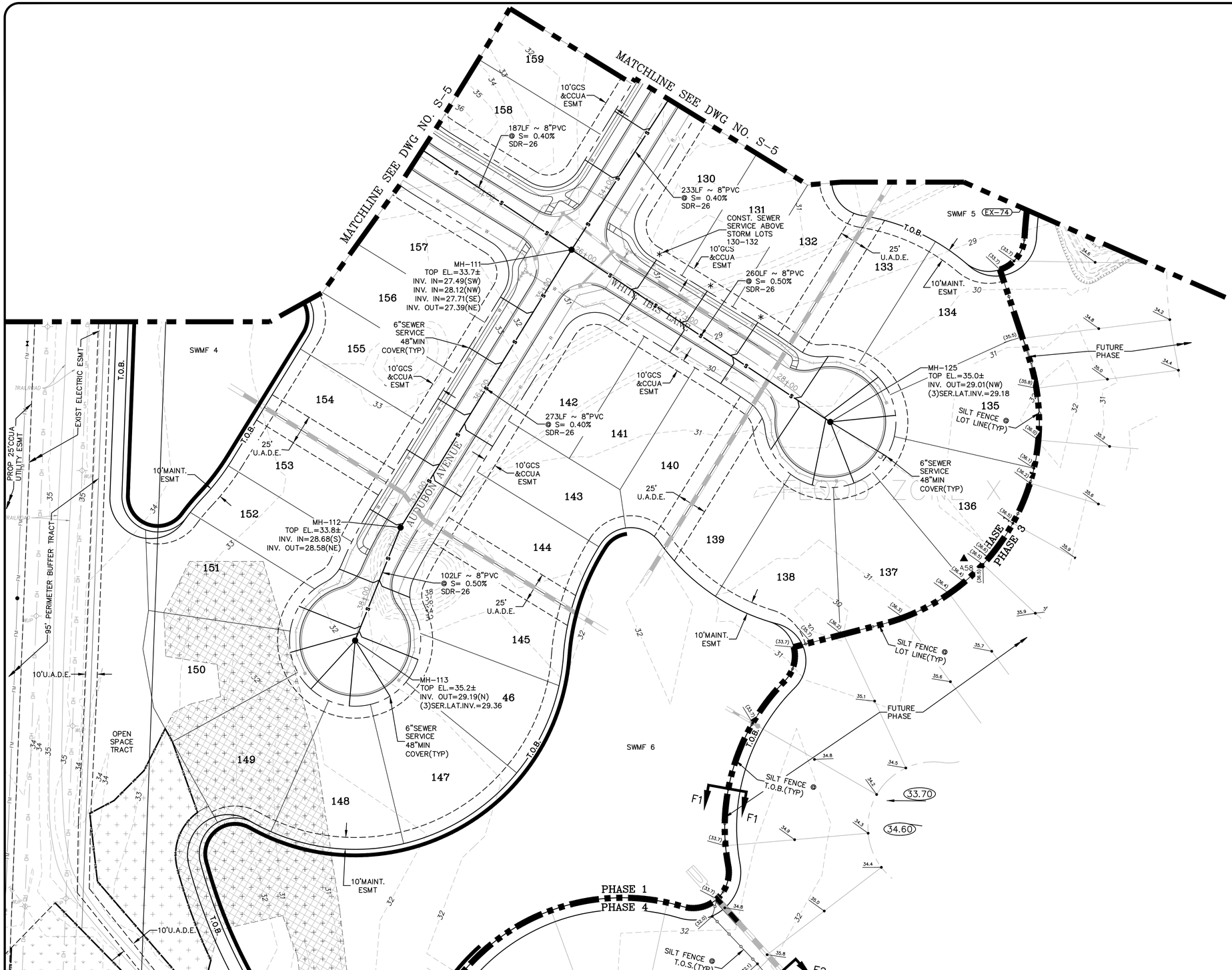
VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 60 of 88

S-5

DWG. NO.

THE ROOKERY – PHASE 1



GRAPHIC SCALE

40 0 40 40 80 160

(IN FEET)
1 inch = 40 ft.

LEGEND

= WETLANDS (AERIAL INTERPRETATION)

= WETLANDS (FLAGGED)

= UPLAND BUFFER

= WETLAND IMPACT

UTILITY CROSSING LEGEND

(1) = CONSTRUCT REUSE MAIN BELOW WATER MAIN - MAINTAIN 12" SEPARATION

(2) = CONSTRUCT FORCE MAIN BELOW WATER MAIN OR REUSE MAIN- MAINTAIN 12" SEPARATION

(A) = CONSTRUCT MAIN 6" ABOVE(MIN)/12" ABOVE (PREFERRED) OUTSIDE WALL OF SEWER/STORM PIPE IN ACCORDANCE W/CCUA

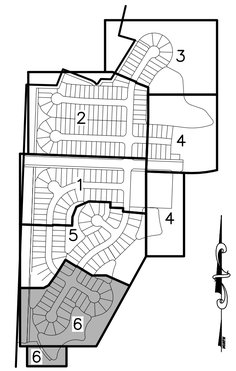
(B) = CONSTRUCT MAIN 12" BELOW OUTSIDE WALL OF SEWER/STORM PIPE IN ACCORDANCE W/CCUA

* = CONSTRUCT 6" SEWER SERVICE ABOVE STORM PIPE.

\# = CONSTRUCT 6" SEWER SERVICE BELOW STORM PIPE.

FORCE MAIN NOTES

1. FOR FORCE MAINS – FITTINGS SHALL NOT BE LOCATED UNDER THE PAVEMENT.
2. NO VALVES / VALVE BOXES SHALL BE LOCATED IN THE ROADWAY.



KEYMAP
NTS

NORTH

THE ROOKERY – PHASE 1

RELEASED FOR CONSTRUCTION

Always call 811 two full business days before you dig
Sunshine811.com

P:\2008-499 AYRSHIRE\ENG PLANS\499 SEW.DWG4/19/2023 8:23 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
–	–	–	

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 40'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1

FOR:
D.R. HORTON, INC. – JACKSONVILLE

CLAY COUNTY, FLORIDA

SANITARY SEWER PLAN

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 61419

Sheet No. 61 of 88

S-6

DWG. NO.

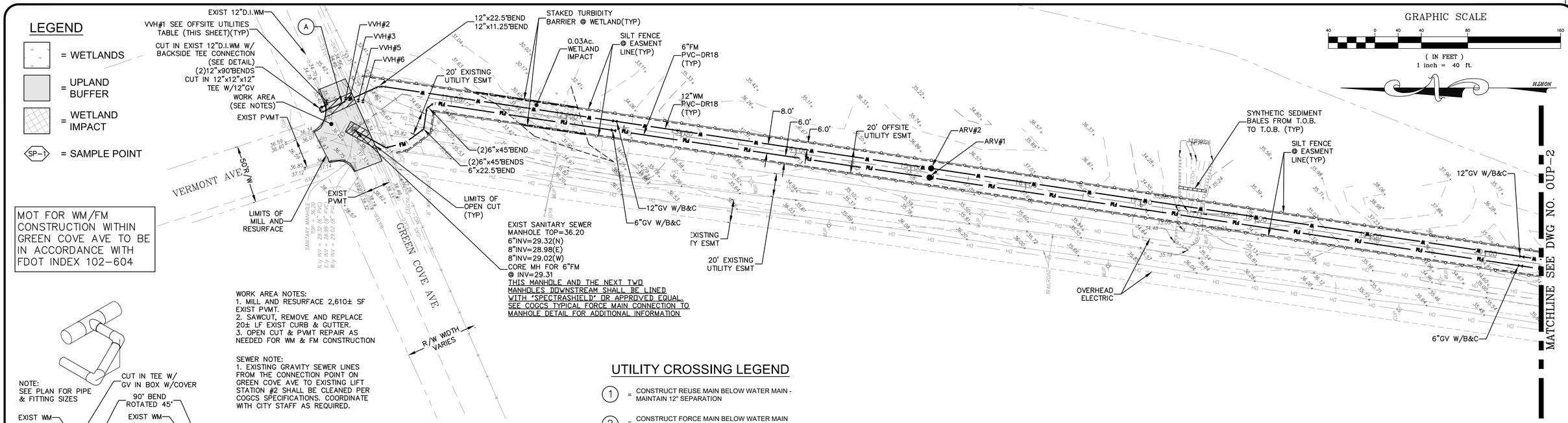
LEGEND

= WETLANDS

= UPLAND BUFFER

= WETLAND IMPACT

SP–1 = SAMPLE POINT



GRAPHIC SCALE

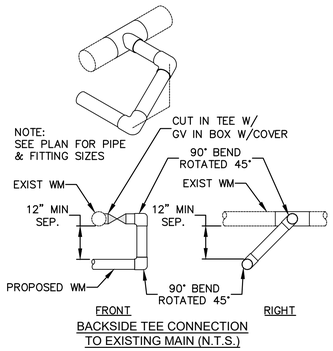
40 0 40 40 80 160

(IN FEET)
1 inch = 40 ft.

MOT FOR WM/FM CONSTRUCTION WITHIN GREEN COVE AVE TO BE IN ACCORDANCE WITH FDOT INDEX 102–604

WORK AREA NOTES:
1. MILL AND RESURFACE 2,610± SF EXIST PVMT.
2. SAWCUT, REMOVE AND REPLACE 20± LF EXIST CURB & GUTTER.
3. OPEN CUT & PVMT REPAIR AS NEEDED FOR WM & FM CONSTRUCTION

SEWER NOTE:
1. EXISTING GRAVITY SEWER LINES FROM THE CONNECTION POINT ON GREEN COVE AVE TO EXISTING LIFT STATION #2 SHALL BE CLEANED PER COGCS SPECIFICATIONS. COORDINATE WITH CITY STAFF AS REQUIRED.



BACKSIDE TEE CONNECTION TO EXISTING MAIN (N.T.S.)

OFFSITE UTILITIES TABLE			
VVH #	TYPE OF UTILITY	TOP OF UTILITY EL.	EX. GROUND EL.
1	12" DI WM	32.32	35.31
2	6" PVC ELEC. CON	32.55	35.49
3	6" PVC ELEC. CON	32.19	35.43
5	GAS (NOT FOUND)	N/A	35.30
6	2.5" PE (MCI)	32.72	35.14

UTILITY CROSSING LEGEND

(1) = CONSTRUCT REUSE MAIN BELOW WATER MAIN - MAINTAIN 12" SEPARATION

(2) = CONSTRUCT FORCE MAIN BELOW WATER MAIN OR REUSE MAIN- MAINTAIN 12" SEPARATION

(A) = CONSTRUCT MAIN 6" ABOVE(MIN)/12" ABOVE (PREFERRED) OUTSIDE WALL OF SEWER/STORM PIPE IN ACCORDANCE W/CCUA

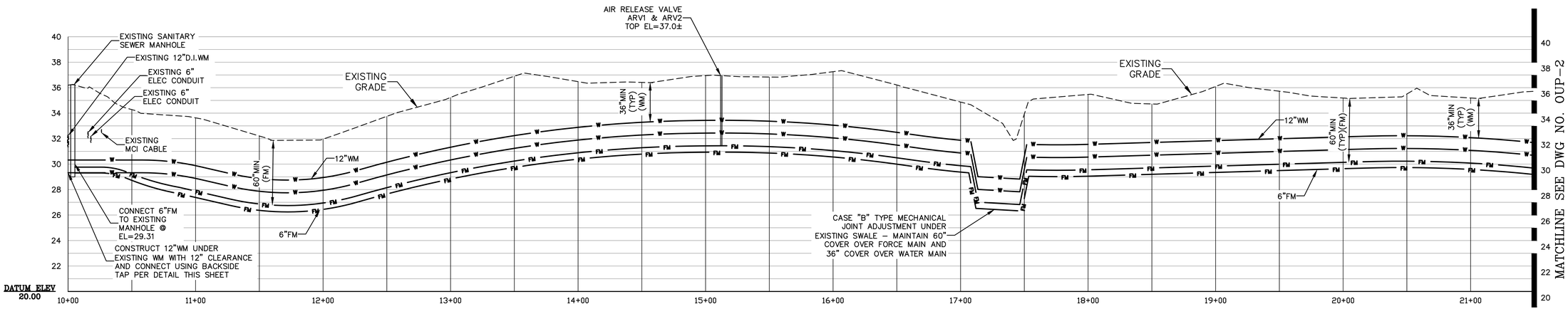
(B) = CONSTRUCT MAIN 12" BELOW OUTSIDE WALL OF SEWER/STORM PIPE IN ACCORDANCE W/CCUA

(C) = MAINTAIN VERTICAL AND HORIZONTAL SEPARATION IN ACCORDANCE W/CCUA

NOTES:

1. WATER MAIN AND FORCE MAIN TO BE INSTALLED WITH TRACER WIRE, SEE DETAIL DWG. NO. WD–5.
2. THE MINIMUM COVER OVER TOP OF WATER MAIN SHALL BE 36".
3. THE MINIMUM COVER OVER TOP OF FORCE MAIN SHALL BE 60".
4. FOR UTILITIES (CLAY ELECTRIC, BELL SOUTH & CABLE, T.V.) LOCATIONS SEE DETAILS 50' R/W AND 60' R/W DWG. NO. UTC–2.
5. FOR WATER AND REUSE MAINS – A&B CROSSINGS & FITTINGS SHALL NOT BE LOCATED UNDER PAVEMENT.
6. WATER & REUSE MAIN VALVES & VALVE BOXES SHALL NOT BE LOCATED WITHIN THE PAVEMENT.

Always call 811 two full business days before you dig
Sunshine811.com



OFFSITE UTILITY EASEMENT

SCALE: 1" = 40' HOR.
1" = 4' VERT.

RELEASED FOR CONSTRUCTION

THE ROOKERY – PHASE 1

P:\2008–499 AYRSHIRE\ENG PLANS\499 OUP.DWG4/19/2023 8:24 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
–	–	–	–

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 40'
DATE:	4/19/2023
PROJ. NO.:	2008–499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363–8916 Fax: (904)363–8917
www.dunneng.com

THE ROOKERY – PHASE 1
FOR:
D.R. HORTON, INC. – JACKSONVILLE
CLAY COUNTY, FLORIDA
OFFSITE UTILITY PLAN AND PROFILE

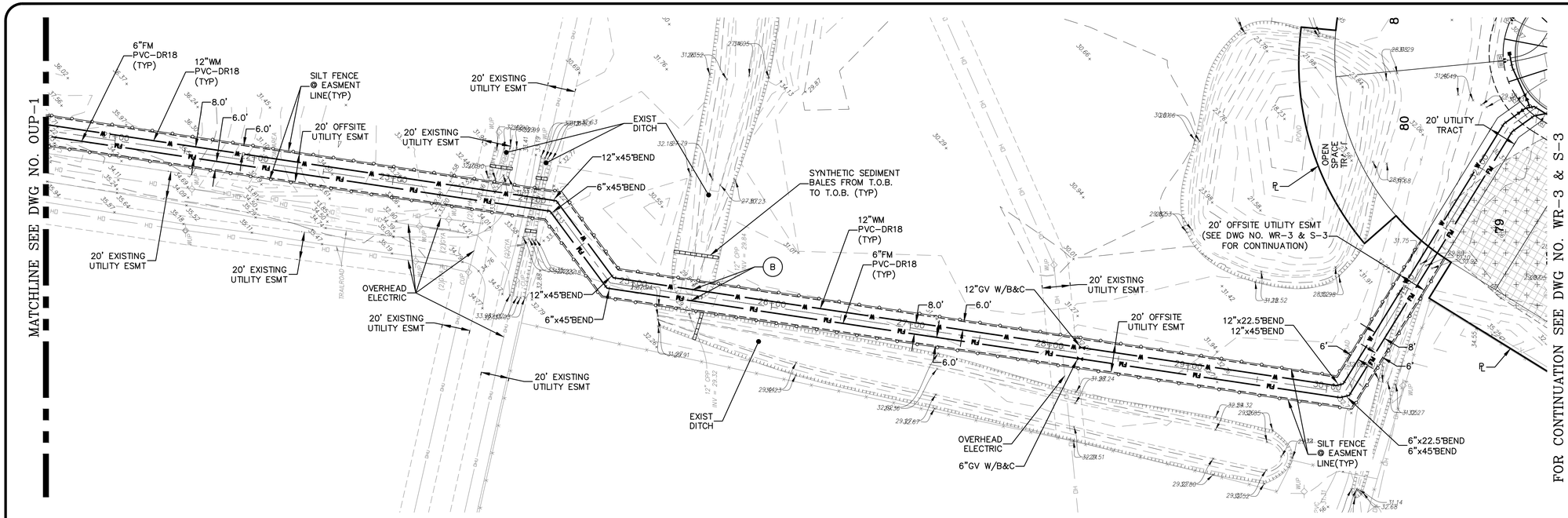
VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 62 of 88

OUP–1
DWG. NO.



GRAPHIC SCALE

40 0 40 40 80 160

(IN FEET)
1 inch = 40 ft.

LEGEND

= WETLANDS

= UPLAND BUFFER

= WETLAND IMPACT

SP-1 = SAMPLE POINT

UTILITY CROSSING LEGEND

1 = CONSTRUCT REUSE MAIN BELOW WATER MAIN - MAINTAIN 12" SEPARATION

2 = CONSTRUCT FORCE MAIN BELOW WATER MAIN OR REUSE MAIN- MAINTAIN 12" SEPARATION

A = CONSTRUCT MAIN 6" ABOVE(MIN)/12" ABOVE (PREFERRED) OUTSIDE WALL OF SEWER/STORM PIPE IN ACCORDANCE W/CCUA

B = CONSTRUCT MAIN 12" BELOW OUTSIDE WALL OF SEWER/STORM PIPE IN ACCORDANCE W/CCUA

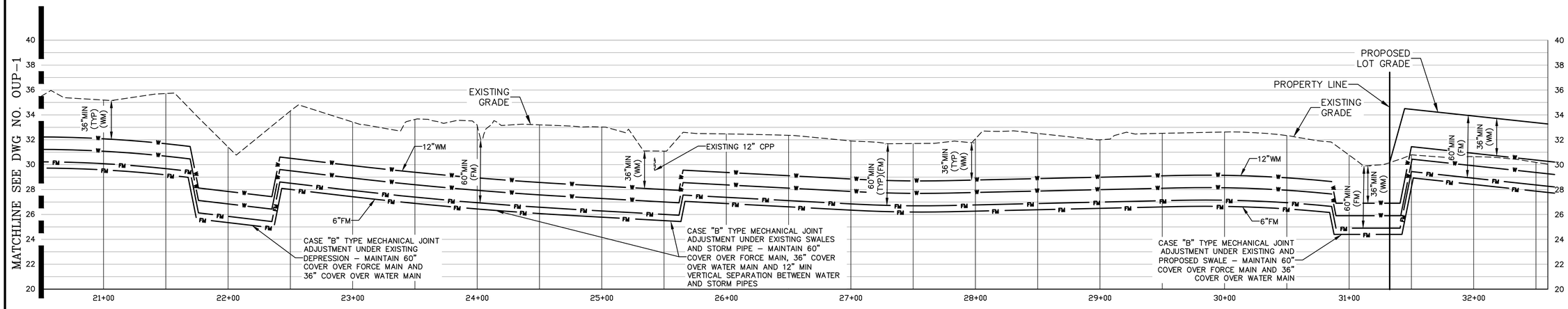
C = MAINTAIN VERTICAL AND HORIZONTAL SEPARATION IN ACCORDANCE W/CCUA

Always call 811 two full business days before you dig

Sunshine811.com

NOTES:

1. WATER MAIN AND FORCE MAIN TO BE INSTALLED WITH TRACER WIRE, SEE DETAIL DWG. NO. WD-5.
2. THE MINIMUM COVER OVER TOP OF WATER MAIN SHALL BE 36".
3. THE MINIMUM COVER OVER TOP OF FORCE MAIN SHALL BE 60".
4. FOR WATER AND REUSE MAINS – A&B CROSSINGS & FITTINGS SHALL NOT BE LOCATED UNDER PAVEMENT.
5. WATER & REUSE MAIN VALVES & VALVE BOXES SHALL NOT BE LOCATED WITHIN THE PAVEMENT.



OFFSITE UTILITY EASEMENT

SCALE: 1" = 40' HOR.
1" = 4' VERT.

RELEASED FOR CONSTRUCTION

THE ROOKERY – PHASE 1

P:\2008-499 AYRSHIRE\ENG PLANS\499 OUP.DWG4/19/2023 8:25 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
–	–	–	–

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 40'
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1
FOR:
D.R. HORTON, INC. – JACKSONVILLE
CLAY COUNTY, FLORIDA
OFFSITE UTILITY PLAN AND PROFILE

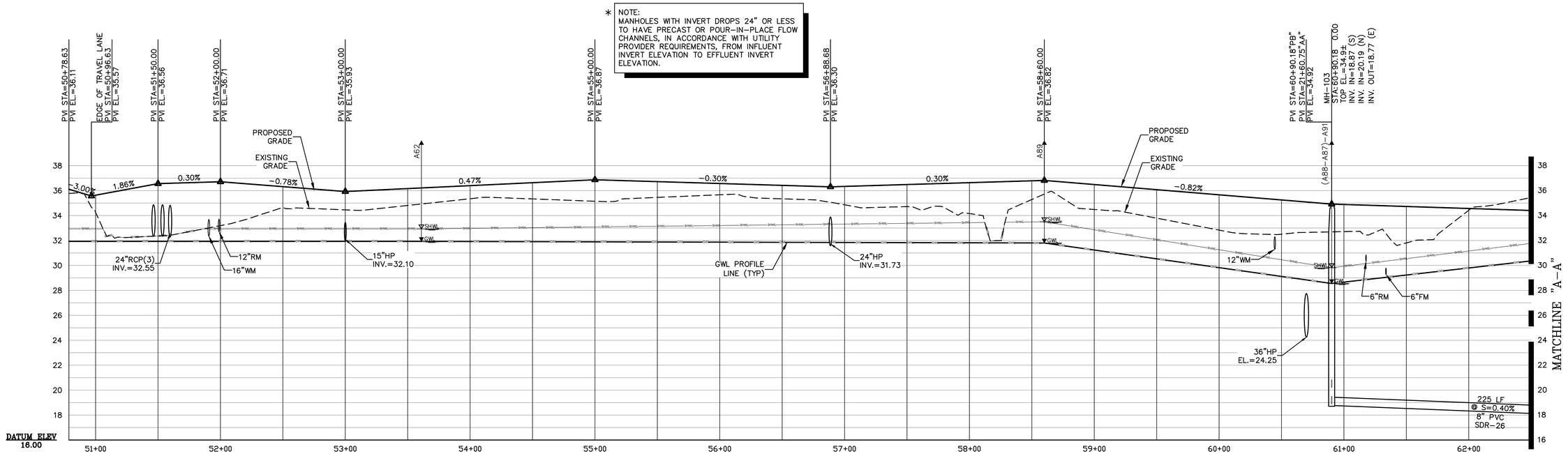
VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

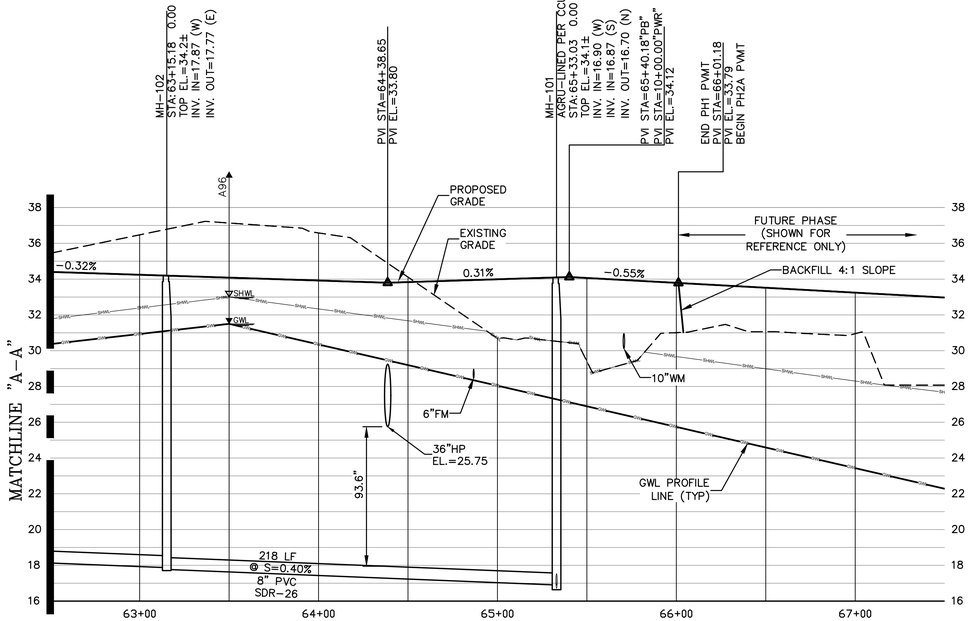
Sheet No. 63 of 88

OUP-2
DWG. NO.



PEARCE BOULEVARD

SCALE: 1" = 40' HOR.
1" = 4' VERT.



PEARCE BOULEVARD

SCALE: 1" = 40' HOR.
1" = 4' VERT.

P:\2008-499 AYRSHIRE\ENG PLANS\499 RSP.DWG4/19/2023 8:26 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
-	-	-	

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	AS NOTED
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY - PHASE 1
FOR:
D.R. HORTON, INC. - JACKSONVILLE
CLAY COUNTY, FLORIDA
ROAD AND SEWER PROFILES

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

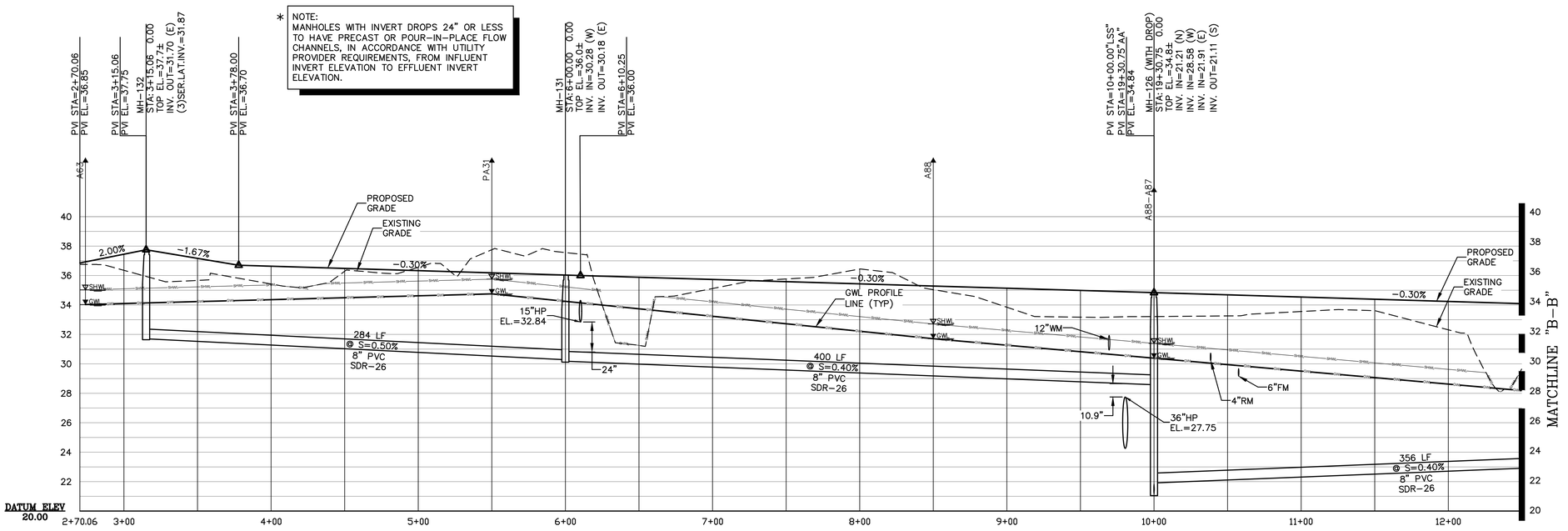
This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 64 of 88

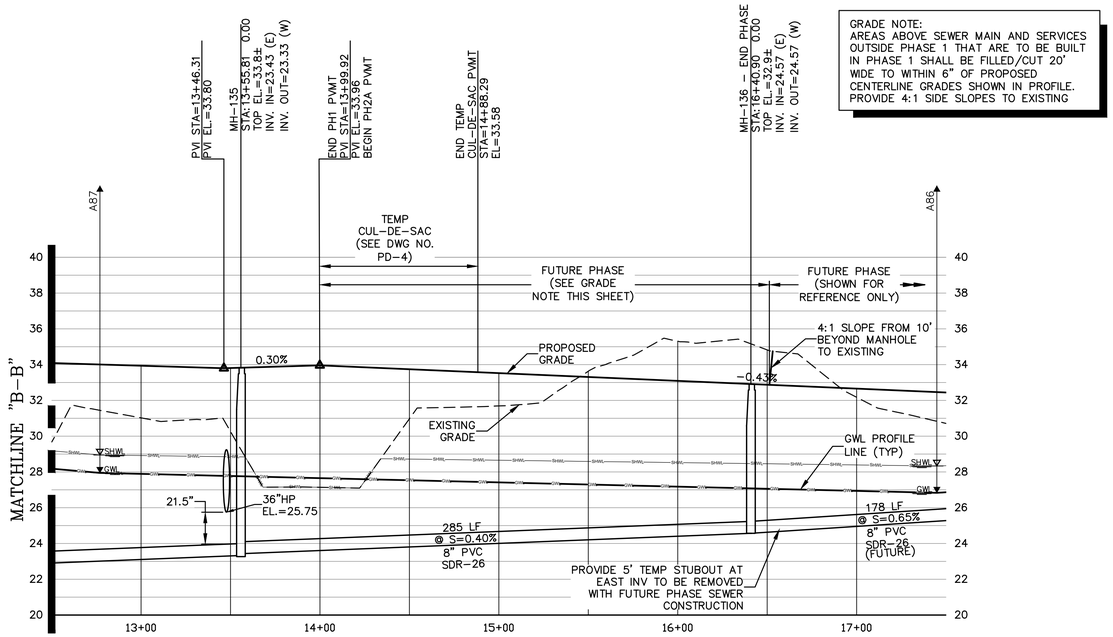
RSP-1
DWG. NO.

RELEASED FOR CONSTRUCTION



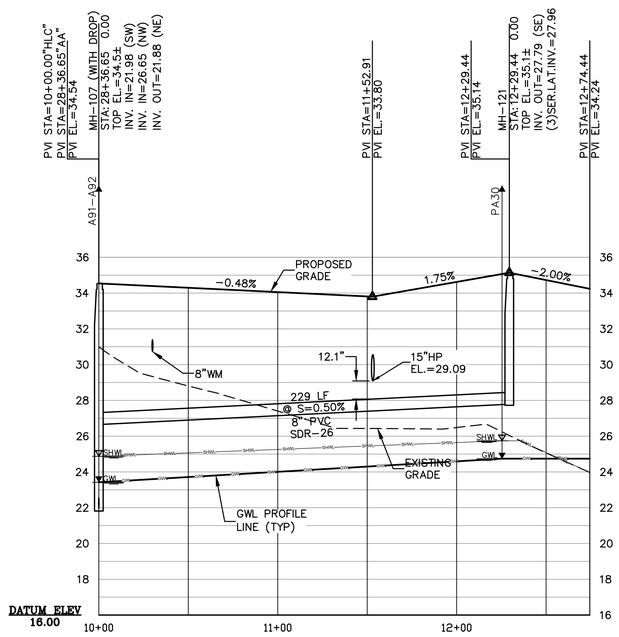
LITTLE HERON PLACE

SCALE: 1" = 40' HOR.
1" = 4' VERT.



LITTLE HERON PLACE

SCALE: 1" = 40' HOR.
1" = 4' VERT.



HORNED LARK COURT

SCALE: 1" = 40' HOR.
1" = 4' VERT.

P:\2008-499 AYRSHIRE\ENG PLANS\499 RSP.DWG4/19/2023 8:26 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
–	–	–	

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	AS NOTED
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1
FOR:
D.R. HORTON, INC. – JACKSONVILLE
CLAY COUNTY, FLORIDA
ROAD AND SEWER PROFILES

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

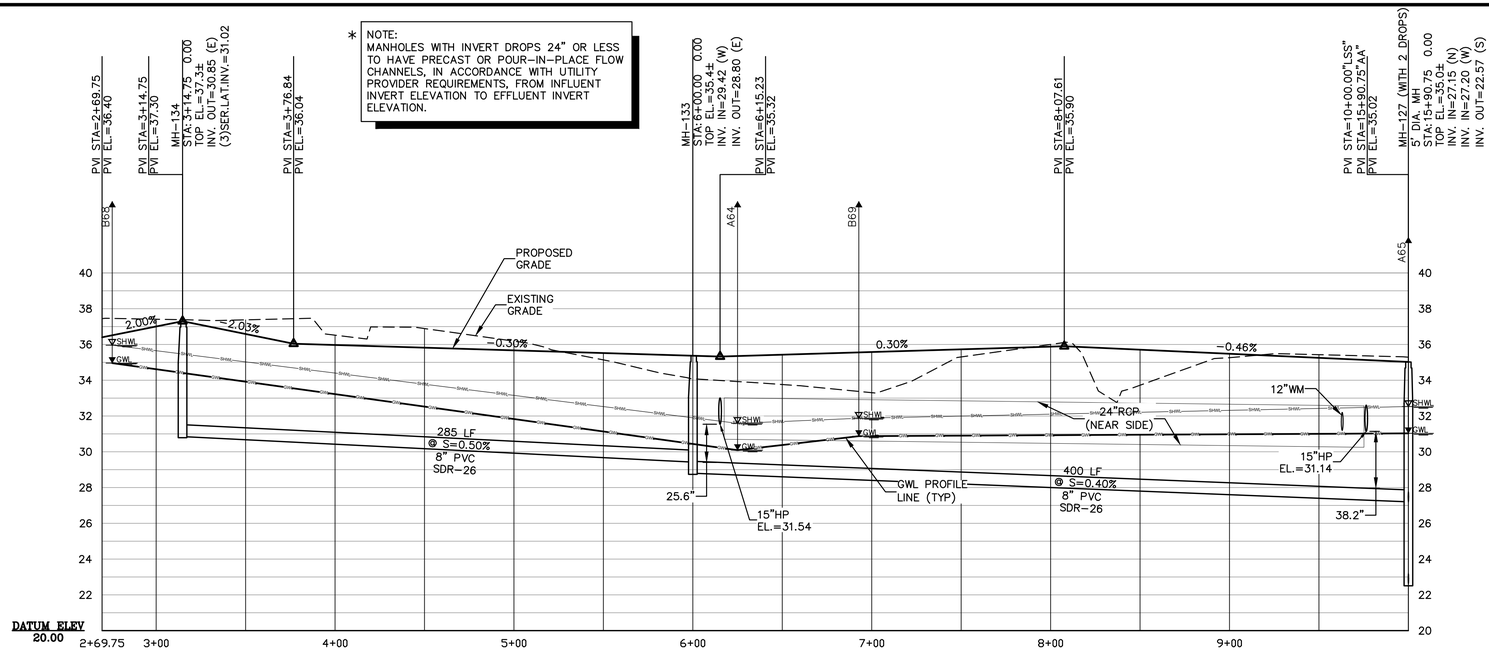
VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 65 of 88

RSP-2

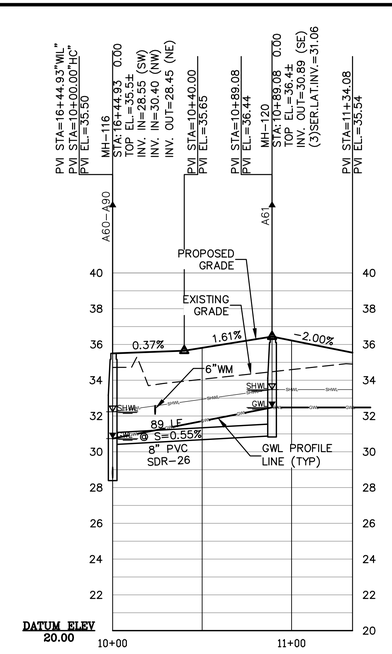
DWG. NO.

RELEASED FOR CONSTRUCTION



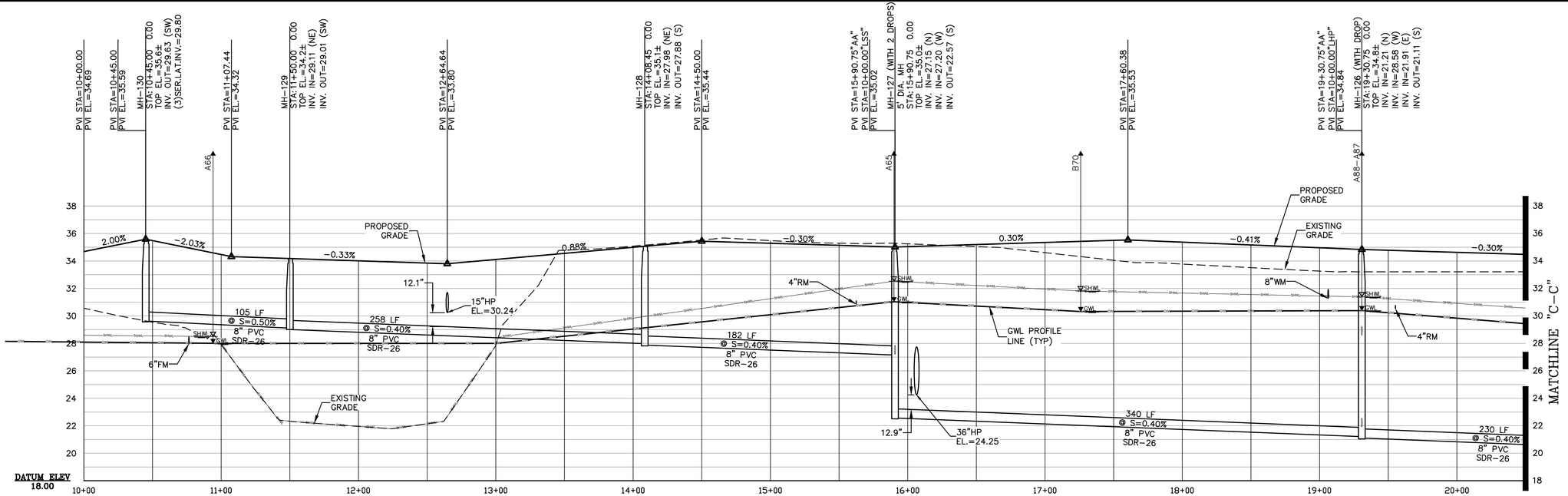
LARK SPARROW STREET

SCALE: 1" = 40' HOR.
1" = 4' VERT.



HATCHLING COURT

SCALE: 1" = 40' HOR.
1" = 4' VERT.



AUDUBON AVE

SCALE: 1" = 40' HOR.
1" = 4' VERT.

RELEASED FOR CONSTRUCTION

P:\2008-499 AYRSHIRE\ENG PLANS\499 RSP.DWG4/19/2023 8:26 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
–	–	–	

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	AS NOTED
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1
FOR:
D.R. HORTON, INC. – JACKSONVILLE
CLAY COUNTY, FLORIDA
ROAD AND SEWER PROFILES

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

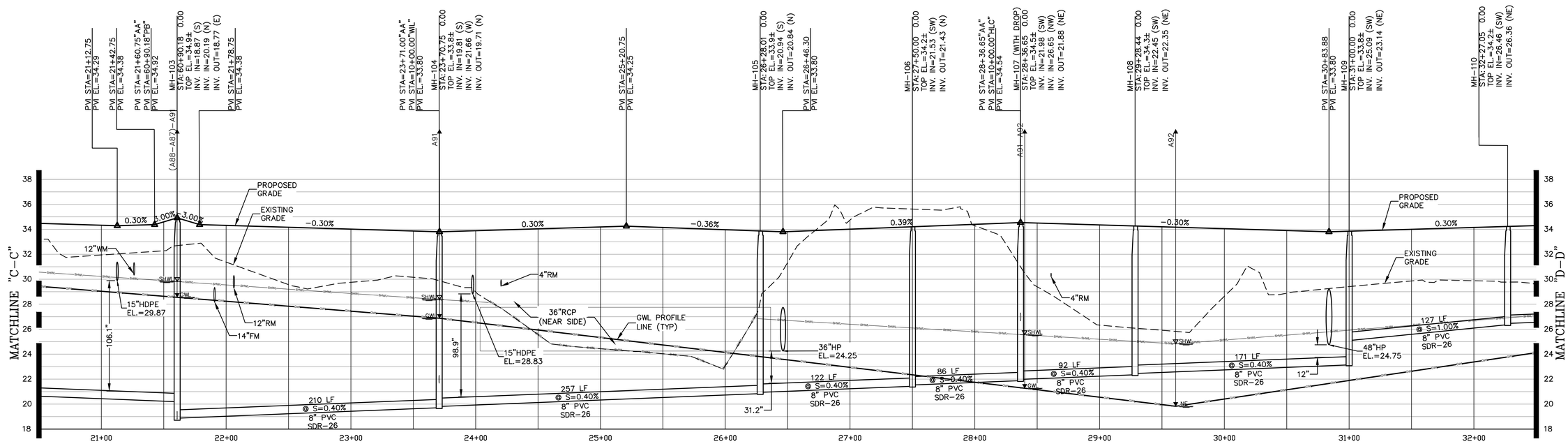
This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 66 of 88

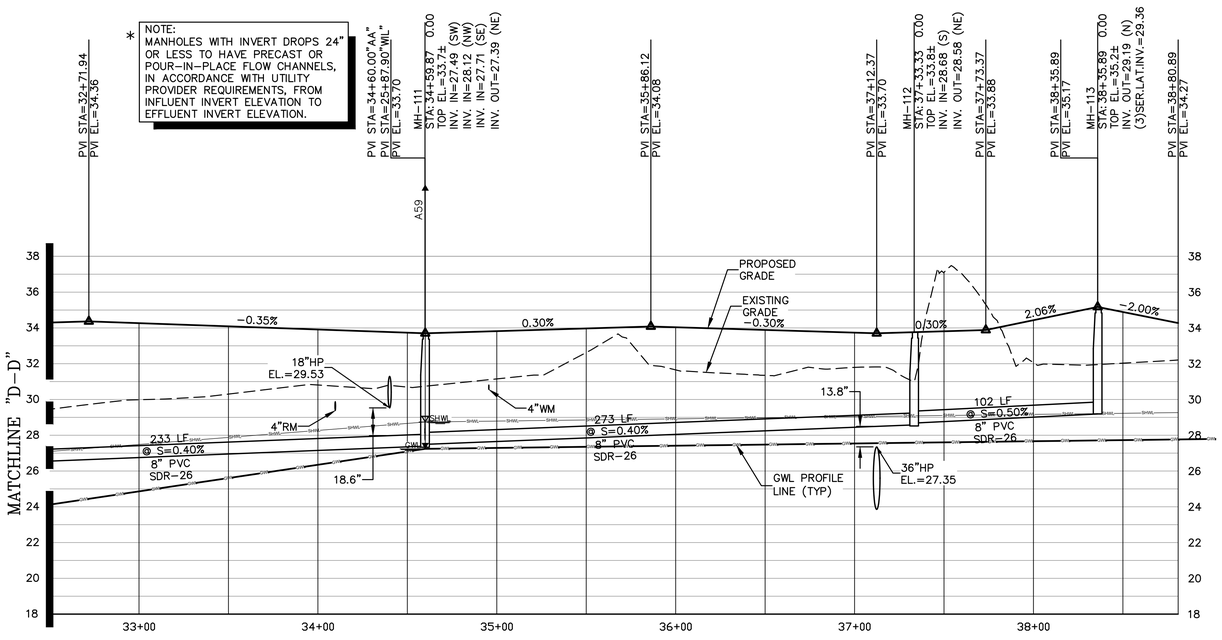
RSP-3

DWG. NO.



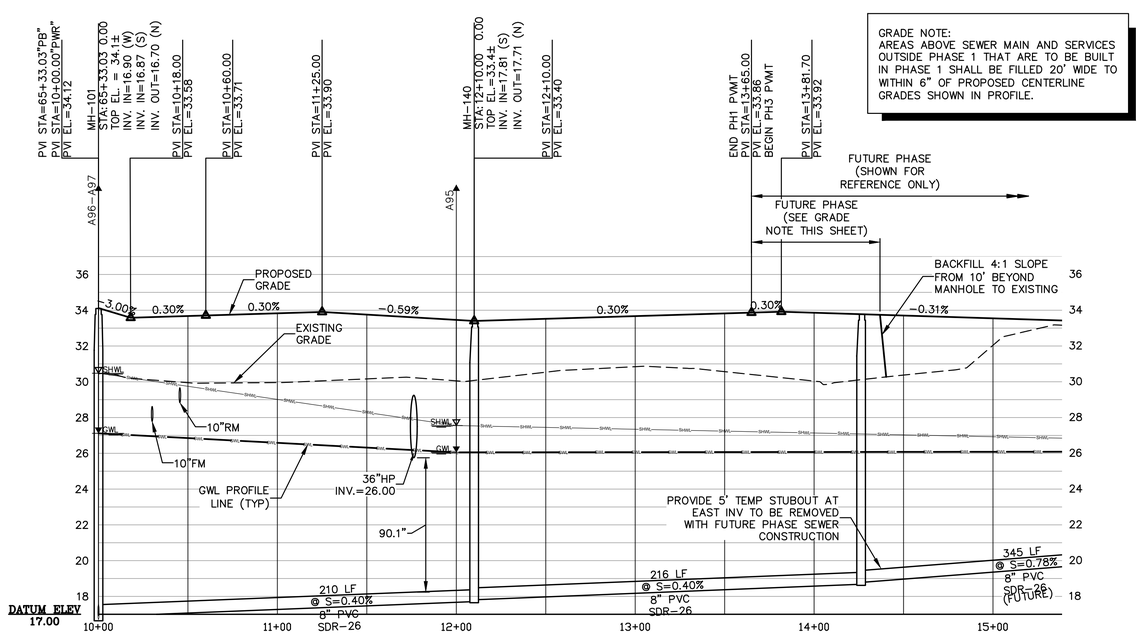
AUDUBON AVE

SCALE: 1" = 40' HOR.
1" = 4' VERT.



AUDUBON AVE

SCALE: 1" = 40' HOR.
1" = 4' VERT.



PALM WARBLER ROAD

SCALE: 1" = 40' HOR.
1" = 4' VERT.

P:\2008-499 AYRSHIRE\ENG PLANS\499 RSP.DWG4/19/2023 8:27 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
–	–	–	

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	AS NOTED
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1

FOR:
D.R. HORTON, INC. – JACKSONVILLE

CLAY COUNTY, FLORIDA

ROAD AND SEWER PROFILES

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

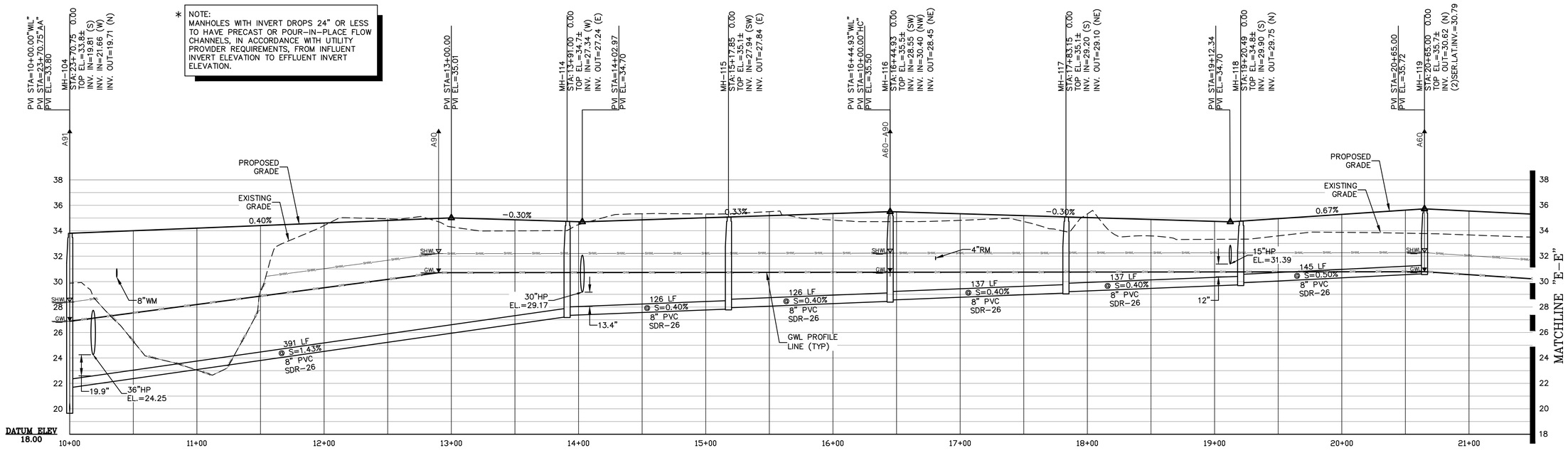
VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 61419

Sheet No. 67 of 88

RSP-4

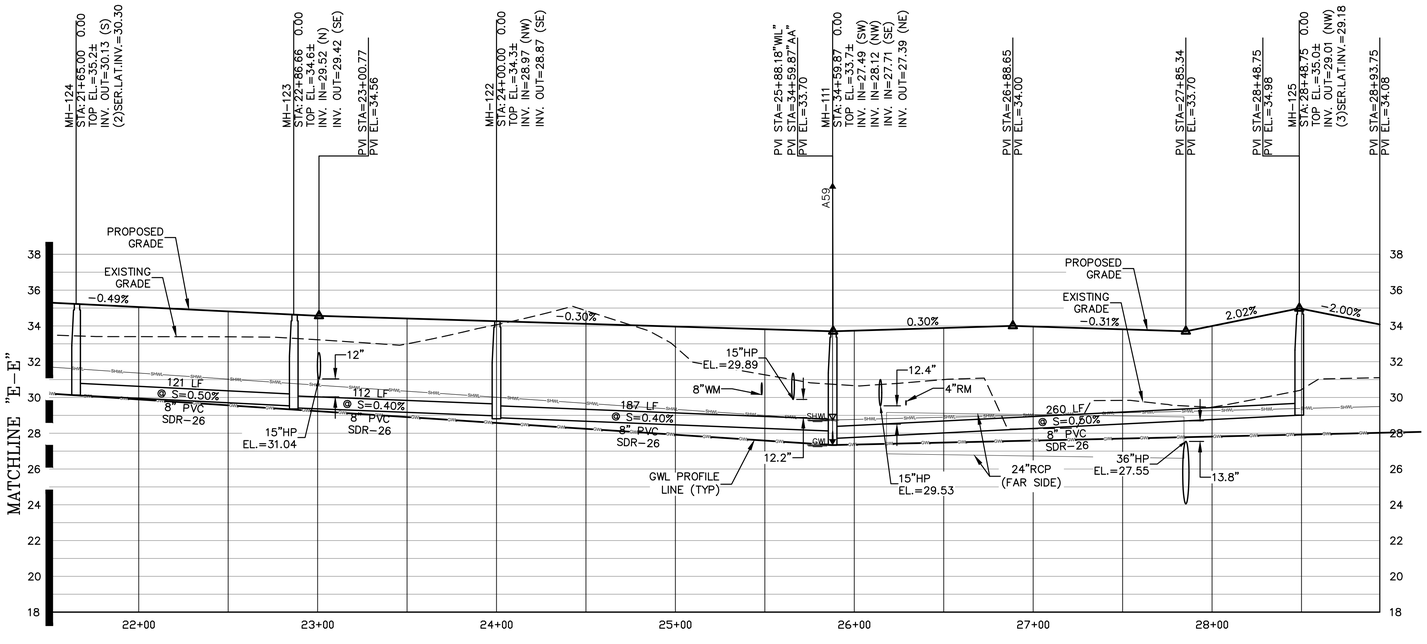
DWG. NO.

RELEASED FOR CONSTRUCTION



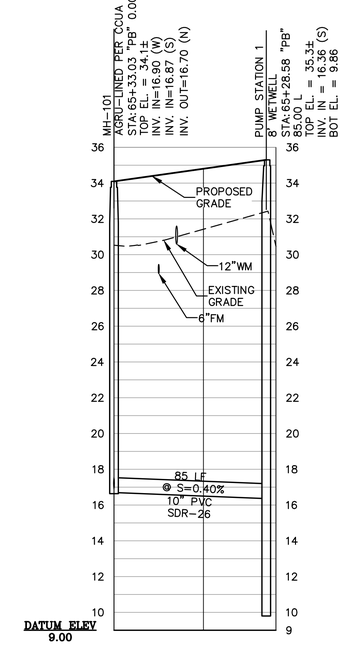
WHITE IBIS LANE

SCALE: 1" = 40' HOR.
1" = 4' VERT.



WHITE IBIS LANE

SCALE: 1" = 40' HOR.
1" = 4' VERT.



MH101-PS

SCALE: 1" = 40' HOR.
1" = 4' VERT.

RELEASED FOR CONSTRUCTION

P:\2008-499 AYRSHIRE\ENG PLANS\499 RSP.DWG4/19/2023 8:27 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
–	–	–	

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	AS NOTED
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1

FOR:
D.R. HORTON, INC. – JACKSONVILLE

CLAY COUNTY, FLORIDA

ROAD AND SEWER PROFILES

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

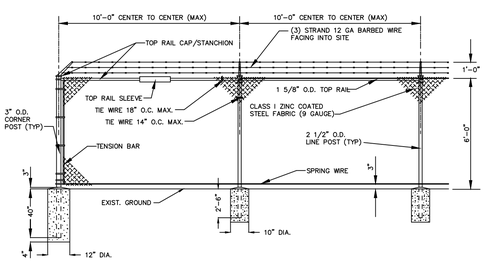
This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

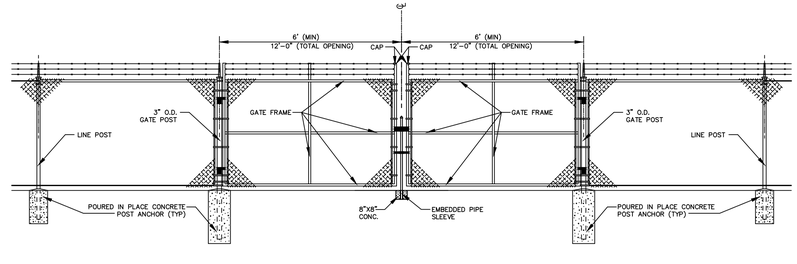
Sheet No. 68 of 88

RSP-5

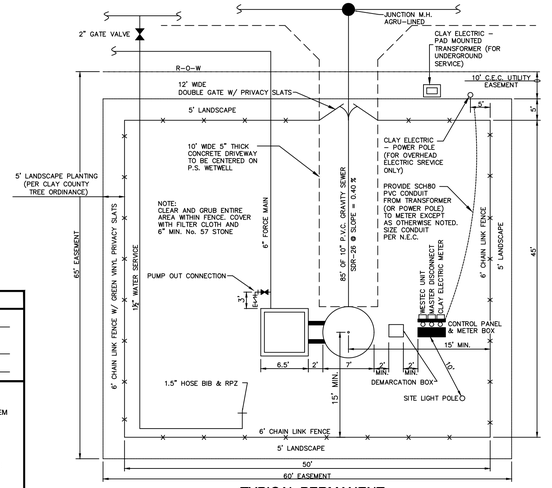
DWG. NO.



CHAIN LINK FENCE & CORNER POST DETAIL



GATE DETAIL



TYPICAL PERMANENT PUMP STATION SITE PLAN

N.T.S.

AS-BUILT

INFORMATION PROVIDED BY: _____

ADDRESS: _____

PHONE #: _____

I HEREBY CERTIFY THAT THE

____ PAVEMENT	____ WATER MAIN
____ CURB AND GUTTER	____ SANITARY GRAVITY SYSTEM
____ STORMWATER DRAINAGE SYSTEM	____ FORCE MAIN
____ UNDERDRAIN CONNECTIONS	____ LIFT STATION
	____ RECLAIMED WATER

ARE AT THE HORIZONTAL AND VERTICAL LOCATIONS AS SHOWN ON THESE "AS-BUILT" SURVEYS MEET THE STANDARDS OF PRACTICE EFFECTIVE DATE JULY 1, 2014 AS PURSANT TO SECTION 472, FLORIDA STATUTES. UNLESS OTHERWISE DEFINED IN THE CLAY COUNTY UTILITY AUTHORITY SPECIFICATIONS FOR AS-BUILTS, NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.

SIGNATURE: _____

FLORIDA PROFESIONAL SURVEYOR & MAPPER #: _____

GENERAL NOTES:

1. PUMPS: TWO (2) TOTALLY SUBMERSIBLE SEWAGE PUMPS WITH 230/460 VOLTS, 3 PHASE 60 HERTZ MOTORS, CAPABLE OF DELIVERING 300 GPM @ 60' TDH W/230MM IMPELLER AND 290 GPM @ 111' TDH W/278MM IMPELLER FULL BUILDOUT SHALL BE ABS CONTRABLOCK, FLYGT OR DAVIS EMU. (VERIFY WITH UTILITY AT THE TIME OF DESIGN).

PUMP MANUFACTURER: FLYGT
PUMP MODEL NUMBER: NP 3153.HT3-462
MOTOR HP: 20
MOTOR RPM: 1755
PUMP RPM: 1755
IMPELLER SIZE: 230 MM (TRIMMED)- PROVIDE EXTRA 276 MM

2. GAUGES: GAUGES SHALL BE FURNISHED WHERE SHOWN MOUNTED BRASS MOVEMENTS, COMPLETELY SEALED UNBREAKABLE PLEXIGLASS CRYSTAL, WITH NOT LESS THAN 90% GLYCERIN-FILLED STAINLESS STEEL CASE. EACH GAUGE SHALL HAVE A RANGE SUCH THAT THE NORMAL OPERATION PRESSURE SHALL BE APPROXIMATELY AT HALF OF THE RANGE. GAUGES SHALL BE EQUIPPED WITH A SAFELY BLOW-OUT PLUG AND DAMPENING SCREW. GAUGES SHALL BE MOUNTED USING ½" (NPT) STEEL PIPE WITH DIAPHRAGM PROTECTORS WITH STAINLESS STEEL DIAPHRAGM AND STOP COCKS BETWEEN DISCHARGE PIPES AND GAUGES. GAUGES SHALL BE EQUAL TO THOSE MANUFACTURED BY THE LENZ COMPANY.

3. TO MAKE A COMPLETE INSTALLATION, FENCING SHALL BE FURNISHED AND INSTALLED. FENCING SHALL COMPLY WITH ASTM A392-68T LATEST SPECIFICATIONS FOR ZINC COATED STEEL CHAIN LINK FENCE FABRIC AND AS DETAILED ON THE DRAWING. FITTINGS SHALL BE MALLEABLE IRON OR PRESSED STEEL FORGINGS. ALL FERROUS MATERIALS SHALL BE THOROUGHLY GALVANIZED BY THE HOT-DIP METHOD.

A. PRIVACY SLATS: SLATS SHALL BE FLAT/TUBULAR IN SHAPE, ± 0.003"). THERMOPLASTIC WITH A WALL THICKNESS P 0.030". LENGTH AND WIDTH OF SLATS SHALL BE AS RECOMMENDED BY THE MANUFACTURER. FENCE FABRIC AS SPECIFIED HEREIN. SLATS SHALL HAVE A HORIZONTAL LOCKING STRIP TO PROVIDE SECURE ATTACHMENT TO CHAIN-LINK. THE FABRIC, AND PROVIDE A PRIVACY FACTOR OF 89%. MINIMUM WIDTH OF SLAT SHALL BE 1-1/2". ACCEPTABLE MANUFACTURER: PATRICIAN PRODUCTS, OR EQUAL

B. PRIVACY SCREENING: ENVIRONMENTAL PRIVACY SCREENING SHALL BE 6' HIGH WOVEN MESH FABRIC OF 70% POLYETHYLENE UV STABILIZED TRIM, COLOR GREEN. SCREENING SHALL BE ATTACHED TO THE FENCE FABRIC WITH SUFFICIENT TIES TO SECURE THE SCREEN. ACCEPTABLE SCREEN: PRIVACY PLUS OR EQUAL

4. ALL PRECAST REINFORCED CONCRETE PRODUCTS SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM C478 (LATEST), WITH CLASS A CONCRETE, UNLESS OTHERWISE NOTED. ALL CONCRETE AND REINFORCING SHALL BE CERTIFIED BY AN ENGINEER REGISTERED WITH THE STATE OF FLORIDA.

5. ALL DISCHARGE PIPING FROM THE PUMPS THROUGH TO THE VALVE VAULT SHALL BE 316 GRADE, SCH.40 STAINLESS STEEL. THIS INCLUDES ALL FITTINGS WITHIN THIS PRESCRIBED LIMIT.

6. PIPE FITTINGS 4" AND SMALLER SHALL BE EPOXY LINED OR POLY-LINED (40 MIL THICKNESS) DUCTILE IRON.

7. PUMP STATION SITE SHALL BE COVERED (INSIDE OF FENCED AREA) WITH NO. 57 LIMESTONE 6" THICK WITH 6 MIL VISQUEEN BETWEEN ROCK AND GRADE. DRIVEWAY SHALL BE 5"-2500 PSI CONCRETE.

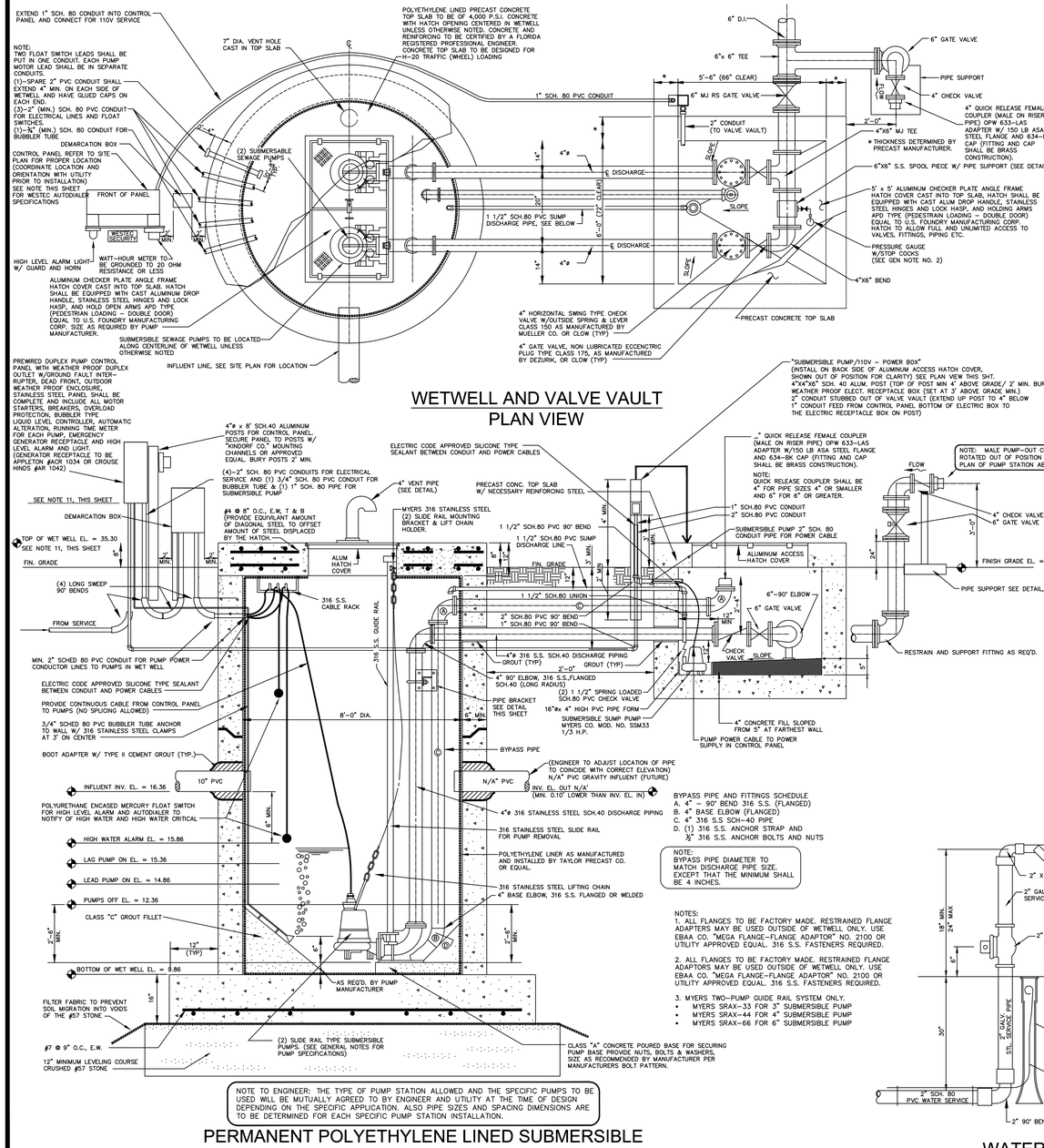
8. ALL DUCTILE IRON FITTINGS AND PIPE SHALL BE HOLIDAY TESTED PRIOR TO INSTALLATION.

9. EXTERIOR COATING OF BITUMINOUS COATING AS SPECIFIED IN A.N.S.I. SPECIFICATIONS A21.51.

10. ALL EXTERIOR JOINTS OF PRECAST CONCRETE WETWELLS SHALL BE SEALED WITH A RUBBERIZED ASPHALT MEMBRANE TAPE, TAPE SHALL BE PERMA-A-BARRIER BY W.R. GRACE, ELASTEX BY KARNAK OR EQUAL.

11. EACH PUMP STATION SHALL BE EQUIPPED WITH A DSC 1500 MASTER CONTROL PANEL WITH LOCKED METAL ENCLOSURE W/ BOX DIMENSIONS OF 12"x 12"x 4 1/2". A DSC 1550 ACCESS KEYPAD MOUNTED ON THE PANEL ENCLOSURE W/ DIMENSIONS NO GREATER THAN 4 3/4"X 4 3/4"X 1", A 12 VOLT, 7 AMP BACK-UP BATTERY; A TRANSFORMER (16.5 VAC) OUTSIDE BOX IN ELECTRICAL OUTLET; PHONE CABLE AND RJ31X PHONE JACK FOR DIALER HOOK-UP INSIDE BOX); ELECTRICAL SURGE PROTECTOR (OUTSIDE BOX IN ELECTRICAL OUTLET); PHONE LINE SURGE PROTECTOR (INSIDE BOX); AND ALL MISCELLANEOUS HARDWARE FOR A COMPLETE AND OPERATING SYSTEM.
ALL COMPONENTS LISTED TO BE ENCLOSED IN THE ALARM PANEL BOX WITH EXCEPTION OF THE TRANSFORMER, THE ELECTRICAL SURGE PROTECTOR AND THE CONTROL PANEL KEYPAD (TO BE MOUNTED DIRECTLY ONTO THE ALARM PANEL).

12. ENGINEERS SHALL PROVIDE VERIFICATION THAT THE TOP OF THE WETWELL, BOTTOM OF CONTROL PANELS, GENERATOR RECEPTACLE AND GENERATOR SLAB ARE ALL ABOVE THE 100 YR. FLOOD ELEVATION. THEREFORE, I DO HEREBY CERTIFY THAT THE ABOVE ELEVATIONS HAVE BEEN MET.

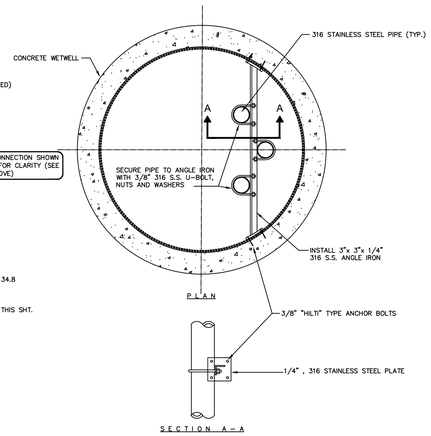


WETWELL AND VALVE VAULT PLAN VIEW

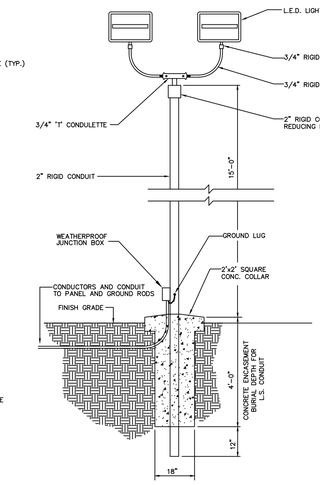
PERMANENT POLYETHYLENE LINED SUBMERSIBLE PUMP STATION WITH VALVE PIT - ELEVATION

(NOTE: PIPE SIZES, WETWELL SIZES AND INSIDE DIMENSIONS OF VALVE PIT TO BE VERIFIED BY ENGINEER AND MODIFIED AS NECESSARY.)

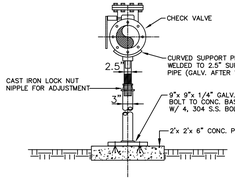
NOTE TO ENGINEER: THE TYPE OF PUMP STATION ALLOWED AND THE SPECIFIC PUMPS TO BE USED WILL BE MUTUALLY AGREED TO BY ENGINEER AND UTILITY AT THE TIME OF DESIGN DEPENDING ON THE SPECIFIC APPLICATION. ALSO PIPE SIZES AND SPACING DIMENSIONS ARE TO BE DETERMINED FOR EACH SPECIFIC PUMP STATION INSTALLATION.



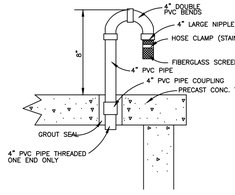
PIPE ATTACHMENT TO WALL DETAIL



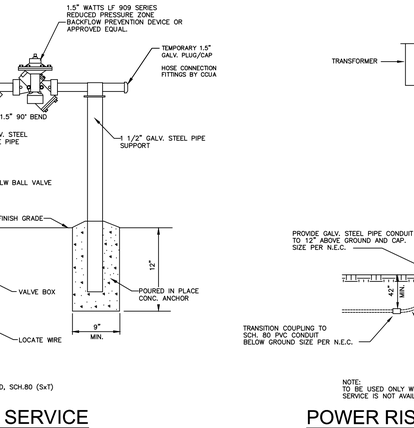
SITE LIGHT STANDARD DETAIL



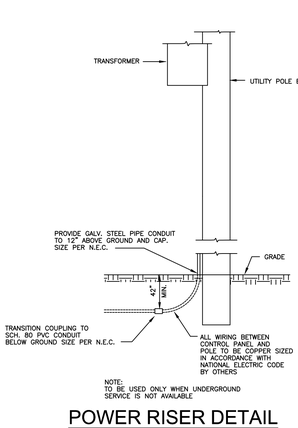
PIPE DETAIL



VENT PIPE DETAIL



WATER SERVICE



POWER RISER DETAIL

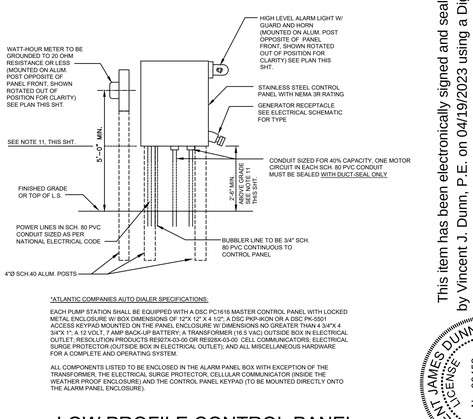
BYPASS PIPE AND FITTINGS SCHEDULE
A. 4" – 90° BEND 316 S.S. (FLANGED)
B. 4" BASE ELBOW (FLANGED)
C. 4" 316 S.S SCH–40 PIPE
D. (1) 316 S.S. ANCHOR STRAP AND ½" 316 S.S. ANCHOR BOLTS AND NUTS

NOTE: BYPASS PIPE DIAMETER TO MATCH DISCHARGE PIPE SIZE, EXCEPT THAT THE MINIMUM SHALL BE 4 INCHES.

NOTES:
1. ALL FLANGES TO BE FACTORY MADE. RESTRAINED FLANGE ADAPTERS MAY BE USED OUTSIDE OF WETWELL ONLY. USE EBAA CO. "MEGA FLANGE–FLANGE ADAPTOR" NO. 2100 OR UTILITY APPROVED EQUAL. 316 S.S. FASTENERS REQUIRED.

2. ALL FLANGES TO BE FACTORY MADE. RESTRAINED FLANGE ADAPTORS MAY BE USED OUTSIDE OF WETWELL ONLY. USE EBAA CO. "MEGA FLANGE–FLANGE ADAPTOR" NO. 2100 OR UTILITY APPROVED EQUAL. 316 S.S. FASTENERS REQUIRED.

3. MYERS TWO–PUMP GUIDE RAIL SYSTEM ONLY.
- MYERS SRAX–33 FOR 3" SUBMERSIBLE PUMP
- MYERS SRAX–44 FOR 4" SUBMERSIBLE PUMP
- MYERS SRAX–66 FOR 6" SUBMERSIBLE PUMP



*ATLANTIC COMPANIES AUTO DIALER SPECIFICATIONS:

EACH PUMP STATION SHALL BE EQUIPPED WITH A DSC PC1616 MASTER CONTROL PANEL WITH LOCKED METAL ENCLOSURE W/ BOX DIMENSIONS OF 12"X 12" X 4 1/2". A DSC PKP-WGN OR A DSC PK-5501 ACCESS KEYPAD MOUNTED ON THE PANEL ENCLOSURE W/ DIMENSIONS NO GREATER THAN 4 3/4"X 4 3/4"X 1", A 12 VOLT, 7 AMP BACK-UP BATTERY; A TRANSFORMER (16.5 VAC) OUTSIDE BOX IN ELECTRICAL OUTLET; RESOLUTION PRODUCTS RE5027X-03-00 OR RE928X-03-00 CELL COMMUNICATORS; ELECTRICAL SURGE PROTECTOR (OUTSIDE BOX IN ELECTRICAL OUTLET); AND ALL MISCELLANEOUS HARDWARE FOR A COMPLETE AND OPERATING SYSTEM.

ALL COMPONENTS LISTED TO BE ENCLOSED IN THE ALARM PANEL BOX WITH EXCEPTION OF THE TRANSFORMER, THE ELECTRICAL SURGE PROTECTOR, CELLULAR COMMUNICATOR (INSIDE THE WEATHER PROOF ENCLOSURE) AND THE CONTROL PANEL KEYPAD (TO BE MOUNTED DIRECTLY ONTO THE ALARM PANEL ENCLOSURE).

LOW PROFILE CONTROL PANEL

NO	DATE	BY	REVISION DESCRIPTION
16	10–04	MRS	REVISIONS TO PUMP STATION SITE PLAN
15	10–04	MRS	REVISED GENERAL NOTES
14	04–17	RHD	REVISED GENERAL NOTES (PUMP DATA)
13	04–17	RHD	MODIFIED GENERAL NOTES (CLEAR AND GRUB TO)
12	04–16	RHD	MODIFIED PUMP STATION SITE PLAN
11	04–16	RHD	ADDED PUMP DATA TO GENERAL NOTES
10	04–16	RHD	MODIFIED PUMP STATION PLAN
9	03–13	MRS	GENERAL REVISIONS
8	01–07	MRS	GENERAL REVISIONS
7	03–06	MRS	GENERAL PLANS AND REVISIONS
6	03–05	MRS	REVISED INV. EL. OUT NOTE TO PUMP STATION PLAN VIEW & BYPASS SIZE
5	10–04	MRS	REVISED GENERAL NOTES, ELEVATION & NOTE TO ENGINEER
4	10–04	MRS	REVISIONS TO PUMP STATION SITE PLAN
3			
2			
1			

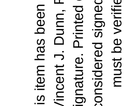
DESG
DRWN
CHKD
APRV
DATE

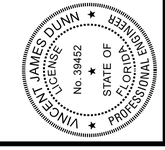
PROJECT:

PERMANENT SUBMERSIBLE PUMP STATION WITH CONCRETE WET WELL

CLAY COUNTY UTILITY AUTHORITY
3176 OLD JENNINGS ROAD
MIDDLEBURG, FLORIDA 32068–3907
TELEPHONE: (904) 272–5999

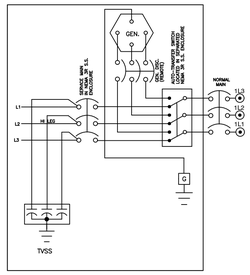
This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.



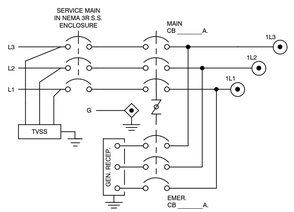


SHEET NO.

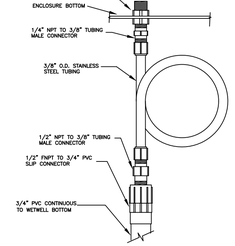
PS–1



AUTOMATIC TRANSFER SWITCH
TYP. GENERATOR SCHEMATIC

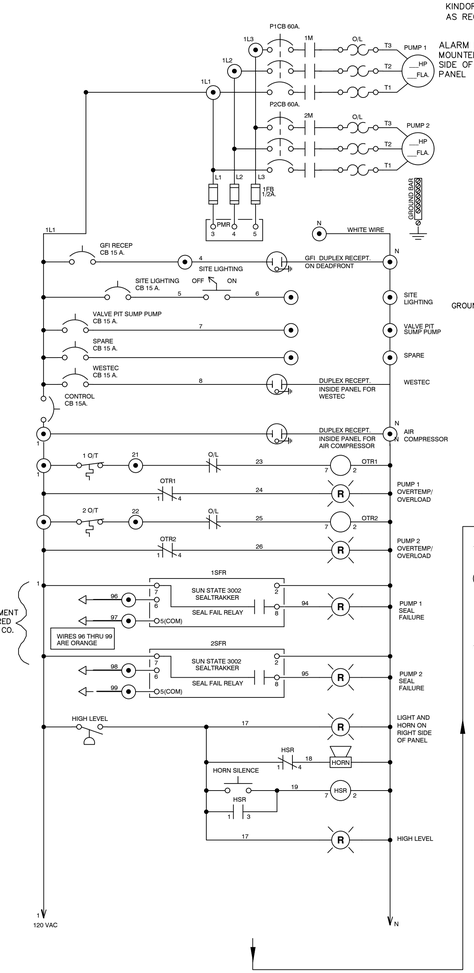


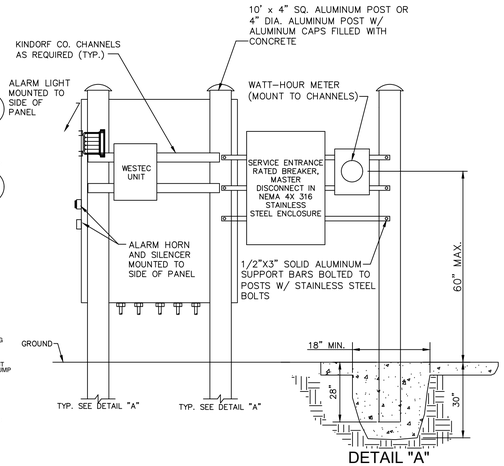
MANUAL TRANSFER SWITCH
TYP. GENERATOR RECEPTACLE SCHEMATIC



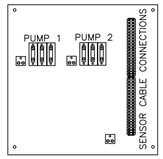
BUBBLER TUBE
CONNECTION DETAIL

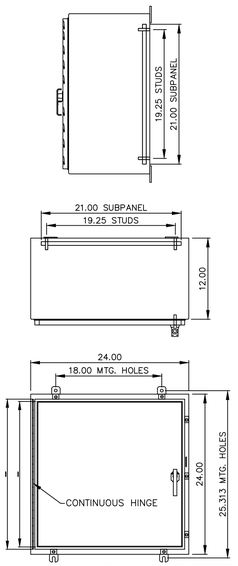
*WESTEC AUTO DIALER SPECIFICATIONS:
EACH PUMP STATION SHALL BE EQUIPPED WITH A DSC 1550 MASTER CONTROL PANEL WITH LOCKED METAL ENCLOSURE W/ BOX DIMENSIONS OF 12"x 12"x 4 1/2"; A DSC 1550 ACCESS KEYPAD MOUNTED ON THE PANEL ENCLOSURE W/ DIMENSIONS OF 4 3/4"x 4 3/4"x 1"; A 12 VOLT, 7 AMP BACK-UP BATTERY; A TRANSFORMER (16.5 VAC) OUTSIDE BOX IN ELECTRICAL OUTLET; PHONE CABLE AND RJ31X PHONE JACK FOR DIALER HOOK-UP INSIDE BOX); ELECTRICAL SURGE PROTECTOR (OUTSIDE BOX IN ELECTRICAL OUTLET); PHONE LINE SURGE PROTECTOR (INSIDE BOX); AND ALL MISCELLANEOUS HARDWARE FOR A COMPLETE AND OPERATING SYSTEM.
ALL COMPONENTS LISTED TO BE ENCLOSED IN THE ALARM PANEL BOX WITH EXCEPTION OF THE TRANSFORMER, THE ELECTRICAL SURGE PROTECTOR AND THE CONTROL PANEL KEYPAD (TO BE MOUNTED DIRECTLY ONTO THE ALARM PANEL). CONTRACTOR SHALL CONTACT CLAY COUNTY UTILITY AUTHORITY D&C SUPERVISOR TO COORDINATE PAYMENT FOR THE DSC 1550 MASTER CONTROL PANEL WHICH WILL BE ORDERED BY CLAY COUNTY UTILITY AUTHORITY. THE COST SHALL BE INCLUDED AS CONTRACTORS RESPONSIBILITY.



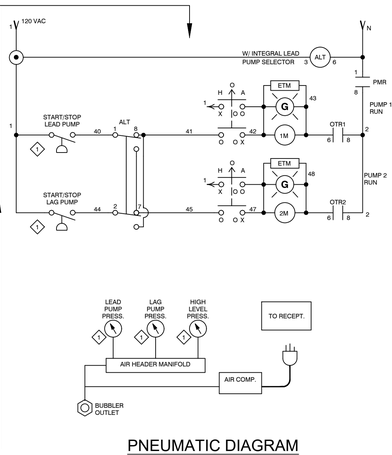


TYP. CONTROL PANEL REAR VIEW

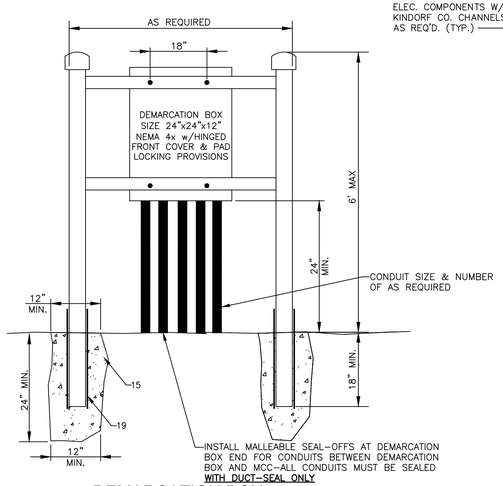




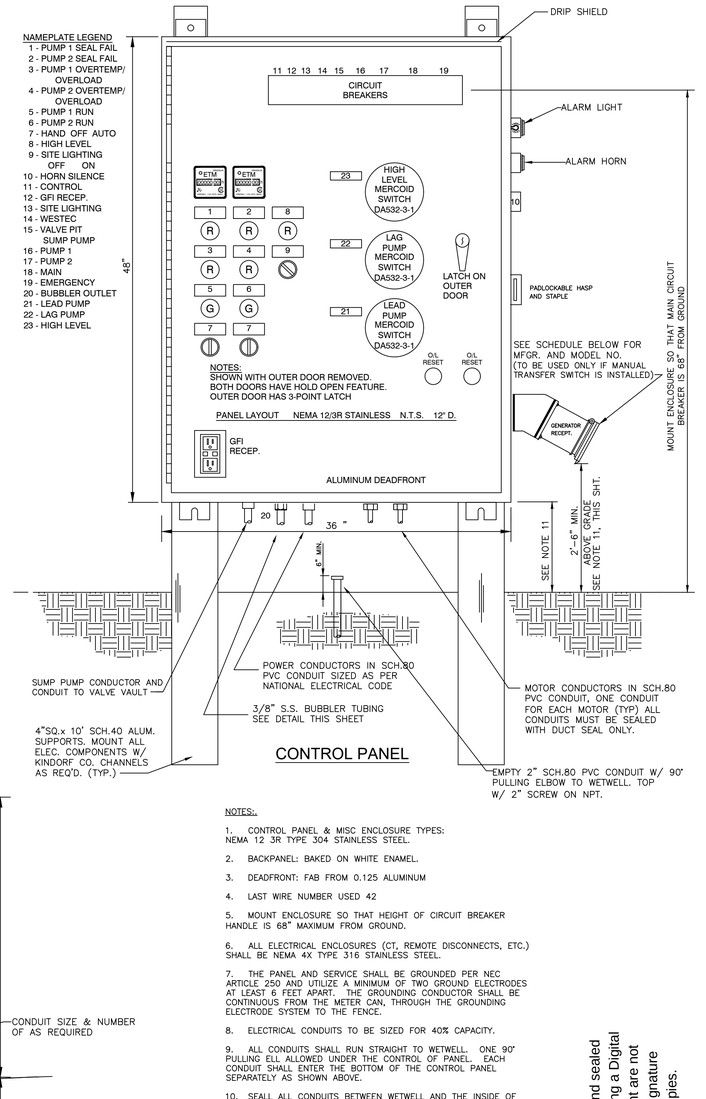
NEMA 4X 316 STAINLESS STEEL
24 X 24 DEMARCATION BOX



PNEUMATIC DIAGRAM



DEMARCATION BOX



CONTROL PANEL

NOTE:
ENGINEER IS TO VERIFY ELECTRIC SUPPLY OF SUFFICIENT CAPACITY IS AVAILABLE TO PROJECT PRIOR TO DESIGNING PUMP STATION. FILL IN ALL APPLICABLE BLANKS BELOW. CONTRACTOR SHALL PROVIDE CCUA WITH ALL REQUIRED SHOP DRAWING SUBMITTALS FOR REVIEW AND APPROVAL PRIOR TO ORDERING PUMP STATION MATERIALS.

DESIGN ENGINEER SHALL SELECT THE PROPER AMP RATED GENERATOR RECEPTACLE AND PLACE THE MODEL NUMBER IN GENERATOR RECEPTACLE COLUMN APPLETON #ACR 1034 OR CROUSE-HINDS #AR 1042 = BOTH RATED AT 100 AMPS APPLETON / #AR 20034RS OR CROUSE-HINDS #AR 2042S22 = BOTH RATED AT 200 AMPS.

LOCATION	CONTROL PANEL & MISCELLANEOUS ENCLOSURE TYPES	EMERGENCY MAIN	NORMAL/ SERVICE MAIN	CIRCUIT BREAKER PUMP NO.1	CIRCUIT BREAKER PUMP NO.2	CIRCUIT BREAKER PANEL	CIRCUIT BREAKER RECEPTACLE	CIRCUIT BREAKER GFI DUP RECEPTACLE	CIRCUIT BREAKER SITE LIGHTING	CIRCUIT BREAKER VALVE VAULT SUMP PUMP	CIRCUIT BREAKER SPARE	GENERATOR RECEPTACLE	STARTER SIZE	STARTER TYPE	TVSS	PHASE MONITOR RELAY	PUMP MOTOR NO.1	PUMP MOTOR NO.2	ALARM BEACON	AUTO TRANSFER SWITCH	ELECTRIC SERVICE TYPE & SIZE
PS-1	NEMA 3R TYPE 304 S/S	200 A	200 A	70 A	70 A	25 A	25 A	25 A	25 A	25 A	25 A	CROUSE-HINDS #AR 1042	#4	NEMA	YES	YES	20 HP	20 HP	YES		240, 3 PHASE 4 WIRE, 60 HZ *

LEGEND:

- MSR - MOISTURE SENSING RELAY
- OT - OVER TEMPERATURE
- PMR - PHASE MONITOR RELAY 230V-001-230-118 AS MANUFACTURED BY MOTOR PROTECTION CONTROL
- GFI - GROUND FAULT INTERRUPTER - DUPLEX RECEPT. 15 AMP.
- ETM - ELAPSE TIME METER
- TVSS - TRANSIENT VOLTAGE SURGE SUPPRESSOR
- HOA - HAND,OFF,AUTOMATIC SELECTOR SWITCH
- --- - FIELD WIRING/DEVICES EXTERNAL TO PANEL
- ⊙ - TERMINALS ON TERMINAL STRIP

NOTES:

1. CONTROL PANEL & MISC ENCLOSURE TYPES: NEMA 12 3R TYPE 304 STAINLESS STEEL.
2. BACKPANEL: BAKED ON WHITE ENAMEL.
3. DEADFRONT: FAB FROM 0.125 ALUMINUM
4. LAST WIRE NUMBER USED 42
5. MOUNT ENCLOSURE SO THAT HEIGHT OF CIRCUIT BREAKER HANDLE IS 68" MAXIMUM FROM GROUND.
6. ALL ELECTRICAL ENCLOSURES (CT, REMOTE DISCONNECTS, ETC.) SHALL BE NEMA 4X TYPE 316 STAINLESS STEEL.
7. THE PANEL AND SERVICE SHALL BE GROUNDED PER NEC ARTICLE 250 AND UTILIZE A MINIMUM OF TWO GROUND ELECTRODES AT LEAST 6 FEET APART. THE GROUNDING CONDUCTOR SHALL BE CONTINUOUS FROM THE METER CAN, THROUGH THE GROUNDING ELECTRODE SYSTEM TO THE FENCE.
8. ELECTRICAL CONDUITS TO BE SIZED FOR 40% CAPACITY.
9. ALL CONDUITS SHALL RUN STRAIGHT TO WETWELL. ONE 90° PULLING ELL ALLOWED UNDER THE CONTROL OF PANEL. EACH CONDUIT SHALL ENTER THE BOTTOM OF THE CONTROL PANEL SEPARATELY AS SHOWN ABOVE.
10. SEALL ALL CONDUITS BETWEEN WETWELL AND THE INSIDE OF CONTROL PANEL TO PREVENT GAS IN THE WETWELL FROM ENTERING THE PANEL **WITH DUCT-SEAL ONLY**.
11. ENGINEER SHALL PROVIDE VERIFICATION THAT THE TOP OF WELL, BOTTOM OF CONTROL PANELS, GENERATOR RECEPTACLE AND GENERATOR SLAB ARE ALL ABOVE THE 100 YR. FLOOD ELEVATION.
12. STARTERS SHALL BE A MINIMUM OF 8" ABOVE BOTTOM OF CONTROL PANEL WITH NO OBSTRUCTION TO WIRING.
13. GROUNDING BUSS MUST BE EASILY ACCESSIBLE.
14. PUMP VOLTAGE AND CONTROL PANEL VOLTAGE SHALL MATCH THE SERVICE VOLTAGE.
15. REDUCED VOLTAGE, NON REVERSING SOLID STATE MOTOR STARTERS (SOFT START) SHALL BE USED ON 208 OR 230V ELECTRIC SERVICE FROM PUMP MOTORS 25 HP AND LARGER.
16. ALL CIRCUIT BREAKERS AND SWITCHES SHALL BE SQUARE D OR CUTLER HAMMER ONLY. (VERIFY WITH UTILITY AT TIME OF DESIGN).
17. ALL EXTERIOR FASTENERS, ANCHORS, AND HARDWARE SHALL BE 316 S.S.

* ENGINEER SHALL VERIFTY SERVICE POWER WITH ELECTRIC UTILITY.

208 or 230 V

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

NO	DATE	BY	REVISION DESCRIPTION
11	MAY. 07	MRS	GENERAL UPDATES AND REVISIONS
10	FEB. 07	MRS	ADDED VOLTAGE/HP REQUIREMENTS FOR SOFT STARTER USE
9	JAN. 06	MRS	ADDED ECCENTRIC REDUCER TO WETWELL CONNECTION
8	MAY. 05	MRS	ADDED ENGINEER'S NOTE TO VERIFY ELECTRIC SUPPLY NOTE
7	MAR. 05	MRS	MODIFIED GENERATOR RECEPTACLE NOTE

DESG
DRWN
CHKD
APRV
DATE

PROJECT:
208/230 VOLT FOR LESS THAN 25 HP
SUBMERSIBLE PUMP STATION
ELECTRICAL SCHEMATIC AND DETAILS

CLAY COUNTY
UTILITY AUTHORITY
3176 OLD JENNINGS ROAD
MIDDLEBURG, FLORIDA 32068-3907
TELEPHONE: (904) 272-5999

ACAD FILE NAME
PUMPELEC.DWG
SHEET NO.
PSD-1

OUTLINE SPECIFICATIONS FOR CONSTRUCTION OF SEWAGE COLLECTION SYSTEM

01. INTENTION. It is the declared and acknowledged intention to secure a new sewerage system, complete, in accordance with the plans, specifications, and contract documents. All new work shall be in accordance with Clay County Utility Authority Specifications and Details and with Clay County Utility Authority Approved Materials Manual and Clay County Engineering Department Details and Specifications and any other Government Regulatory Agency. All work shall conform to the above, whether or not specifically called out or noted on the plans.

02. GENERAL. All materials shall be of those listed in the CCUA Approved Materials Manual. The installation shall be warranted by the Contractor as to materials, workmanship and accuracy of the As-built drawings for a period of two years from the date of completion of the work or beneficial use of the facilities. Workmanship shall be of good quality; i.e., sewers shall be laid to line and grade, manholes shall be properly installed and ventilated, trenches shall be properly excavated and backfilled, manholes shall be installed at locations and to elevations shown on the plans.

02.1 Contractor LICENSE AND APPROVAL. Utility reserves the right to approve or deny approval of Contractor prior to construction of any on-site or off-site utility facilities. Contractor must hold a State Of Florida Underground Utility Contractors license, that named contracting company being the one doing the work on project, and demonstrate acceptable experience in the field of utility construction.

03. SURVEYS. The Utility Contractor shall provide all surveys necessary for the layout and construction of the work of his contract.

04. EARTHWORK. Earthwork shall include all excavation, fill and backfill (hand/machine), compaction and rough grading of materials encountered. No unsuitable materials clay, muck, or peat removed from pipe trenches are to be used for backfill. All fill or backfill shall be either sand or sandy clay, free of roots, trash or other debris. All backfill alongside of and to a height twenty-four inches above all pipe shall be free of clay or organic material, compacted in lifts, the first of which shall be to the spring line of the pipe by either hand or machine operation carefully to 98%. All other backfill shall be compacted by either hand or machine operation carefully to 95% (outside of paving), 98% (under paving) of its optimum moisture content as determined by ASTM D698, latest. Copies of compaction density test reports from a licensed testing agency shall be made available to CCUA if requested.

05. MANHOLES. Manhole bases, sections, and cones shall conform to the requirements of ASTM C478, Specifications for Precast Reinforced Concrete Manhole Sections. Cement shall meet the requirements of ASTM C150, Specifications for Portland Cement, Type II. Concrete shall meet the minimum requirements for Class "A" Concrete Work. Minimum wall thickness shall be 1/12 the inside diameter in inches plus one (1) inch. Bases for manholes shall be cast integrally with the bottom manhole section. Joint contact surfaces shall be formed with machined castings; they shall be exactly parallel with a 2 degree slope and nominal 1/16 inch clearance with the tongue equipped with a proper recess for the installation of an O-ring rubber gasket, conforming to ASTM C443. Joints for circular Concrete sewer and Culvert pipe using Rubber gasket, or RAM-NEK premolded Plastic Joint Sealer with joints Manhole adjustment shall be sound, hard, and pre-primed. Precast concrete adjustment rings as manufactured by Taylor Precast Co., or equal shall be utilized in lieu of brick adjustment. Field mixed mortar for brick shall be composed of portland cement Type II, sand and clean water. Mortar shall be one part cement Type II and two parts sand; lime shall not be used. The outside faces of brick masonry shall be plastered with mortar from 1/4" to 3/8" thick. Precast manhole walls shall not be coated unless otherwise noted. Cement grout for manhole bottoms shall be a stiff rich mix of Type II Portland Cement and sharp plaster sand. Calcium chloride may be added (maximum of 2%) to aid in obtaining a faster set. At permanent pump station locations, the first upstream manhole from the station shall be lined with a polyethylene liner as manufactured and installed by Taylor Precast Co., or approved equal.

05.1 CAST IRON MANHOLE FRAMES AND COVERS. Cast iron manhole frames and covers shall be as detailed on drawings. Castings shall meet the requirements of ASTM A48, Specifications for Gray Iron Castings, Class No. 30, or Grade 65-45-12, Ductile Iron Casting Specification for Ductile Iron Castings. In either case, manhole frame and cover shall be designed to withstand an HS20-44 loading defined in the AASHTO Specifications. Frames and covers shall be machined or ground at touching surfaces so as to seat firmly and prevent crocking.

05.2 FLEXIBLE MANHOLE CONNECTOR. All connections between sewer pipe and pre-cast concrete manholes shall be accomplished by a Flexible Connector, "Kor-N-Seal", as manufactured by National Pollution Control Systems, Inc., or approved equal.

05.3 FLOW CHANNELS. Flow channels in manhole base shall be formed of D.O.T. Class I Type II cement grout with brick and trowel to a smooth surface finish. Grout surface shall be 1" min. thickness over brick or rubble. While the manholes are under construction, cut off pipes at inside face of the manhole and construct the invert to the shape and sizes of pipe indicated.
All inverts shall provide a constant gradient from influent pipe to effluent pipe through manhole. Changes in direction of the sewer and entering branch or branches shall be laid out in smooth curves of the longest possible radius which is tangent to the center lines of adjoining pipelines.

05.4 DROP INLETS. Where shown on the drawings, drop inlets to the manholes shall be constructed as shown on the drawings and specified herein.

06. POLYVINYL CHLORIDE PIPE. Polyvinyl Chloride Sewer Pipe shall conform to the requirements of ASTM D-3034, SDR 26. The PVC compound conforming to ASTM D-1784. Pipe shall be early marked in 5 ft. intervals or less, indicating Manufacturers name, nominal size, cell classification and legend. Joints shall be push-on rubber gasketed, conforming to ASTM 3212. Pipe and fittings shall be installed in accordance with recommended practice ASTM D-2321. All pipe and sewer fittings shall be SDR-26 heavy wall, installed up to a depth of 13' from finish grade to invert of pipe. Maximum depth of gravity sewer without prior approval shall be 13 feet. Sewer pipe and fittings over 13' in depth shall be DR-18 P.V.C. Design of sewer installation over 13' in depth shall have CCUA's prior approval.

07. PIPE BETWEEN MANHOLES. All piping installed between manholes shall be the same material and class. No dissimilar pipe material will be allowed anywhere within a single run of pipe.

08. SANITARY SERVICE LATERALS. Sanitary service laterals shall be Polyvinyl Chloride Pipe conforming to the requirements of ASTM D-3034, SDR 26 where cover over top of pipe is 36 inches or greater. Where cover over top of pipe is less than 36 inches, specific construction conditions shall be directed by the Clay County Utility Authority. All sanitary service laterals shall be a minimum of 4'-0" deep at the right-of-way line to top of pipe. Any sanitary service lateral which must be more than 6'-0" deep shall not be installed prior to obtaining permission from the CCUA field inspector or CCUA Engineering Department. All sanitary service laterals shall be 6-inch diameter from the main to the right-of-way line with a minimum slope of 0.60% (0.6 feet per hundred feet). In single family residential developments, services shall reduce to 4" in size at the property line utilizing the proper fittings for the type of pipe specified. All sewer service laterals over 13' deep shall be constructed of DR-18 PVC pipe, and DR-18 pipe fittings, per CCUA standard sewer system details.

09. FORCE MAINS. Force mains shall be C900 DR-18 PVC and conform to the requirements of ASTM D-1784, D-2241, D-3139 and F-477. Pipe shall be color coded and marked "FORCE MAIN" on at least two sides and at every 12" along the barrel of the pipe. Ductile iron pipe for force main service shall be polylined. Ductile iron pipe is not to be used without prior approval of the Clay County Utility Authority. Fittings shall be C110 gray iron and shall be polylined. Force mains less than 3" shall be SCH80 PVC. All force mains shall be installed with tracer wire per CCUA standard location wire details. All force mains should be installed 5 feet to top of pipe, unless approved by CCUA.

09.1 LIFT STATION VALVES. See CCUA Approved Materials Manual for acceptable plug valves and check valves.

09.2 FORCE MAIN VALVE. Gate valve, resilient seated, same as specified in Water Distribution System Specifications Section 11 at right. Except valve bodies shall be gray iron. Valve box shall have the word "SEWER" cast into the cover.

09.3 FORCE MAIN JOINT RESTRAINT. All fittings shall be properly and adequately restrained against lateral movement at all force main tees, crosses, valves and bends. See CCUA Approved Materials Manual for acceptable restrainers. (SEE RESTRAINED JOINT SCHEDULE)

09.4 FORCE MAIN PIPE FLUSHING. All force main piping shall be flushed with clean water utilizing full pipe diameter. In cases where the water supply is inadequate to flush the full pipe diameter, flushing shall occur to the extent of the water supply that is available.

10. INSTALLATION. All sewer lines, manholes, and appurtenances shall be constructed to the dimensions and elevations indicated on the drawings. Trenches shall be excavated to a width approximately twelve inches greater than the outside diameter of the pipe. Machine excavation shall be to a depth one-fourth pipe diameter above proposed pipe grade; the remaining depth shall be hand excavated and shaped to give full support to the lower one-fourth of each pipe.
Each section of pipe shall be inspected for defects prior to being lowered into the trench. The inside of each bell and the outside of each spigot shall be thoroughly cleaned of all foreign matter prior to making the joint. All sewer lines shall be constructed with the spigot ends pointing in the direction of the flow. Both the bell and the spigot of each joint shall be lubricated with the lubricant recommended by the pipe Manufacturer. All sewer lines shall be cleaned of foreign matter as construction progresses, and shall be in a clean condition upon completion of construction operations. Pipe materials shall remain the same on runs between manholes and/or other structures.

11. INSPECTIONS. Each section of the completed sewer system shall be inspected for proper alignment. Any section of the sewer system which does not display true, concentric alignment shall be reinstalled at no additional expense to the Owner. A written log of inspection shall be kept indicating location of test, potential problems in sewer, dips and depth of water, service locations, and other irregularities in the pipe lines. An image in DVD format shall be made of the television inspection and submitted to the Engineer and the Clay County Utility Authority. Copies of compaction density test reports from a licensed testing agency shall be made available to CCUA if requested.

11.1 TELEVISION INSPECTIONS Television inspection will be required on all new gravity sewers constructed. This service shall be provided by the Contractor as a part of this Contract. The newly constructed sewers shall be televised in the presence of the Inspector of the Clay County Utility Authority. A full report as to the condition of pipe, type, depth, location of services, length, joint and distance between manholes, etc. shall be furnished to the CCUA inspector prior to the final acceptance of the system. Any pipe found to be cracked, leaking or otherwise defective shall be removed and replaced with new pipe at no additional costs to the Owner. Deflection testing with 5% mandrel also required. Any section not passing the mandrel test shall be corrected. Sewer mains shall be televised after curb and lime rock are in place but prior to paving. Curb and limerock shall be installed, finish graded prior to televising the gravity sewer. Limerock priming and paving operations shall not take place until the CCUA inspector has reviewed the television recorded DVD and approves the gravity sewer system. This will be strictly enforced. All gravity sewers must be flushed no sooner than 4 hours prior to any television inspection. Force main lines shall be pressure tested and approved prior to paving, but not prior to subgrade mixing operation and limerock installation, finish graded and compacted. Sewer services shall be viewed by a camera capable of viewing into service lateral connections. Adequate water must be placed within the upstream manhole to flow through the downstream manhole before inspecting with the camera. All work must be accomplished in the presence of the CCUA inspector. Contractor shall provide CCUA with a 48 hr. notice of when he will be ready to inspect sewer main. CCUA inspector shall report to job site at the time specified by Contractor at the time of the call-in. CCUA inspectors will wait at the job site no more than one hour for the televising to begin before leaving the job site. Contractor shall reschedule televising giving CCUA 48 hrs. notice if the above occurs. Inspections start at manhole invert.

11.2 INFILTRATION TEST After completion, the sewers or sections thereof, shall be tested and gauged for infiltration. To check the amount of infiltration, the Contractor, at no added compensation over the contract price for the sewers, shall furnish, and install and maintain a V-notch sharp crested weir in a wood frame on the main sewers as directed by the Engineer. Maximum allowable infiltration shall be 50 gallons per mile, per inch of dia. of sewer per 24 hour day, at any time.

11.3 EXFILTRATION TEST In areas where ground water is not encountered in sewer construction, or it is desired to run exfiltration tests, the Contractor shall furnish and install all necessary materials, equipments, shall supply water, etc., and shall run exfiltration tests to determine acceptance of the sewer. The maximum allowable exfiltration shall be 50 gallons per mile per inch of diameter of sewer per 24 hour day at any time based on two foot minimum internal head.

11.4. A "dip" is defined as any water holding depth which is equal or greater than the minimum depth as listed below. There shall not be any more than 1 "dip" per 135 linear feet of sewer pipe installed. The defective pipe sections, or those dip/sections over the allowable limit, shall be removed and replaced (at no cost to CCUA). Each run of pipe, between two manholes, shall be evaluated independently for compliance. Any "dip" which is greater than the "maximum" "dip" depth listed below are not acceptable and shall be removed and replace at no cost to CCUA. Regardless of the number of "dips" in the line section, if, in the option of the CCUA inspector, the number and/or location of the "dips" is believed to create an unacceptable operating condition, then the defective pipe section(s) shall be removed and replaced at no cost to CCUA. Any deviation from these "dip" limitation must be approved by the CCUA Service Availability Manager.

WATER HOLDING DEPTH (INCHES)		
PIPE SIZE	MINIMUM	MAXIMUM
8-10 INCH	.50	1.00
12-15 INCH	.75	1.50
18-21 INCH	1.00	2.00
24 INCH AND GREATER	1.25	2.50

12. Demarcation box shall be used as an isolation point between the wet well and the motor control center panel. All wiring between the motor control center and wet well shall be interconnected at this point. Install malleable seal off conduits at the demarcation box end, in conduits between the demarcation box and the MCC. All internal hardware including terminal strips, blocks and backplane shall be stainless steel.

12.1 Demarcation box shall be 24" wide, 24" tall and 12" deep nema 4x enclosure manufactured of 316 stainless steel. Enclosure shall have a hinged cover and removable backplane for terminal blocks. The box shall be mounted so that the cover faces away from the wet well.

12.2 Terminal blocks will need to be mounted for each wire passing through the demarcation box. Terminal strips will be rated at 600 volts, sized according to the load served. Antioxidant compound shall be used on all terminal connections, (nolox or equal). Nameplates as specified on the electrical standards sheet shall be provided at the terminal blocks to identify each circuit.

12.3 All wires including spares shall be identified with heat shrink labels. All control wires shall have spade lugs. Wires shall be 600 volt rated thhn/thwn/thhw.

13. SEPARATION OF WATER AND SEWER MAINS. Horizontal and vertical separation between potable water system mains and or appurtenances and sanitary or storm sewers, wastewater or storm water force mains, and reclaimed water mains shall be in accordance with Rule 62-555.314 FAC.
a. New or relocated underground water mains shall be laid to provide a horizontal distance of at least three feet between the outside of the water main and the outside of any existing or proposed storm sewer, storm water force main, reclaimed water main regulated under Part III of Chapter 62-610, F.A.C, or proposed vacuum-type sanitary sewer.
b. New or relocated, underground water mains shall be laid to provide a horizontal distance of at least six feet, and preferably ten feet, between the outside of the water main and the outside of any existing or proposed gravity- or pressure-type sanitary sewer, wastewater force main, or pipeline conveying reclaimed water not regulated under Part III of Chapter 62-610, F.A.C. The minimum horizontal separation distance between water mains and gravity-type sanitary sewers shall be reduced to three feet where the bottom of the water main is laid at least six inches above the top of the sewer.
c. New or relocated underground water mains crossing any existing or proposed gravity- or vacuum-type sanitary sewer or storm sewer shall be laid so the outside of the water main is at least six inches, and preferably 12 inches, above, or at least 12 inches below, the outside of the other pipeline. However, it is preferable to lay the water main above the other pipeline (see Crossing "A" as shown on detail sheet WAT-02).
d. New or relocated underground water mains crossing any existing or proposed pressure-type sanitary sewer, wastewater or storm water force main, or pipeline conveying reclaimed water shall be laid so the outside of the water main is at least 12 inches above or below the outside of the other pipeline. However, it is preferable to lay the water main above the other pipeline.
e. At the utility crossings described in paragraphs (c) and (d) above, one full length of water main pipe shall be centered above or below the other pipeline so the water main joints will be as far as possible from the other pipeline. Alternately, at such crossings, the pipes shall be arranged so that all water main joints are at least three feet from all joints in vacuum-type sanitary sewers, storm sewers, storm water force mains, or pipelines conveying reclaimed water regulated under Part III of Chapter 62-610, F.A.C., and at least six feet from all joints in gravity- or pressure-type sanitary sewers, wastewater force mains, or pipelines conveying reclaimed water not regulated under Part III of Chapter 62-610, F.A.C.

14. NEW CONNECTION TO EXISTING MAIN. New connection to existing main in service shall be accomplished by the "wet tap" method utilizing full circle stainless steel tapping sleeve and mechanical joint tapping valve. Tapping sleeve shall be rated at 200 p.s.i., non-shock working pressure conforming to AWWA Standard C110, latest revision. Stainless steel tapping sleeves shall be from those listed in CCUA approved material manual. Tapping valve shall be mechanical joint on one end and standard flanged joint on other end. Valve shall conform to Section 09.2 of these specifications.

15. JOBSITE SAFETY. While on the job site, the Contractor shall at all times observe all Federal, State and local safety rules, regulations and laws. This includes, but is not limited to, confined spaces and excavation protection systems as per O.S.H.A. standards.

16. CCUA SHOP DRAWING AND SUBMITTAL PROCESS. A signed acknowledgment by the Contractor and the Material Supplier on the CCUA's Approved Materials List Form", that all materials will be in accordance with CCUA's Specifications, CCUA's Details and CCUA's Approved Materials Manual, is the only submittal CCUA will require for each item of materials with the following exception: any alternate materials requested by the Engineer; any materials not listed in the CCUA Materials Manual; and materials associated with pumping station facilities and structures. Those exceptions shall have an engineering drawing submitted for CCUA's review and approval prior to any installation of said materials. This is CCUA's procedure and it does not preclude the Design Engineer from requiring additional submittals and shop drawings as he deems necessary for the project.

17. PUMP STATIONS (TEMPORARY OR PERMANENT). All pump stations shall be constructed in accordance with CCUA standards, rules and regulations and be approved by CCUA All work and materials shall meet the requirements of CCUA Standard Pump Station Details and Specifications or the plans, details and specifications for that specific pump station. A driveway shall be provided (all weather) to within 2 feet of the pump station wetwell, minimum 10 feet wide x 6 inches thick 3,500 p.s.i. concrete. Submersible pump stations shall be fenced completely about the perimeter of the pump station site (location of the pump station site as noted on the plans), including gates and all other items required to make a completely fenced installation. The entire pump station site within the fenced area shall be covered with #57 stone, 6 inch thick minimum, placed over filter cloth.

18. Information shown on the Drawings as to the location of existing utilities has been prepared from the most reliable data available to the Engineer. The Contractor shall be responsible for requesting underground utility locates and shall assist the utility companies by every means possible to determine said locations and the locations of recent additions to the systems not shown. Extreme caution shall be exercised to eliminate any possibility of any damage to utilities resulting from Contractor's activities. The locations of all overhead utilities shall also be verified by the Contractor. The Engineer shall be notified of any conflict that may occur. The Contractor shall be responsible for determining which poles will need shoring during excavation and shall provide such shoring and support as required.

19. CCUA details and specifications (latest available copy) shall be included in all plans submitted for work within the CCUA utility system. No person shall modify, change, omit, or replace any portion of those details and specifications without the express written consent of CCUA. In any instance where the Design Engineer has included his written specifications or details in the plans then the more stringent of the two shall govern.

20. All materials to be used for any project within CCUA'S utility system shall conform to those materials listed in the CCUA approved material manual in effect at the time final plans for that project are approved by CCUA

21. Under no circumstance shall any trees be planted within a CCUA utility easement without:
a. CCUA approving landscape and irrigation plans.
b. CCUA being notified prior to the planting of trees and giving approval.
c. CCUA inspecting the installation of root barrier material (required at all trees which are closer than 7.5' to any CCUA utility line) as shown in CCUA approved material manual and CCUA roadway cross section details, whether or not shown on the plans.

22. At all Jack & Bore locations a CCUA inspector shall inspect the casing spacers to verify they are the correct size and have been installed correctly on the pipe prior to the pipe being installed into the pipe casing. The pipe casing shall be clean and free of all dirt, and shall be cleaned with a Vac-Con if necessary. A CCUA inspector shall be present at all time during this work. Contractor shall be responsible to establish the correct elevation of the Jack and Bore carrier pipe and pipe casing. Contractor shall compact the bottom of the excavation to assure the density of earth is adequate to prevent any settlement of equipment used to perform the Jack and Bore operation. Contractor shall, at all Jack and Bore pits, provide and utilize the necessary de-watering equipment to keep the excavation dry and free from water in accordance with Paragraph 7 of the General Notes. Contractor shall, at all Jack and Bore excavations, provide a rock bed of #57 stone (a minimum of 8-inches thick) to support the track and rail system of the Jack and Bore equipment. This shall be inspected by a CCUA inspector and approved by the inspector prior to beginning the placement of the pipe casing. Contractor shall replace, at his/her expense, any Jack and Bore installed which CCUA refuses to accept for Ownership and which does not meet the requirements of CCUA, due to incorrect grading, damaged or faulty materials, poor workmanship, or anything that CCUA deems as inadequate to perform its intended use.

OUTLINE SPECIFICATIONS FOR CONSTRUCTION OF WATER DISTRIBUTION SYSTEM

01. INTENTION. It is the declared and acknowledged intention to secure a new water distribution system, complete, in accordance with the plans and specifications, and contract documents. All new work shall be in accordance with Clay County Utility Authority Specifications and Details and Approved Materials Manual and Clay County Engineering Department Details and Specifications and any other Government Regulatory Agency. All work shall conform to the above whether or not specifically called out or noted on the plans.

02. GENERAL. All materials shall be in conformance to National Sanitation Foundation (NSF) 61 and those listed in the CCUA Approved Materials Manual. Materials shall be warranted by the Contractor as to materials, workmanship and accuracy of As-built drawings for a period of two years from the date of completion of the work or beneficial use of the facilities. Workmanship shall be of good quality; i.e., mains shall be laid in a uniform alignment, fittings shall be properly restrained, trenches shall be properly excavated and backfilled, fire hydrants and valve boxes shall be adjusted to finished grade. All water mains shall be installed with tracer wire per CCUA standard location wire details.

02.1 Contractor LICENSE AND APPROVAL. Utility reserves the right to approve or deny approval of Contractor prior to construction of any on-site or off-site utility facilities. Contractor must hold a State Of Florida Underground Utility Contractors license, that named contracting company being the one doing the work on project, and demonstrate acceptable experience in the field of utility construction.

03. SURVEYS. The Utility Contractor shall provide all surveys necessary for the layout and construction of the work of his contract.

04. EARTHWORK. Earthwork shall include all excavation, fill and backfill (hand/machine), compaction and rough grading of materials encountered. No unsuitable materials clay, muck, or peat removed from pipe trenches are to be used for backfill. All fill or backfill shall be either sand or sandy clay, free of roots, trash or other debris. All backfill alongside of and to a height twenty-four inches above all pipe shall be free of clay or organic material, compacted by either hand or machine operation carefully to 98%. All other backfill shall be compacted by either hand or machine operation carefully to 95% (outside of paving), 98% (under paving) of its optimum moisture content as determined by ASTM D698, latest. Copies of compaction density test reports from a licensed testing agency shall be made available to CCUA if requested.

05. JOINT RESTRAINT. All fittings shall be properly and adequately restrained against lateral movement at all water main tees, crosses, valves, bends and fire hydrants. Restrainers shall be Uni-Flange Series 1300, 1350, 1390 or approved equal installed per Manufacturer's recommendations and Clay County Utility Authority Details and Specifications (SEE RESTRAINED JOINT SCHEDULE). See CCUA Approved Materials Manual for acceptable restraints.

06. DUCTILE IRON PIPE. Ductile iron pipe shall conform to ANSI Specification A21.50 (AWWA C150) latest, "Thickness Design of Ductile Iron Pipe", Table 50.5, laying condition Type 2, internal operating pressure of 250 p.s.i. for an 8-foot depth of cover, Class 51 minimum and shall be ANSI A21.51 (AWWA C151), latest centrifugally cast pipe. Laying lengths shall be 20 feet or less in length, and shall be clearly marked with pressure rating, thickness, class, height of pipe without lining, length, and Manufacturer. Ductile iron pipe for water service shall be furnished with push-on joint fitting per AWWA C110, C115 and C151. The pipe shall have design values of 60,000 p.s.i. minimum tensile strength, and 42,000 p.s.i. minimum yield strength. Ductile iron pipe for water or service lines shall be used in any easement, right-of-way, between lots, and any instance where a building foundation or other permanent appurtenance is within 10' of the water main or a service line larger than 3".

07. DUCTILE IRON FITTINGS shall be C153 cement lined and suitable for the type and class of pipe to which connected. Gaskets shall be suitable for potable, domestic water service. Minimum working pressure shall be 150 p.s.i.

08. POLYVINYL CHLORIDE PIPE. Polyvinyl chloride pipe for water mains 4 inch through 24 inches in diameter, shall be DR18 (C900) Pressure Class 235 psi PVC 1120; water distribution mains above 24 inches in diameter shall be DR25 (C900) PVC 1120, Pressure Class 165 psi, conforming to ASTM D-1784, D-2241, D-3139 and F-477, latest, or P.V.C. C900, Class 165, DR-25, conforming to ASTM D-1784, Cell Class 12454, ASTM F-477, ASTM D-3139, latest, and shall bear the seal of the National Sanitation Foundation. Pipe shall be color coded and marked "WATER" at every 12" along the barrel of the pipe, with lettering facing up. Couplings shall be rubber gasketed, push-on type conforming to ASTM D-2122. DR-18 shall be used for fire mains.

09. STEEL CASING PIPE. Steel casing pipe shall be of size indicated on the Drawings and shall conform to ASTM A139, with a minimum yield strength of 35,000 p.s.i.

10. POLYVINYL CHLORIDE (PVC 1120, SCHEDULE 80) PIPE shall conform to the requirements of ASTM D 1785. Fittings shall be suitable for type of installation required. All piping smaller than 4" shall be Schedule 80 PVC.

11. GATE VALVES AND BOXES. Gate valves shall be non-rising stem type and shall be suitable for a 200 p.s.i. non-shock working pressure. Gate valves shall be mechanical joint, flanged or screwed. Gate valves shall have a 2" operating nut and open left. Gate valves shall have joints suitable for the type of main on which installed. Valves 3" and larger shall be iron body, bronze fitted with resilient seat. Boxes shall be of cast iron construction, 7/32" minimum wall thickness and shall be nontacky tar enamel coated. The word "WATER" shall be cast in the cover. Other gate valves smaller than 3" shall be heavy-duty bronze ball valves. See CCUA Approved Materials Manual for acceptable valves.

12. WATER METER BOXES. Developer shall be responsible for installation of meter boxes on all water services as part of the water main installation. All curb stops shall be adjusted to the proper elevation and shall be accessible for the installation of the water meter. The Contractor shall be required to open all boxes for the Authority's inspector at the final inspection. A treated 6'-6" fence post marker shall be painted blue for identification. Meter boxes shall not be placed in any sidewalk or driveway without the approval of CCUA.

13. CURB STOPS. Curb stops shall be cast bronze, inverted key stop, roundway, with check, lock wing type, for locking in the closed position. See CCUA Approved Materials Manual for acceptable curb stops.

14. FIRE HYDRANTS. Fire hydrants shall be traffic type, 150 pound working pressure, AWWA Standard C502, latest revision, with two 2 1/2" nozzles, one 4 1/2" nozzle and one 5 1/4" main valve. Fire hydrant shall be compression type with breakable coupling and bolts. Pipe connection shall be mechanical joint. Fire hydrants shall be painted silver, BLP Mobile Paints, Liquid Aluminum, 1151 alkyd weight 56.6% x volume 41.2% VOC 3.76 lb. per gallon with 1 1/2" penta nuts, opening left. See CCUA Approved Materials Manual for acceptable fire hydrants.

15. INSTALLATION. The minimum cover over top of potable water main shall be 36". All water lines and appurtenances shall be thoroughly cleaned of all foreign matter before being lowered into the trench and shall be kept clean during laying operations by means of plugs or other approved methods. All pipe shall be checked for defects before being lowered into the trench. Defective pipe shall not be used. Pipe found to be defective after installation, shall be removed and replaced with sound pipe at no additional expense to the Owner. The full length of each section of pipe shall rest solidly upon the pipe bed, with recesses excavated to accommodate the bells and joints. All pipe that has the grade or joint disturbed after laying shall be taken up and reinstalled. The pipe shall not be laid in water or when trench or weather conditions are unsuitable for the work. All joints shall be cleaned of all foreign matter before making the joint. Fittings at bends in the pipe shall be properly restrained with joint restrainers adequately sized to prevent movement and dislocating or blowing off when the line is under pressure. Service laterals shall terminate at the point noted in the details.

16. TESTS. After the pipe is laid, the joints completed, and the trench backfilled, the newly laid pipe and appurtenances shall be subjected to a Hydrostatic and Leakage test of 150 pounds per square inch for a period of at least two hours. During this period, all joints shall be inspected to determine water tightness of the system. Any leaks detected shall be corrected, tests shall be in accordance with the CCUA's requirements and specifications. Water main lines shall be pressure tested and approved prior to paving, but not prior to subgrade mixing operation and limerock installation, finish graded and compacted. If CCUA inspector detects the water main has been damaged during priming or paving, he shall require the Contractor to repair the water main and retest the water main.

17. STERILIZATION. After completion of construction and testing, the water system shall be sterilized with chlorine in accordance with AWWA Standard C651 latest, and State of Florida Department of Environmental Protection requirements before acceptance for domestic operation. The amount of chlorine applied shall be sufficient to provide a dosage of 50 parts per million or more, for a period of at least 24 hours. A CCUA inspector must be present for the below referenced sterilization procedures. After completion of sterilization procedures, the system shall be flushed using chlorinated water from a domestic water source having a chlorine residual of at least 1 part per million. The Contractor shall obtain all bacteriological clearances as required by the Florida Department of Environmental Protection. After bacteriological clearances, the pressure in the main shall not drop below 20 p.s.i. Clearance reports to be submitted to the Engineer. The Contractor should be aware that there is a timing maximum related to bacteriological clearance of the main, completion of as-built drawings and Engineer/CCUA completion of Certificate of Completion. In any project where the bacteriological clearances are greater than 30 days old at the time of actual completion, the Contractor may be required to purge, remobilize to FDEP or CCUA, the Contractor may be required to pull water samples and obtain more bacteriological clearances. Prior to introducing the chlorine solution, the lines shall be thoroughly flushed with clean water utilizing full pipe diameter. In cases where the water supply is inadequate to flush the full pipe diameter, flushing shall occur to the extent of the water supply that is available. Dechlorination of flushing water shall be in compliance with the State of Florida Surface Water Quality Standards (F.A.C. 63-302.530). Dechlorination is necessary if the flushing of highly chlorinated water is to be discharged directly to a surface water or to a storm water system. If the water can be sheet flowed over a large area or discharged to a holding pond, dechlorination may be avoided. See note number 4 of Special Notes below.

18. BACTERIOLOGICAL SAMPLING. Contractor shall ensure the project construction is completely finished prior to any bacteriological sampling and testing.

19. FIRE LINES/MAINS. All fire lines or mains connecting to Clay County Utility Authority owned potable water main shall be installed by a State of Florida Licensed Fire Installation Contractor, and shall meet all requirements of the local Authority, State Fire Marshal, County Fire Marshal, and the National Fire Protection Association. Work performed must meet all requirements of NFPA 24, Standard for the Installation of Private Fire Service Mains and Their Appurtenances.

19.1 The Fire Marshal shall have the right to deny acceptance or use of any fire line, installed and connected to a Clay County Utility Authority owned and maintained water main until such time that the Contractor installing the fire line can produce proof to the Fire Marshal that all paperwork, fees due, or close out documents have been satisfactorily prepared and approved by Clay County Utility Authority.

20. POLYETHYLENE TUBING SERVICE LINES AND MAINS (2 INCH AND SMALLER): Tubing shall be manufactured of PE 4710, High Density Polyethylene (HDPE), in accordance with AWWA C901, ASTM D1248, ASTM D2239, ASTM D3737 and ASTM D3350. The tubing shall have a minimum working pressure of 250 psi. Polyethylene tubing shall be copper tube size SDR-9 and shall be colored blue. HDPE pipe shall have ultraviolet (UV) inhibitors for protection against direct sunlight for 1 year. Inserts for polyethylene tubing may be utilized, at Contractors options, and, if used, shall be 316 stainless steel. The use of no-lead brass couplings, tees and "Y" fittings are acceptable on poly service tubing, if not located under a roadway. Tubing shall be approved for use with potable water by the National Sanitation Foundation (NSF-14) and shall be continuously marked at intervals of not more than four feet with the following:
Nominal size
Pressure rating
NSF seal
Manufacturer's name or trademark
Standard dimension ratio
ASTM specification

GENERAL NOTES

1. AS-BUILT DRAWINGS AND ASSOCIATED COSTS. All cost records pertaining to the cost of water, reclaim and sewer facilities donated to the utility shall be provided to the Utility by applicant. Prior to acceptance of any extension to the Utility's system that is completed by a licensed underground utility Contractor, the Utility will require that the applicant's Contractor provide the Utility, to retain for its permanent records, all field as-built data which shall be provided in accordance with the Utility's 'As-built Specifications Standards Manual', which can obtained from the Utility's website (www.clayutility.org).

2. CONSTRUCTION WARRANTY AND WARRANTY SECURITY PERIOD. Developer's Contractor shall warranty Utility against defects in material and workmanship for the portion of the onsite system to be owned by the Utility for two (2) years. Developer shall secure from its Contractor a written and fully assignable warranty that the system installed will be and remain free from all defects, latent or otherwise, with respect to workmanship, materials, installation, and accuracy of his as-built drawings in accordance with the Utility approved plans and specifications for a period of two years from the date of the system acceptance by the Utility and immediately assign the same and the right to enforce the same to Utility on or before the date of the Utility's acceptance of the system for Ownership and maintenance.

3. CLEAN-UP. All surplus materials of construction shall be removed from the site and disposed of by the Contractor as part of his contract with the Owner.

4. RESTORATION. New Sanitary Sewer and Water Main Construction in earthen areas shall be seeded and mulched in accordance with Section 570 of Standard Specifications of the Florida Dept. of Transportation (latest edition). In locations where existing grassed (sodded) areas are disturbed, sod shall be replaced to preconstruction condition and to limits of construction or where directed by the engineer.

5. PERMITS. The Contractor shall be responsible for obtaining and providing records of all permits required for performing work under this contract, except that the FDEP permits, and wetland permits, if required, will be secured by the Owner or Developer.

6. PIPE BEDDING. In the event unsuitable or unstable bedding material is encountered at or below the limits of the excavation required for installation, such material shall be removed and replaced with suitable compacted backfill material specified by the Design Engineer and approved by the CCUA so as to provide a stable trench bedding surface suitable for proper pipe installation.

6.1. PIPE BEDDING (ROCK BEDDING MATERIAL) Rock material used for pipe bedding shall be #57 stone or crushed concrete (crush-crete) in a #57 size. Rock bedding material shall be completely wrapped in a heavy filter fabric material, overlapped a minimum of one foot. Rock bedding shall be installed to the correct grade and compacted to a density which will prevent any settlement, either by mechanical tamping equipment or by compressing the rock using the bottom of the backhoe bucket. The compaction shall be approved by CCUA inspector. The Contractor shall be required to have submittal approved by Design Engineer and CCUA prior to use of such rock bedding material.

7. DEWATERING. The Contractor shall at all times during construction provide ample means and equipment with which to promptly remove and dispose of all water entering the trench and structure excavations and shall keep said excavations acceptably dry until the piping and / or structures to be built therein are completed. All water pumped or drained from the work area shall be disposed of in a manner as to not damage sewer, water, electrical or any other piping, structures or property. No pipe shall be laid in water and no water shall be allowed to rise above the bottom of any pipe while it is being jointed, except as may be approved in writing by the CCUA

8. HYDROSTATIC TESTING. After all pressure pipes (water mains, services, and force mains) are laid, the joints completed, and the trench backfilled, the newly laid pipe and appurtenances shall be subjected to a hydrostatic test of 150 p.s.i. for a period of at least two hours. The engineer and the Clay County Utility Authority must be notified 48 hours before a test is to be performed. Test shall be as set forth in AWWA standard C600. Any leaks detected shall be corrected and the section of pipeline retested. The two hour test period shall begin when all joints have been determined to be water tight. Leakage shall be limited to that allowance set forth in Section 4 of AWWA Standard C600-87. Hydrostatic and leakage test and blow-down (zeroing of gage) must occur before sampling for bacteriological test. The maximum allowable pressure loss is 5 p.s.i. regardless of the length of pipe.

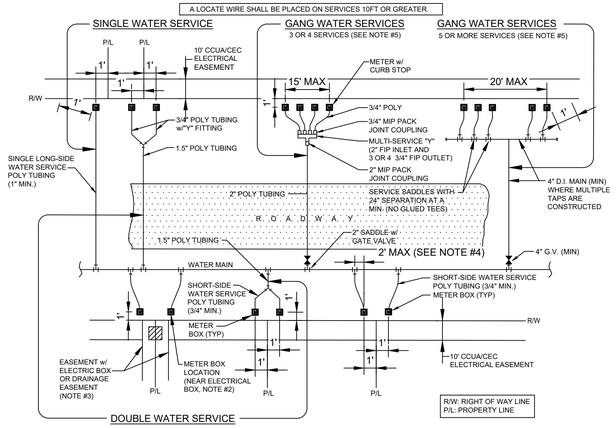
9. REPORTS. Reports of hydrostatic and leakage tests and sterilization of the newly completed systems shall be submitted to the Clay County Utility Authority prior to requesting acceptance of the system.

10. DENSITY TESTING. In-place density tests are required at intervals not to exceed 150' along pipelines for every other lift. A minimum of one test between manholes is required for every other lift regardless of the distance between sanitary sewer manholes.

11. CONCRETE. All Portland Cement concrete shall be of Type II Portland Cement, 2,500 p.s.i. minimum, ready mixed. All concrete shall be placed before the initial set has taken place. Stale or retempered concrete shall not be used.

12. GATE VALVES AND BOXES. Gate valves shall have a 2" operating nut and open left. Gate valves shall have joints suitable for the type main on which installed. Valves 2" and 3" shall be iron body, bronze fitted. Valves 4" and larger shall be iron body, bronze fitted with resilient seat. The word "WATER" on water boxes and "SEWER" on force main boxes shall be cast in the covers.

13. PIPE AND PIPE JOINTING FOR FUSED & HDPE PIPE:
a. Heat Fusion Jointing:
Joints between plain end pipes and pipe fittings shall be made by butt fusion when possible. Electro fusion welding may also be used to complete when the location is not accessible to butt fusion welding equipment. The on-site welder making the joints (butt fusion or electro fusion) shall have received specific training from the Manufacturer of the fittings and/or pipe being welded and shall have written proof of proper training/certification from the associated Manufacturers. Only certified welders who have written training certifications from the fitting and/or pipe



NOTES

1. THE SKETCHES ABOVE INDICATE TYPICAL WATER SERVICE AND METER BOX LOCATIONS. ACTUAL LOCATIONS OF BOXES MAY VARY SLIGHTLY ACCORDING TO FIELD CONDITIONS ENCOUNTERED. TYPICALLY, THE METER BOX SHALL BE LOCATED 1.0' OFF OF THE R/W LINE.

2. UNLESS SPECIFIED OTHERWISE BY THE APPLICABLE COUNTY (CLAY OR BRADFORD), THE METER BOX SHALL BE LOCATED 1.0' OFF OF THE R/W LINE, AND 1.0' FOOT INSIDE OF THE PROLONGATION OF ONE OF THE SIDE PROPERTY LINES. IF A CONFLICT EXISTS WITH OTHER UTILITIES, THE METER BOX MAY BE ADJUSTED TO FOUR FEET (MAX.) INSIDE PROPERTY LINES (IN LIEU OF 1.0' FEET). UNLESS APPROVED OTHERWISE BY CCUA, THE WATER METER BOX SHALL BE LOCATED IN NON-TRAFFIC AREAS (NOT IN SIDEWALKS OR DRIVEWAYS). IF AN UNAPPROVED METER BOX IS IDENTIFIED BY CCUA, THEN THE CONTRACTOR OR CUSTOMER SHALL BE RESPONSIBLE FOR THE COST OF RELOCATING ANY METER BOX WHICH IS LOCATED IN THE SIDEWALK OR DRIVEWAY OR THE COST TO PROVIDE THE CORRECT METER BOX. CCUA SHALL APPROVE ALL DEVIATIONS TO THE ABOVE PRIOR TO CONSTRUCTION.

3. IF DRAINAGE OR OTHER EASEMENT IS LOCATED BETWEEN LOTS, METER BOXES SHALL BE LOCATED AT THE EASEMENT LINE BUT OUTSIDE THE EASEMENT AREA.

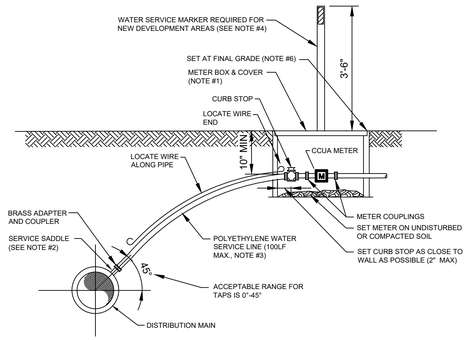
4. FOR SINGLE SERVICES, THE HORIZONTAL DISTANCE (PERPENDICULAR TO THE MAIN)BETWEEN THE SERVICE'S SADDLE AND THE METER BOX SHALL BE 2 FEET MAXIMUM. FOR DOUBLE 3/4" SERVICES, THE 1 ½" POLY MAIN SHALL BE LOCATED CENTERED BETWEEN THE TWO METER BOXES. LOCATE WIRE IS REQUIRED ON ALL SERVICES 10' OR GREATER IN LENGTH. IF LOCATE WIRE IS REQUIRED, THE WIRE SHALL RUN FROM THE METER BOX TO THE MAIN (WITH NO CONNECTION TO MAIN WIRE WITH THE LAST 24 INCHES STRIPPED OF INSULATION/BARE WIRE AS GROUND). ALL EXCEPTIONS TO THIS REQUIREMENT MUST BE APPROVED BY CCUA. THIS WILL ASSIST IN LOCATING EXISTING SERVICE LINES IN THE FUTURE.

5. GANG WATER SERVICES: FOR 3 OR 4 SERVICES IN ONE AREA, A DUCTICLE IRON PIPE (D.I.P.) WATER MAIN EXTENSION W/LOCATE WIRE MAY BE UTILIZED ON EITHER SHORT-SIDE OR LONG-SIDE SERVICES WHERE SHOWN ON THE DRAWINGS. LOCATE WIRE SHALL EXTEND FROM ONE METER BOX TO CURB STOP AT WATER MAIN. FOR 5 OR MORE SERVICES IN ONE AREA, A WATER MAIN EXTENSION W/LOCATE WIRE MAY BE UTILIZED ON EITHER SHORT-SIDE OR LONG-SIDE SERVICES WHERE SHOWN ON THE DRAWINGS (TAPS STAGGERED AND AT 2 FEET ON CENTER-MIN). FOR WATER SUPPLY HEADERS WHERE 5 OR MORE TAPS ARE CONSTRUCTED, THE HEADER PIPE SHALL BE 4" AT A MINIMUM. EXAMPLE: CONSTRUCT A 4" MAIN D.I. CROSSING THE STREET FOR 5 RESIDENTIAL CUSTOMERS, UTILIZING 4" G.V., 4" PIPE, 4"X1" SADDLES AND 1" CURB STOPS (NO GLUED TEE FITTINGS). THE 4" OR LARGER D.I.P. WATER MAIN MUST BE SIZED AND DESIGNED BY THE ENGINEER.

6. RECLAIMED WATER METER BOXES OR SERVICES SHALL BE CONSTRUCTED SIMILAR TO THE ABOVE AND SHALL BE LOCATED AT A MIN. OF 10' FROM THE POTABLE WATER SERVICE AND/OR BOX, AND NOT ALLOWED IN CONCRETE OR ASPHALT UNLESS APPROVED OTHERWISE BY CCUA.

WATER SERVICE INSTALLATIONS
2" AND SMALLER METER

POLYETHYLENE WATER SERVICE DETAILS
(NTS)



NOTES

1. SEE CCUA APPROVED MATERIALS MANUAL AND SYSTEM DETAILS FOR REQUIREMENTS.

2. SINGLE BAND SADDLES MAYBE UTILIZED ON NEW 1" WATER SERVICES WHICH ARE INSTALLED ON A DRY 10" SIZE OR SMALLER WATER MAIN (NEW WATER MAIN CONSTRUCTION). FOR WET TAPS OR WATER MAINS 12" SIZE AND LARGER, A DOUBLE BAND SADDLE IS REQUIRED.

3. NO OPEN CUT UNDER ROADWAY PAVING ALLOWED UNLESS THE ROADWAY IS BEING RECONSTRUCTED OR IF DIRECTED OTHERWISE BY CCUA. CONSTRUCT POLY LINE WITH 36" (MIN.) COVER UNDER ROADWAYS. THE POLY WATER SERVICE LINE SHALL BE SAME SIZE AS THE METER (3/4" MINIMUM) AND BE INSTALLED PERPENDICULAR TO THE MAIN AND NOT EXCEED 100LF UNLESS OTHERWISE APPROVED BY CCUA.

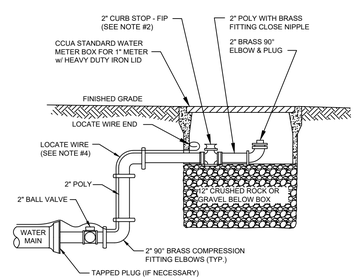
4. INSTALL PVC PLUG IN ALL CURB STOPS IF WATER SERVICE IS "NOT IN USE" (I.E.: IF NO METER IS INSTALLED). IN ADDITION, INSTALL A 6', 6" P.T. FENCE POST (TOP PAINTED BLUE) 12" OFF SIDE OF METER BOX. THE REMOVAL OR TRANSFER OF A WATER SERVICE SHALL INCLUDE BRASS METER COUPLINGS (HEX ON BARREL TYPE).

5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OR REPLACEMENT OF THE METER OR ELECTRONIC DEVICES IF DAMAGED BY THE CONTRACTOR DURING THE CONSTRUCTION PERIOD.

6. METER BOX AND TOP SHALL BE CLEAR OF ALL DEBRIS TO ALLOW FULL ACCESS TO BOX (I.E., NO DIRT, TRASH OR OTHER DEBRIS PLACED ON TOP OF BOX).

7. LOCATE WIRING REQUIRED ON ALL SERVICES 10' OR GREATER IN LENGTH / OFFSET GREATER THAN 2.0'.

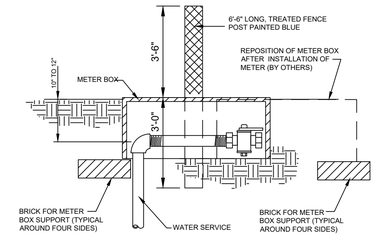
WATER SERVICE DETAIL- 2" AND SMALLER METER



NOTES

1. PIPE SHALL BE POLYETHYLENE. FITTINGS SHALL BE BRASS.
2. THE 2" CURB STOP SHALL BE ALL BRONZE. FITTINGS SHALL BE BRASS.
3. LOCATE WIRE FOR 10' OR GREATER IN LENGTH.
4. CANNOT BE PLACED UNDER CONCRETE OR PAVEMENT.
5. PLACE 2 FEET PAST LAST WATER MAIN SERVICE CONNECTION.

FLUSHING VALVE BELOW GRADE



WATER SERVICE MARKER POST

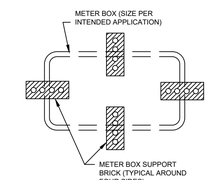
1. ALL SERVICES ARE TO BE CLEARLY MARKED BY A TREATED 6'-6" LONG MARKER (FENCE) POST PAINTED BLUE.

2. ALL SERVICES ARE TO BE EXTENDED ABOVE GRADE UNTIL COMPLETION OF ALL GRADING ACTIVITIES. ONCE FINAL ROAD GRADING IS COMPLETE, LOWER SERVICES BY CUTTING OFF RISER 10" TO 12" BELOW FINAL GRADE AND INSTALL 90° BEND, NIPPLE AND LOCATE WIRE BALL VALVE AT THAT ELEVATION.

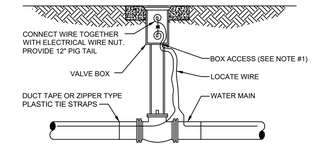
3. SET METER BOX OVER ENTIRE HORIZONTAL SECTION OF SERVICE LINE FROM LAST 90° BEND TO THE END OF THE CURB STOP.

4. BOX TO BE REPOSITIONED WHEN THE METER IS INSTALLED.

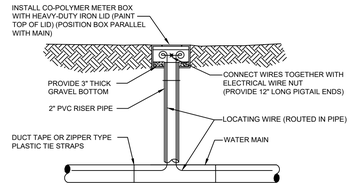
5. MARKER POST TO BE INSTALLED ADJACENT TO AND LOCATED AT THE MID SECTION OF THE METER BOX.



METER BOX SUPPORT DETAIL



LOCATE WIRE BOX UTILIZING VALVE BOX

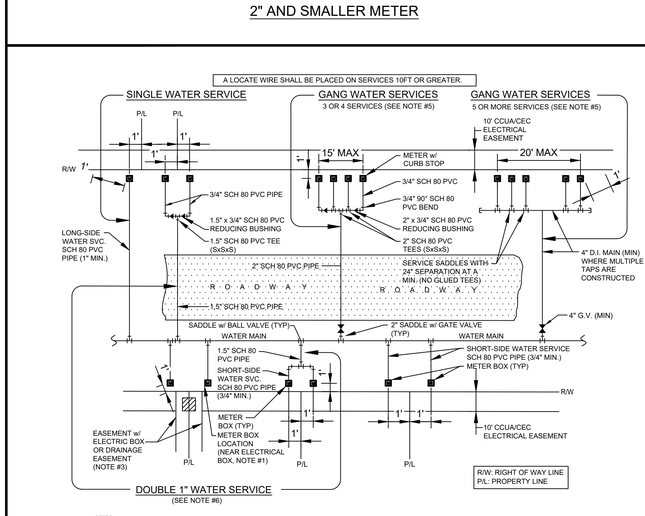


LOCATE WIRE BOX UTILIZING METER BOX

NOTES

1. LOCATE WIRE SHALL ENTER THE VALVE BOX THROUGH A "V" CUT IN THE 6" PVC RISER PIPE.

LOCATE WIRE BOX



NOTES

1. THE SKETCHES ABOVE INDICATE TYPICAL WATER SERVICE AND METER BOX LOCATIONS. ACTUAL LOCATIONS OF BOXES MAY VARY SLIGHTLY ACCORDING TO FIELD CONDITIONS ENCOUNTERED. TYPICALLY, THE METER BOX SHALL LOCATED 1.0' OFF OF THE R/W LINE.

2. UNLESS SPECIFIED OTHERWISE BY THE APPLICABLE COUNTY (CLAY OR BRADFORD), THE METER BOX SHALL BE LOCATED 1.0' OFF OF THE R/W LINE, AND 1.0' FOOT INSIDE OF THE PROLONGATION OF ONE OF THE SIDE PROPERTY LINES. IF A CONFLICT EXISTS WITH OTHER UTILITIES, THE METER BOX MAY BE ADJUSTED TO FOUR FEET (MAX.) INSIDE PROPERTY LINES (IN LIEU OF 1.0' FEET), UNLESS APPROVED OTHERWISE BY CCUA, THE WATER METER BOX SHALL BE LOCATED IN NON-TRAFFIC AREAS (NOT IN SIDEWALKS OR DRIVEWAYS). IF AN UNAPPROVED METER BOX IS IDENTIFIED BY CCUA, THEN THE CONTRACTOR OR CUSTOMER SHALL BE RESPONSIBLE FOR THE COST OF RELOCATING ANY METER BOX WHICH IS LOCATED IN THE SIDEWALK OR DRIVEWAY OR THE COST TO PROVIDE THE CORRECT METER BOX. CCUA SHALL APPROVE ALL DEVIATIONS TO THE ABOVE PRIOR TO CONSTRUCTION.

3. IF DRAINAGE OR OTHER EASEMENT IS LOCATED BETWEEN LOTS, METER BOXES SHALL BE LOCATED AT THE EASEMENT LINE BUT OUTSIDE THE EASEMENT AREA.

4. FOR SINGLE SERVICES, THE HORIZONTAL DISTANCE (PERPENDICULAR TO THE MAIN)BETWEEN THE SERVICES SADDLE AND THE METER BOX SHALL BE 2 FEET MAXIMUM. FOR DOUBLE 3/4" SERVICES, THE 1 ½" SCH 80 PVC MAIN SHALL BE LOCATED CENTERED BETWEEN THE TWO METER BOXES. LOCATE WIRE IS REQUIRED ON ALL SERVICES 10' OR GREATER IN LENGTH. IF LOCATE WIRE IS REQUIRED, THE WIRE SHALL RUN FROM THE METER BOX TO THE MAIN (WITH NO CONNECTION TO MAIN WIRE WITH THE LAST 24 INCHES STRIPPED OF INSULATION/BARE WIRE AS GROUND). ALL EXCEPTIONS TO THIS REQUIREMENT MUST BE APPROVED BY CCUA. THIS WILL ASSIST IN LOCATING EXISTING SERVICE LINES IN THE FUTURE.

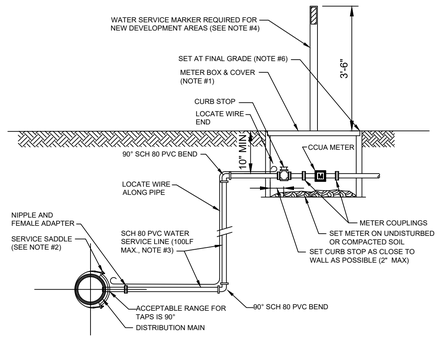
5. GANG WATER SERVICES: FOR 3 OR 4 SERVICES IN ONE AREA, A DUCTICLE IRON PIPE (D.I.P.) WATER MAIN EXTENSION W/LOCATE WIRE MAY BE UTILIZED ON EITHER SHORT-SIDE OR LONG-SIDE SERVICES WHERE SHOWN ON THE DRAWINGS. LOCATE WIRE SHALL EXTEND FROM ONE METER BOX TO CURB STOP AT WATER MAIN. FOR 5 OR MORE SERVICES IN ONE AREA, A WATER MAIN EXTENSION W/LOCATE WIRE MAY BE UTILIZED ON EITHER SHORT-SIDE OR LONG-SIDE SERVICES WHERE SHOWN ON THE DRAWINGS (TAPS STAGGERED AND AT 2 FEET ON CENTER-MIN). FOR WATER SUPPLY HEADERS WHERE 5 OR MORE TAPS ARE CONSTRUCTED, THE HEADER PIPE SHALL BE 4" AT A MINIMUM. EXAMPLE: CONSTRUCT A 4" MAIN D.I.P CROSSING THE STREET FOR 5 RESIDENTIAL CUSTOMERS, UTILIZING 4" G.V., 4" PIPE, 4"X1" SADDLES AND 1" CURB STOPS (NO GLUED TEE FITTINGS). THE 4" OR LARGER D.I.P. WATER MAIN MUST BE SIZED AND DESIGNED BY THE ENGINEER.

6. DOUBLE 1" WATER SERVICES IS ALLOWED FOR SHORT SIDE OR LONG SIDE SERVICES AND WHERE SHOWN ON THE DRAWINGS.

7. RECLAIMED WATER METER BOXES OR SERVICES SHALL BE CONSTRUCTED SIMILAR TO THE ABOVE AND SHALL BE LOCATED AT A MIN. OF 10' FROM THE POTABLE WATER SERVICE AND/OR BOX, AND NOT ALLOWED IN CONCRETE OR ASPHALT UNLESS APPROVED OTHERWISE BY CCUA.

SCH 80 PVC WATER SERVICE INSTALLATIONS
2" AND SMALLER METER

SCH 80 PVC WATER SERVICE DETAILS
(NTS)



NOTES

1. SEE CCUA APPROVED MATERIALS MANUAL AND SYSTEM DETAILS FOR REQUIREMENTS.

2. SINGLE BAND SADDLES MAYBE UTILIZED ON NEW 1" WATER SERVICES WHICH ARE INSTALLED ON A DRY 10" SIZE OR SMALLER WATER MAIN (NEW WATER MAIN CONSTRUCTION). FOR WET TAPS OR WATER MAINS 12" SIZE AND LARGER, A DOUBLE BAND SADDLE IS REQUIRED.

3. NO OPEN CUT UNDER ROADWAY PAVING ALLOWED UNLESS THE ROADWAY IS BEING RECONSTRUCTED OR IF DIRECTED OTHERWISE BY CCUA. CONSTRUCT SCH 80 PVC LINE WITH 36" (MIN.) COVER UNDER ROADWAYS. THE SCH 80 PVC WATER SERVICE LINE SHALL BE SAME SIZE AS THE METER (3/4" MINIMUM) AND BE INSTALLED PERPENDICULAR TO THE MAIN AND NOT EXCEED 100LF UNLESS OTHERWISE APPROVED BY CCUA.

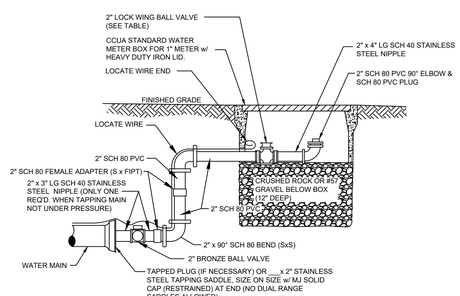
4. INSTALL PVC PLUG IN ALL CURB STOPS IF WATER SERVICE IS "NOT IN USE" (I.E.: IF NO METER IS INSTALLED). IN ADDITION, INSTALL A 6', 6" P.T. FENCE POST (TOP PAINTED BLUE) 12" OFF SIDE OF METER BOX. THE REMOVAL OR TRANSFER OF A WATER SERVICE SHALL INCLUDE BRASS METER COUPLINGS (HEX ON BARREL TYPE).

5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OR REPLACEMENT OF THE METER OR ELECTRONIC DEVICES IF DAMAGED BY THE CONTRACTOR DURING THE CONSTRUCTION PERIOD.

6. METER BOX AND TOP SHALL BE CLEAR OF ALL DEBRIS TO ALLOW FULL ACCESS TO BOX (I.E., NO DIRT, TRASH OR OTHER DEBRIS PLACED ON TOP OF BOX).

7. LOCATE WIRING REQUIRED ON ALL SERVICES 10' OR GREATER IN LENGTH / OFFSET GREATER THAN 2.0".

SCH 80 PVC WATER SERVICE DETAIL
2" AND SMALLER METER



NOTES

1. PIPE SHALL BE SCH 80 PVC. FITTINGS SHALL BE SCH 80 PVC.
2. THE 2" BALL VALVE SHALL BE ALL BRONZE. FITTINGS SHALL BE BRASS.
3. LOCATE WIRE FOR 10' OR GREATER IN LENGTH.
4. CANNOT BE PLACED UNDER CONCRETE OR PAVEMENT.
5. PLACE 2 FEET PAST LAST WATER MAIN SERVICE CONNECTION.

2" STANDARD SCH 80 PVC FLUSHING HYDRANT ON DEAD-END LINE

NO	DATE	BY	REVISION DESCRIPTION
4	JUNE 17	RHD	REVISED VARIOUS DETAILS.
3	JUNE 16	RHD	REVISED POLY WATER SERVICE DETAIL
2	JUNE 15	RHD	ADDED SCH 80 DETAILS
1	JUNE 15	RHD	NEW DETAIL SHEET DESIGN

DESG
DRWN
CHKD
APRV
DATE

STANDARD SCH80 AND POLYETHYLENE WATER SERVICE DETAILS

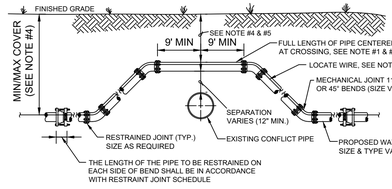
CLAY COUNTY UTILITY AUTHORITY
3176 OLD JENNINGS ROAD
MIDDLEBURG, FLORIDA 32068-3907
TELEPHONE: (904) 272-5999

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

ACAD FILE NAME

SHEET NO.
WD-1

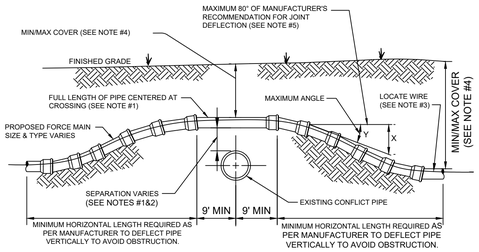


CASE "A" CROSSING

NOTES

1. THE SOILS BETWEEN THE NEW MAIN AND THE CONFLICT PIPE SHALL BE COMPACTED TO 98% OF THE MAXIMUM DENSITY AS DETERMINED BY THE LABORATORY MODIFIED PROCTOR TEST, ASTM D 1557.
2. ALL BENDS TO BE RESTRAINED IN BOTH DIRECTIONS PER CCUA REQUIREMENTS, TO WITHSTAND 150 P.S.I. PRESSURE TEST.
3. LOCATING WIRE REQUIRED.
4. THE COVER FOR PIPING SHALL BE 36" (MIN) IN PAVED AND UNPAVED AREAS AND A MAXIMUM COVER OF 84", UNLESS APPROVED BY CCUA.
5. IF UTILITY CONFLICT IS LOCATED IN A NON-TRAFFIC AREA (NO TRAFFIC LOADS) AND IF THE NEW PIPE SHALL BE DUCTILE IRON PIPE, THEN THE MINIMUM COVER MAY BE REDUCED TO 24 INCHES (ONLY IN THE AREA OF THE CONFLICT).

ADJUSTMENT OVER EXISTING UTILITIES MECHANICAL RESTRAINTS (NTS)



CASE "A" CROSSING

NOTES

1. A FULL LENGTH OF PIPE SHALL BE CENTERED OVER EXISTING UTILITY MAIN TO PROVIDE MAXIMUM JOINT SPACING FOR ALL CROSSING.

2. ALL BENDS TO BE RESTRAINED IN BOTH DIRECTIONS PER CCUA REQUIREMENTS TO WITHSTAND 150 P.S.I. PRESSURE TEST.

3. LOCATING WIRE REQUIRED.

4. THE COVER OVER ALL PIPING SHALL BE MINIMUM OF 36" (PAVED AND UNPAVED) AND MAXIMUM OF 84" UNLESS OTHERWISE APPROVED BY CCUA. THE SOILS BETWEEN THE NEW MAIN AND THE CONFLICT PIPE SHALL BE COMPACTED TO 98% OF THE MAXIMUM DENSITY AS DETERMINED BY THE LABORATORY MODIFIED PROCTOR TEST ASTM D 1557.

5. CCUA ONLY ALLOWS 80% OF THE PIPE MANUFACTURER'S RECOMMENDATION FOR JOINT DEFLECTION. BENDING THE PIPE BARREL IS NOT ALLOWED. UNLESS OTHERWISE APPROVED BY CCUA, THE MAXIMUM ARE LISTED IN TABLE BELOW. ONLY MANUAL FORCE CAN BE UTILIZED TO OBTAIN THESE JOINT DEFLECTION. ALL OFFSETS ARE BASED ON MINIMUM 20LF PIPE LENGTH.

MAXIMUM ALLOWED OFFSET FOR PIPE BY JOINT DEFLECTION

PVC PIPE

PIPE SIZE (IN.)	(X) MAX. OFFSET (IN.)	(Y) ANGLE AT ONE BELL	RESULTING RADIUS OF CURVE WITH 20FT. LENGTHS
2	30	7°	158 FT
4	10	2.4°	480 FT
6	10	2.4°	480 FT
8	10	2.4°	480 FT
10	10	2.4°	480 FT
12	8.5	2"	564 FT
14 - 24	5	1.2°	960 FT
30 - 48	3.25	0.8°	1477 FT

DUCTILE IRON PIPE (Mechanical Joint)

PIPE SIZE (IN.)	(X) MAX. OFFSET (IN.)	(Y) ANGLE AT ONE BELL	RESULTING RADIUS OF CURVE WITH 20FT. LENGTHS
-	-	-	-
4	27	6.5°	177 FT
6	24	5.7°	200 FT
8 - 12	17.5	4.2°	273 FT
14 - 16	12	2.9°	400 FT
18 - 20	10	2.4°	477 FT
24 - 30	8	1.9°	600 FT
36	7	1.7°	687 FT
42 - 48	6.7	1.6°	716 FT

ADJUSTMENT OVER EXISTING UTILITIES PIPE JOINT DEFLECTION

WATER MAIN AND NON-WATER MAIN SEPARATION REQUIREMENTS - NOTES

1) SEPARATION OF WATER AND SEWER MAINS. HORIZONTAL AND VERTICAL SEPARATION BETWEEN POTABLE WATER SYSTEM MAINS AND OR APPURTENANCES AND SANITARY OR STORM SEWERS, WASTEWATER OR STORM WATER FORCE MAINS, AND RECLAIMED WATER MAINS SHALL BE IN ACCORDANCE WITH RULE 62-555.314 FAC.

2. NEW OR RELOCATED UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED STORM SEWER, STORM WATER FORCE MAIN, RECLAIMED WATER MAIN REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C, OR PROPOSED VACUUM-TYPE SANITARY SEWER.

3. NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST SIX FEET, AND PREFERABLY TEN FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY- OR PRESSURE-TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C. THE MINIMUM HORIZONTAL SEPARATION DISTANCE BETWEEN WATER MAINS AND GRAVITY-TYPE SANITARY SEWERS SHALL BE REDUCED TO THREE FEET WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST SIX INCHES ABOVE THE TOP OF THE SEWER.

4. NEW OR RELOCATED UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED GRAVITY- OR VACUUM-TYPE SANITARY SEWER OR STORM SEWER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST SIX INCHES, AND PREFERABLY 12 INCHES, ABOVE, OR AT LEAST 12 INCHES BELOW, THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE (SEE CROSSING "A" AS SHOWN ON DETAIL SHEET WAT-02).

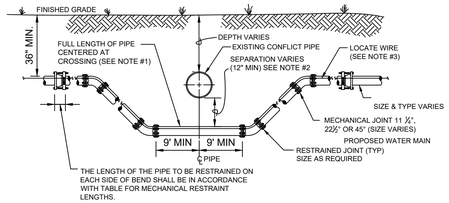
5. NEW OR RELOCATED UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED PRESSURE-TYPE SANITARY SEWER, WASTEWATER OR STORM WATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST 12 INCHES ABOVE OR BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.

6. AT THE UTILITY CROSSINGS DESCRIBED IN PARAGRAPHS (4) AND (5) ABOVE, ONE FULL LENGTH OF WATER MAIN PIPE SHALL BE CENTERED ABOVE OR BELOW THE OTHER PIPELINE SO THE WATER MAIN JOINTS WILL BE AS FAR AS POSSIBLE FROM THE OTHER PIPELINE. ALTERNATIVELY, AT SUCH CROSSINGS, THE PIPES SHALL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST THREE FEET FROM ALL JOINTS IN VACUUM-TYPE SANITARY SEWERS, STORM SEWERS, STORM WATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C., AND AT LEAST SIX FEET FROM ALL JOINTS IN GRAVITY- OR PRESSURE-TYPE SANITARY SEWERS, WASTEWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.

7. NEW OR RELOCATED FIRE HYDRANTS SHALL BE LOCATED SO THAT THE HYDRANTS ARE AT LEAST THREE (3) FEET FROM ANY EXISTING OR PROPOSED STORM SEWER, STORM WATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER; AT LEAST THREE (3) FEET, AND PREFERABLY TEN (10) FEET, FROM ANY EXISTING OR PROPOSED VACUUM-TYPE SANITARY SEWER; AT LEAST SIX (6) FEET, AND PREFERABLY TEN (10) FEET, FROM ANY EXISTING OR PROPOSED GRAVITY OR PRESSURE-TYPE SANITARY SEWER OR WASTEWATER FORCE MAIN.

8. WHERE AN UNDERGROUND WATER MAIN IS BEING LAID LESS THAN THE REQUIRED MINIMUM HORIZONTAL DISTANCE FROM ANOTHER PIPELINE AND WHERE AN UNDERGROUND WATER MAIN IS CROSSING ANOTHER PIPELINE AND JOINTS IN THE WATER MAIN ARE BEING LOCATED LESS THAN THE REQUIRED MINIMUM DISTANCE FROM JOINTS IN THE OTHER PIPELINE, THE CONTRACTOR SHALL CONSULT THE DESIGN ENGINEER TO OBTAIN APPROVAL OF ANY ALTERNATIVE CONSTRUCTION METHODS PRIOR TO CONSTRUCTION.

NOTES ON UTILITY SEPARATION REQUIREMENTS

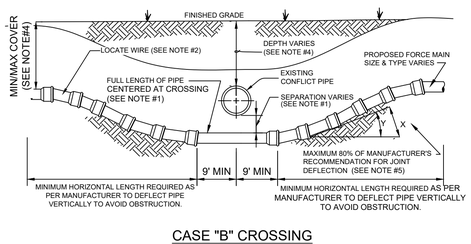


CASE "B" CROSSING

NOTES

1. THE SOILS BETWEEN THE NEW MAIN AND THE CONFLICT PIPE SHALL BE COMPACTED TO 98% OF THE MAXIMUM DENSITY AS DETERMINED BY THE LABORATORY MODIFIED PROCTOR TEST, ASTM D 1557
2. LOCATING WIRE REQUIRED.
3. ALL BENDS TO BE RESTRAINED IN BOTH DIRECTIONS PER CCUA REQUIREMENTS, TO WITHSTAND 150 P.S.I. PRESSURE TEST.
4. THE COVER FOR ALL PIPING SHALL BE 36" (MIN) IN PAVED AND UNPAVED AREAS AND A MAXIMUM COVER OF 84", UNLESS APPROVED BY CCUA.

ADJUSTMENT UNDER EXISTING UTILITIES MECHANICAL RESTRAINTS (NTS)



CASE "B" CROSSING

NOTES

1. IF EXISTING CONFLICT PIPE IS A WATER MAIN, 12 INCHES OF SEPARATION IS REQUIRED. A FULL LENGTH OF PIPE SHALL BE CENTERED UNDER EXISTING UTILITY MAIN TO PROVIDE MAXIMUM JOINT SPACING FOR ALL CROSSING.
2. LOCATING WIRE REQUIRED.
3. THE COVER OVER ALL PIPING SHALL BE MINIMUM OF 36" (PAVED AND UNPAVED) AND MAXIMUM OF 84" UNLESS OTHERWISE APPROVED BY CCUA. THE SOILS BETYEEN THE NEW MAIN AND THE CONFLICT PIPE SHALL BE COMPACTED TO 98% OF THE MAXIMUM DENSITY AS DETERMINED BY THE LABORATORY MODIFIED PROCTOR TEST ASTM D 1557.
4. CCUA ONLY ALLOWS 80% OF THE PIPE MANUFACTURER'S RECOMMENDATION FOR JOINT DEFLECTION. BENDING THE PIPE BARREL IS NOT ALLOWED. UNLESS OTHERWISE APPROVED BY CCUA, THE MAXIMUM ARE LISTED IN TABLE BELOW. ONLY MANUAL FORCE CAN BE UTILIZED TO OBTAIN THESE JOINT DEFLECTION. ALL OFFSETS ARE BASED ON MINIMUM 20LF PIPE LENGTH.

MAXIMUM ALLOWED OFFSET FOR PIPE BY JOINT DEFLECTION

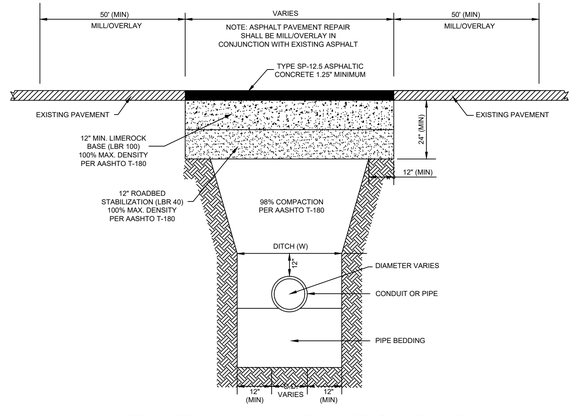
PVC PIPE

PIPE SIZE (IN.)	(X) MAX. OFFSET (IN.)	(Y) ANGLE AT ONE BELL	RESULTING RADIUS OF CURVE WITH 20FT. LENGTHS
2	30	7°	158 FT
4	10	2.4°	480 FT
6	10	2.4°	480 FT
8	10	2.4°	480 FT
10	10	2.4°	480 FT
12	8.5	2"	564 FT
14 - 24	5	1.2°	960 FT
30 - 48	3.25	0.8°	1477 FT

DUCTILE IRON PIPE (Mechanical Joint)

PIPE SIZE (IN.)	(X) MAX. OFFSET (IN.)	(Y) ANGLE AT ONE BELL	RESULTING RADIUS OF CURVE WITH 20FT. LENGTHS
-	-	-	-
4	27	6.5°	177 FT
6	24	5.7°	200 FT
8 - 12	17.5	4.2°	273 FT
14 - 16	12	2.9°	400 FT
18 - 20	10	2.4°	477 FT
24 - 30	8	1.9°	600 FT
36	7	1.7°	687 FT
42 - 48	6.7	1.6°	716 FT

ADJUSTMENT UNDER EXISTING UTILITIES PIPE JOINT DEFLECTION



REVISED CLAY COUNTY CASE 2 ASPHALT PAVEMENT REPAIR DETAIL (NTS)

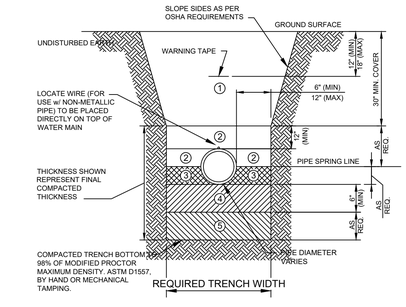
FOR PIPE RESTRAINT JOINT SCHEDULES, SEE STANDARD WATER MISCELLANEOUS DETAILS SHEET

LOCATION OF PUBLIC WATER SYSYEM MAINS IN ACCORDANCE WITH F.A.C. RULE 62-555.314

Other Pipe	Horizontal Separation	Crossings (1)	Joint Spacing @ Crossings (Full Joint Centered)
Storm Sewer, Stormwater Force Main, Reclaimed Water (2)	Water Main — 3 ft. minimum	Water Main — 12 inches is the minimum, except for storm sewer, then 6 inches is the minimum and 12 inches is preferred	Alternate 3 ft. minimum — Water Main
Vacuum Sanitary Sewer	Water Main — 10 ft. preferred, 3 ft. minimum	Water Main — 12 inches preferred, 6 inches minimum	Alternate 3 ft. minimum — Water Main
Gravity or Pressure Sanitary Sewer, Sanitary Sewer Force Main, Reclaimed Water (4)	Water Main — 10 ft. preferred, 6 ft. minimum (3)	Water Main — 12 inches is the minimum, except for gravity sewer, then 6 inches is the minimum and 12 inches is preferred	Alternate 6 ft. minimum — Water Main
On-Site Sewage Treatment & Disposal System	10 ft. minimum	---	---

(1) Water main should cross above other pipe. When water main must be below other pipe, the minimum separation is 12 inches.
(2) Reclaimed water regulated under Part III of Chapter 62-610, F.A.C.
(3) 3 ft. for gravity sanitary sewer where the bottom of the water main is laid at least 6 inches above the top of the gravity sanitary sewer.
(4) Reclaimed water not regulated under Part III of Chapter 62-610, F.A.C.
(5) All bells must be offset.

Disclaimer – This document is provided for your convenience only. Please refer to F.A.C. Rule 62 -555.314 for additional construction requirements.



1. FINAL BACKFILL - CLEAN, WELL GRADED MATERIAL IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT SPECIFICATIONS. FINAL BACKFILL SHALL BE INSTALLED IN LIFTS NOT EXCEEDING 6 INCHES, LOOSE MEASUREMENT, AND SHALL BE COMPACTED TO AT LEAST 95% (UNPAVED) AND 98% (PAVED) MODIFIED PROCTOR MAXIMUM DRY DENSITY, ASTM D-1557.

2. INITIAL BACKFILL - CLEAN, WELL GRADED MATERIAL IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT SPECIFICATIONS. INITIAL BACKFILL SHALL BE INSTALLED IN LIFTS NOT EXCEEDING 6 INCHES, LOOSE MEASUREMENT, AND SHALL BE COMPACTED TO AT LEAST 98% MODIFIED PROCTOR MAXIMUM DRY DENSITY, ASTM D-1557. BACKFILL SHALL EXTEND TO THE TOP OF THE PIPE AFTER COMPACTION. ALL LIFTS SHALL BE COMPACTED BY HAND TAMPING OR AN APPROVED METHOD OF MECHANICAL TAMPING. DEWATERING SHALL CONTINUE UNTIL BACKFILL IS COMPACTED AT LEAST 2 FEET ABOVE PIPE.

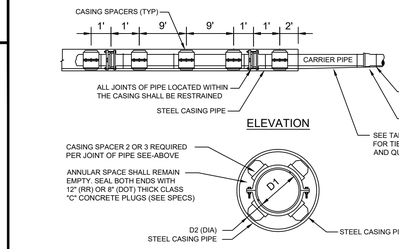
3. HAUNCHING - CLEAN, WELL GRADED MATERIAL IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT SPECIFICATIONS. HAUNCHING SHALL BE INSTALLED IN COMPLETELY DEWATERED TRENCHES IN LIFTS NOT EXCEEDING 4 INCHES, LOOSE MEASUREMENT, AND SHALL BE COMPACTED TO AT LEAST 98% MODIFIED PROCTOR MAXIMUM DRY DENSITY, ASTM D-1557, BY HAND TAMPING. HAUNCHING SHALL BE BROUGHT UP EQUALLY ON BOTH SIDES OF THE PIPE. COMPACT BACKFILL TO MID-PIPE.

4. BEDDING - CLEAN, WELL GRADED MATERIAL IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT SPECIFICATIONS. BEDDING SHALL BE INSTALLED IN COMPLETELY DEWATERED TRENCHES IN LIFTS NOT EXCEEDING 6 INCHES, LOOSE MEASUREMENT, AND SHALL BE COMPACTED TO AT LEAST 98% MODIFIED PROCTOR MAXIMUM DRY DENSITY, ASTM D-1557, BY HAND TAMPING OR MECHANICAL TAMPING. PROPERLY SHAPED BELL HOLES SHALL BE EXCAVATED IN THE COMPACTED BEDDING TO PERMIT ASSEMBLY OF THE PIPE. SEE SPECIFICATIONS FOR UNSUITABLE MATERIALS EXCAVATION IF REQUIRED. TRENCH BOTTOM IS AT BOTTOM OF PIPE IF UNSUITABLE MATERIAL IS NOT ENCOUNTERED.

NOTE: NATIVE, UNDISTURBED MATERIAL IN COMPLETELY DEWATERED TRENCHES MEETING THE COMPACTION AND MATERIAL REQUIREMENTS FOR COMPACTED BEDDING MATERIAL NEED NOT BE REPLACED OR REWORKED, EXCEPT FOR SHAPING OF BELL HOLES, AND WHERE REFILL IS REQUIRED.

5. REFILL - REQUIRED WHERE TRENCH HAS BEEN OVER-EXCAVATED. REFILL SHALL BE INSTALLED IN COMPLETELY DEWATERED TRENCHES IN LIFTS NOT EXCEEDING 6 INCHES AND SHALL BE COMPACTED TO 98% OF ASTM D-1557 MAX DRY DENSITY, BY HAND OR MECHANICAL TAMPING.

TYPICAL PIPE TRENCH DETAIL (NTS)



CASING DETAIL

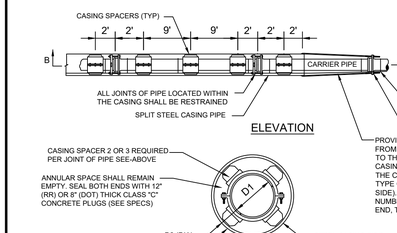
CARRIER TYPE AND CASING PIPE SIZES (MIN) IN INCHES												
CARRIER PIPE NO. DIA. (D1)	4	6	8	10	12	14	16	18	20	24	30	36
CASING PIPE NOM. DIA. (D2)	14	16	20	20	24	30	30	30	36	42	48	54
WALL THICKNESS RAILROAD (CSX)	0.25	0.281	0.375	0.375	0.375	0.469	0.469	0.469	0.562	0.625	0.688	0.781
WALL THICKNESS DOT	0.25	0.25	0.25	0.25	0.25	0.312	0.312	0.312	0.375	0.50	0.50	0.50
NUMBER OF TIE RODS (EACH END)	2	2	2	4	4	6	6	8	8	12	14	14
TIE ROD SIZE (DIA.)	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	1"	1"

CASING SIZE SCHEDULE

NOTES

1. MIN. COVER TO TOP OF CASING; a) FDOT-3.0' b)RAILROAD-5.5' TO BASE OF RAIL, 4.5' FOR SECONDARY OR INDUSTRIAL TRACKS.
2. ALL JOINTS WITHIN CARRIER PIPE SHALL BE MECHANICAL RESTRAINED JOINTS.
3. FOR STREET USES WHICH ARE NOT DOT OR RAILROAD, USE DOT CASING THICKNESS UNLESS OTHERWISE INDICATED BY ENGINEER.
4. CASING PIPE SHALL BE FURNISHED IN NOMINAL 8 FOOT LENGTHS (MIN.) UNLESS OTHERWISE INDICATED ON THE DRAWING OR APPROVED BY CCUA.
5. PIPE TO BE USED AS A CASING SHALL CONFORM TO EITHER ASTM STANDARD A139 FOR "ELECTRIC FUSION (ARC) WELDED STEEL PIPE". WITH A MINIMUM YIELD STRENGTH OF 35,000 PSI OR "API SPECIFICATION API-5LX, GRADE X-42 WELDED STEEL PIPE".

TYPICAL CASING DETAIL - WATER (NTS)

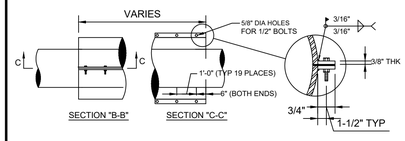


SPLIT CASING DETAIL

CARRIER TYPE AND CASING PIPE SIZES (MIN) IN INCHES														
CARRIER PIPE NO. DIA. (D_1)	4	6	8	10	12	14	16	18	20	24	30	36	42	48
CASING PIPE NOM. DIA. (D_2)	14	16	20	20	24	30	30	30	36	42	48	54	60	66
WALL THICKNESS RAILROAD-(CSX)	0.25	0.281	0.375	0.375	0.375	0.469	0.469	0.469	0.562	0.625	0.688	0.781	0.844	0.938
WALL THICKNESS DOT	0.25	0.25	0.25	0.25	0.25	0.312	0.312	0.312	0.375	0.50	0.50	0.50	0.50	0.50
NUMBER OF TIE RODS (EACH END)	2	2	2	4	4	6	6	8	8	12	14	14	16	16
TIE ROD SIZE (DIA.)	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	1"	1"	1 1/4"	1 1/4"

NOTES

1. NOT ALLOWED UNDER RAILROADS.
2. THE INSIDE DIAMETER OF THE CASING PIPE SHALL BE A MINIMUM OF 4 INCHES GREATER THAN THE OUTSIDE DIAMETER OF THE CARRIER PIPE BELL OR COUPLING.
3. ALL JOINTS WITHIN CARRIER PIPE SHALL BE MECHANICAL RESTRAINED JOINTS.
4. FOR STREET USES WHICH ARE NOT DOT OR RAILROAD, USE DOT CASING THICKNESS UNLESS OTHERWISE INDICATED BY ENGINEER.
5. CASING PIPE SHALL BE FURNISHED IN NOMINAL 8 FOOT LENGTHS (MIN.) UNLESS OTHERWISE INDICATED ON THE DRAWING OR APPROVED BY CCUA.
6. PIPE TO BE USED AS A CASING SHALL CONFORM TO EITHER ASTM STANDARD A139 FOR "ELECTRIC FUSION (ARC) WELDED STEEL PIPE". WITH A MINIMUM YIELD STRENGTH OF 35,000 PSI OR "API SPECIFICATION API-5LX, GRADE X-42 WELDED STEEL PIPE".



MATERIAL: PIPE - ATSM A53, GRADE B, ERW, STD WALL, CARBON STEEL
PLATE - STM A36, GRADE B, CARBON STEEL (THICKNESS AS NOTED)
WELDS ALL WELDS SHALL BE PERFORMED BY A CERTIFIED WELDER
LNINGS/COATINGS: INTERIOR - BARE
EXTERIOR - BARE

PIPE MAIN FOR CROSSINGS USING SPLIT CASING PIPE NOT ALLOWED UNDER RAILROADS

TYPICAL SPLIT CASING DETAIL - WATER (NTS

REVISION DESCRIPTION	NO	DATE	BY
REVISED SLAT CONCRETE ASPHALT DETAIL REVISED NOTES & NOTE DETAILS REVISED CASING SPACER DETAIL (PVP RESTRAINT) ADDED CASE 2 DETAIL ADDED CASING SPACER DETAIL NEW DETAIL SHEET DESIGN	6 5 4 3 2 1	JAN 17 JAN 17 SEPT 16 AUG 16 JUNE 15	RHD RHD RHD RHD RHD

DESG
DRWN
CHKD
APRV
DATE

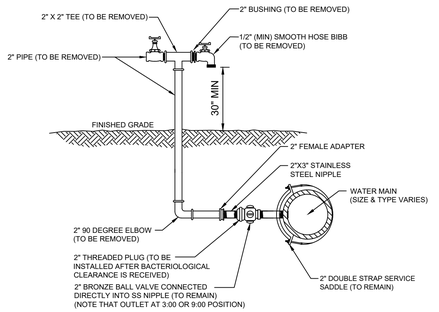
STANDARD WATER CASING, CROSSING TYPE AND PIPE RESTRAINT DETAILS

CLAY COUNTY UTILITY AUTHORITY
3176 OLD JENNINGS ROAD
MIDDLEBURG, FLORIDA 32068-3907
TELEPHONE: (904) 272-5999

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

ACAD FILE NAME

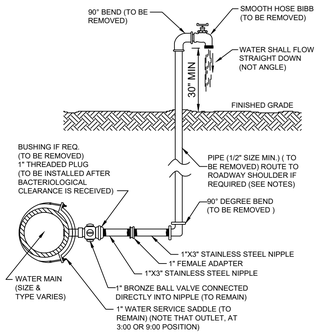
SHEET NO.
WD-2



NOTES

1. LOCATION OF SAMPLE POINT BIBB SHALL NOT BE WITHIN THE ROADWAY BUT ROUTED TO THE ROADWAY SHOULDERS (NON-TRAFFIC AREAS).
2. ALL PIPE & FITTING SHALL BE GALVANIZED MATERIAL OR SCH 80 PVC.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL TEMPORARY PIPING & FITTING (AS NOTED) AFTER BACTERIOLOGICAL CLEARANCE IS RECEIVED.
4. THE CONTRACTOR SHALL COMPLY WITH ALL CCUA RULES AND POLICES AS OUTLINED BY CCUA'S STANDARD WATER SYSTEM STANDARDS AND OTHER ASSOCIATED CCUA STANDARDS.

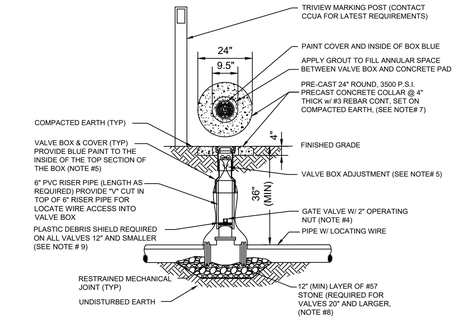
2" TEMPORARY SAMPLE TAP FOR STUB OUT (NTS)



NOTES

1. LOCATION OF SAMPLE POINT BIBB SHALL NOT BE WITHIN THE ROADWAY BUT ROUTED TO THE ROADWAY SHOULDERS (NON-TRAFFIC AREAS).
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL TEMPORARY PIPING & FITTINGS (AS NOTED), AFTER BACTERIOLOGICAL CLEARANCE IS RECEIVED.
3. PIPE AND FITTINGS SHALL BE PVC SCH 80 OR GALV. MATERIAL.
4. THE USE OF THE ABOVE CONSTRUCTION FOR A TEMPORARY SAMPLE POINT SHALL BE LIMITED TO AREAS WHERE A SAMPLE TAP BY ALTERNATIVE METHODS IS NOT FEASIBLE OR IF DIRECTED OTHERWISE BY CCUA.
5. THE CONTRACTOR SHALL COMPLY WITH ALL CCUA RULES AND POLICIES AS AS OUTLINED BY CCUA'S STANDARD WATER SYSTEM STANDARDS AND OTHER ASSOCIATED CCUA STANDARDS.

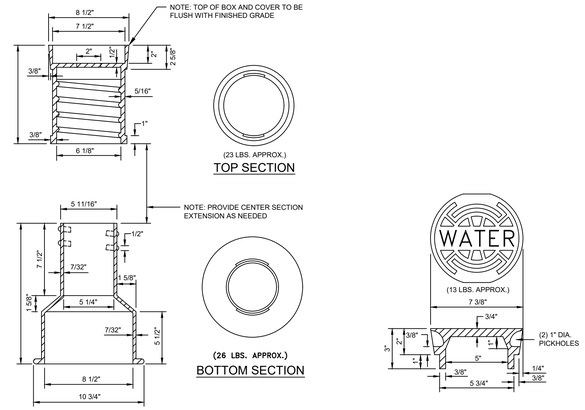
TEMPORARY SAMPLE TAP (NTS)



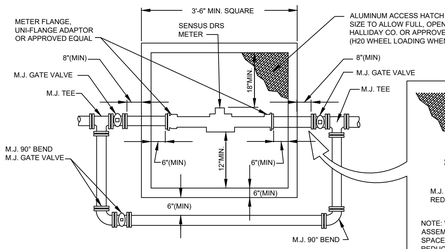
NOTES

1. FOR UNPAVED LOCATIONS, A PRECAST CONCRETE VALVE PAD SHALL BE PROVIDED AND INSTALLED FLUSH WITH GRADE. CONCRETE PAD IS NOT REQUIRED FOR VALVE LOCATED IN THE ROADWAY, UNLESS SHOWN OR NOTED OTHERWISE.
2. LOCATING WIRE IS REQUIRED ON ALL PRESSURE PIPING (SEE DETAILW-44).
3. A "V" CUT SHALL BE CARVED IN THE CURB CLOSEST/ADJACENT TO ALL BELOW GRADE VALVES. THE "V" CUT IS TO BE PAINTED GREEN.
4. IN PAVED AREAS, INSTALL VALVE AT A DEPTH TO ALLOW A 12" MIN. DISTANCE BETWEEN THE VALVE COVER PLATE AND THE TOP OF THE VALVE OPERATING NUT. OUTSIDE OF PAVED AREAS (GRASS), INSTALL VALVE AT A DEPTH TO ALLOW A 6" MINIMUM DISTANCE BETWEEN THE VALVE COVER AND THE TOP OF THE VALVE OPERATING NUT. OPERATING NUT/STEM EXTENSION SHALL BE PROVIDED (WHERE APPLICABLE) SO THAT THE OPERATING NUT WILL BE NO MORE THAN 30 INCHES BELOW FINISHED GRADE.
5. FOR NEW CONSTRUCTION, THE VALVE BOX SHALL BE ADJUSTED TO MIDRANGE TO ALLOW FOR FUTURE BOX ADJUSTMENTS. ROUTE LOCATE WIRES THRU A "V" CUT IN THE TOP OF THE 6" PVC RISER PIPE FOR LOCATE WIRE ACCESS INTO VALVE BOX. THE LOCATE WIRES WITH A 12" LONG PIG-TAIL AT THE TOP SHALL BE CONNECTED TOGETHER WITH A WIRE NUT.
6. BRASS IDENTIFICATION TAG INDICATING "WATER", VALVE SIZE, DIRECTION AND TURNS TO OPEN & VALVE TYPE. PROVIDE A 1/4" HOLE IN BRASS TAG AND ATTACH TAG (TWIST WIRE AROUND TAG) TO THE END OF THE LOCATE WIRE. TAGS ARE NOT REQUIRED ON VALVES INSTALLED ON FIRE HYDRANT BRANCH LINES.
7. IN LIEU OF PRECAST CONCRETE PAD, A 6" THICK X 24" (ROUND OR SQUARE) POURED CONCRETE PAD W/2 - #4 REBAR AROUND PERIMETER, MAY BE USED.
8. GRAVEL SHALL BE PROVIDED UNDER ALL VALVES 20" AND LARGER. THE MINIMUM VERTICAL LIMIT OF GRAVEL IS 12" UNDER THE VALVE UP TO 1/3 THE OVERALL HEIGHT OF THE VALVE.
9. FOR VALVES 12 INCH AND SMALLER, PROVIDE A WHITE OR BLACK PLASTIC DEBRIS SHIELD WHICH INSTALLS BELOW THE OPERATING NUT. THIS SHIELD SHALL CENTER THE RISER PIPE BOX OVER THE OPERATING NUT AND MINIMIZE INFILTRATION. SHIELD SHALL BE BY AFC, BOXLOK OR APPROVED EQUAL.

WATER VALVE INSTALLATION DETAIL



VALVE BOX AND COVER

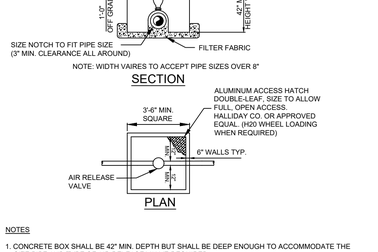


NOTES

1. ALL PIPE TO BE D.I. (MINIMUM 4")
2. ALL VALVES & FITTINGS TO BE DUCTILE IRON. (MINIMUM 4")
3. MINIMUM LENGTH OF 8 DIAMETERS OF STRAIGHT PIPE TO BE INSTALLED ON INLET SIDE OF METER.
4. ALL PIPE AND FITTINGS TO BE SAME SIZE AS METER. (EXCEPT 3" METER SHALL HAVE 4" PIPE AND FITTINGS)
5. CONC. BOX SHALL BE A MINIMUM OF 42" DEEP WITH OPEN BOTTOM, PRECAST WITH NOTCH TO ACCOMMODATE PIPE INSTALLED 36" DEEP, INSTALLED ON 12" OF #57 STONE.
6. CONTRACTOR SHALL PROVIDE SHOP DRAWING OF BOX WITH DIMENSIONS FOR APPROVAL BY CCUA.
7. THE COST OF THE METER WILL BE ASSESSED TO DEVELOPER UNDER SEPARATE AGREEMENT. THE METER ONLY WILL BE FURNISHED TO THE CONTRACTOR BY THE CLAY COUNTY UTILITY AUTHORITY AND THE CONTRACTOR SHALL INSTALL THE METER TO COMPLETE THE INSTALLATION SHOWN HEREON.
8. PIPES COMING IN AND GOING OUT OF BOX SHALL BE 36" DEEP. CONTRACTOR SHALL BE RESPONSIBLE TO ADJUST THE ELEVATION OF THESE PIPES, USE OF BENDS ARE PERMITTED TO ACHIEVE THIS.
9. FOR ANY SIZE WATER AND FIRE LINE METERS NOT LISTED, THE CONTRACTOR SHALL SUBMIT ALL NECESSARY SUBMITTALS TO BE APPROVED BY CCUA.

METER VAULT DIMENSIONS (OVER 8" CONTACT CCUA ENGINEERING DEPARTMENT)			
METER TYPE	3" and 4" VAULT DIMENSIONS	6" VAULT DIMENSIONS	8" VAULT DIMENSIONS
SENSUS TURBINE	4'-0" OUTSIDE 3'-0" INSIDE	4'-6" OUTSIDE 3'-6" INSIDE	4'-6" OUTSIDE 3'-6" INSIDE
SENSUS COMPOUND	4'-0" OUTSIDE 3'-0" INSIDE	4'-6" OUTSIDE 3'-0" INSIDE	4'-6" OUTSIDE 3'-0" INSIDE
SENSUS F2 FIRE LINE	5'-0" OUTSIDE 4'-0" INSIDE	6'-0" OUTSIDE 5'-0" INSIDE	6'-10" OUTSIDE 5'-6" INSIDE
"McCROMETER" PROPELLER	4'-0" OUTSIDE 3'-0" INSIDE	4'-6" OUTSIDE 3'-6" INSIDE	4'-6" OUTSIDE 3'-6" INSIDE

METER VAULT - 3" AND LARGER METERS



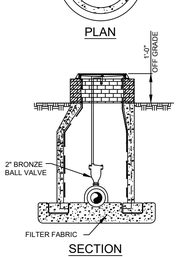
NOTE: WIDTH VAIRES TO ACCEPT PIPE SIZES OVER 8"

NOTES

1. CONCRETE BOX SHALL BE 42" MIN. DEPTH BUT SHALL BE DEEP ENOUGH TO ACCOMMODATE THE SIZE PIPE AND TYPE OF AIR RELEASE VALVE REQUIRED, WITH OPEN BOTTOM, PRECAST WITH NOTCH TO ACCOMMODATE PIPE INSTALLED WITH 36" COVER FROM TOP OF PIPE TO FINISH GRADE, ON 12" OF #57 STONE,WITH FILTER FABRIC ABOVE AND BELOW THE STONE.
2. CONTRACTOR SHALL PROVIDE SHOP DRAWING OF BOX WITH DIMENSIONS FOR APPROVAL BY CCUA.
3. DIMENSIONS SHOWN ARE MINIMUM AND SHALL BE INCREASED BASED UPON ACTUAL SIZE OF PIPE INSTALLED.

WATER MAIN AIR RELEASE VALVE VAULT

TO BE USED ON ALL PIPES 12" OR LARGER



NOTES

1. FOR PIPE 10" OR SMALLER A 4' DIAMETER, NOTCHED MANHOLE CAN BE USED FOR AIR RELEASE VALVE.
2. SET MANHOLE ON MIN. OF 4 SOLID CONCRETE BLOCKS SPACED EVENLY AROUND THE MANHOLE W/ A MIN. OF 12" OF #57 STONE WITH FILTER FABRIC ABOVE AND BELOW THE STONE.

WATER MAIN AIR RELEASE VALVE VAULT

TO BE USED ON ALL PIPES 10" OR SMALLER

PVC PIPE RESTRAINT NOTES

1. THIS SCHEDULE SHALL BE UTILIZED ON ALL WATER, SEWER FORCE MAIN OR RECLAIMED WATER SYSTEMS. ALL FITTINGS SHALL BE RESTRAINED TO LENGTHS INDICATED ON THIS SCHEDULE, AT A MINIMUM.
2. ASSUMPTIONS: PVC PIPE, SAFETY FACTOR=1.5, TEST PRESSURE=150PSI, SOIL=GM OR SM, TRENCH TYPE 3, DEPTH OF COVER=30 INCHES FOR 20" AND SMALLER PIPE SIZE OR 36 INCHES FOR 24" AND LARGER PIPE SIZE.
3. BENDS AND VALVES: SHALL BE RESTRAINED ON EACH SIDE OF FITTING.
4. VERTICAL OFFSETS: ARE APPROX. 3 FEET COVER ON TOP AND APPROX. 8 FEET COVER ON BOTTOM. PER THE DETAILS, Lu IS THE RESTRAINED LENGTH FOR THE UPPER (TOP) LEVEL. Li IS THE RESTRAINED LENGTH FOR THE LOWER (DEEPER) LEVEL. ASSUME 45 DEGREE BENDS.
5. TEES: TOTAL LENGTH BETWEEN FIRST JOINTS OR RESTRAINED LENGTH ON EITHER SIDE OF TEE (RUN) SHALL BE A TOTAL DISTANCE OF 30 FEET (MIN). SEE SCHEDULE ABOVE FOR RESTRAINT LENGTH ON TEE "BRANCH" LINE.
6. HDPE TO PVC TRANSITIONS: THE PVC PIPE SIDE SHALL BE RESTRAINED 35 FT (MIN).
7. THE INSTALLATION OF BELL HARNESS RESTRAINTS AT PVC JOINTS SHALL BE COMPLETED PER THE MANUFACTURERS RECOMMENDATION, WHICH INCLUDES NOT OVER TIGHTENING THE PARALLEL RODS/NUTS. THESE NUTS SHOULD ONLY BE SNUG TIGHT, THE HOME MARKS ON THE PIPE SHOULD ALWAYS BE VISIBLE AFTER THE RESTRAINT IS INSTALLED. OVERHOMING THE JOINT MAY CAUSE A FAILURE AT THE BELL RESULTING IN A SERVICE OUTAGE.

NOMINAL PIPE SIZE (IN.)	HORIZONTAL BENDS				VERTICAL OFFSETS 45° BENDS (SEE NOTE 4)		VALVES OR DEAD ENDS
	90° BENDS L (FT.)	45° BENDS L (FT.)	22.5° BENDS L (FT.)	11.25° BENDS L (FT.)	UPPER Lu (FT.)	LOWER Li (FT.)	L (FT.)
4	20	8	4	2	20	3	50
6	28	10	5	2	28	4	20
8	36	14	6	3	36	5	90
10	40	18	8	4	45	6	110
12	50	20	9	4	52	8	120
14	56	23	10	5	60	9	140
16	60	26	11	6	67	10	160
18	69	29	12	6	74	12	180
20	75	32	13	7	80	13	195
24	76	33	15	7	81	14	200
30	88	36	18	9	97	16	235
36	100	40	20	10	110	20	270
42	115	48	23	11	125	24	300
48	125	52	25	12	140	30	340

REDUCERS	
SIZE (IN.)	L (FT.)
6x4	35
8x6	35
8x4	65
10x8	35
10x6	65
12x10	35
12x8	65
16x12	65
16x10	95
20x18	35
20x16	65
20x12	120
24x20	65
24x18	95
24x16	120
30x24	80
30x20	150
36x30	80
36x24	150
42x36	80
42x30	150
48x42	80
48x36	150

TEES SEE NOTE 5		
RUN SIZE (IN.)	BRANCH SIZE (IN.)	L (FT.)
4	4	F.O.
4	6 4 < LESS	10 F.O.
8	8 6 < LESS	30 F.O.
10	10 8 6 < LESS	48 14 F.O.
12	12 10 8 < LESS	65 35 F.O.
16	16 12 10 < LESS	100 40 F.O.
20	20 16 12 < LESS	130 80 F.O.
24	24 20 16 12 < LESS	130 90 40 F.O.
30	30 24 20 16 < LESS	140 80 50 F.O.
36	36 30 24 20 < LESS	180 120 50 F.O.
42	42 36 30 24 20 < LESS	220 160 80 40 F.O.
48	48 42 36 30 24 < LESS	250 180 90 40 F.O.

F.O. = FITTING ONLY

PVC PIPE RESTRAINT JOINT SCHEDULE

DUCTILE IRON PIPE RESTRAINT NOTES

1. THIS SCHEDULE SHALL BE UTILIZED ON ALL WATER, SEWER FORCE MAIN OR RECLAIMED WATER SYSTEMS. ALL FITTINGS SHALL BE RESTRAINED TO LENGTHS INDICATED ON THE ABOVE SCHEDULE, AT A MINIMUM.
2. ASSUMPTIONS: DUCTILE IRON PIPE (WITHOUT POLY WRAP), SAFETY FACTOR=1.5, TEST PRESSURE=150PSI, SOIL=GM OR SM, TRENCH TYPE 3, DEPTH OF COVER=30 INCHES FOR 20" AND SMALLER PIPE SIZE OR 36 INCHES FOR 24" AND LARGER PIPE SIZE. FOR D.I.P. W/POLY WRAP, USE RESTRAINT JOINT SCHEDULE FOR PVC PIPE.
3. BENDS AND VALVES: SHALL BE RESTRAINED ON EACH SIDE OF FITTING.
4. VERTICAL OFFSETS: ARE APPROX. 3 FEET COVER ON TOP AND APPROX. 8 FEET COVER ON BOTTOM. PER THE DETAILS, Lu IS THE RESTRAINED LENGTH FOR THE UPPER (TOP) LEVEL. Li IS THE RESTRAINED LENGTH FOR THE LOWER (DEEPER) LEVEL. ASSUME 45 DEGREE BENDS.
5. TEES: TOTAL LENGTH BETWEEN FIRST JOINTS OR RESTRAINED LENGTH ON EITHER SIDE OF TEE (RUN) SHALL BE A TOTAL DISTANCE OF 30 FEET (MIN). SEE SCHEDULE ABOVE FOR RESTRAINT LENGTH ON TEE "BRANCH" LINE.
6. HDPE TO D.I.P. TRANSITIONS: THE D.I.P. PIPE SIDE SHALL BE RESTRAINED 35 FT (MIN).

LENGTH (L) TO BE RESTRAINED

NOMINAL PIPE SIZE (IN.)	HORIZONTAL BENDS				VERTICAL OFFSETS 45° BENDS (SEE NOTE 4)		VALVES OR DEAD ENDS
	90° BENDS L (FT.)	45° BENDS L (FT.)	22.5° BENDS L (FT.)	11.25° BENDS L (FT.)	UPPER Lu (FT.)	LOWER Li (FT.)	L (FT.)
4	18	6	4	2	12	2	30
6	22	10	5	2	17	3	40
8	30	13	6	3	22	4	50
10	35	14	7	4	26	5	64
12	42	16	8	4	31	6	75
14	46	20	9	5	35	7	85
16	53	22	11	5	40	8	95
18	57	24	12	6	44	9	105
20	62	26	13	6	48	10	110
24	64	27	14	6	50	11	111
30	73	30	15	7	57	13	137
36	85	34	18	8	66	17	159
42	93	38	20	9	75	20	176
48	102	43	22	10	82	22	198

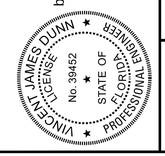
REDUCERS	
SIZE (IN.)	L (FT.)
6x4	20
8x6	20
8x4	40
10x8	20
10x6	40
12x10	20
12x8	40
16x12	40
16x10	57
20x18	20
20x16	40
20x12	73
24x20	40
24x18	50
24x16	60
30x24	50
30x20	76
36x30	50
36x24	88
42x36	40
42x30	88
48x42	40
48x36	88

TEE SEE NOTE 5		
RUN SIZE (IN.)	BRANCH SIZE (IN.)	L (FT.)
4	4	F.O.
4	6 4 < LESS	6 F.O.
8	8 6 < LESS	18 F.O.
10	10 8 6 < LESS	27 8 F.O.
12	12 10 8 < LESS	38 20 F.O.
16	16 12 10 < LESS	60 20 F.O.
20	20 16 12 < LESS	78 40 F.O.
24	24 20 16 12 < LESS	76 53 20 F.O.
30	30 24 20 16 < LESS	99 60 37 F.O.
36	36 30 24 20 16 < LESS	118 88 52 37 F.O.
42	42 36 30 24 20 < LESS	138 110 78 37 F.O.
48	48 42 36 30 24 < LESS	154 132 99 59 F.O.

F.O. = FITTING ONLY

DUCTILE IRON PIPE RESTRAINT JOINT SCHEDULE

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the Signature must be verified on any electronic copies.



NO	DATE	BY	REVISION DESCRIPTION
4	JUNE 15	RHD	NEW DETAIL SHEET DESIGN
3	OCT 16	RHD	MODIFIED VAULT DIMENSION CHART
2	JUN 17	RHD	REVISED NOTES AND DETAILS
1			

DESG
DRWN
CHKD
APRV
DATE

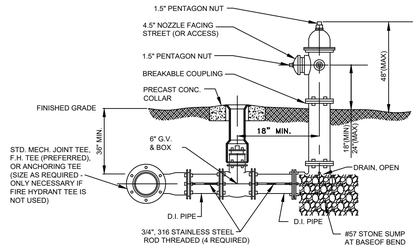
STANDARD WATER MISC DETAILS

CLAY COUNTY UTILITY AUTHORITY
3176 OLD JENNINGS ROAD
MIDDLEBURG, FLORIDA 32068-3907
TELEPHONE: (904) 272-5999

ACAD FILE NAME

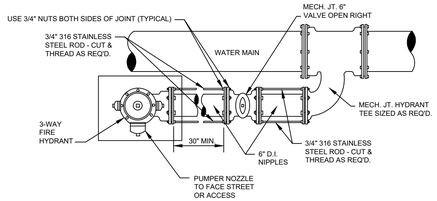
SHEET NO.

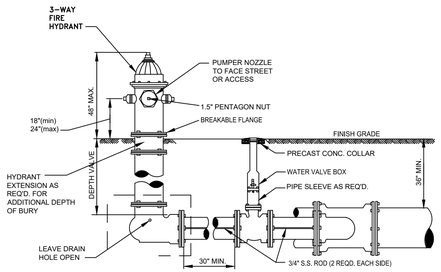
WD-3



FIRE HYDRANT (STANDARD)

SEE CCUA APPROVED MATERIALS MANUAL





FIRE HYDRANT - LIMITED SPACE

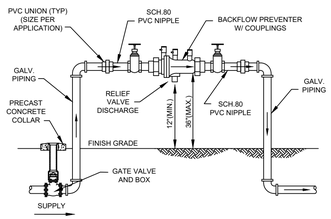
HYDRANT INSTALLATION FOR LIMITED SPACE WITH MECH. JOINT HYDRANT TEE

FIRE HYDRANT CANNOT BE LOCATED LESS THAN 5'-0" FROM BACK OF CURB AND NO MORE THAN 20'-0" BACK OF CURB.

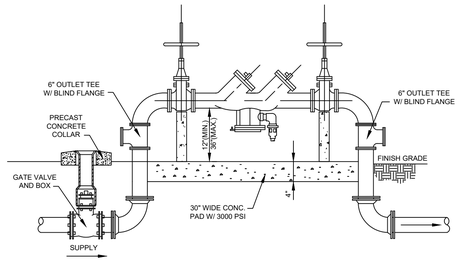
NOTES:

THERE SHALL BE CLEARANCES OF SEVEN AND ONE-HALF FEET (7'-6") IN FRONT OF AND TO THE SIDES OF THE FIRE HYDRANT, WITH A FOUR FEET (4') CLEARANCE TO THE REAR OF THE HYDRANT. *EXCEPTION: THESE DIMENSIONS MAY BE REDUCED BY THE APPROVAL OF THE FIRE OFFICIAL.*

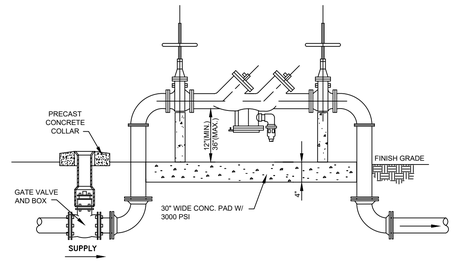
THERE SHALL BE NO OBSTRUCTIONS PLACED IN FRONT OF ANY FIRE HYDRANT ASSEMBLY THAT WOULD PROHIBIT ACCESS.



REDUCED PRESSURE BACKFLOW PREVENTER 2" DIAMETER AND SMALLER (NTS)



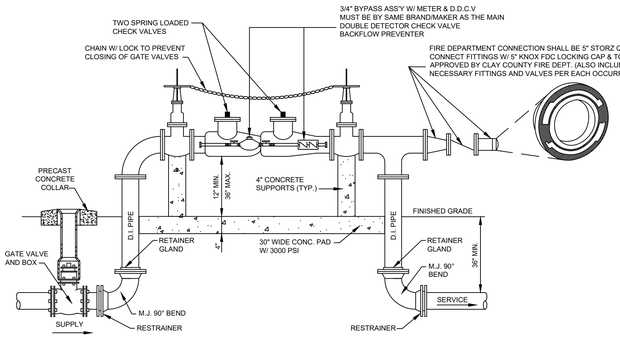
BACKFLOW PREVENTER SIZES 6" & ABOVE WHERE BACKFLOW IS BETWEEN RECLAIMED & POTABLE (NTS)



REDUCED PRESSURE BACKFLOW PREVENTER - SIZES 3" & ABOVE (NTS)

BACKFLOW PREVENTER NOTE:

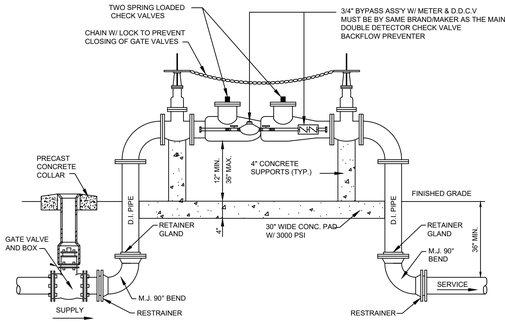
DESIGNS SHOWN FOR BACKFLOW PREVENTER INSTALLATIONS ARE REQUIRED FOR CCUA OWNED INSTALLATIONS - SEE CCUA APPROVED MATERIALS MANUAL. THE BOTTOM OF THE BACKFLOW PREVENTER VALVE IS TO BE NO LESS THAN 12" OR MORE THAN 36" ABOVE THE NATURAL FLOOD GRADE. (SEE CCUA PUMP STATION DETAIL SHEETS (ALL) FOR BACKFLOW PREVENTERS AT PUMP STATIONS)



NOTES

1. DOUBLE DETECTOR CHECK VALVE W/ 3/4" BYPASS METER & 3/4" D.D.C.V ARE REQUIRED ON ALL ON-SITE FIRE SPRINKLER SYSTEMS.
2. PROVIDE FREEZE PROTECTION FOR COMPLETE ASSEMBLY.

DOUBLE DETECTOR CHECK VALVE BACKFLOW PREVENTER WITHOUT ABOVE GROUND ENCLOSURE - 3" AND ABOVE WITH FIRE DEPARTMENT CONNECTION



NOTES

1. DOUBLE DETECTOR CHECK VALVE W/ 3/4" BYPASS METER & 3/4" D.D.C.V ARE REQUIRED ON ALL ON-SITE FIRE SPRINKLER SYSTEMS.
2. PROVIDE FREEZE PROTECTION FOR COMPLETE ASSEMBLY.

DOUBLE DETECTOR CHECK VALVE BACKFLOW PREVENTER WITHOUT ABOVE GROUND ENCLOSURE - 3" & ABOVE WITHOUT FIRE DEPARTMENT CONNECTION

NO	DATE	BY	REVISION DESCRIPTION
2	AUG 17	RHD	ADDED HYDRANT GENERAL NOTES
1	JUNE 15	RHD	NEW DETAIL SHEET DESIGN

DESG
DRWN
CHKD
APRV
DATE

STANDARD FIRE HYDRANT AND D.D.C.V.BACKFLOW PREVENTER DETAILS

CLAY COUNTY UTILITY AUTHORITY
3176 OLD JENNINGS ROAD
MIDDLEBURG, FLORIDA 32068-3907
TELEPHONE: (904) 272-5999

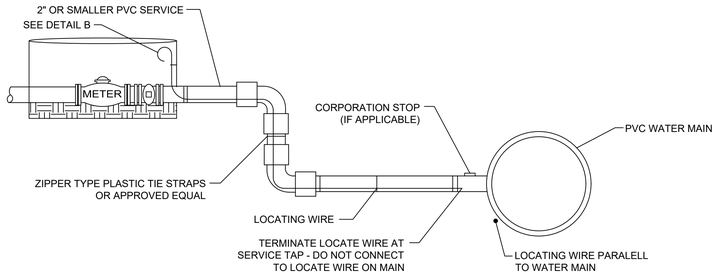
This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT JAMES DUNN LICENSEE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

ACAD FILE NAME

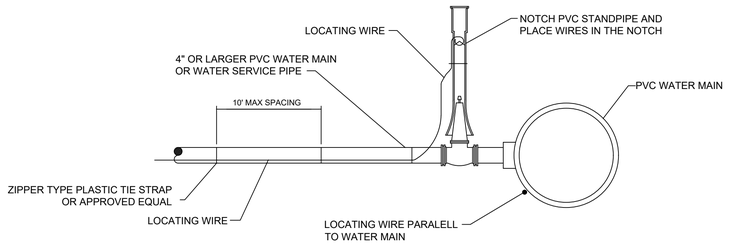
SHEET NO.

WD-4



CONNECTION TO PVC MAINS

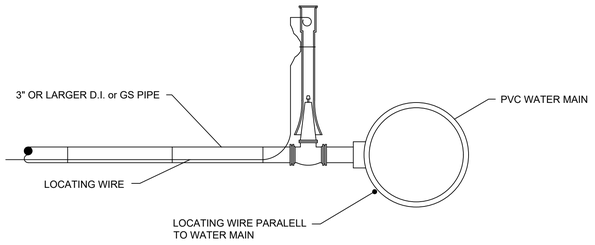
2" OR SMALLER WATER SERVICE
(LONG SERVICES ONLY)



CONNECTION TO PVC MAINS

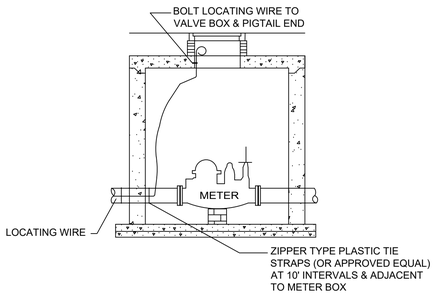
4" OR LARGER PVC WATER MAIN OR WATER SERVICE PIPE

DETAIL - A



CONNECTION TO PVC MAINS

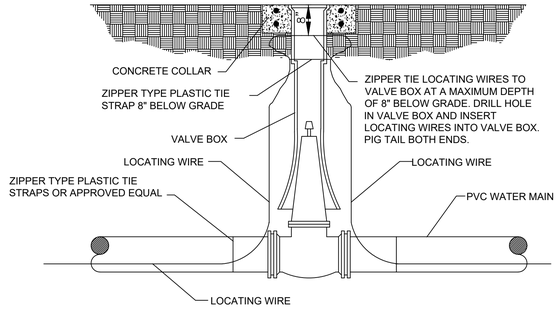
w/3" OR LARGER D.I. OR GS WATER SERVICE OR WATER MAIN



PRECAST METER BOX & COVER
(3" OR LARGER)

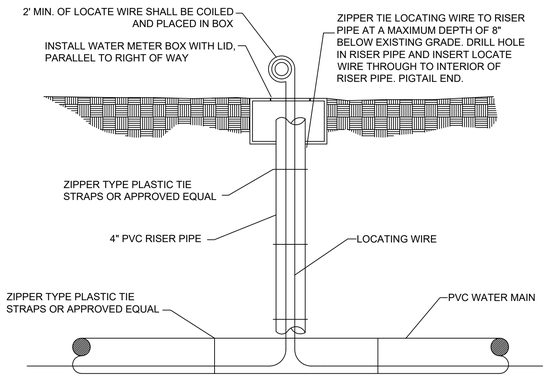
CONNECTION AT METERS BOXES w/ PVC WATER SERVICE

DETAIL - B



IN-LINE LOCATING STATION- PVC PIPE

VALVE BOX WITH VALVE



IN-LINE LOCATING STATION - PVC PIPE

METER BOX

DETAIL - C

LOCATE WIRE

LOCATE WIRE TESTING REQUIREMENTS
Installed locate wiring shall be tested by the contractor as part of the final inspection procedure, using a certified tester and approved testing equipment. The Contractor shall notify CCUA at least 48 hours in advance of the testing period. At this time the Contractor shall tell CCUA the number of locate personnel to be used for the wire testing, so that CCUA can assign an inspector to work with each locate wire tester. If CCUA has not been notified of the correct number of testing personnel to be used, then the only testers allowed to test the wire shall be those who have a CCUA assigned inspector to work with them. The CCUA inspector shall have the plans on-site, as shall the testing personnel, for the purpose of recording the required test information (ie passed and failed sections) and for as-built preparation. The CCUA field representative or inspector shall be present during the testing period, and have the authority to request tester to retest sections if inspector suspects any problems within that section. The contractor shall provide the Certified Tester a copy of the project site drawings (as-builts preferred). A tone shall be put on the locate wire. The technician shall trace the entire length of the installed wire and spot paint the location at least at 100-foot intervals along the route. The depth shall be tested at 100-foot intervals and tester shall record the depth of pipe/wire on the report at each 100' interval. The certified tester shall report (show on drawings), where the pipe/wire has less than the allowable minimum cover (36 inches) or more than the maximum allowable cover (60 inches) unless called for on the plans or requested and approved by CCUA during the installation of said piping. All lateral stub-outs shall be marked with pain and the depth recorded. A final Locate Wire Report (statement by the certified tester), shall be submitted to CCUA for review and approval. The report shall include a signed statement from the certified tester which certifies that all installed wire (where shown on the drawing), was successfully (sounded), traced with no open breaks. The report shall also include a copy of the project site drawings which indicate all field notes, breaks found/repaired, depths (if installed outside the acceptable cover limits), and other applicable field remarks by the certified tester. A Certified copy of the report and marked-up drawings shall be furnished to CCUA prior to final acceptance of the project or as approved otherwise by CCUA.

Definitions:
Approved Testing Equipment shall include variable frequency controls, digital depth read-out and tone continuity. The following is a list of approved equipment - Dynatel (3M)-2273 Cable/Fault Locator, Metrotech 9800XT, Ditch Witch 950 R/T or CCUA pre-approved equal.

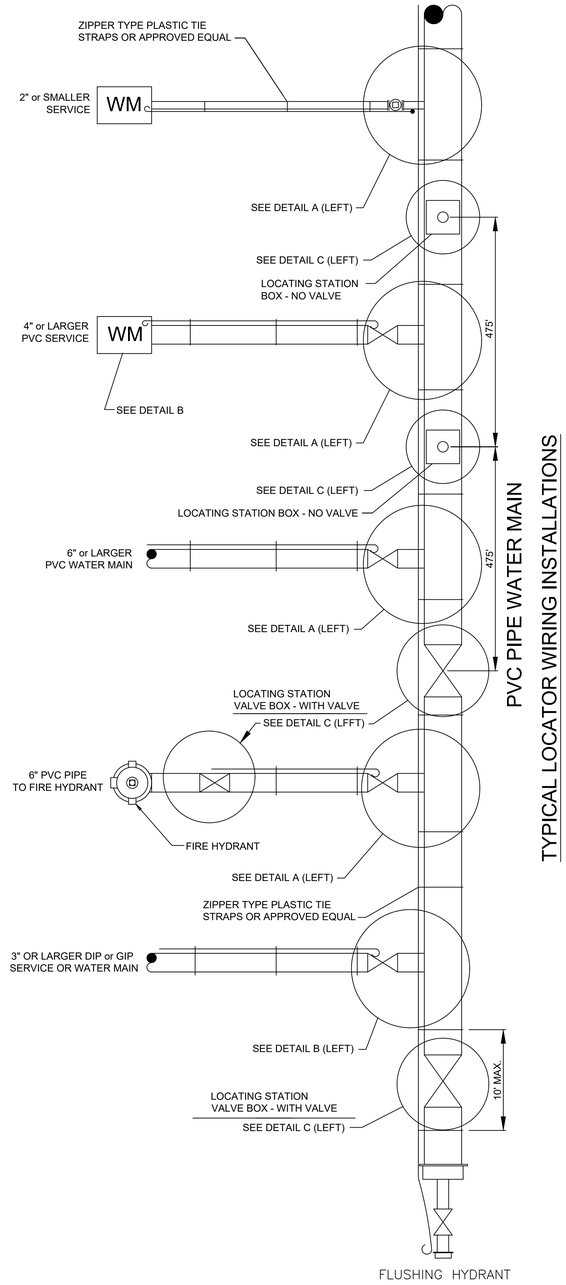
Certified Tester - A person or company that has been certified by the Manufacturer of the approved testing equipment as proficient in the use of the equipment has 8 months experience in the use of the equipment including documented proof of past performance.

CCUA Approval: Clay County Utility Authority shall have the authority to approve Certified Tester, or deny the approval of Certified Tester to work on Utility's System. CCUA shall have the authority to remove any previously Certified Tester from its approved list of Certified Testers as CCUA deems necessary.

LOCATE WIRE INSTALLATION
Contractor shall furnish and install locate wiring on all water mains, sewer force mains, and reclaimed water mains (both PVC and ductile 1" inch size and greater. Locate wire must be attached to mains and services with duct tape or approved iron) and on all service mains 1 z plastic zipper ties, (pulled tight to keep wire from rotating out of location), at each side of bell joint or fitting and at 10 foot intervals along pipeline (at a minimum). Locate wire shall be brought to grade within a valve box or locating station box, as required, at 475 foot intervals (see note # 2 this page). Locate wire shall be installed in box and along pipeline as detailed in the CCUA Standard Details. Locate wire shall be installed beneath the pipe line at the 5:00 to 7:00 o'clock position on the pipe. Connection or splices underground which are not inside a locate box (or valve box), shall be prohibited unless approved otherwise by CCUA. The request to make an underground connection or wire splice shall be done in writing to CCUA. The request shall contain the complete job name, name of street, station number as shown on plans and scaled as close as possible to the location of splice or connection, and the reason for request. CCUA shall have at least 48 hrs. to respond verbally and 5 working days to respond in writing. If an underground connection is unavoidable and approved by CCUA, then the wire shall be first tied in a knot (to minimize future separation), then the wire ends shall be connected utilizing an electric wire nut, then make the connection water tight by using either vinyl mastic tape (4" wide X 0.09" thick by 3M-Scotch 2210), or plastic enclosure (Snaploo Model LV 9500/951-4 large by TKH) or CCUA approved equipment.

LOCATE WIRE BOX INSTALLATION
Where utility mains are to be installed beneath sidewalks, valve boxes shall be installed instead of locate wire boxes. The valve box lids shall indicate the type of line (i.e. water, sewer, or reclaimed water). The valve box shall be adjusted so the top of valve box is flush with the finished sidewalk grade. If for any reason a locate wire box must be offest from the C/L of pipeline, then the contractor shall have installed an adequate length of wire to avoid splices and the exact location of the locate box including the amount of the offset distance shall be recorded on the As-builts.

AS-BUILT DRAWINGS
Shall comply to the guidance set forth in CCUA's 'As-built Specifications Standards Manual' , which can be obtained from CCUA's website (www.clayutility.org).



TYPICAL LOCATOR WIRING INSTALLATIONS
PVC PIPE WATER MAIN
PLAN VIEW

FLUSHING HYDRANT

NOTES:

1. LOCATING WIRE SHALL BE 10 GAUGE, SINGLE STRAND UF RATED (DIRECT BURIAL), COPPER WIRE, OR APPROVED EQUAL.

2) ALL DIRECTIONAL DRILLED PIPES SHALL HAVE 2-8 GUAGE STRAND COPPER-CLAD STEEL CONDUCTORS WITH 45mil HDPE EXTRUDED COATING, AND SHALL BE OF SUFFICIENT LENGTH TO AVOID SPLICING. UNDER NO CIRCUMSTANCES SHALL THE TRACER WIRE BE SPLICED; IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ORDER ROLLS OF WIRE OF THE REQUIRED LENGTH TO AVOID THE NEED FOR SPLICING THE TRACER WIRE.

3. LOCATE BOXES SHALL BE INSTALLED AT THE LOT LINE IN RESIDENTIAL SUBDIVISIONS, OR COMMERCIAL PROPERTIES; BOXES SHALL NOT BE LOCATED IN SIDEWALKS OR DRIVEWAYS. LOCATE BOXES SPACING SHALL NOT EXCEED 500 FEET.

4. WHERE IT IS NOT POSSIBLE TO LOCATE THE BOX OUTSIDE OF A PAVED STREET OR PARKING LOT, THE LOCATE WIRE SHALL BE PLACED IN A VALVE BOX INSTEAD OF A ROME BOX. VALVE BOX LID SHALL BE MARKED ACCORDING TO THE TYPE OF PIPE SERVED.

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

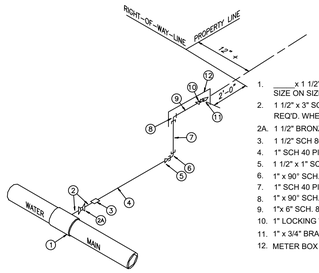
VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

NO	DATE	BY	REVISION DESCRIPTION
6	JUNE 17	RHD	REVISED NOTES AND DETAILS
5	OCT 2013	RHD	ADDED AS-BUILTS
4	JAN 2013	MRS	REVISED TRACER WIRE DIAGRAM NOTES
3	MAY 07	MRS	GENERAL UPDATES & REVISIONS
2	MAR 06	MRS	GENERAL UPDATES & REVISIONS
1	JUNE 05	MRS	GENERAL UPDATES & REVISIONS

PROJECT:
STANDARD LOCATOR WIRING INSTALLATIONS

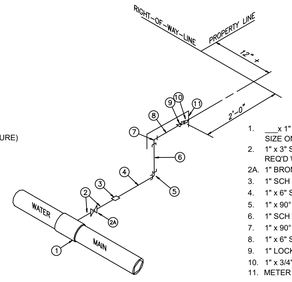
CLAY COUNTY
UTILITY AUTHORITY
3176 OLD JENNINGS ROAD
MIDDLEBURG, FLORIDA 32068-3907
TELEPHONE: (904) 272-5999

ACAD FILE NAME
WD-5



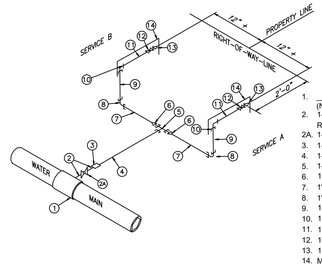
1. ____x 1 1/2" STAINLESS STEEL TAPPING SADDLE, SIZE ON SIZE, (NO DUAL RANGE SADDLES ALLOWED)
2. 1 1/2" x 3" SCH 40 STAINLESS STEEL NIPPLE (ONLY ONE REQ'D. WHEN TAPPING MAIN NOT UNDER PRESSURE)
2A. 1 1/2" BRONZE BALL VALVE (REQ'D. ONLY WHEN TAPPING MAIN UNDER PRESSURE)
3. 1 1/2" SCH 80 FEMALE ADAPTER (SxFIPT)
4. 1" SCH 40 PIPE (PURPLE)
5. 1 1/2" x 1" SCH. 80 RED. BUSHING (SxS)
6. 1" x 90° SCH. 80 BEND (SxS)
7. 1" SCH 40 PIPE (PURPLE)
8. 1" x 90° SCH. 80 BEND (SxT)
9. 1"x 6" SCH. 80 NIPPLE (TxT)
10. 1" LOCKING WING BALL VALVE (SEE TABLE ON WATER DETAILS SHEET)
11. 1" x 3/4" BRASS BUSHING (TxFIPT)
12. METER BOX - SEE CCUA APPROVED MATERIALS MANUAL.

LONG SINGLE RECLAIMED SERVICES



1. ___x 1" STAINLESS STEEL TAPPING SADDLE, SIZE ON SIZE, (NO DUAL RANGE SADDLES ALLOWED)
2. 1" x 3" SCH 40 STAINLESS STEEL NIPPLE (ONLY ONE REQ'D WHEN TAPPING MAIN NOT UNDER PRESSURE)
2A. 1" BRONZE BALL VALVE (REQ'D. ONLY WHEN TAPPING MAIN UNDER PRESSURE)
3. 1" SCH 80 FEMALE ADAPTER (SxFIPT)
4. 1" x 6" SCH 40 PVC PIPE (PURPLE)
5. 1" x 90° SCH 80 PVC ELL. (SxS)
6. 1" SCH 40 PVC PIPE (PURPLE)
7. 1" x 90° SCH 80 PVC ELL. (SxFIPT)
8. 1" x 6" SCH 80 PVC NIPPLE (TxT)
9. 1" LOCKING WING BALL VALVE (SEE TABLE ON WATER DETAILS SHEET)
10. 1" x 3/4" BRASS RED. BUSHING (Tx FIPT)
11. METER BOX - SEE CCUA APPROVED MATERIALS MANUAL

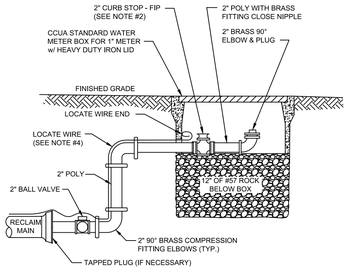
SHORT SINGLE RECLAIMED SERVICES



1. ___X 1-1/2" STAINLESS STEEL TAPPING SADDLE (NO DUAL RANGE SADDLES ALLOWED)
2. 1-1/2" x 3" SCH 40 STAINLESS STEEL NIPPLE (ONLY ONE REQ'D. WHEN TAPPING MAIN NOT UNDER PRESSURE)
2A. 1-1/2" BRONZE BALL VALVE (REQ'D. ONLY WHEN TAPPING MAIN UNDER PRESSURE)
3. 1-1/2" SCH 80 PVC FEMALE ADAPTER
4. 1-1/2" SCH 40 PVC PIPE (PURPLE)
5. 1-1/2" SCH 80 PVC TEE (SxSxS)
6. 1-1/2" x 1" SCH 80 PVC REDUCING BUSHING (SxS), AS REQUIRED
7. 1" x 12" SCH 40 PVC PIPE (PURPLE)
8. 1" x 90° SCH 80 PVC BEND (SxS)
9. 1" SCH 40 PVC PIPE (PURPLE)
10. 1" x 90° SCH 80 PVC BEND (SxT)
11. 1" x 6" SCH 80 PVC NIPPLE (TxT)
12. 1" LOCKING WING BALL VALVE (SEE TABLE ON WATER DETAILS SHEET)
13. 1" x 3/4" BRASS REDUCING BUSHING (Tx FIPT)
14. METER BOX - SEE CCUA APPROVED MATERIALS MANUAL

DOUBLE RECLAIMED SERVICES

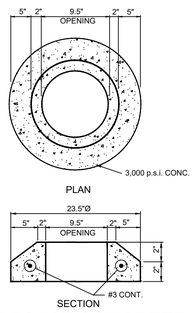
NOTE: ALL RECLAIMED WATER SERVICES ARE TO BE INSTALLED ON ONE LOT LINE AND POTABLE WATER SERVICES ARE TO BE INSTALLED ON THE OTHER. THIS IS TO ALLOW SEPARATION OF THE TWO WATER SERVICES. SEWER SERVICES ARE TO BE INSTALLED AT THE MIDDLE OF THE LOT.



NOTES

1. PIPE SHALL BE POLYETHYLENE. FITTINGS SHALL BE BRASS.
2. THE 2" CURB STOP SHALL BE ALL BRONZE. FITTINGS SHALL BE BRASS.
3. LOCATE WIRE FOR 10' OR GREATER IN LENGTH.
4. CANNOT BE PLACED UNDER CONCRETE OR PAVEMENT.
5. PLACE 2 FEET PAST LAST WATER MAIN SERVICE CONNECTION.

FLUSHING VALVE BELOW GRADE



PRECAST CONCRETE VALVE BOX COLLAR

FINAL INSPECTION PROCEDURES

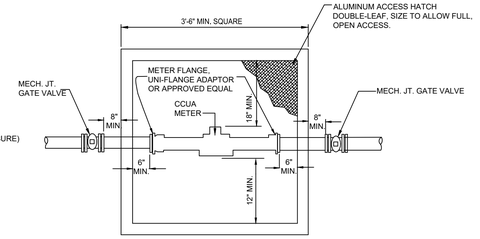
PRIOR TO FINAL INSPECTION, THE Contractor SHALL PROVIDE THE FOLLOWING: 1. The pressure test and flushing report.
2. The Engineer of Record certification to FDEP, this can be done with preliminary as-builts.
3. Preliminary as-builts showing at least the following: location of valves, mains, services and manholes.
4. All services and valves to be plainly marked with a treated fence post.
5. The reclaimed water use warning sign/signs shall be installed.

PRIOR TO FINAL ACCEPTANCE FOR OWNERSHIP, THE FOLLOWING MUST BE COMPLETED:
1. Reclaimed water services must be lowered and meter boxes installed, valve boxes must be set on all gate valves, recast concrete valve box collar must be in place on all gate valves.
2. As-built drawings shall have been updated to accommodate the Clay County Utility Authority's comments (shall comply to the guidance set forth in CCUA's `As-built Specifications Standards Manual', which can be obtained from CCUA's website www.clayutility.org).
3. As-builts must be accepted by the Clay County Utility Authority.
4. All valves and single services should be scribed in curb and painted the correct color for each.

OUTLINE SPECIFICATIONS FOR CONSTRUCTION OF RECLAIMED WATER DISTRIBUTION SYSTEM

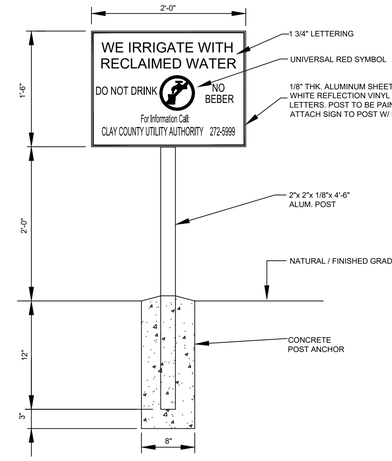
01. INTENTION. It is the declared and acknowledged intention to secure a new reclaimed water distribution system, complete, in accordance with the plans and specifications, and contract documents. All new work shall be in accordance with Clay County Utility Authority Specifications and Details and Approved Materials Manual and Clay County Engineering Department Details and Specifications and any other Government Regulatory Agency. All work shall conform to the above whether or not specifically called out or noted on the plans.
02. GENERAL. All materials shall be in conformance to National Sanitation Foundation (NSF) 61 and those listed in the CCUA Approved Materials Manual. Materials shall be warranted by the Contractor as to materials, workmanship and accuracy of As-built drawings for a period of two years from the date of completion of the work or beneficial use of the facilities. Workmanship shall be of good quality; i.e., mains shall be laid in a uniform alignment, fittings shall be properly restrained, trenches shall be properly excavated and backfilled, and valve boxes shall be adjusted to finished grade.
02.1 Contractor LICENSE AND APPROVAL. Utility reserves the right to approve or deny approval of Contractor prior to construction of any on-site or off-site utility facilities. Contractor must hold a State Of Florida Underground Utility Contractors license, that named contracting company being the one doing the work on project, and demonstrate acceptable experience in the field of utility construction.
03. SURVEYS. The Utility Contractor shall provide all surveys necessary for the layout and construction of the work of his contract.
04. EARTHWORK. Earthwork shall include all excavation, fill and backfill (hand/machine), compaction and rough grading of materials encountered. No unsuitable materials clay, muck, or peat removed from pipe trenches are to be used for backfill. All fill or backfill shall be either sand or sandy clay, free of roots, trash or other debris. All backfill alongside of and to a height twenty-four inches above all pipe shall be free of clay or organic material, compacted by either hand or machine operation carefully to 98%. All other backfill shall be compacted by either hand or machine operation carefully to 95% (outside of paving), 98% (under paving) of its optimum moisture content as determined by ASTM D698, latest. Copies of compaction density test reports from a licensed testing agency shall be made available to CCUA if requested.
05. JOINT RESTRAINT. All fittings shall be properly and adequately restrained against lateral movement at all water main tees, crosses, valves, bends and fire hydrants. Restrainers shall be Uni-Flange Series 1300, 1350, 1390 or approved equal installed per Manufacturer's recommendations and Clay County Utility Authority Details and Specifications (SEE RESTRAINED JOINT SCHEDULE). See CCUA Approved Materials Manual for acceptable restraints.
06. DUCTILE IRON PIPE. Ductile iron pipe shall conform to ANSI Specification A21.50 (AWWA C150) latest, "Thickness Design of Ductile Iron Pipe", Table 50.5, laying condition Type 2, internal operating pressure of 250 p.s.i. for an 8-foot depth of cover, Class 51 minimum and shall be ANSI A21.51 (AWWA C151), latest centrifugally cast pipe. Laying lengths shall be 20 feet or less in length, and shall be clearly marked with pressure rating, thickness, class, height of pipe without lining, length, and Manufacturer. Ductile iron pipe for water service shall be furnished with cement lining per AWWA C110, C115 and C151. The pipe shall have design values of 60,000 p.s.i. minimum tensile strength, and 42,000 p.s.i. minimum yield strength. All ductile iron piping shall be wrapped with purple tape and stamped "Reclaimed Water" on at least two sides @ 12" o.c. along pipe barrel. Ductile iron pipe for reclaimed water or service lines shall be used in any easement, right-of-way, between lots, and any instance where a building foundation or other permanent appurtenance is within 10' of the water main or a service line larger than 3".
07. DUCTILE IRON FITTINGS shall be C153 cement lined and suitable for the type and class of pipe to which connected. Gaskets shall be suitable for reclaimed water service. Minimum working pressure shall be 150 p.s.i.
08. POLYVINYL CHLORIDE PIPE. Polyvinyl chloride pipe for water mains 4 inch through 24 inches in diameter, shall be DR18 (C900) Pressure Class 235 psi PVC 1120; reclaim mains above 24 inches in diameter shall be DR25 (C900) PVC 1120, Pressure Class 165 psi, conforming to ASTM D-1784, D-2241, D-3139 and F-477, latest, or P.V.C. C900, Class 165, DR-25, conforming to ASTM D-1784, Cell Class 12454, ASTM F-477, ASTM D-3139, latest, and shall bear the seal of the National Sanitation Foundation. Pipe shall be color coded and marked "RECLAIMED WATER" at every 12" along the barrel of the pipe, with lettering facing up. Couplings shall be rubber gasketed, push-on type conforming to ASTM D-2122.
09. STEEL CASING PIPE. Steel casing pipe shall be of size indicated on the Drawings and shall conform to ASTM A139, with a minimum yield strength of 35,000 p.s.i.
10. POLYVINYL CHLORIDE (PVC 1120, SCHEDULE 40) PIPE shall conform to the requirements of ASTM D 1785. Fittings and threaded nipples shall be Schedule 80 PVC. All piping smaller than 4" shall be Schedule 40 or Schedule 80 as detailed. Schedule 40 PVC pipe shall be Pantone purple 522C and marked "Reclaimed Water".
11. GATE VALVES AND BOXES. Gate valves shall be non-rising stem type and shall be suitable for a 200 p.s.i. non-shock working pressure. Gate valves shall be mechanical joint, flanged or screwed. Gate valves shall have a 2" operating nut and open left. Gate valves shall have joints suitable for the type of main on which installed. Valves 3" and larger shall be iron body, bronze fitted with resilient seat. Valves shall be of DOMESTIC (American) manufacture and shall be those listed in CCUA Approved Material Manual. Valves 16" and larger shall be AWWA C-515. Valve boxes with screw extensions shall be provided for all gate valves. Boxes shall be of cast iron construction, 7/32" minimum wall thickness and shall be nontacky tar enamel coated. The word "RECLAIMED WATER" shall be cast in the cover. Other gate valves smaller than 2" shall be heavy-duty bronze ball valves. Box covers to be primed and painted Pantone Purple 522C.
12. RECLAIMED WATER METER BOXES. Developer shall be responsible for installation of meter boxes on all water services as part of the water main installation. All curb stops shall be adjusted to the proper elevation and shall be accessible for the installation of the water meter. The Contractor shall be required to open all boxes for the Authority's inspector at the final inspection. A treated 6'-6" fence post marker shall be installed at the side of and centered on the meter box and painted Pantone Purple 522C for identification. Meter boxes shall not be placed in any sidewalk or driveway without the approval of CCUA.
13. CURB STOPS. Curb stops shall be cast bronze, inverted key stop, roundway, with check, lock wing type, for locking in the closed position. See CCUA Approved Materials Manual for acceptable curb stops.
14. PRESSURE REDUCING VALVES (when and where required) The pressure reducing valve shall maintain a constant delivery pressure as part of the service to each residential irrigation system. Pressure reducing valves shall conform with the standard requirements of the ASSE (Std. 1003) and WPOA Uniform Plumbing Code. Approved model: Watts Series USB or equal.
15. INSTALLATION. The minimum cover over top of reclaimed water main shall be 48". All lines and appurtenances shall be thoroughly cleaned of all foreign matter before being lowered into the trench and shall be kept clean during laying operations by means of plugs or other approved methods. All pipe shall be checked for defects before being lowered into the trench. Defective pipe shall not be used. Pipe found to be defective after installation, shall be removed and replaced with sound pipe at no additional expense to the Owner. The full length of each section of pipe shall rest solidly upon the pipe bed, with recesses excavated to accommodate the bells and joints. All pipe that has the grade or joint disturbed after laying shall be taken up and reinstalled. The pipe shall not be laid in water or when trench or weather conditions are unsuitable for the work. All joints shall be cleaned of all foreign matter before making the joint. Fittings at bends in the pipe shall be properly restrained with joint restrainers adequately sized to prevent movement and dislocating or blowing off when the line is under pressure. Service laterals shall terminate at the point noted in the details. All reclaimed mains shall be installed with tracer wire per CCUA standard location wire details.
16. SEPARATION OF RECLAIMED WATER MAINS. Maximum separation of reclaimed water lines and potable water lines shall be practiced. A minimum horizontal separation of three feet, outside-to-outside, shall be maintained between reclaimed water mains and either potable water mains or wastewater pipes. Reclaimed water mains crossing under water mains shall be laid to provide a minimum vertical separation of 18 inches between the invert of the upper pipe and the crown of the lower pipe. Where the minimum separation cannot be maintained, the crossing shall be arranged such that the reclaimed water main pipe joints and potable water main joints are equidistant from the point of crossing with no less than ten feet between joints. Alternatively, the reclaimed water main shall be placed in a sleeve to obtain the equivalent of the required ten feet separation. Where there is no alternative to reclaimed water pipes crossing over a water main, the criteria for minimum separation between lines and joints shall be required.
17. PIPE FLUSHING. All reclaimed water system piping shall be flushed with clean water utilizing full pipe diameter flushing. In cases where the water supply is inadequate to flush the full pipe diameter, flushing shall occur to the extent of the water supply that is available. All flushing must be contained.
18. TESTS. After the pipe is laid, the joints completed, and the trench backfilled, the newly laid pipe and appurtenances shall be subjected to a Hydrostatic and Leakage test of 150 pounds per square inch for a period of at least two hours. During this period, all joints shall be inspected to determine water tightness of the system. Any leaks detected shall be corrected. tests shall be in accordance with the CCUA's requirements and specifications. Curb and limerock may be installed after construction of the reclaimed water mains, however, limerock priming cannot proceed until such time as the CCUA inspector approves the reclaimed water distribution system pressure test. This will be strictly enforced. If the reclaimed water system is damaged during any of the operations prior to paving, a follow up test may be required by the Clay County Utility Authority.
19. WARNING SIGN. Each development, subdivision, or commercial establishment, regardless of the number of buildings, shall install reclaimed water use warning signs at the entrance or any other street or driveway entering any properties which use reclaimed water. The signs shall meet the requirements of CCUA details and specifications. The signs shall be a requirement whether shown on plans or not. Direction of locating those signs shall be given by the CCUA inspector on site.
20. POLYETHYLENE TUBING SERVICE LINES AND MAINS (2 INCH AND SMALLER):
Tubing shall be manufactured of PE 4710, High Density Polyethylene (HDPE), in accordance with AWWA C901, ASTM D1248, ASTM D2239, ASTM D3737 and ASTM D3350. The tubing shall have a minimum working pressure of 250 psi. Polyethylene tubing shall be copper tube size SDR-9 and shall be colored purple. HDPE pipe shall have ultraviolet (UV) inhibitors for protection against direct sunlight for 1 year. Inserts for polyethylene tubing may be utilized, at Contractors options, and, if used, shall be 316 stainless steel. The use of no-lead brass couplings, tees and "Y" fittings are acceptable on poly service tubing, if not located under a roadway. Tubing shall be approved for use with potable water by the National Sanitation Foundation (NSF-14) and shall be continuously marked at intervals of not more than four feet with the following:
- Nominal size
- Pressure rating
- NSF seal
- Manufacturer's name or trademark
- Standard dimension ratio
- ASTM specification

METER VAULT - 3" AND LARGER METERS

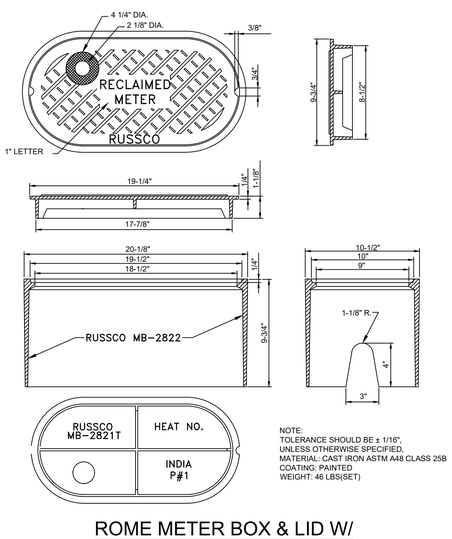


NOTES:

1. ALL PIPE TO BE D.I.
2. ALL VALVES & FITTINGS TO BE DUCTILE IRON.
3. MINIMUM LENGTH OF 8 DIAMETERS OF STRAIGHT PIPE TO BE INSTALLED ON INLET SIDE OF METER.
4. ALL PIPE AND FITTINGS TO BE SAME SIZE AS METER.
5. CONC. BOX SHALL BE 42" DEEP WITH OPEN BOTTOM, PRECAST WITH NOTCH TO ACCOMMODATE PIPE INSTALLED 36" DEEP, INSTALLED ON 12" OF #57 STONE
6. Contractor SHALL PROVIDE SHOP DRAWING OF BOX WITH DIMENSIONS FOR APPROVAL BY CCUA.
7. DIMENSIONS SHOWN ARE MINIMUM AND SHALL BE INCREASED BASED UPON ACTUAL SIZE OF METER PROVIDED.
8. THE COST OF THE METER WILL BE ASSESSED TO DEVELOPER UNDER SEPARATE AGREEMENT. THE METER ONLY WILL BE FURNISHED TO THE CONTRACTOR BY THE CLAY COUNTY UTILITY AUTHORITY AND THE CONTRACTOR SHALL INSTALL THE METER TO COMPLETE THE INSTALLATION SHOWN HEREON.



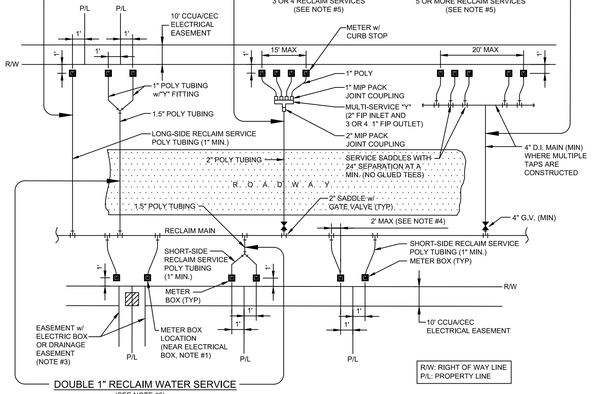
RECLAIMED WATER USE/WARNING SIGN



NOTE:
TOLERANCE SHOULD BE ± 1/16", UNLESS OTHERWISE SPECIFIED.
MATERIAL: CAST IRON ASTM A48 CLASS 25B
COATING: PAINTED
WEIGHT: 46 LBS(SET)

ROME METER BOX & LID W/ TOUCH READ HOLE

A LOCATE WIRE SHALL BE PLACED ON SERVICES 10FT OR GREATER.



NOTES

1. THE SKETCHES ABOVE INDICATE TYPICAL RECLAIM WATER SERVICE AND METER BOX LOCATIONS. ACTUAL LOCATIONS OF BOXES MAY VARY SLIGHTLY ACCORDING TO FIELD CONDITIONS ENCOUNTERED. TYPICALLY, THE METER BOX SHALL LOCATED 1.0' OFF OF THE R/W LINE.

2. UNLESS SPECIFIED OTHERWISE BY THE APPLICABLE COUNTY (CLAY OR BRADFORD), THE METER BOX SHALL BE LOCATED 1.0' OFF OF THE R/W LINE, AND 1.0' FOOT INSIDE OF THE PROLONGATION OF ONE OF THE SIDE PROPERTY LINES. IF A CONFLICT EXISTS WITH OTHER UTILITIES, THE METER BOX MAY BE ADJUSTED TO FOUR FEET (MAX.) INSIDE PROPERTY LINES (IN LIEU OF 1.0' FEET). UNLESS APPROVED OTHERWISE BY CCUA, THE WATER METER BOX SHALL BE LOCATED IN NON-TRAFFIC AREAS (NOT IN SIDEWALKS OR DRIVEWAYS). IF AN UNAPPROVED METER BOX IS IDENTIFIED BY CCUA, THEN THE CONTRACTOR OR CUSTOMER SHALL BE RESPONSIBLE FOR THE COST OF RELOCATING ANY METER BOX WHICH IS LOCATED IN THE SIDEWALK OR DRIVEWAY OR THE COST TO PROVIDE THE CORRECT METER BOX. CCUA SHALL APPROVE ALL DEVIATIONS TO THE ABOVE PRIOR TO CONSTRUCTION.

3. IF DRAINAGE OR OTHER EASEMENT IS LOCATED BETWEEN LOTS, METER BOXES SHALL BE LOCATED AT THE EASEMENT LINE BUT OUTSIDE THE EASEMENT AREA.

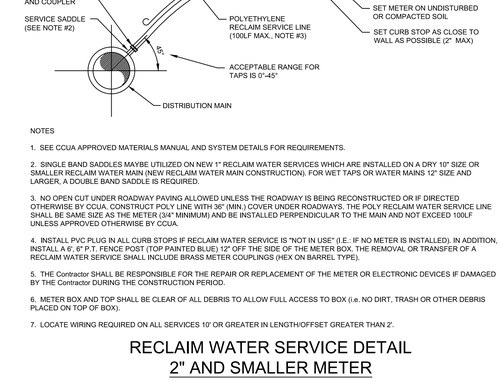
4. FOR SINGLE SERVICES, THE HORIZONTAL DISTANCE (PERPENDICULAR TO THE MAIN)BETWEEN THE SERVICE'S SADDLE AND THE METER BOX SHALL BE 2 FEET MAXIMUM. FOR DOUBLE 1" SERVICES, THE 1 ½" POLY MAIN SHALL BE LOCATED CENTERED BETWEEN THE TWO METER BOXES. LOCATE WIRE IS REQUIRED ON ALL SERVICES 10' OR GREATER IN LENGTH. IF LOCATE WIRE IS REQUIRED, THE WIRE SHALL RUN FROM THE METER BOX TO THE MAIN (WITH NO CONNECTION TO MAIN WIRE WITH THE LAST 24 INCHES STRIPPED OF INSULATION/BARE WIRE AS GROUND), ALL EXCEPTIONS TO THIS REQUIREMENT MUST BE APPROVED BY CCUA. THIS WILL ASSIST IN LOCATING EXISTING SERVICE LINES IN THE FUTURE.

5. GANG WATER SERVICES: FOR 3 OR 4 SERVICES IN ONE AREA, A DUCTILE IRON PIPE (D.I.P.) WATER MAIN EXTENSION W/LOCATE WIRE MAY BE UTILIZED ON EITHER SHORT-SIDE OR LONG SIDE SERVICES WHERE SHOWN ON THE DRAWINGS. LOCATE WIRE SHALL EXTEND FROM ONE METER BOX TO CURB STOP AT WATER MAIN. FOR 5 OR MORE SERVICES IN ONE AREA, A WATER MAIN EXTENSION W/LOCATE WIRE MAY BE UTILIZED ON EITHER SHORT-SIDE OR LONG SIDE SERVICES WHERE SHOWN ON THE DRAWINGS (TAPS STAGGERED AND AT 2 FEET ON CENTER-MIN). FOR WATER SUPPLY HEADERS WHERE 5 OR MORE TAPS ARE CONSTRUCTED, THE HEADER PIPE SHALL BE 4" AT A MINIMUM. EXAMPLE: CONSTRUCT A 4" MAIN D.I.P CROSSING THE STREET FOR 5 RESIDENTIAL CUSTOMERS, UTILIZING 4" G.V., 4" PIPE, 4"x1" SADDLES AND 1" CURB STOPS (NO GLUED TEE FITTINGS). THE 4" OR LARGER D.I.P. WATER MAIN MUST BE SIZED AND DESIGNED BY THE ENGINEER.

6. DOUBLE 1" RECLAIM WATER SERVICES IS ALLOWED FOR SHORT SIDE OR LONG SIDE SERVICES AND WHERE SHOWN ON THE DRAWINGS.

7. RECLAIMED WATER METER BOXES OR SERVICES SHALL BE LOCATED AT A MIN. OF 10' FROM THE EXISTING POTABLE WATER SERVICE AND/OR BOX, AND NOT ALLOWED IN CONCRETE OR ASPHALT UNLESS APPROVED OTHERWISE BY CCUA.

RECLAIM WATER SERVICE INSTALLATIONS 2" AND SMALLER METER



NOTES

1. SEE CCUA APPROVED MATERIALS MANUAL AND SYSTEM DETAILS FOR REQUIREMENTS.

2. SINGLE BAND SADDLES MAYBE UTILIZED ON NEW 1" RECLAIM WATER SERVICES WHICH ARE INSTALLED ON A DRY 10" SIZE OR SMALLER RECLAIM WATER MAIN (NEW RECLAIM WATER MAIN CONSTRUCTION). FOR WET TAPS OR WATER MAINS 12" SIZE AND LARGER, A DOUBLE BAND SADDLE IS REQUIRED.

3. NO OPEN CUT UNDER ROADWAY PAVING ALLOWED UNLESS THE ROADWAY IS BEING RECONSTRUCTED OR IF DIRECTED OTHERWISE BY CCUA. CONSTRUCT POLY LINE WITH 36" (MIN.) COVER UNDER ROADWAYS. THE POLY RECLAIM WATER SERVICE LINE SHALL BE SAME SIZE AS THE METER (3/4" MINIMUM) AND BE INSTALLED PERPENDICULAR TO THE MAIN AND NOT EXCEED 100LF UNLESS APPROVED OTHERWISE BY CCUA.

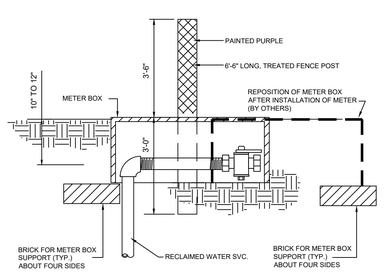
4. INSTALL PVC PLUG IN ALL CURB STOPS IF RECLAIM WATER SERVICE IS 'NOT IN USE' (I.E.: IF NO METER IS INSTALLED). IN ADDITION, INSTALL A 6', 6" P.T. FENCE POST (TOP PAINTED BLUE) 12" OFF THE SIDE OF THE METER BOX. THE REMOVAL OR TRANSFER OF A RECLAIM WATER SERVICE SHALL INCLUDE BRASS METER COUPLINGS (HEX ON BARREL TYPE).

5. THE Contractor SHALL BE RESPONSIBLE FOR THE REPAIR OR REPLACEMENT OF THE METER OR ELECTRONIC DEVICES IF DAMAGED BY THE Contractor DURING THE CONSTRUCTION PERIOD.

6. METER BOX AND TOP SHALL BE CLEAR OF ALL DEBRIS TO ALLOW FULL ACCESS TO BOX (i.e. NO DIRT, TRASH OR OTHER DEBRIS PLACED ON TOP OF BOX).

7. LOCATE WIRING REQUIRED ON ALL SERVICES 10' OR GREATER IN LENGTH/OFFSET GREATER THAN 2'.

RECLAIM WATER SERVICE DETAIL 2" AND SMALLER METER



NOTE:
ALL SERVICES ARE TO BE CLEARLY MARKED BY A TREATED 6'-6" LONG MARKER POST PAINTED PURPLE. ALL SERVICES ARE TO BE EXTENDED ABOVE GRADE UNTIL COMPLETION OF ALL GRADING ACTIVITIES. ONCE FINAL ROAD GRADING IS COMPLETE, LOWER SERVICES BY CUTTING OFF RISER 8" TO 10" BELOW FINAL GRADE AND INSTALL 90° BEND, NIPPLE AND LW BALL VALVE AT THAT ELEVATION. SET METER BOX OVER ENTIRE HORIZONTAL SECTION OF SERVICE LINE FROM LAST 90° BEND TO THE END OF THE CURB STOP. BOX TO BE REPOSITIONED WHEN THE METER IS INSTALLED. MARKER POST TO BE INSTALLED ADJACENT TO AND LOCATED AT THE MID SECTION OF THE METER BOX.

RECLAIMED SERVICE LOCATION POST

NO	DATE	BY	REVISION DESCRIPTION
19	JUNE 17	RHD	REVISED NOTES AND DETAILS
18	SEPT. 16	RHD	REVISED SERVICE SIZES TABLE - SVC
17	MAR. 16	RHD	REVISED SINGLE LENG SIDE SVC
16	DEC. 01	RHD	REVISED TITLE BLOCK
15	DATE 01	RHD	REVISED 02. & FINAL INSPECTION NOTES - PARAGRAPH 11
14	MAY 13	RHD	REVISED 02. & FINAL INSPECTION NOTES
13	MAY 13	RHD	REVISED PARAGRAPH 17 OF OUTLINE SPECS
12	APRIL 08	RHD	REVISED PARAGRAPH 17 OF OUTLINE SPECS
11	APRIL 08	MRS	ADDED RESTRAINED JOINT SCHEDULE
10	APRIL 08	MRS	ADDED RESTRAINED JOINT SCHEDULE
9	JUNE 05	DSJ	GENERAL UPDATES AND REVISIONS
8	JUNE 05	MRS	GENERAL UPDATES AND REVISIONS
7	JUNE 05	DJR	GENERAL UPDATES AND REVISIONS
6	JUNE 04	DJR	GENERAL UPDATES AND REVISIONS
5	JUNE 03	CAR	GENERAL UPDATES AND REVISIONS
4	AUG. 01	DJR	GENERAL UPDATES AND REVISIONS

DESG
DRWN
CHKD
APRV
DATE

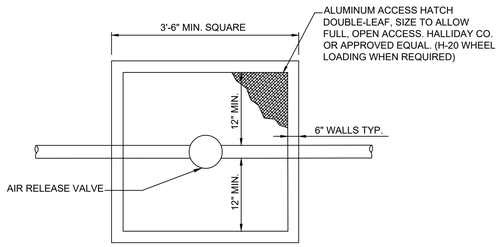
PROJECT:
RECLAIMED WATER DISTRIBUTION SYSTEM DETAILS AND SPECIFICATIONS

CLAY COUNTY UTILITY AUTHORITY
3176 OLD JENNINGS ROAD
MIDDLEBURG, FLORIDA 32068-3907
PHONE (904) 272-5999

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

ACAD FILE NAME
REUSE1.DWG
SHEET NO.
RD-1



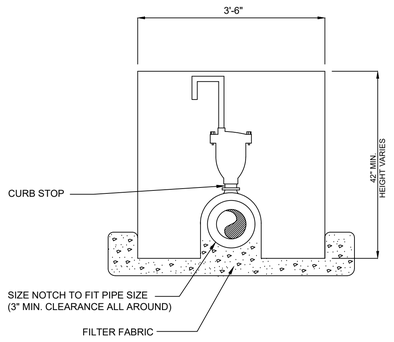
NOTES:

1. CONC. BOX SHALL BE 42" MIN. DEPTH BUT SHALL BE DEEP ENOUGH TO ACCOMMODATE THE SIZE PIPE AND TYPE OF AIR RELEASE VALVE REQUIRED, WITH OPEN BOTTOM, PRECAST WITH NOTCH TO ACCOMMODATE PIPE INSTALLED WITH 36" COVER FROM TOP OF PIPE TO FINISH GRADE, ON 12" OF #57 STONE. WITH FILTER FABRIC ABOVE AND BELOW THE STONE.

2. CONTRACTOR SHALL PROVIDE SHOP DRAWING OF BOX WITH DIMENSIONS FOR APPROVAL BY C.C.U.A.

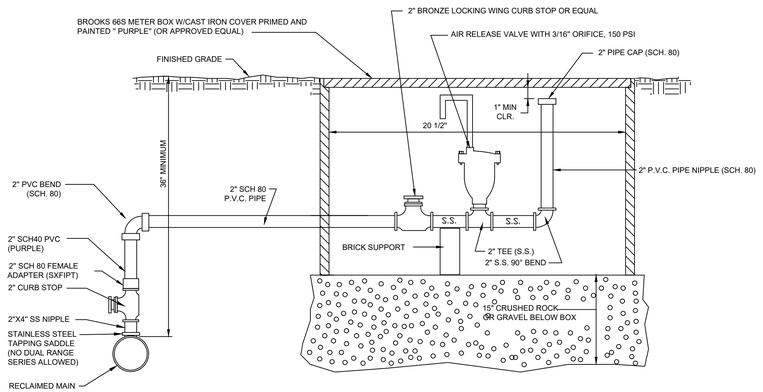
3. DIMENSIONS SHOWN ARE MINIMUM AND SHALL BE INCREASED BASED UPON ACTUAL SIZE OF PIPE INSTALLED

NOTE: WIDTH VAIRES TO ACCEPT PIPE SIZES OVER 8"



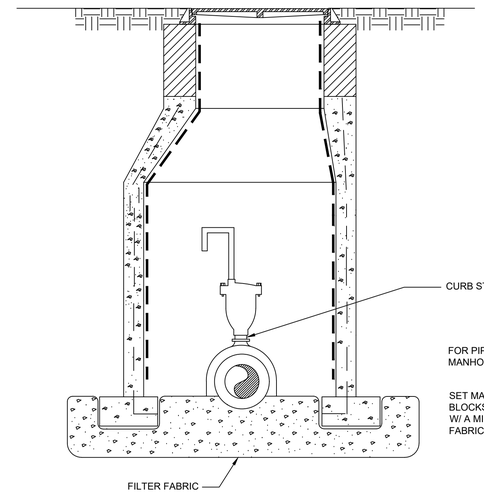
REUSE MAIN AIR RELEASE VALVE VAULT

TO BE USED ON ALL PIPES 12" OR LARGER



AIR RELEASE VALVE DETAIL

NTS



FOR PIPE 10" OR SMALLER A 4' DIAMETER, NOTCHED MANHOLE CAN BE USED FOR AIR RELEASE VALVE.

SET MANHOLE ON MIN. OF 4 SOLID CONCRETE BLOCKS SPACED EVENLY AROUND THE MANHOLE W/ A MIN. OF 12"#57 STONE WITH FILTER FABRIC ABOVE AND BELOW THE STONE.

REUSE MAIN AIR RELEASE VALVE VAULT

TO BE USED ON ALL PIPES 12" OR SMALLER

NO	DATE	BY	REVISION DESCRIPTION
7	MAY 06	MRS	PRECAST CONCRETE ADJUSTING RINGS
6	SEP 04	DGJ	REUSE MAIN AIR RELEASE VALVE VAULT
5	JUNE 03	CAR	GENERAL UPDATES AND REVISIONS
4	APR 01	CAR	GENERAL UPDATES AND REVISIONS
3	SEPT 00	CAR	GENERAL UPDATES AND REVISIONS
2	NOV 99	CAR	GENERAL UPDATES AND REVISIONS
1	JULY 98	CAR	GENERAL UPDATES AND REVISIONS

DESG
DRWN
CHKD
APRV
DATE

PROJECT:

RECLAIMED WATER DISTRIBUTION SYSTEM DETAILS AND SPECIFICATIONS 2

CLAY COUNTY UTILITY AUTHORITY
3176 OLD JENNINGS ROAD
MIDDLEBURG, FLORIDA 32068-3907
PHONE (904) 272-5999

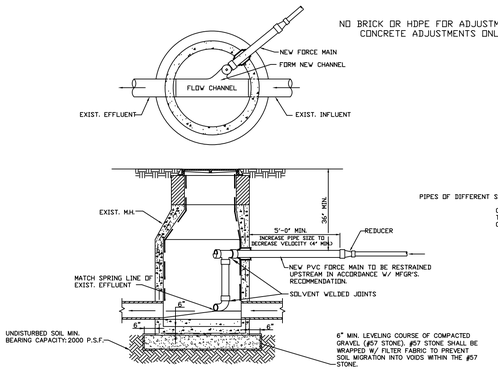
This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

ACAD FILE NAME

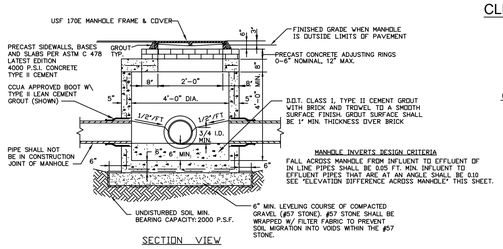
SHEET NO.

RD-2

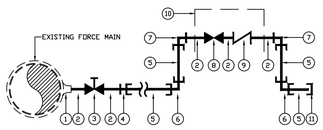


TYPICAL FORCE MAIN CONNECTION TO MANHOLE

NOTE:
1. THIS MANHOLE AND THE NEXT TWO MANHOLES DOWNSTREAM (AS REQUIRED BY UTILITY) ARE TO HAVE POLYETHYLENE LINER AS MANUFACTURED BY STANDARD PRECAST CO. (AGRU SURE GRIP) OR APPROVED EQUAL.
2. IF CONNECTION IS BEING MADE TO AN EXISTING MANHOLE, THAT MANHOLE AND THE NEXT TWO MANHOLES DOWNSTREAM (AS REQUIRED BY UTILITY), SHALL BE LINED WITH "SPECTRASHIELD" OR APPROVED EQUAL.
3. SIZE OF DROP PIPE CONNECTION TO MANHOLE SHALL BE DESIGNED BY THE PROJECT ENGINEER. MINIMUM SIZE SIZE SHALL BE 4", CONNECTION AND DROP PIPE SHALL BE SIZED TO REDUCE THE VELOCITY AND PREVENT "SPLASHDOVER" WITHIN THE MANHOLE. 5'-0" MINIMUM DISTANCE FROM MANHOLE TO REDUCER MAY BE INCREASED TO ASSIST IN THIS VELOCITY REDUCTION.

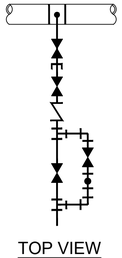


SHALLOW SANITARY SEWER MANHOLE

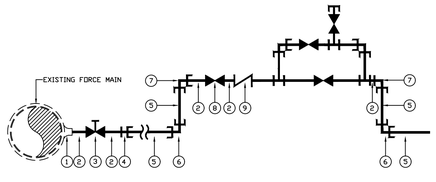


2" SEWAGE FORCE MAIN MANIFOLD SERVICE CONNECTION DETAIL

FOR MEDIUM TO HIGH PRESSURE CONNECTION SYSTEMS

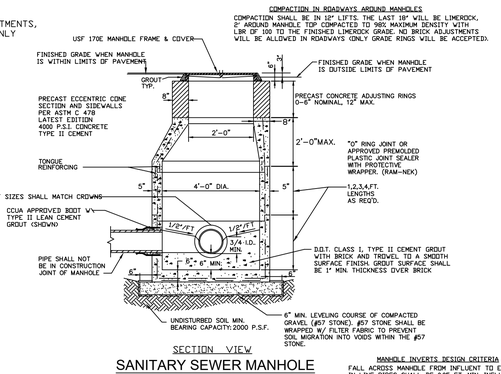


TOP VIEW

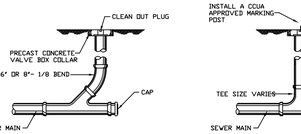


SEWAGE FORCE MAIN MANIFOLD

SERVICE CONNECTION (WITH PRESSURE GAUGE FITTING)
FOR LOW PRESSURE RECEIVING SYSTEMS
FOR CREATING ARTIFICIAL HEAD PRESSURE

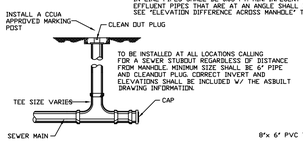


SANITARY SEWER MANHOLE



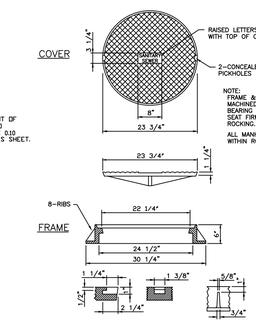
CLEANOUT DETAIL

N.T.S.



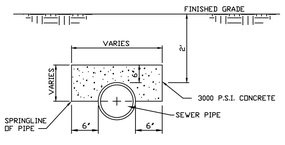
STANDARD STUBOUT SURVEY ACCESSIBLE CLEANOUT

N.T.S.



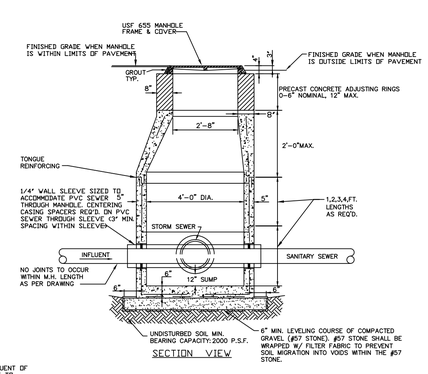
MANHOLE FRAME AND COVER SHALL BE USF CO. MOD. NO. 170E

SANITARY SEWER MANHOLE FRAME & COVER

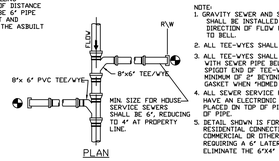


REQUIRED WHERE TOP OF SEWER PIPE IS WITHIN 2' OF FINISHED GRADE UNLESS ALTERNATE DETAIL IS APPROVED BY THE CLAY COUNTY UTILITY AUTHORITY.

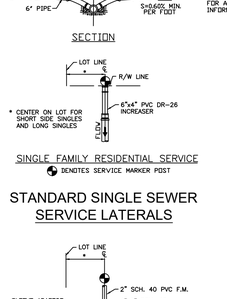
CONCRETE CAP FOR SEWER PIPES



STORM CONFLICT MANHOLE

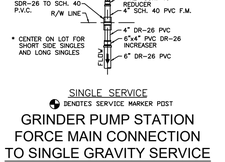


NOTE:
1. GRAVITY SEWER AND SERVICE PIPE SHALL BE INSTALLED WITH THE DIRECTION OF FLOW FROM SPIGOT TO BELL.
2. ALL TEE-WYES SHALL BE BELL-SPIGOT.
3. ALL TEE-WYES SHALL BE COMPATIBLE WITH SEWER PIPE BELLS BEING USED. SPIGOT END OF TEE-WYE SHALL BE A MINIMUM OF 2" BEYOND THE BELL GASKET WHEN "HOMED UP".
4. ALL SEWER SERVICE PIPES SHALL HAVE AN ELECTRONIC MARKER (GREEN) PLACED ON TOP OF PIPE AT EACH END OF PIPE.
5. DETAIL SHOWN IS FOR RESIDENTIAL CONNECTION. COMMERCIAL OR OTHER USE REQUIRING A 6' LATERAL CAN ELIMINATE THE 6"X4" REDUCER.



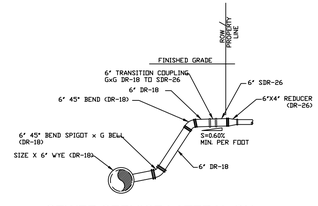
SINGLE FAMILY RESIDENTIAL SERVICE
DENOTES SERVICE MARKER POST

STANDARD SINGLE SEWER SERVICE LATERALS

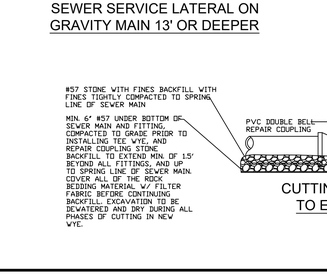


SINGLE SERVICE
DENOTES SERVICE MARKER POST

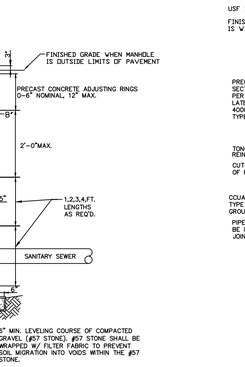
GRINDER PUMP STATION FORCE MAIN CONNECTION TO SINGLE GRAVITY SERVICE



SEWER SERVICE LATERAL ON GRAVITY MAIN 13' OR DEEPER

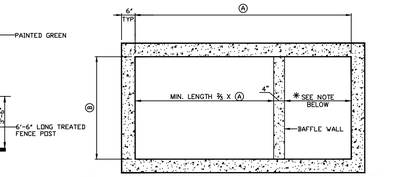


CUTTING IN SERVICE LATERAL TO EXISTING SEWER MAIN



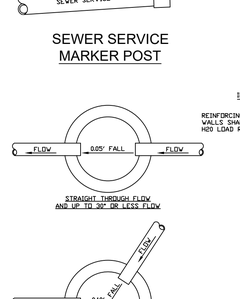
NOTE: FOR ADDITIONAL MANHOLE SPECIFICATIONS, SEE "SANITARY SEWER MANHOLE" DETAIL THIS SHEET. MAXIMUM ALLOWABLE DIFFERENCE IN INVERT ELEVATION WITHOUT INTERNAL DROP CONNECTION IS 24". SEE "ELEVATION DIFFERENCE ACROSS MANHOLE" THIS SHEET.

TYPICAL GRAVITY SEWER DROP PIPE CONNECTION TO MANHOLE

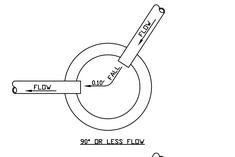


SEWER SERVICE MARKER POST

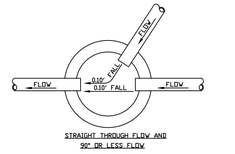
*ON ALL TANKS BEING INSTALLED, THE LENGTH OF THE OUTLET COMPARTMENT SHALL BE AT LEAST ⅝TH OF THE TOTAL LENGTH OF ALL TANKS.



STRAIGHT THROUGH FLOW AND UP TO 30° OR LESS FLOW

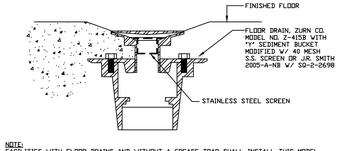


90° OR LESS FLOW



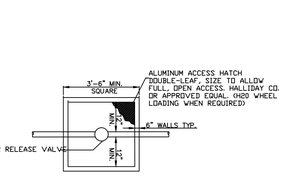
STRAIGHT THROUGH FLOW AND 90° OR LESS FLOW

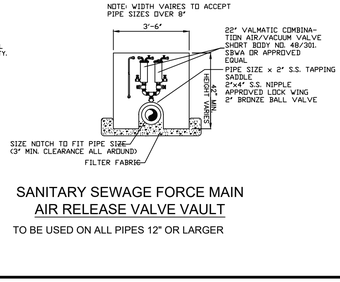
ELEVATION DIFFERENCE ACROSS MANHOLE



NOTE:
FACILITIES WITH FLOOR DRAINS AND WITHOUT A GREASE TRAP SHALL INSTALL THIS MODEL FLOOR DRAIN AND ONLY WITH PRIOR APPROVAL FROM THE CLAY COUNTY UTILITY AUTHORITY.

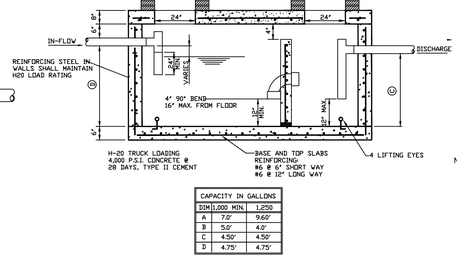
FLOOR DRAIN WITH STRAINER DETAIL





SANITARY SEWAGE FORCE MAIN AIR RELEASE VALVE VAULT

TO BE USED ON ALL PIPES 12" OR LARGER

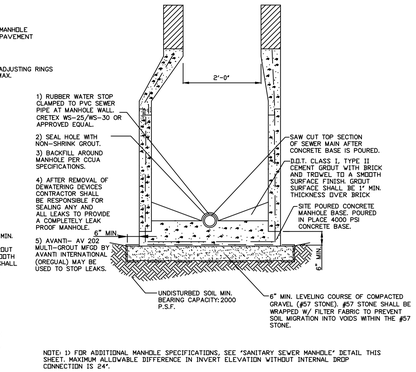


CAPACITY IN GALLONS	
SIM\1,000 MIN.	1,250
A	7.0'	9.60'
B	5.0'	4.0'
C	4.50'	4.50'
D	4.75'	4.75'

COMPLIES WITH A.S.T.M. C-913, PRECAST CONCRETE WATER AND WASTEWATER STRUCTURES AND A.S.T.M. C-890, MINIMUM STRUCTURAL DESIGN LOADING FOR MONOLITHIC OR SECTIONAL PRECAST CONCRETE WATER AND WASTEWATER STRUCTURES

NOTES:
1. GREASE TRAP SHALL BE SIZED BY THE PROJECT ENGINEER USING THE ANTICIPATED PEAK FLOW OF WATER ENTERING THE GREASE TRAP IN ACCORDANCE WITH THE 2003 STATE OF FLORIDA BUILDING CODE - PLUMBING.
2. ROUND-UP TO MATCH THE CLOSEST CAPACITY IN GALLONS PER THE CHART.

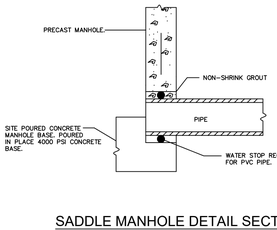
GREASE INTERCEPTOR DETAIL



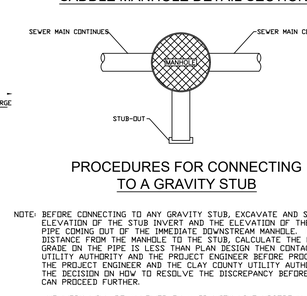
NOTE: 1) FOR ADDITIONAL MANHOLE SPECIFICATIONS, SEE "SANITARY SEWER MANHOLE" DETAIL THIS SHEET. MAXIMUM ALLOWABLE DIFFERENCE IN INVERT ELEVATION WITHOUT INTERNAL DROP CONNECTION IS 24".

SADDLE MANHOLE DETAIL

THIS DETAIL IS ONLY TO
BE USED WITH SPECIFIC APPROVAL BY CCUA.



SADDLE MANHOLE DETAIL SECTION

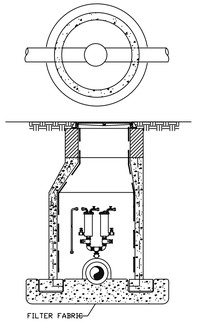


PROCEDURES FOR CONNECTING TO A GRAVITY STUB

NOTE: BEFORE CONNECTING TO ANY GRAVITY STUB, EXCAVATE AND SHOOT THE ELEVATION OF THE STUB INVERT AND THE ELEVATION OF THE INVERT OF THE SAME PIPE COMING OUT OF THE IMMEDIATE DOWNSTREAM MANHOLE. MEASURE THE DISTANCE FROM THE MANHOLE TO THE STUB, CALCULATE THE PIPE GRADE. IF THE GRADE ON THE PIPE IS LESS THAN PLAN DESIGN THEN CONTACT THE CLAY COUNTY UTILITY AUTHORITY AND THE PROJECT ENGINEER BEFORE PROCEEDING FURTHER. THE PROJECT ENGINEER AND THE CLAY COUNTY UTILITY AUTHORITY WILL MAKE THE DECISION ON HOW TO RESOLVE THE DISCREPANCY BEFORE THE CONTRACTOR CAN PROCEED FURTHER.

NO WORK WILL BE ALLOWED ON A GRAVITY LINE UPSTREAM OF THE CONNECTION POINT TO THE CLAY COUNTY UTILITY AUTHORITY'S SYSTEM WITHOUT PRIOR APPROVAL OF THE CLAY COUNTY UTILITY AUTHORITY.

NOTES:
1. CONC. BOX SHALL BE 42" MIN. DEPTH BUT SHALL BE DEEP ENOUGH TO ACCOMMODATE THE SIZE PIPE AND TYPE OF AIR RELEASE VALVE REQUIRED, WITH OPEN BOTTOM, PRECAST WITH NOTCH TO ACCOMMODATE PIPE INSTALLED WITH 24" COVER FROM TOP OF PIPE TO FINISH GRADE, ON 12" OF #57 TONE. WITH FILTER FABRIC ABOVE AND BELOW THE STONE.
2. CONTRACTOR SHALL PROVIDE SHOP DRAWING OF BOX WITH DIMENSIONS FOR APPROVAL BY C.C.U.A.
3. DIMENSIONS SHOWN ARE MINIMUM AND SHALL BE INCREASED BASED UPON ACTUAL SIZE OF PIPE INSTALLED



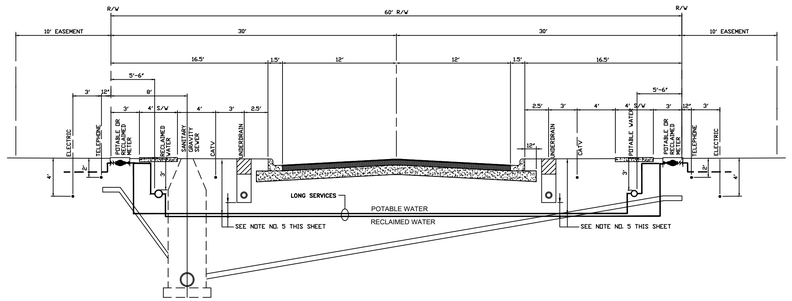
SANITARY SEWAGE FORCE MAIN AIR RELEASE VALVE VAULT

TO BE USED ON ALL PIPES 10" OR SMALLER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

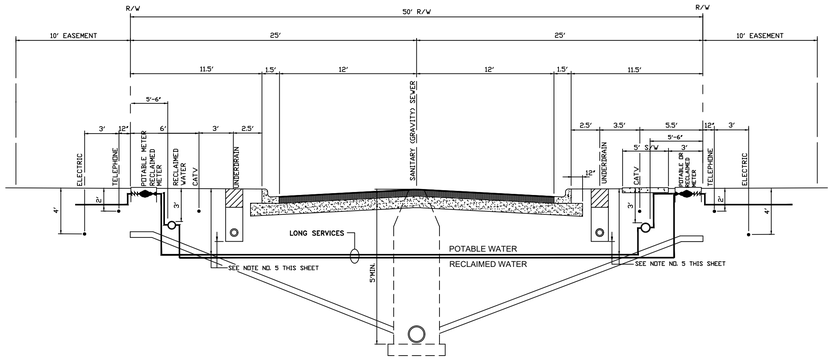
VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

NO	DATE	BY	REVISION DESCRIPTION
1	7-14-11	BWB	ADDED LEVELING COURSE MATERIAL & MH. INVERTS FOR MANHOLES
2	8-22-11	BWB	REVISED STANDARD SINGLE SEWER SERVICE LATERAL DETAIL
3	10-19-11	BWB	REVISED NOTES AND DETAILS
4	12-14-11	BWB	REVISED NOTES AND DETAILS
5	2-7-12	BWB	REVISED NOTES AND DETAILS
6	3-6-12	BWB	REVISED NOTES AND DETAILS
7	4-10-12	BWB	REVISED NOTES AND DETAILS
8	5-8-12	BWB	REVISED NOTES AND DETAILS
9	6-5-12	BWB	REVISED NOTES AND DETAILS
10	7-24-12	BWB	REVISED NOTES AND DETAILS
11	8-28-12	BWB	REVISED NOTES AND DETAILS
12	9-25-12	BWB	REVISED NOTES AND DETAILS
13	10-23-12	BWB	REVISED NOTES AND DETAILS
14	11-20-12	BWB	REVISED NOTES AND DETAILS
15	12-18-12	BWB	REVISED NOTES AND DETAILS
16	1-15-13	BWB	REVISED NOTES AND DETAILS
17	2-12-13	BWB	REVISED NOTES AND DETAILS
18	3-19-13	BWB	REVISED NOTES AND DETAILS
19	4-16-13	BWB	REVISED NOTES AND DETAILS
20	5-14-13	BWB	REVISED NOTES AND DETAILS
21	6-11-13	BWB	REVISED NOTES AND DETAILS
22	7-9-13	BWB	REVISED NOTES AND DETAILS
23	8-6-13	BWB	REVISED NOTES AND DETAILS
24	9-3-13	BWB	REVISED NOTES AND DETAILS
25	10-1-13	BWB	REVISED NOTES AND DETAILS
26	10-29-13	BWB	REVISED NOTES AND DETAILS
27	11-26-13	BWB	REVISED NOTES AND DETAILS
28	12-24-13	BWB	REVISED NOTES AND DETAILS
29	1-21-14	BWB	REVISED NOTES AND DETAILS
30	2-18-14	BWB	REVISED NOTES AND DETAILS
31	3-18-14	BWB	REVISED NOTES AND DETAILS
32	4-15-14	BWB	REVISED NOTES AND DETAILS
33	5-13-14	BWB	REVISED NOTES AND DETAILS
34	6-10-14	BWB	REVISED NOTES AND DETAILS
35	7-8-14	BWB	REVISED NOTES AND DETAILS
36	8-5-14	BWB	REVISED NOTES AND DETAILS
37	9-2-14	BWB	REVISED NOTES AND DETAILS
38	9-30-14	BWB	REVISED NOTES AND DETAILS
39	10-28-14	BWB	REVISED NOTES AND DETAILS
40	11-25-14	BWB	REVISED NOTES AND DETAILS
41	12-23-14	BWB	REVISED NOTES AND DETAILS
42	1-20-15	BWB	REVISED NOTES AND DETAILS
43	2-17-15	BWB	REVISED NOTES AND DETAILS
44	3-17-15	BWB	REVISED NOTES AND DETAILS
45	4-14-15	BWB	REVISED NOTES AND DETAILS
46	5-12-15	BWB	REVISED NOTES AND DETAILS
47	6-9-15	BWB	REVISED NOTES AND DETAILS
48	7-7-15	BWB	REVISED NOTES AND DETAILS
49	8-4-15	BWB	REVISED NOTES AND DETAILS
50	9-1-15	BWB	REVISED NOTES AND DETAILS
51	9-29-15	BWB	REVISED NOTES AND DETAILS
52	10-27-15	BWB	REVISED NOTES AND DETAILS
53	11-24-15	BWB	REVISED NOTES AND DETAILS
54	12-22-15	BWB	REVISED NOTES AND DETAILS
55	1-19-16	BWB	REVISED NOTES AND DETAILS
56	2-16-16	BWB	REVISED NOTES AND DETAILS
57	3-15-16	BWB	REVISED NOTES AND DETAILS
58	4-12-16	BWB	REVISED NOTES AND DETAILS
59	5-10-16	BWB	REVISED NOTES AND DETAILS
60	6-7-16	BWB	REVISED NOTES AND DETAILS
61	7-5-16	BWB	REVISED NOTES AND DETAILS
62	8-2-16	BWB	REVISED NOTES AND DETAILS
63	8-30-16	BWB	REVISED NOTES AND DETAILS
64	9-27-16	BWB	REVISED NOTES AND DETAILS
65	10-25-16	BWB	REVISED NOTES AND DETAILS
66	11-22-16	BWB	REVISED NOTES AND DETAILS
67	12-20-16	BWB	REVISED NO



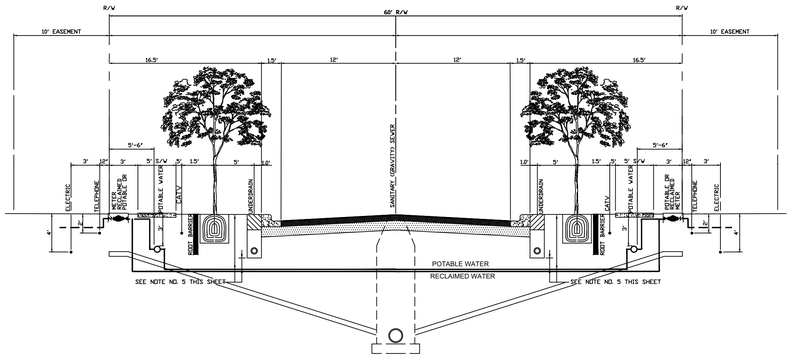
PROPOSED UTILITY TYPICAL SECTION FOR 60' R/W WITH GRAVITY SEWER BACK OF CURB W/ RECLAIMED WATER

SCALE: N.T.S.



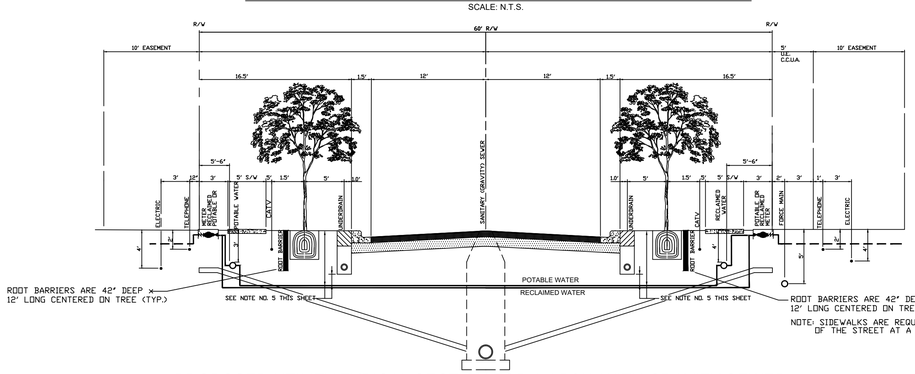
PROPOSED UTILITY TYPICAL SECTION FOR 50' R/W WITH GRAVITY SEWER IN CENTER OF ROAD W/ RECLAIMED WATER

SCALE: N.T.S.



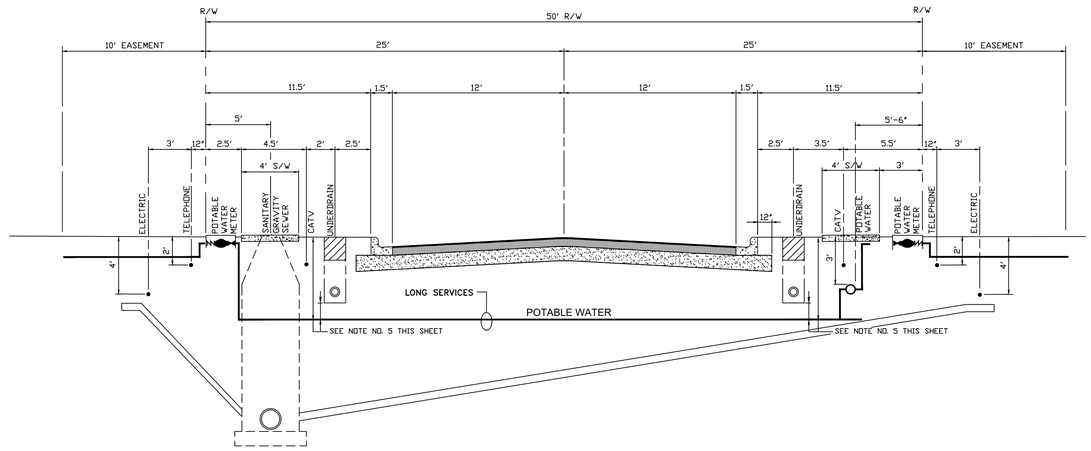
PROPOSED UTILITY TYPICAL SECTION FOR 60' R/W WITH GRAVITY SEWER IN CENTER OF ROAD W/ RECLAIMED WATER

SCALE: N.T.S.



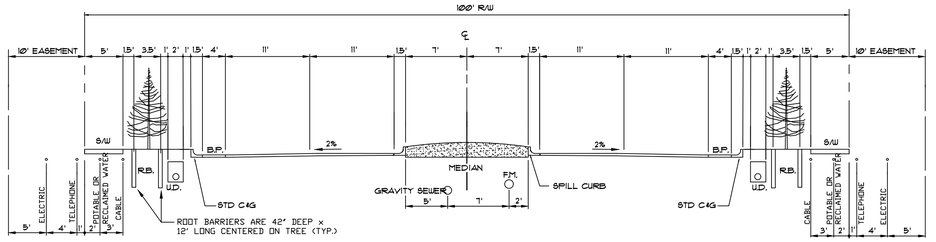
PROPOSED UTILITY TYPICAL SECTION FOR 60' R/W WITH GRAVITY SEWER IN CENTER OF ROAD W/ FORCE MAIN PARALLEL TO RECLAIMED WATER

SCALE: N.T.S.



PROPOSED UTILITY TYPICAL SECTION FOR 50' R/W WITH GRAVITY SEWER BACK OF CURB W/O RECLAIMED WATER

SCALE: 1"=5'



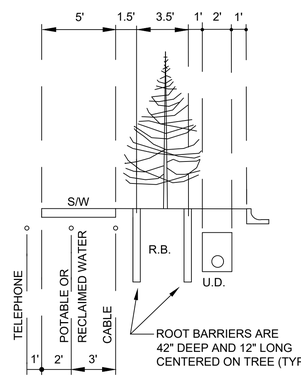
ROOT BARRIER SPECIFICATIONS:
ROOT BARRIER SHALL BE LONG TERM ROOT CONTROL SYSTEM WHICH UTILIZES TIME RELEASE OF AN HERBICIDE TO PREVENT ROOT INTRUSION. EFFECTIVE LIFE OF THE MATERIAL SHALL BE AT LEAST 15 YEARS. SIMILAR AND / OR EQUAL TO "BIOBARRIER" AS MANUFACTURED BY BBA NONWOVEN / REEMAY, INC., 70 OLD HICKORY BLVD., OLD HICKORY, TN. 37138-3651, (800)284-2780.

SEE CCUA APPROVED MATERIALS MANUAL TO ROOT BARRIER SPECIFICATIONS.

100' CROSS SECTION SHOWN IS FOR INFORMATION PURPOSES ONLY. THIS CROSS SECTION MAY NEED TO BE MODIFIED TO FIT THE PROPOSED ROADWAY DESIGN; REQUIRES CCUA APPROVAL.

PROPOSED UTILITY TYPICAL SECTION FOR 100' R/W WITH RAISED MEDIAN AND GRAVITY SEWER IN CENTER OF ROAD

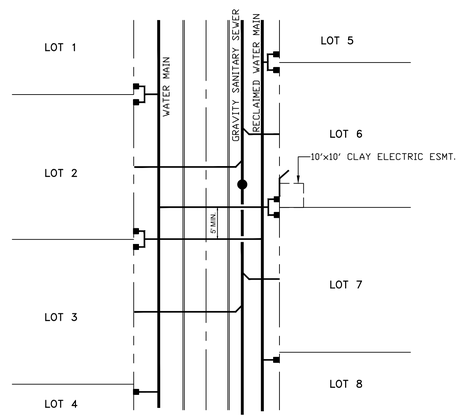
NOT TO SCALE



EXTRUDED SHEETS OR PANELS WITH INTEGRAL MALE/FEMALE SLIDING LOCK CONNECTION ENDS. MATERIAL SHALL BE HDPE WITH A MINIMUM THICKNESS OF 60 MIL, AND SHALL BE RIBBED. ROOT BARRIER SHALL EXTEND TO A MINIMUM DEPTH OF 42" BELOW FINISH GRADE. THE ROOT BARRIER SHALL BE A MINIMUM OF 12" LONG, CENTERED ON THE TREE AND PARALLEL WITH THE UTILITY MAIN OR SERVICE LINE BEING PROTECTED, UNLESS SHOWN OTHERWISE ON THE PLANS. ROOT BARRIER SHALL BE INSTALLED AT ANY TREE PLANTED IN A CCUA UTILITY EASEMENT, OR ANY TREE PLANTED WITHIN 10' OF ALL CCUA UTILITY MAINS OR SERVICES. NO TREES SHALL BE PLANTED IN A CCUA UTILITY EASEMENT EASEMENT WITHOUT THE APPROVAL OF CCUA. NO TREES SHALL BE CLOSER THAN 5' TO ANY CCUA UTILITY LINE OR SERVICES.

ROOT BARRIER DETAIL

SCALE: N.T.S.



TYPICAL WATER AND SEWER SERVICE LOCATION PLAN

1.) ALL WATER AND RECLAIMED DOUBLE SERVICES ON PROPERTY LINE.
2.) ANY SINGLE WATER OR RECLAIMED SERVICE LINES ON LOT LINE.
3.) ALL SEWER SERVICES ARE TO CENTER OF LOTS.
4.) IF FITTINGS ARE REQUIRED TO ACHIEVE 5'-0" SEPARATION BETWEEN THE RECLAIMED AND POTABLE WATER SERVICE LATERALS THEN ASBUILT TIE LOCATIONS WILL BE REQUIRED FOR THE SERVICE FITTINGS. THE OFFSET REQUIRED TO ACHIEVE THE SEPARATION SHALL OCCUR OUTSIDE OF THE PAVED ROADWAY.
5.) POTABLE AND RECLAIMED WATER SERVICE LINES SHALL ONLY BE DEEP ENOUGH TO CLEAR THE BOTTOM OF THE UNDERDRAIN TRENCH. MINIMUM COVER SHALL BE MAINTAINED IN ALL CASES.

NO	DATE	BY	REVISION DESCRIPTION
7	AUG 17	RHD	REVISED TO ADD ROOT BARRIER DETAIL
6	JUL 17	RHD	REVISED TO USE AS BUILT DISTANCES FROM R/W
5	NOV 15	RHD	REVISED MAIN PLACEMENT DISTANCES FROM R/W
4	APRIL 06	MRS	GENERAL UPDATES AND REVISIONS
3	JUNE 05	MRS	REVISED SECTION TO INCLUDE FM
2	JUNE 05	MRS	REVISED 60' & 100' R-O-W SECTION DETAILS
1	APRIL 02	GAR	NEW STANDARD DETAIL SHEET

DESG	GAR
DRWN	GAR
CHKD	
APRV	
DATE	

PROJECT:

WATER, SEWER AND RECLAIMED
WATER UTILITY PLACEMENT IN R/W
27' PAVEMENT WIDTH

CLAY COUNTY
UTILITY AUTHORITY
3176 OLD JENNINGS ROAD
MIDDLEBURG, FLORIDA 32068-3907
TELEPHONE: (904) 272-5999

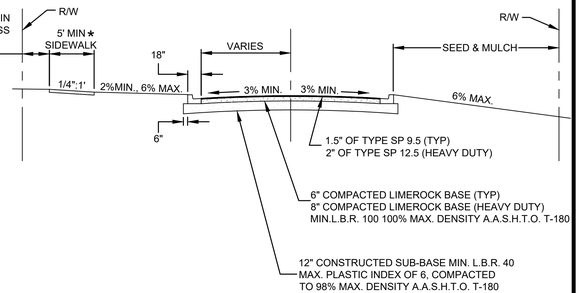
This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

ACAD FILE NAME

SHEET NO.

UTC-1

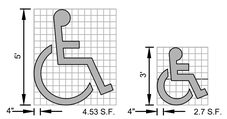


NOTE:

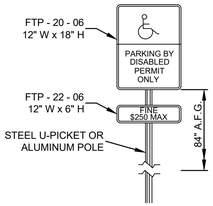
1. HEAVY DUTY PVMT TO BE USED ON PEARCE BLVD (SEE DWG NO.'S G-1, G-4 & ENT-1).
2. SOIL ANALYSIS MAY INDICATE THE NEED FOR THICKER BASE COURSES THAN THOSE SHOWN HEREIN. THE PAVEMENT THICKNESS SHOWN HEREIN ARE NOT INTENDED TO BE ABSOLUTE, BUT ARE PRELIMINARY CRITERIA & MAY BE MODIFIED TO ACCOMMODATE THE BEARING CAPACITIES OF VARIOUS SUBGRADES.
3. ALL DISTURBED AREAS SHALL BE SEEDED & MULCHED. ALL AREAS WHERE SOD HAS BEEN DISTURBED OR REMOVED SHALL BE RESODDED TO SATISFACTION OF OWNER.
4. ALL ASPHALTIC CONCRETE SHALL MEET THE REQUIREMENTS OF SECTION 331 AND/OR SECTION 333, F.D.O.T. STANDARD SPECIFICATIONS, LATEST EDITION.
5. ★ OR IN ACCORDANCE WITH APPROVED CONSTRUCTION PLANS. VARIATIONS IN SIDEWALK LOCATION/ MEANDERING DUE TO CONFLICTS SUCH AS TREES, HYDRANTS, UTILITIES, TRAFFIC SIGN, ETC. IS PERMITTED AS PER THE APPROVED PLANS, OR AS OTHERWISE REQUIRED TO BE ADJUSTED IN THE FIELD.

60' & 80' R/W RESIDENTIAL ROADWAY SECTION

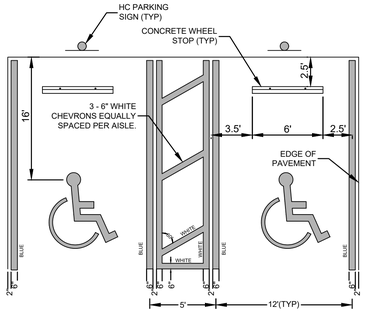
NOTES:
1. DIMENSIONS ARE TO THE CENTERLINE OF MARKINGS.
2. CRITERIA FOR PAVEMENT MARKINGS ONLY, NOT PUBLIC SIDEWALK CURB RAMP LOCATIONS. FOR RAMP LOCATIONS REFER TO PLANS.
3. BLUE PAVEMENT MARKINGS SHALL BE TINTED TO MATCH SHADE 15180 OF FEDERAL STANDARDS 595A.



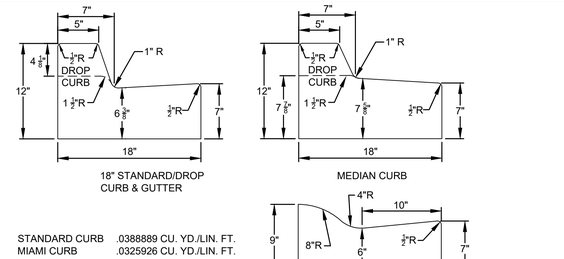
USE OF PAVEMENT SYMBOL IN ACCESSIBLE PARKING SPACES IS OPTIONAL. WHEN USED; THE SYMBOL SHALL BE 3' OR 5' HIGH AND WHITE IN COLOR.



HANDICAP PARKING SIGN

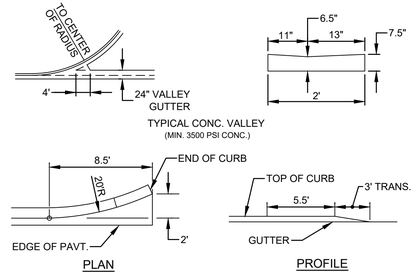


HC PARKING DETAIL

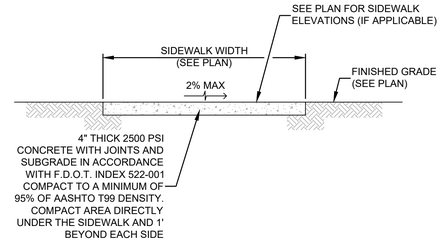


STANDARD CURB	.0388889 CU. YD./LIN. FT.	
MIAMI CURB	.0325926 CU. YD./LIN. FT.	

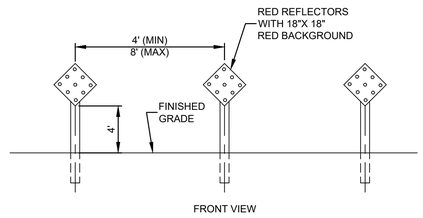
TYPICAL STANDARD CURBS
(MIN. 3000 PSI CONC.)



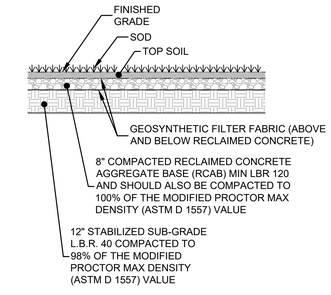
STANDARD CURB TEMPLATES



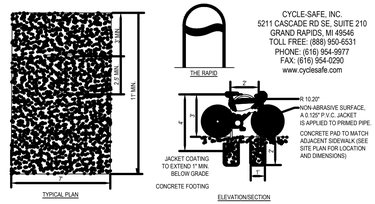
CONCRETE SIDEWALK / MULTI-PURPOSE PATH



TYPE 1 TRAFFIC BARRICADE

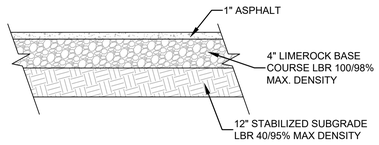


STABILIZED FIRE DEPT ACCESS SECTION

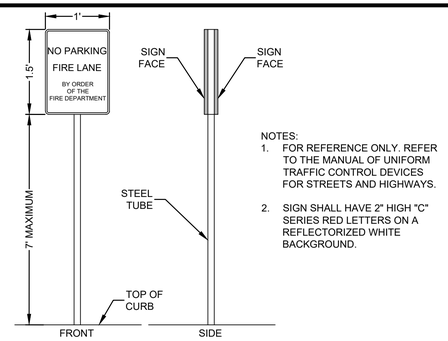


1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

1 LOOP 2 BIKE BICYCLE RACK
BASED ON CYCLE-SAFE, INC (THE RAPID) OR EQUAL

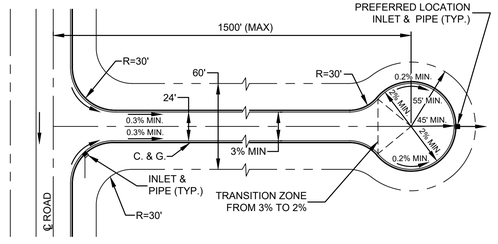


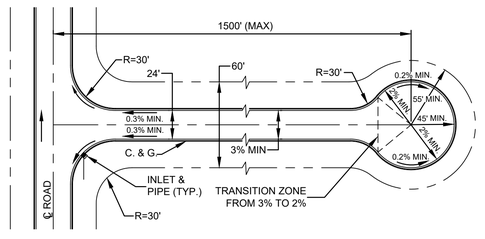
PAVEMENT SECTION - TEMPORARY CUL-DE-SAC



NOTES:
1. FOR REFERENCE ONLY. REFER TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS.
2. SIGN SHALL HAVE 2" HIGH "C" SERIES RED LETTERS ON A REFLECTORIZED WHITE BACKGROUND.

FIRE LANE SIGN DETAIL

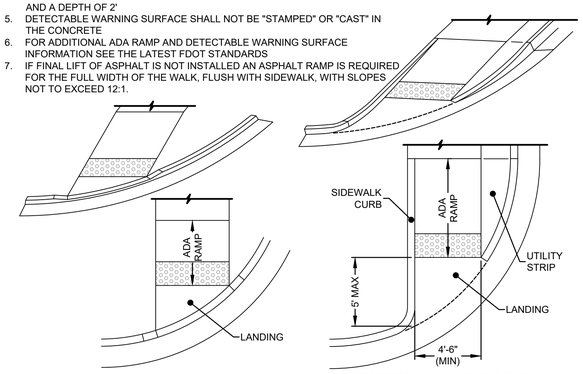




NOTES:
1. CURB & GUTTER ALONG ROAD TO MAINTAIN MIN. SLOPE OF 0.3% IN DIRECTION OF POSITIVE DRAINAGE.
2. CURB & GUTTER AROUND THE CUL-DE-SAC TO MAINTAIN MIN. SLOPE OF 0.2% IN DIRECTION OF POSITIVE DRAINAGE.
3. PAVING SHALL BE CROWNED MIN. OF 3% TO PROVIDE ADEQUATE RUN-OFF OFF PAVEMENT.
4. PAVING SHALL BE CROWNED MIN. OF 2% TO PROVIDE ADEQUATE RUN-OFF OFF CUL-DE-SAC PAVEMENT
5. VALLEY GUTTERS ARE NOT ALLOWED.
6. INLETS & PIPES TO BE LOCATED AS NECESSARY.

STANDARD CUL-DE-SAC W/CURB & GUTTER

NOTES:
1. SEE GEOMETRY PLAN FOR SIDEWALK WIDTH AND LOCATION
2. SEE CURB TEMPLATE DETAILS FOR ADDITIONAL INFORMATION
3. ADA RAMP TO BE 6' LONG (MAX) AT 1:12 MAXIMUM SLOPE
4. DETECTABLE WARNING SURFACE TO BE FULL WIDTH OF RAMP OR LANDING AND A DEPTH OF 2'
5. DETECTABLE WARNING SURFACE SHALL NOT BE "STAMPED" OR "CAST" IN THE CONCRETE
6. FOR ADDITIONAL ADA RAMP AND DETECTABLE WARNING SURFACE INFORMATION SEE THE LATEST FDOT STANDARDS
7. IF FINAL LIFT OF ASPHALT IS NOT INSTALLED AN ASPHALT RAMP IS REQUIRED FOR THE FULL WIDTH OF THE WALK, FLUSH WITH SIDEWALK, WITH SLOPES NOT TO EXCEED 12:1.



SIDEWALK RAMPS

P:\2008-499 AYRSHIRE\ENG PLANS\499 PDD.DWG4/19/2023 8:28 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
-	-	-	-

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	N/A
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1

FOR:
D.R. HORTON, INC. – JACKSONVILLE

CLAY COUNTY, FLORIDA

PAVING AND DRAINAGE DETAILS

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 61419

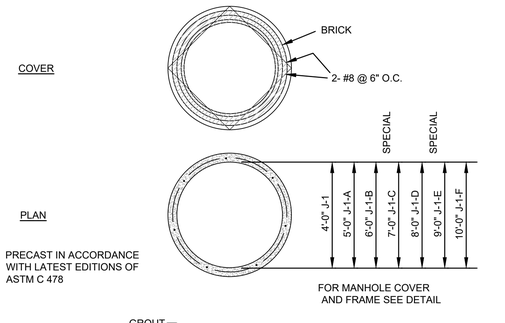
Sheet No. 81 of 88

PDD-1

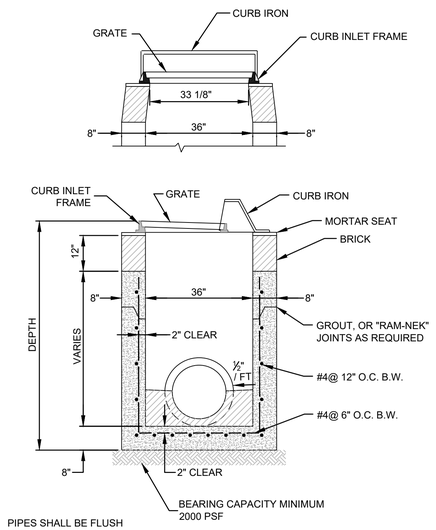
DWG. NO.

THE ROOKERY – PHASE 1

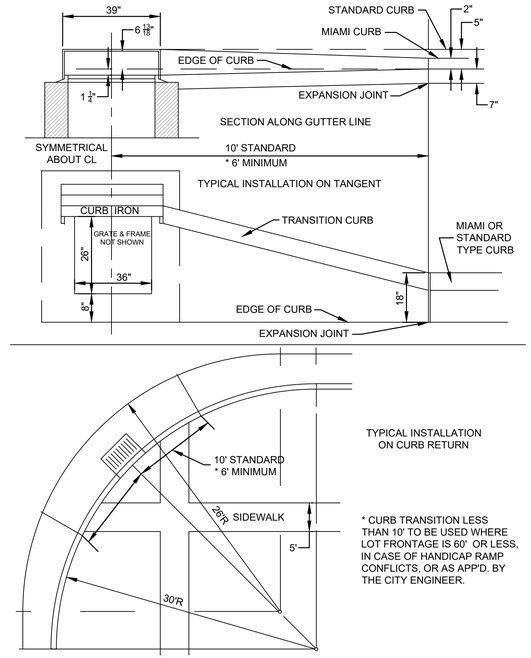
RELEASED FOR CONSTRUCTION



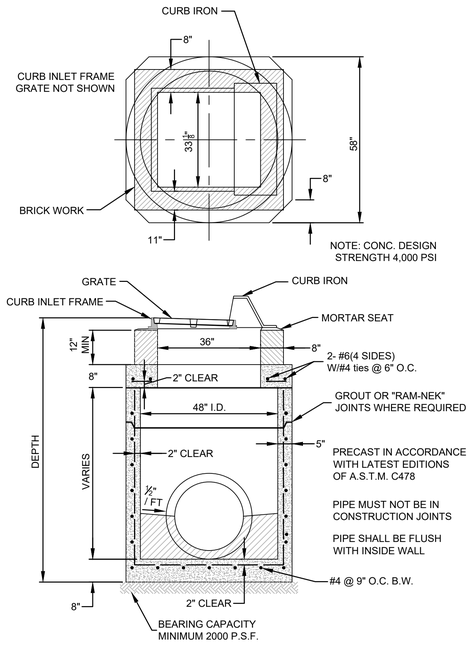
STORM SEWER MANHOLE



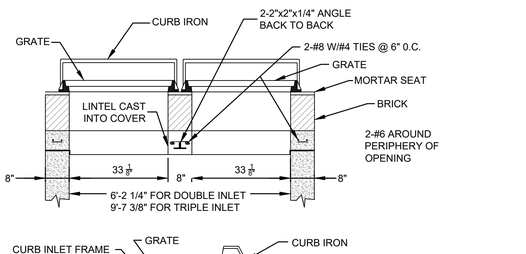
STORM SEWER CURB INLET



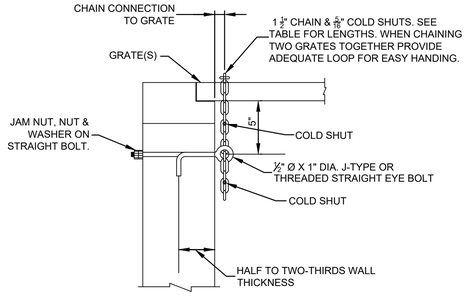
STANDARD CURB INLET INSTALLATION



STORM SEWER 48" CURB INLET



STORM SEWER DOUBLE AND TRIPLE CURB INLET



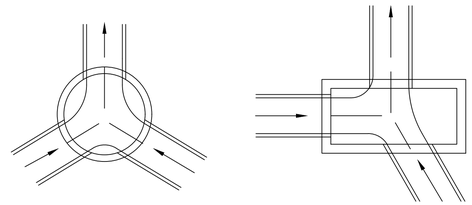
COST OF GALVANIZED EYE BOLT AND CHAIN TO BE INCLUDED IN THE CONTRACT UNIT PRICE FOR INLET.

EYE BOLT AND CHAIN REQUIREMENTS

Plate Number	Inlet Type	Eye Bolt	Length Of Chain	Handling & Remarks
207	C	1	2'-6"	Slide & Spin
208	E	2	2@ 2'-6"	Slide & Spin

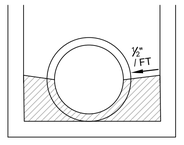
EYE BOLT AND CHAIN FOR LOCKING GRATES TO INLETS

GENERAL NOTE:
MORTAR USED TO SEAL THE PIPE INTO THE WALLS OF PRECAST UNITS WILL BE OF SUCH A MIX THAT SHRINKAGE WILL NOT CAUSE LEAKAGE INTO OR OUT OF THE UNITS. MAXIMUM OPENING FOR PIPE SHALL BE THE O.D. OF THE PIPE REQUIRED PLUS 6".



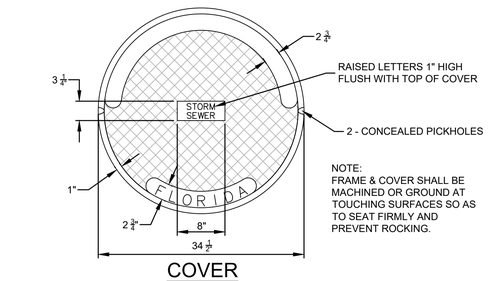
DETAIL OF CHANNELIZATION

NOTE: CHANNELIZATION REQUIRED AT ALL DRAINAGE STRUCTURES

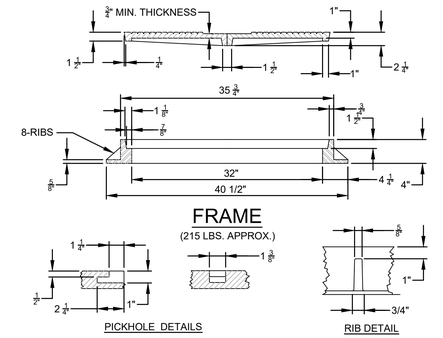


SMOOTH FLOW CHANNELS COMPOSED OF CONCRETE OR BRICK AND MORTAR SHALL BE CONSTRUCTED ON THE BOTTOMS OF ALL STRUCTURES TO A DEPTH EQUAL TO HALF THE DIAMETER OF THE LARGEST PIPE.

STORM SEWER INVERT DETAIL



COVER
(265 LBS.± 5 LBS.)



STORM SEWER MANHOLE COVER AND FRAME

RELEASED FOR CONSTRUCTION

P:\2008-499 AYRSHIRE\ENG PLANS\499 PDD.DWG4/19/2023 8:30 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
-	-	-	-

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	N/A
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1
FOR:
D.R. HORTON, INC. – JACKSONVILLE
CLAY COUNTY, FLORIDA
PAVING AND DRAINAGE DETAILS

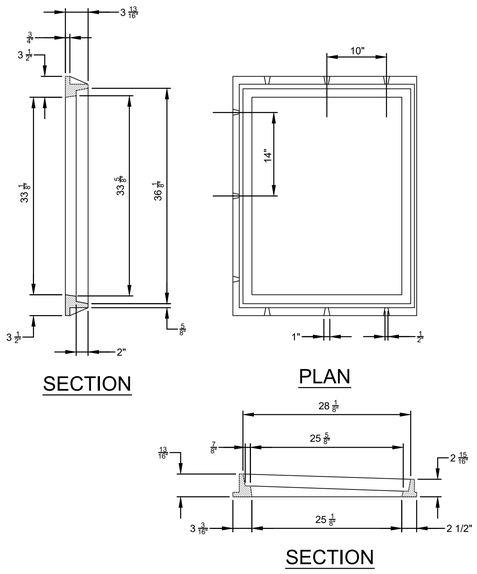
VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

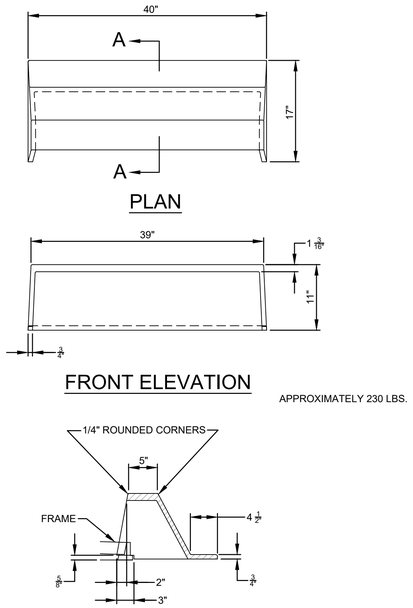
Sheet No. 82 of 88

PDD-2
DWG. NO.



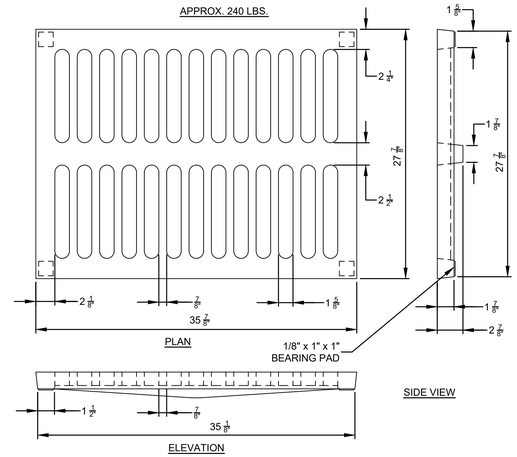
APPROX. 180 LBS.

STORM SEWER CURB INLET FRAME

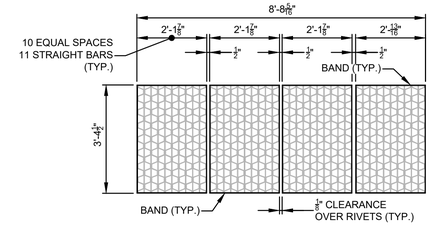


APPROXIMATELY 230 LBS.

STORM SEWER CURB IRON

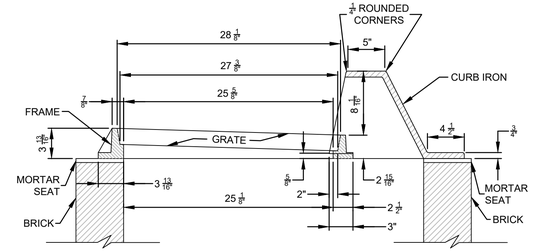


STORM SEWER INLET GRATE

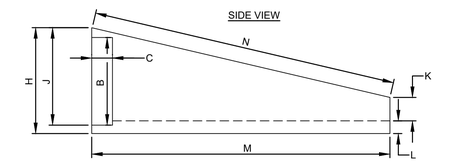


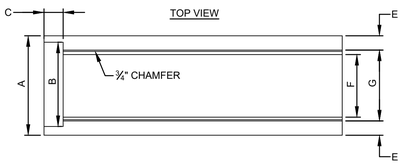
TYPE H (4-GRATE INLET)
STRAIGHT END-BEARING BARS 2" x 1/4"
RETICULINE BARS 1 3/4" x 1/16"
BANDING BARS 2" x 1/16"
APPROX. TOTAL WEIGHT 388 LBS.

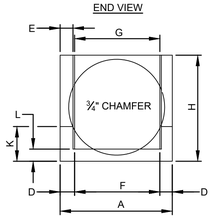
RETICULINE GRATE FOR STORM SEWER
TYPE "H" 4-GRATE INLET



STORM SEWER CURB IRON W/ GRATE AND FRAME







CONCRETE: 4,000 P.S.I.

STEEL: #4 @ 12" E.W., WITH 1 #6 OVER PIPE OPENING. (2" CLEARANCE OVER STEEL, REIN. BARS, 1/2" TOLERANCE).

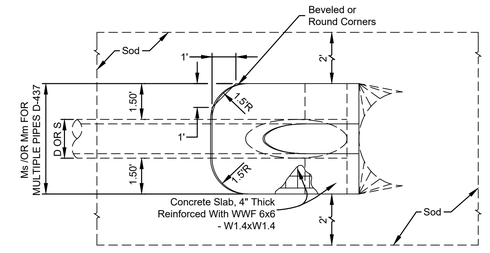
STANDARD MITERED END SECTION

TABLE OF DIMENSIONS

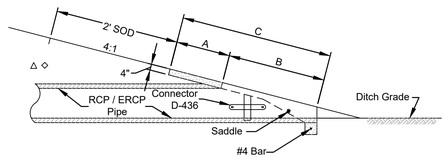
RCP/CMP	A	B	C	D	E	F	G
15" – 18"	2'–7"	2'–1"	6"	6"	6 3/4"	1'–6"	1'–7"
24"	2'–11"	2'–8"	6"	5"	4 1/2"	1'–11"	2'–0"
30"	3'–6"	3'–2"	6"	6"	5 1/2"	2'–5"	2'–6 1/2"
36"	4'–1"	3'–10"	6"	7"	5 1/2"	2'–9"	3'–0"

RCP/CMP	H	J	K	L	M	N
15" – 18"	2'–10"	2'–4"	8"	6"	6'–10"	7'–0"
24"	3'–6"	3'–1"	7 1/2"	5"	10'–0"	10'–3 1/2"
30"	3'–9"	3'–5"	7"	5"	11'–5"	11'–8 1/4"
36"	4'–6"	4'–0"	6"	6"	14'–0"	14'–4 1/2"

STANDARD MITERED END SECTION - TABLE OF DIMENSIONS



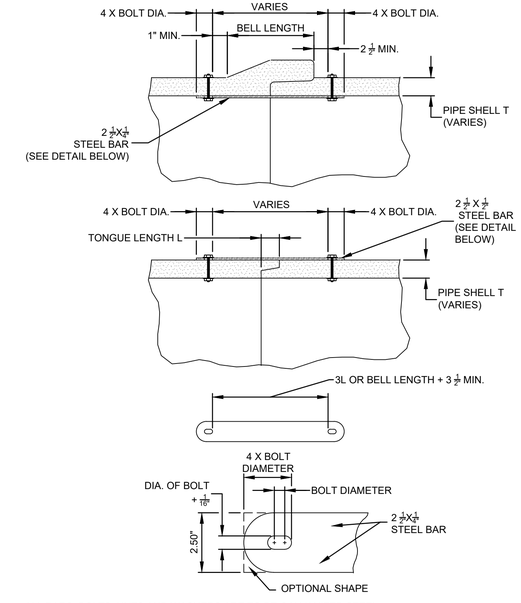
TOP VIEW - SINGLE PIPE



SECTION

- Slope:
  4:1 Miter To ℄ Of Pipe For Pipes 18" & Smaller 2:1 Miter For Pipes 24" & Larger, For RCP. 4:1 Miter To Major Axis For Pipes 24"x 38" & Smaller. 2:1 Miter For Pipes 29"x 45" & Larger, For ERCP.

POURED IN PLACE MITERED END SECTION



ALL BARS, BOLTS, NUTS AND WASHERS ARE TO BE GALVANIZED STEEL.
BOLTS DIAMETER SHALL BE 3/8" FOR 15" TO 36" PIPE AND 5/8" FOR 42" TO 72" PIPE.
TWO CONNECTORS REQUIRED PER JOINT, LOCATED 60° RIGHT AND LEFT OF BOTTOM CENTER OF PIPE.
BOLT HOLES IN PIPE SHELL ARE TO BE DRILLED.

P.I.P. M.E.S. PIPE CONNECTION

RELEASED FOR CONSTRUCTION

THE ROOKERY – PHASE 1

P:\2008-499 AYRSHIRE\ENG PLANS\499 PDD.DWG4/19/2023 8:33 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
-	-	-	-

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	N/A
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1
FOR:
D.R. HORTON, INC. – JACKSONVILLE
CLAY COUNTY, FLORIDA
PAVING AND DRAINAGE DETAILS

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 83 of 88

PDD–3
DWG. NO.

DIMENSIONS FOR R.C.P.									
D	X	A	B	C	E	F	G	Ms	N
15"	2.58'	2.27'	4.09'	6.36'	4.03'	8'	1.22'	4.63'	1.19'
18"	2.83'	2.36'	5.12'	7.48'	5.03'	9'	1.41'	4.92'	1.21'
24"	3.42'	2.53'	7.18' △	9.71'	7.03' △	11'	1.73'	5.50'	1.25'
30"	4.25'	2.70'	9.25'	11.95'	9.03'	13'	2.00'	6.08'	1.29'
36"	5.08'	2.87'	11.31' ◇	14.18'	11.03' ◇	15'	2.24'	6.67'	1.33'
42"	6.00'	3.05'	13.37'	16.42'	13.03'	17'	2.45'	7.25'	1.38'
48"	6.75'	3.22'	15.43'	18.65'	15.03'	19'	2.63'	7.83'	1.42'
54"	7.67'	3.39'	17.49'	20.88'	17.03'	21'	2.83'	8.42'	1.46'
60"	8.50'	3.56'	19.55'	23.11'	19.03'	23'	3.00'	9.00'	1.50'

△ 6.42' △ 6.25' DIMENSIONS PERMITTED TO ALLOW USE OF 8' STANDARD PIPE LENGTHS.

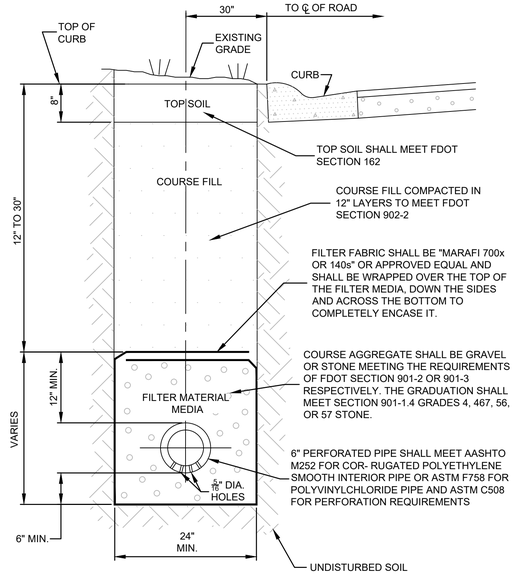
◇ 10.40' ◇ 10.10' DIMENSIONS PERMITTED TO ALLOW USE OF 12' STANDARD PIPE LENGTHS.

△◇ CONCRETE SLAB SHALL BE DEEPENED TO FROM BRIDGE ACROSS CROWN OF PIPE. SEE SECTION.

DIMENSIONS FOR E.R.C.P.										
RISE R	SPAN S	X	A	B	C	E	F	G	Ms	N
12"	18"	2.83'	2.36'	3.06'	5.42'	3.03'	5'	1.50'	4.92'	1.21'
14"	23"	3.33'	2.44'	3.75'	6.19'	3.70'	6'	1.90'	5.38'	1.23'
19"	30"	4.00'	2.62'	5.47'	8.09'	5.36'	8'	2.37'	6.04'	1.27'
24"	38"	5.00'	2.79'	7.18'	9.97'	7.03'	10'	2.85'	6.79'	1.31'
29"	45"	5.92'	3.05'	8.90'	11.95'	8.70'	12'	3.19'	7.50'	1.38'
34"	53"	7.00'	3.22'	10.62'	13.84'	10.36'	13'	3.57'	8.25'	1.42'
38"	60"	7.83'	3.39'	11.99'	15.38'	11.70'	15'	3.95'	8.92'	1.46'
43"	68"	8.92'	3.56'	13.71'	17.27'	13.36'	17'	4.28'	9.67'	1.50'
48"	76"	9.92'	3.73'	15.43'	19.16'	15.03'	19'	4.59'	10.42'	1.54'
* 53"	83"	10.67'	3.91'	17.15'	21.06'	16.70'	20'	4.77'	11.08'	1.58'
58"	91"	11.67'	4.08'	18.87'	22.95'	18.36'	22'	5.01'	11.83'	1.63'

"X"=DISTANCE FROM CENTER OF PIPE TO CENTER OF PIPE.
"Mm"=DIMENSIONS FOR MULTIPLE PIPES.
FORMULA TO DETERMINE "Mm" FOR MULTIPLE PIPES = Ms+X (NO. OF PIPES −1)
FOR "Ms" AND "X" DIMENSIONS, SEE TABLE ABOVE.
* SPECIAL ORDER; NOT STANDARD SIZE

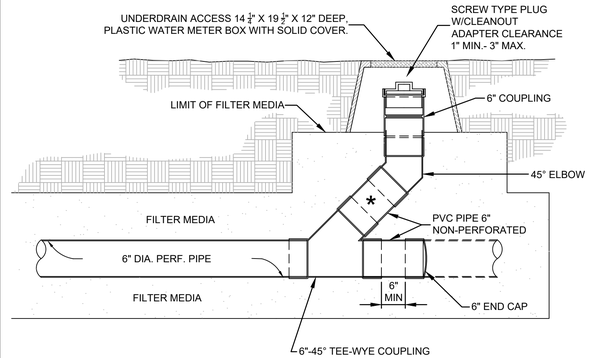
POURED IN PLACE MITERED END SECTION - TABLE OF DIMENSIONS



NOTE: MINIMUM PIPE SLOPE OF 0.30%

TYPE I UNDERDRAIN WITH MARAFI 700x" IS TO BE USED WHERE MODERATE CHEMICAL CLOGGING OF FILTER MATERIAL IS EXPECTED.

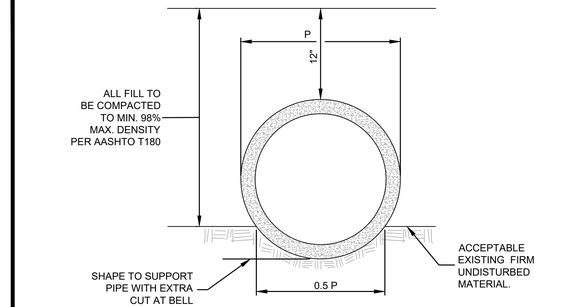
UNDERDRAIN INSTALLATION



NOTES: ALL PIPE AND FITTINGS TO MEET ASTM F758-82 SPECIFICATIONS. 300' MAXIMUM DISTANCE BETWEEN CLEANOUTS

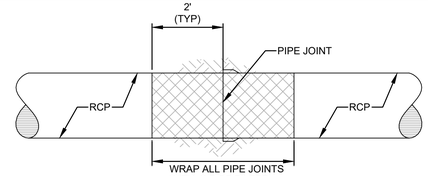
* COUPLING PIPE LENGTH TO BE FIELD ADJUSTED.

UNDERDRAIN CLEANOUT



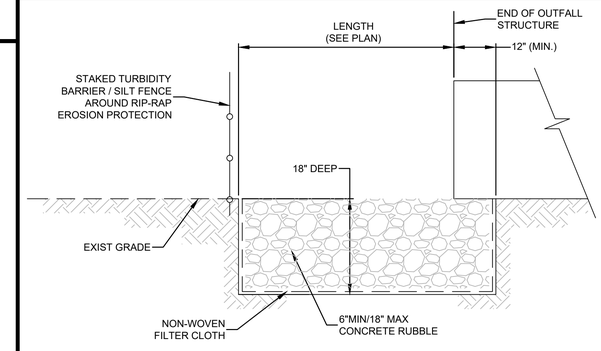
EACH LIFT TO BE COMPLETELY COMPACTED TO REQUIRED DENSITY BEFORE STARTING NEXT LIFT NO LIFT TO EXCEED 6" WHEN COMPACTED.

PIPE BEDDING - RCP

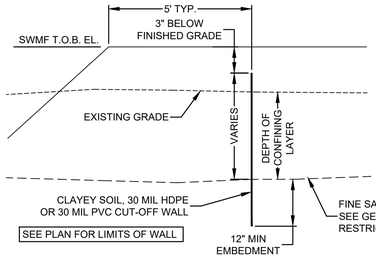


WRAP ALL PIPE JOINTS WITH 4LF OF FILTER FABRIC CENTERED ON PIPE JOINT-PROVIDE 2' OVERLAP AT PIPE JOINT.

RCP PIPE JOINTS



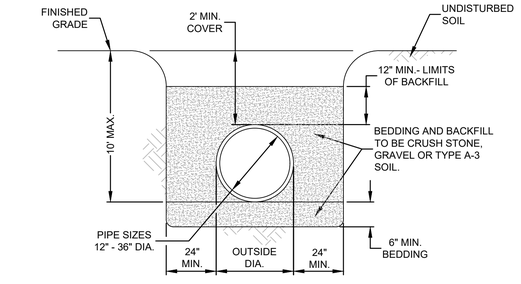
RIP-RAP EROSION PROTECTION



CUT OFF WALL SCHEDULE		
SWMF NO.	APPROX. LENGTH (LF)	DEPTH OF CONFINING LAYER (FT)
4	590	7
6	980	12
21	1,810	6
31	770	12
32	940	10
33	280	4
J1	615	3

POND CUT-OFF WALL PER GEOTECHNICAL REPORT. CONTRACTOR TO INCLUDE COST TO HAVE A FL. PROFESSIONAL ENGINEER SUBMIT A WRITTEN CERTIFICATION TO THE SJRWMD THAT THE POND CUT-OFF WALL WAS INSTALLED PER THE PLANS AND PER THE MANUFACTURER SPECIFICATIONS INCLUDING SEAL/CONNECTION TO OUTFALL PIPES. CERTIFICATION MUST BE SIGNED AND SEALED. CERTIFICATION TO BE SUBMITTED WITHIN THIRTY DAYS OF COMPLETION OF WALL.

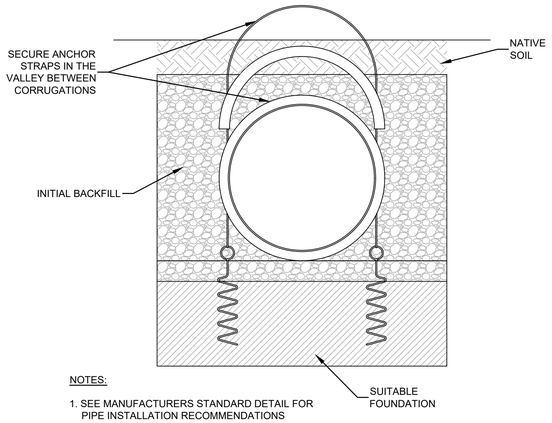
CUT-OFF WALL



NOTES:

1. RUBBER OR NEOPRENE GASKETS REQUIRED AT ALL PIPE JOINTS.
2. HYDROSTATIC FIELD TESTING IS REQUIRED OR FILTER FABRIC WRAP ALL PIPE JOINTS WITH 4LF OF FABRIC CENTERED ON PIPE JOINT.
3. MAXIMUM PIPE DEFLECTION IS 5%. DEFLECTION SHALL BE TESTED USING A MANDREL.
4. PIPE TERMINATION END SECTION MUST BE FABRICATED FROM APPROVED MATERIAL.

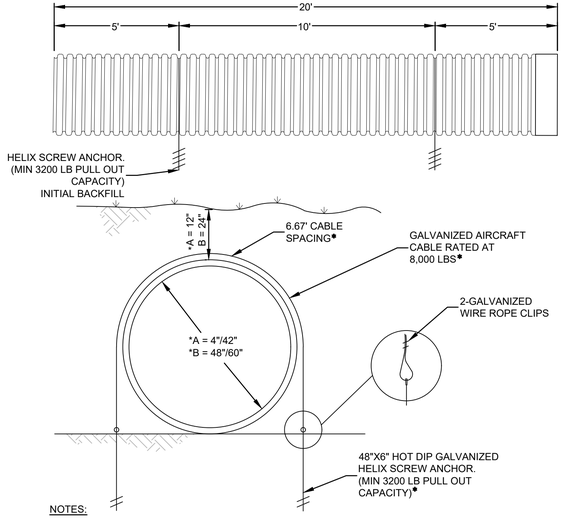
PIPE BEDDING - POLYETHYLENE



NOTES:

1. SEE MANUFACTURERS STANDARD DETAIL FOR PIPE INSTALLATION RECOMMENDATIONS
2. ANCHORS TO BE 10' MAX SPACING, 1 ANCHOR EACH END AND IN MIDDLE OF PIPE. SEE ANCHOR DETAIL BELOW FOR ADDITIONAL INFORMATION.

ANCHOR PLACEMENT



NOTES:

1. SEE MANUFACTURERS STANDARD DETAIL FOR PIPE INSTALLATION RECOMMENDATIONS.
2. SEE ANCHOR PLACEMENT DETAIL.
- •3. FOR MINIMUM STRUCTURAL COVER
- ••4. MINIMUM COVER FOR NO FLOTATION DURING CONSTRUCTION. ASSUMES SATURATED SOILS TO GROUND SURFACE.

OPTION:
10' CABLE SPACING.
11,000LB CABLE RATING.
5,500LB PULL OUT CAPACITY.

MIN COVER REQUIRED	
PIPE SIZE	MIN COVER ••
15"	11"
18"	13"
24"	17"
30"	22"
36"	25"
42"	29"
48"	33"
60"	40"

PIPE ANCHOR

RELEASED FOR CONSTRUCTION

P:\2008-499 AYRSHIRE\ENG PLANS\499 PDD.DWG4/19/2023 8:34 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
-	-	-	-

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	N/A
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1

FOR:
D.R. HORTON, INC. – JACKSONVILLE

CLAY COUNTY, FLORIDA

PAVING AND DRAINAGE DETAILS

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

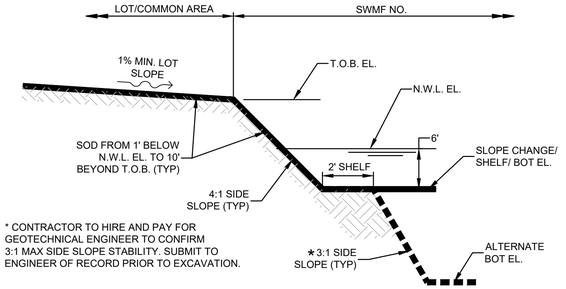
Sheet No. 84 of 88

PDD-4

DWG. NO.

SWMF SCHEDULE

SWMF NO.	1	2	3	4	5	6
T.O.B. EL.	33.8	33.8	33.8	33.7	33.7	33.7
25YR DHW	32.08	32.07	32.07	32.06	32.07	32.06
3YR DHW	30.86	30.86	30.86	30.86	30.86	30.86
N.W.L. EL.	29.0	29.0	29.0	29.0	29.0	29.0
SC/SHELF EL.	23.0	23.0	23.0	23.0	23.0	23.0
BOT. EL.	23.0	23.0	23.0	23.0	23.0	23.0
ALT BOT. EL.	-17.0	11.0	7.0	15.0	15.0	12.0

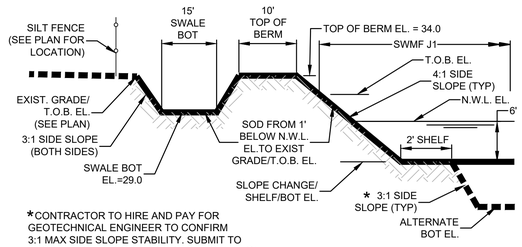


* CONTRACTOR TO HIRE AND PAY FOR GEOTECHNICAL ENGINEER TO CONFIRM 3:1 MAX SIDE SLOPE STABILITY. SUBMIT TO ENGINEER OF RECORD PRIOR TO EXCAVATION.

SECTION L1-L1

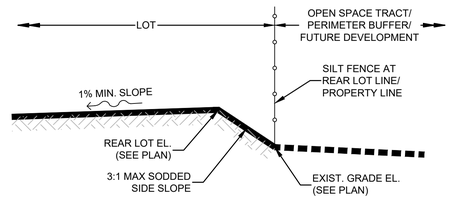
SWMF SCHEDULE

SWMF NO.	J1
T.O.B. EL.	31.2(MIN)
25YR DHW	29.67
3YR DHW	29.39
N.W.L. EL.	29.0
SC/SHELF EL.	23.0
BOT. EL.	23.0
ALT BOT. EL.	-17.0

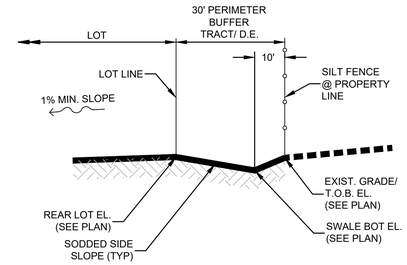


★CONTRACTOR TO HIRE AND PAY FOR GEOTECHNICAL ENGINEER TO CONFIRM 3:1 MAX SIDE SLOPE STABILITY. SUBMIT TO ENGINEER OF RECORD PRIOR TO EXCAVATION.

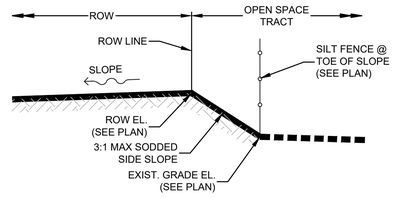
SECTION L4-L4



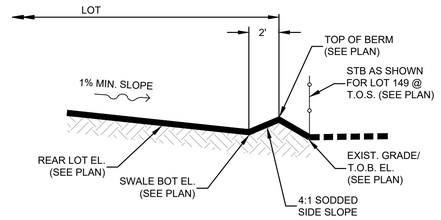
SECTION F1-F1



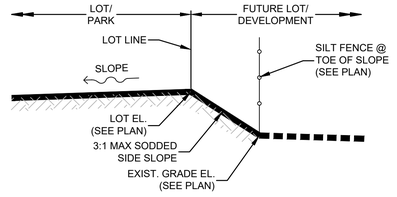
SECTION F6-F6



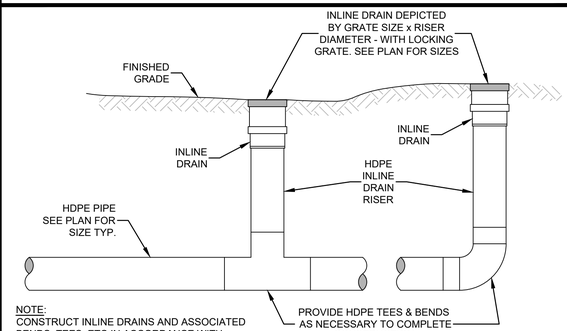
SECTION F2-F2



SECTION F7-F7



SECTION F3-F3

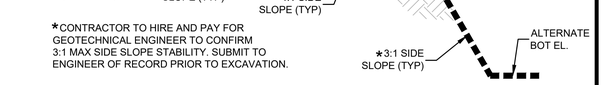


NOTE:
CONSTRUCT INLINE DRAINS AND ASSOCIATED BENDS, TEES, ETC IN ACCORDANCE WITH MANUFACTURERS INSTALLATION INSTRUCTIONS.

TYPICAL AREA DRAIN INSTALLATION

SWMF SCHEDULE

SWMF NO.	1	3	4	5	6	J1
T.O.B. EL.	33.8	33.8	33.7	33.7	33.7	31.2(MIN)
25YR DHW	32.08	32.07	32.06	32.07	32.06	29.67
3YR DHW	30.86	30.86	30.86	30.86	30.86	29.39
N.W.L. EL.	29.0	29.0	29.0	29.0	29.0	29.0
SC/SHELF EL.	23.0	23.0	23.0	23.0	23.0	23.0
BOT. EL.	23.0	23.0	23.0	23.0	23.0	23.0
ALT BOT. EL.	-17.0	7.0	15.0	15.0	12.0	-17.0

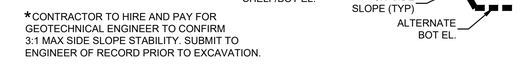


★CONTRACTOR TO HIRE AND PAY FOR GEOTECHNICAL ENGINEER TO CONFIRM 3:1 MAX SIDE SLOPE STABILITY. SUBMIT TO ENGINEER OF RECORD PRIOR TO EXCAVATION.

SECTION L2-L2

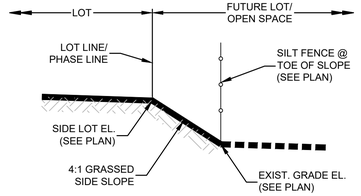
SWMF SCHEDULE

SWMF NO.	J1
T.O.B. EL.	31.2(MIN)
25YR DHW	29.67
3YR DHW	29.39
N.W.L. EL.	29.0
SC/SHELF EL.	23.0
BOT. EL.	23.0
ALT BOT. EL.	-17.0



★CONTRACTOR TO HIRE AND PAY FOR GEOTECHNICAL ENGINEER TO CONFIRM 3:1 MAX SIDE SLOPE STABILITY. SUBMIT TO ENGINEER OF RECORD PRIOR TO EXCAVATION.

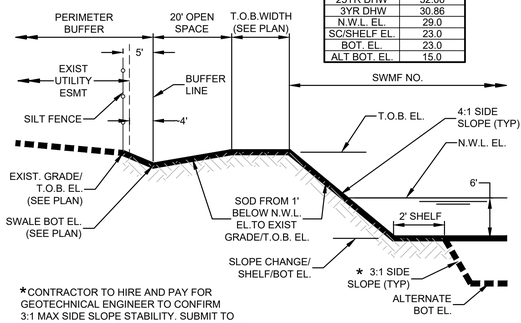
SECTION L5-L5



SECTION F4-F4

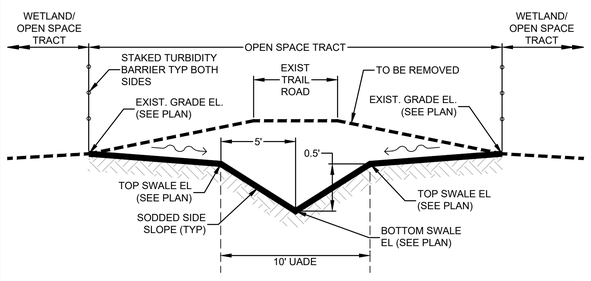
SWMF SCHEDULE

SWMF NO.	4
T.O.B. EL.	33.7
25YR DHW	32.06
3YR DHW	30.86
N.W.L. EL.	29.0
SC/SHELF EL.	23.0
BOT. EL.	23.0
ALT BOT. EL.	15.0

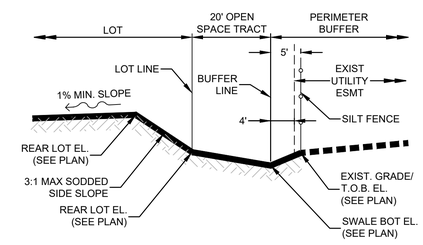


★CONTRACTOR TO HIRE AND PAY FOR GEOTECHNICAL ENGINEER TO CONFIRM 3:1 MAX SIDE SLOPE STABILITY. SUBMIT TO ENGINEER OF RECORD PRIOR TO EXCAVATION.

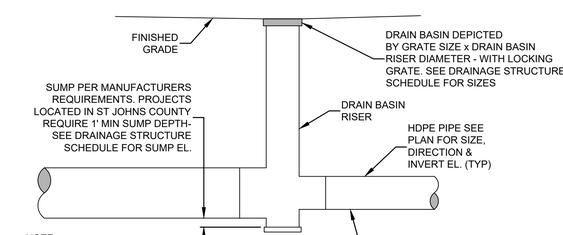
SECTION L3-L3



SECTION S1-S1



SECTION F5-F5



NOTE:
1. CONSTRUCT DRAIN BASINS AND ASSOCIATED BENDS, TEES, ETC IN ACCORDANCE WITH MANUFACTURERS INSTALLATION INSTRUCTIONS.
2. DRAIN BASIN BACKFILL & BEDDING TO BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

TYPICAL DRAIN BASIN INSTALLATION

THE ROOKERY – PHASE 1

RELEASED FOR CONSTRUCTION

P:\2008-499 AYRSHIRE\ENG PLANS\499 PDD.DWG4/19/2023 8:34 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
-	-	-	-

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	N/A
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1

FOR:
D.R. HORTON, INC. – JACKSONVILLE

CLAY COUNTY, FLORIDA

PAVING AND DRAINAGE DETAILS

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

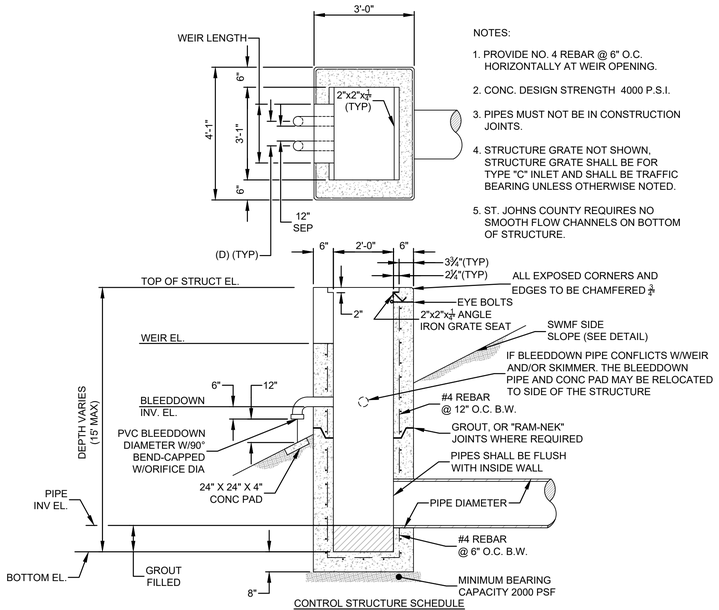
This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 85 of 88

PDD-5

DWG. NO.



NOTES:

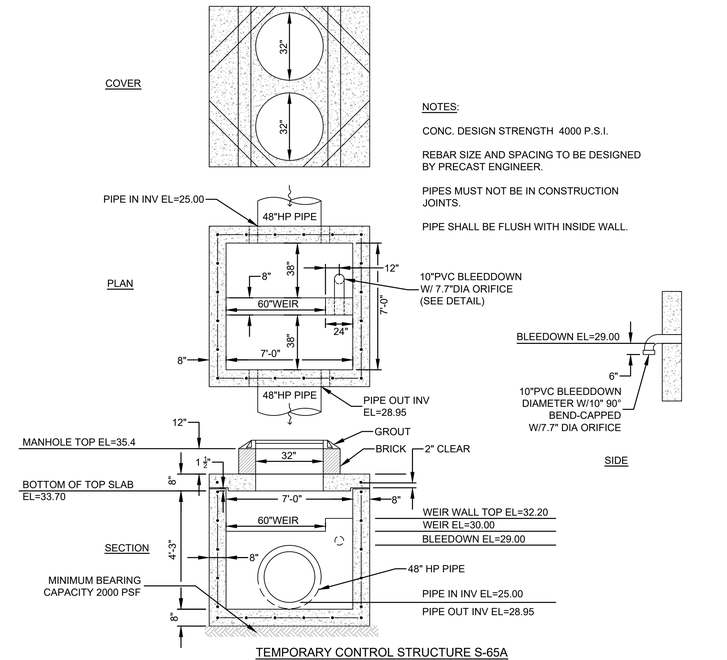
1. PROVIDE NO. 4 REBAR @ 6" O.C. HORIZONTALLY AT WEIR OPENING.
2. CONC. DESIGN STRENGTH 4000 P.S.I.
3. PIPES MUST NOT BE IN CONSTRUCTION JOINTS.
4. STRUCTURE GRATE NOT SHOWN. STRUCTURE GRATE SHALL BE FOR TYPE "C" INLET AND SHALL BE TRAFFIC BEARING UNLESS OTHERWISE NOTED.
5. ST. JOHNS COUNTY REQUIRES NO SMOOTH FLOW CHANNELS ON BOTTOM OF STRUCTURE.

CONTROL STRUCTURE SCHEDULE

PHASE	STRUCT NO.	SWMF NO.	TOP OF STRUCT. EL.	PIPE INV. EL.	PIPE DIA.	WEIR EL.	WEIR LENGTH	WEIR LOCATION	BLEEDDOWN INV. EL.	BLEEDDOWN DIA.	ORIFICE DIA.	(D) BLEEDDOWN DISTANCE	BOTTOM EL.
1	S-38	J1	31.20	28.80	24"	29.20	18"	W	29.0	15"	7.3"	27"	25.5

★ ONLY ONE BLEEDDOWN PIPE TO RECEIVE ORIFICE DIAMETER. ADDITIONAL BLEEDDOWN PIPE TO REMAIN CAPPED AND DO NOT GLUE

TYPE "C" CONTROL STRUCTURES



NOTES:

CONC. DESIGN STRENGTH 4000 P.S.I.

REBAR SIZE AND SPACING TO BE DESIGNED BY PRECAST ENGINEER.

PIPES MUST NOT BE IN CONSTRUCTION JOINTS.

PIPE SHALL BE FLUSH WITH INSIDE WALL.

TEMPORARY CONTROL STRUCTURE S-65A

THE ROOKERY – PHASE 1

RELEASED FOR CONSTRUCTION

P:\2008-499 AYRSHIRE\ENG PLANS\499 PDD.DWG4/19/2023 8:34 AMMike Reilly

REVISIONS

NO.	DATE	DESCRIPTION	BY:
-	-	-	-

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	N/A
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1

FOR:
D.R. HORTON, INC. – JACKSONVILLE

CLAY COUNTY, FLORIDA

PAVING AND DRAINAGE DETAILS

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

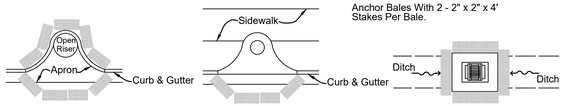
Sheet No. 86 of 88

PDD-6

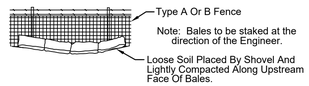
DWG. NO.

EROSION AND SEDIMENT CONTROL NOTES

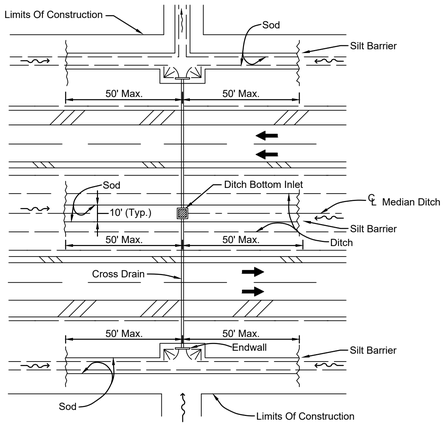
1. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING SILT FROM SITE IF NOT REUSABLE ON-SITE AND ASSURING PLAN ALIGNMENT AND GRADE IN ALL DITCHES AND SWALES AT COMPLETION OF CONSTRUCTION.
2. THE SITE CONTRACTOR IS RESPONSIBLE FOR REMOVING THE TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES AFTER COMPLETION OF CONSTRUCTION AND ONLY WHEN AREAS HAVE BEEN STABILIZED.
3. ADDITIONAL PROTECTION - ON-SITE PROTECTION IN ADDITION TO THE ABOVE MUST BE PROVIDED THAT WILL NOT PERMIT SILT TO LEAVE THE PROJECT CONFINES DUE TO UNSEEN CONDITIONS OR ACCIDENTS.
4. CONTRACTOR SHALL INSURE THAT ALL DRAINAGE STRUCTURES, PIPES, ETC. ARE CLEANED OUT AND WORKING PROPERLY AT TIME OF ACCEPTANCE.
5. WIRE MESH SHALL BE LAID OVER THE DROP INLET SO THAT THE WIRE EXTENDS A MINIMUM OF 1 FOOT BEYOND EACH SIDE OF THE INLET STRUCTURE. HARDWARE CLOTH OR COMPARABLE WIRE MESH WITH 1/2-INCH OPENINGS SHALL BE USED. IF MORE THAN ONE STRIP OF MESH IS NECESSARY, THE STRIPS SHALL BE OVERLAPPED.
6. FDOT NO. 1 COARSE AGGREGATE SHALL BE PLACED OVER THE WIRE MESH AS INDICATED IN D-903. THE DEPTH OF STONE SHALL BE AT LEAST 12 INCHES OVER THE ENTIRE INLET OPENING. THE STONE SHALL EXTEND BEYOND THE INLET OPENING AT LEAST 18 INCHES ON ALL SIDES.
7. IF THE STONE FILTER BECOMES CLOGGED WITH SEDIMENT SO THAT IT NO LONGER ADEQUATELY PERFORMS ITS FUNCTION, THE STONES MUST BE PULLED AWAY FROM THE INLET, CLEANED AND REPLACED.
8. BALES SHALL BE EITHER WIRE-BOUND OR STRING-TIED WITH THE BINDINGS ORIENTED AROUND THE SIDES RATHER THAN OVER AND UNDER THE BALES.
9. BALES SHALL BE PLACED LENGTHWISE IN A SINGLE ROW SURROUNDING THE INLET, WITH THE ENDS OF ADJACENT BALES PRESSED TOGETHER.
10. THE FILTER BARRIER SHALL BE ENTRENCHED AND BACKFILLED. A TRENCH SHALL BE EXCAVATED TO A MINIMUM DEPTH OF 8 INCHES. AFTER THE BALES ARE STAKED, THE EXCAVATED SOIL SHALL BE BACKFILLED AND COMPACTED AGAINST THE FILTER BARRIER.
11. EACH BALE SHALL BE SECURELY ANCHORED AND HELD IN PLACE BY AT LEAST TWO STAKES OR REBARS DRIVEN THROUGH THE BALE.
12. LOOSE SYNTHETIC MATERIAL SHOULD BE WEDGED BETWEEN BALES TO PREVENT WATER FROM ENTERING BETWEEN BALES.
13. SYNTHETIC BALE BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL.
14. CLOSE ATTENTION SHALL BE PAID TO THE REPAIR OF DAMAGED BALES, END RUNS AND UNDERCUTTING BENEATH BALES.
15. NECESSARY REPAIRS TO BARRIERS OR REPLACEMENT OF BALES SHALL BE ACCOMPLISHED PROMPTLY.
16. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SYNTHETIC BALE BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.
17. SILT FENCES AND FILTER BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
18. SHOULD THE FABRIC ON A SILT FENCE OR FILTER BARRIER DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL BE NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.
19. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE-THIRD THE HEIGHT OF THE BARRIER.
20. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED AND SEEDED.
21. THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRS MADE AS NEEDED.
22. SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO $\frac{1}{4}$ THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
23. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING THE BEST EROSION AND SEDIMENT CONTROL PRACTICES AS OUTLINED IN THE PLANS, SPECIFICATIONS AND ST. JOHNS RIVER WATER MANAGEMENT DISTRICT SPECIFICATIONS AND CRITERIA.
24. FOR ADDITIONAL INFORMATION ON SEDIMENT AND EROSION CONTROL REFER TO "THE FLORIDA DEVELOPMENT MANUAL - A GUIDE TO SOUND LAND AND WATER MANAGEMENT" FROM THE STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION (F.D.E.R.) CHAPTER 6.
25. EROSION AND SEDIMENT CONTROL BARRIERS SHALL BE PLACED ADJACENT TO ALL WETLAND AREAS WHERE THERE IS POTENTIAL FOR DOWNSTREAM WATER QUALITY DEGRADATION. SEE DETAIL SHEET FOR TYPICAL CONSTRUCTION.
26. ALL DISTURBED AREAS SHALL BE GRASSED, FERTILIZED, MULCHED AND MAINTAINED UNTIL A PERMANENT VEGETATIVE COVER IS ESTABLISHED.
27. SOD SHALL BE PLACED IN AREAS WHICH MAY REQUIRE IMMEDIATE EROSION PROTECTION TO ENSURE WATER QUALITY STANDARDS ARE MAINTAINED.
28. ANY DISCHARGE FROM DEWATERING ACTIVITY SHALL BE FILTERED AND CONVEYED TO THE OUTFALL IN A MANNER WHICH PREVENTS EROSION AND TRANSPORTATION OF SUSPENDED SOLIDS TO THE RECEIVING OUTFALL.
29. DEWATERING PUMPS SHALL NOT EXCEED THE CAPACITY OF THAT WHICH REQUIRES A CONSUMPTIVE USE PERMIT FROM THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT.
30. ALL DISTURBED AREAS TO BE STABILIZED THROUGH COMPACTION, SILT SCREENS, SYNTHETIC BALES, AND GRASSING. ALL FILL SLOPES 3:1 OR STEEPER TO RECEIVE STAKED SOLID SOD.
31. ALL DEWATERING, EROSION, AND SEDIMENT CONTROL TO REMAIN IN PLACE AFTER COMPLETION OF CONSTRUCTION AND REMOVED ONLY WHEN AREAS HAVE STABILIZED.
32. THIS PLAN INDICATES THE MINIMUM EROSION AND SEDIMENT MEASURES REQUIRED FOR THIS PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR MEETING ALL APPLICABLE RULES, REGULATIONS AND WATER QUALITY GUIDELINES AND MAY NEED TO INSTALL ADDITIONAL CONTROLS.
33. THE CONTRACTOR SHALL BE REQUIRED TO RESPOND TO ALL WATER MANAGEMENT DISTRICT INQUIRIES, RELATIVE TO COMPLIANCE OF SJRWMD FOR EROSION AND SEDIMENTATION CONTROL. THE COST OF THIS COMPLIANCE SHALL BE PART OF THE CONTRACT.



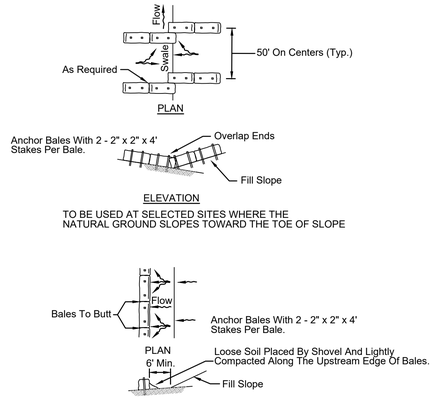
PROTECTION AROUND INLETS OR SIMILAR STRUCTURES



BALES BACKED BY FENCE

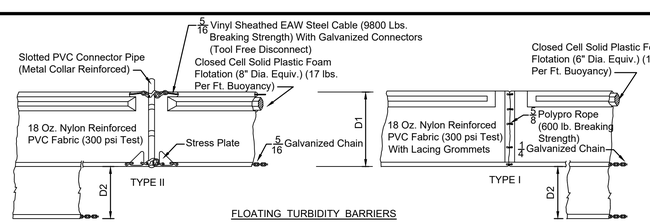


DITCH INSTALLATIONS AT DRAINAGE STRUCTURES

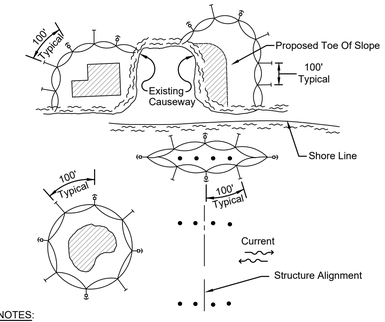


BARRIERS FOR FILL SLOPES

SYNTHETIC BALE LOCATION
(D-901)
N.T.S.



FLOATING TURBIDITY BARRIERS



LEGEND

- Pile Locations
- Dredge Or Fill Area
- Mooring Buoy w/Anchor
- Anchor
- Barrier Movement Due To Current Action

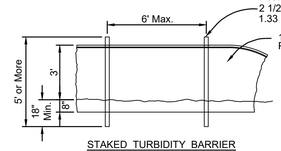
NOTES:

1. Turbidity barriers are to be used in all permanent bodies of water regardless of water depth.
2. Number and spacing of anchors dependent on current velocities.
3. Deployment of barrier around pile locations may vary to accommodate construction operations.
4. Navigation may require segmenting barrier during construction operations.
5. For additional information see Section 104 of the FDOT Standard Specifications.

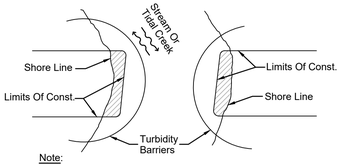
TURBIDITY BARRIER APPLICATIONS

NOTICE:

COMPONENTS OF TYPES I & TYPE II MAY BE SIMILAR OR IDENTICAL TO PROPRIETARY DESIGNS. ANY INFRINGEMENT ON THE PROPRIETARY RIGHTS OF THE DESIGNER SHALL BE THE SOLE RESPONSIBILITY OF THE USER. SUBSTITUTIONS FOR TYPES I AND II SHALL BE AS APPROVED BY THE ENGINEER.



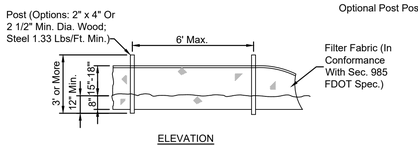
STAKED TURBIDITY BARRIER



Note:

Turbidity barriers for flowing streams and tidal creeks may be either floating, or staked types or any combinations of types that will suit site conditions and meet erosion control and water quality requirements. The barrier type(s) will be at the Contractors option unless otherwise specified in the plans, however payment will be under the contract lump sum price established in the bid proposal for Erosion & Sediment Control Posts in staked turbidity barriers to be installed in vertical position unless otherwise directed by the Engineer.

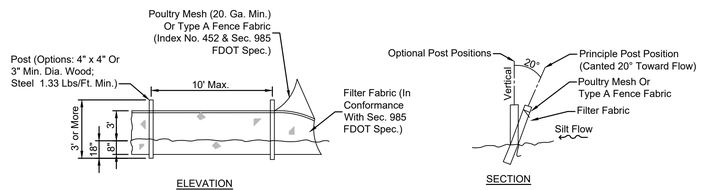
TURBIDITY BARRIERS
(D-907)
N.T.S.



Note:

Silt Fence to be paid for under the contract lump sum price for Erosion and Sediment Control.

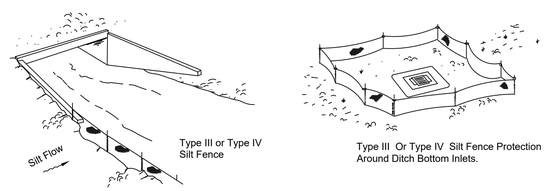
TYPE III SILT FENCE



Note:

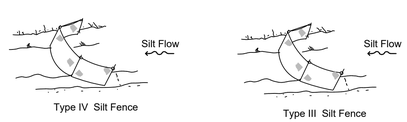
Silt Fence to be paid for under the contract lump sum price for Erosion and Sediment Control.

TYPE IV SILT FENCE



Note:

Do not deploy in a manner that silt fences will act as a dam across permanent flowing watercourses. Silt fences are to be used at upland locations and turbidity barriers used at permanent bodies of water.



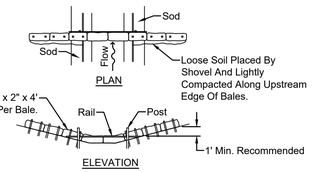
Note:

Spacing for Type III & TYPE IV Fence to be in accordance with Chart 1, Sheet 1 of 3, FDOT Index No. 102 and ditch installations at drainage structures Sheet 2 of 3, FDOT Index No. 102.

SILT FENCE APPLICATIONS

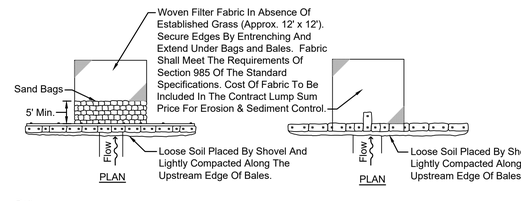
SILT FENCE TYPE III & IV
(D-908)
N.T.S.

NOTE:
WHERE FDOT SPECS AND INDEX ARE REFERENCED, PLEASE REFER TO FDOT ROADWAY & TRAFFIC DESIGN STANDARDS, AND FDOT STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION.



Spacing: Bale barriers for paved ditches should be spaced in accordance with Chart I, Sheet 1 of 3, Index No. 102

BARRIER FOR PAVED DITCH



Application and Spacing: The use of Types I & II bale barriers should be limited to the conditions outlined in Chart I, Sheet 1 of 3, Index No. 102

TYPE II TYPE I

BARRIER FOR UNPAVED DITCHES

SYNTHETIC BALE BARRIERS TYPE I & II
(D-912)
N.T.S.

THE ROOKERY – PHASE 1

RELEASED FOR CONSTRUCTION

P:\2008-499 AYRSHIRE\ENG PLANS\499 SPP1-2.DWG4/19/2023 8:34 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	N.T.S.
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1
FOR:
D.R. HORTON, INC. – JACKSONVILLE
CLAY COUNTY, FLORIDA
STORMWATER POLLUTION PREVENTION PLAN

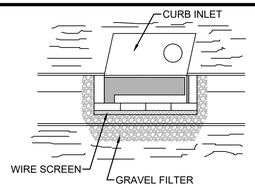
VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

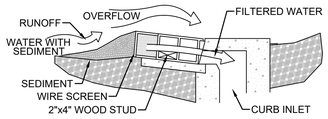
This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 87 of 88

SPP-1
DWG. NO.

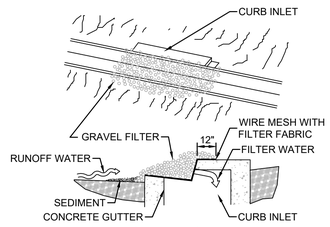




SPECIFIC APPLICATION

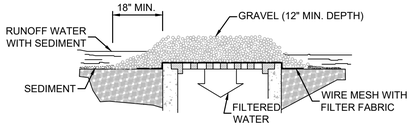
THIS METHOD OF INLET PROTECTION IS APPLICABLE AT CURB INLETS WHERE AN OVERFLOW CAPABILITY IS NECESSARY TO PREVENT EXCESSIVE PONDING IN FRONT OF THE STRUCTURE.

BLOCK & GRAVEL CURB
INLET SEDIMENT FILTER
(D-902)
N.T.S.



GRAVEL CURB INLET SEDIMENT FILTER
SPECIFIC APPLICATION

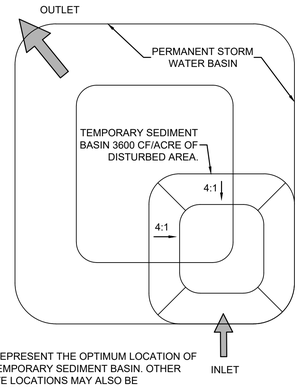
THIS METHOD OF INLET PROTECTION IS APPLICABLE AT CURB INLETS WHERE PONDING IN FRONT OF THE STRUCTURE IS NOT LIKELY TO CAUSE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS.



GRAVEL AND WIRE MESH DROP INLET SEDIMENT FILTER
SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY CONCENTRATED FLOWS ARE EXPECTED, BUT NOT WHERE PONDING AROUND THE STRUCTURE MIGHT CAUSE EXCESSIVE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS.

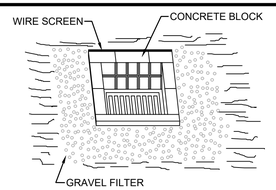
GRAVEL INLET SEDIMENT TRAP
(D-903)
N.T.S.

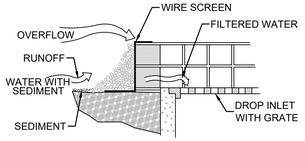


NOTE:

THIS REPRESENT THE OPTIMUM LOCATION OF THE TEMPORARY SEDIMENT BASIN. OTHER ON-SITE LOCATIONS MAY ALSO BE APPROPRIATE.

TEMPORARY SEDIMENT BASIN
N.T.S.

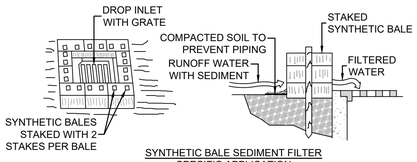




SPECIFIC APPLICATION

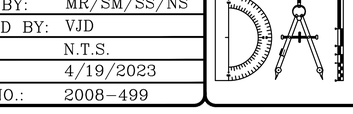
THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY FLOWS ARE EXPECTED AND WHERE AN OVERFLOW CAPACITY IS NECESSARY TO PREVENT EXCESSIVE PONDING AROUND THE STRUCTURE.

BLOCK & GRAVEL DROP
INLET SEDIMENT FILTER
(D-904)
N.T.S.



SYNTHETIC BALE SEDIMENT FILTER
SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE THE INLET DRAINS A RELATIVELY FLAT AREA (SLOPES NO GREATER THAN 5 PERCENT) WHERE SHEET OR OVERLAND FLOWS (NOT EXCEEDING 0.5 cfs) ARE TYPICAL. THE METHOD SHALL NOT APPLY TO INLETS RECEIVING CONCENTRATED FLOWS, SUCH AS IN STREET OR HIGHWAY MEDIANS.



FABRIC SEDIMENT FILTER
SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE THE INLET DRAINS A RELATIVELY FLAT AREA (SLOPES NO GREATER THAN 5 PERCENT) WHERE SHEET OR OVERLAND FLOWS (NOT EXCEEDING 0.5 cfs) ARE TYPICAL. THE METHOD SHALL NOT APPLY TO INLETS RECEIVING CONCENTRATED FLOWS. SUCH AS IN STREET OR HIGHWAY MEDIANS.

DROP INLET SEDIMENT TRAP
(D-905)
N.T.S.

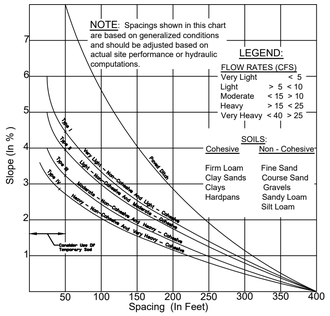
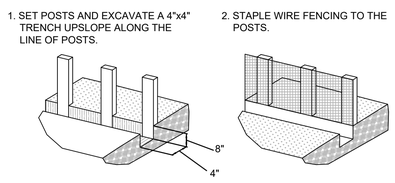
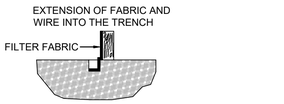


CHART I

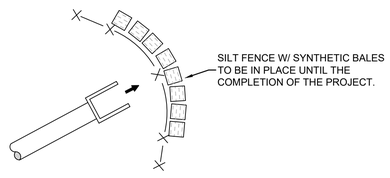
RECOMMENDED SPACING FOR TYPE I AND TYPE II SYNTHETIC BALE BARRIERS, AND TYPE III AND TYPE IV SILT FENCES AND PAVED DITCH SYNTHETIC BALE BARRIERS

SPACING RECOMMENDATION FOR
SILT FENCES & SYNTHETIC BALES
(D-906)
N.T.S.

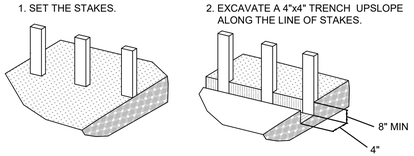




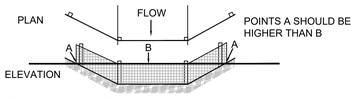
CONSTRUCTION DETAILS FOR SILT FENCES
(D-909)



OUTLET PROTECTION
N.T.S.



CONSTRUCTION OF A FILTER BARRIER



PROPER PLACEMENT OF A FILTER BARRIER IN A DRAINAGE WAY

FILTER BARRIER CONSTRUCTION DETAIL
(D-910)
N.T.S.

CROSS-SECTION OF A PROPERLY INSTALLED SYNTHETIC BALE

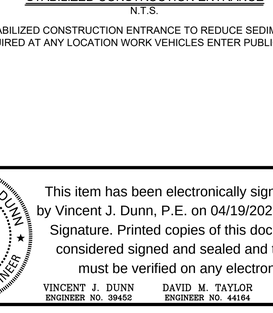
STAKED SYNTHETIC BALE
(D-911)
N.T.S.

CONSTRUCTION OF A SYNTHETIC BALE BARRIER

POINTS A SHOULD BE HIGHER THAN POINT B

PROPER PLACEMENT OF SYNTHETIC BALE BARRIER IN DRAINAGE WAY

SYNTHETIC BALE BARRIER CONSTRUCTION DETAILS
(D-913)
N.T.S.



LEVEL SPREADER

TEMPORARY DIVERSION DIKE

DIVERSION DIKE
(D-914)
N.T.S.

STABILIZED CONSTRUCTRUCTION ENTRANCE
N.T.S.

A STABILIZED CONSTRUCTION ENTRANCE TO REDUCE SEDIMENT TRANSPORT IS REQUIRED AT ANY LOCATION WORK VEHICLES ENTER PUBLIC ROADS.

ERECT SEDIMENT BARRIERS AT CATCH BASINS
(TYPICAL)
N.T.S.

P:\2008-499 AYRSHIRE\ENG PLANS\499 SPP1-2.DWG4/19/2023 8:34 AMMike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	N.T.S.
DATE:	4/19/2023
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1

FOR:
D.R. HORTON, INC. – JACKSONVILLE

CLAY COUNTY, FLORIDA

STORMWATER POLLUTION PREVENTION PLAN

VINCENT JAMES DUNN LICENSE No. 39452 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Vincent J. Dunn, P.E. on 04/19/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 61419

Sheet No. 88 of 88

SPP-2

DWG. NO.

THE ROOKERY – PHASE 1

RELEASED FOR CONSTRUCTION

STORM DRAINAGE ANALYSIS

THE ROOKERY
Master Conceptual

Drainage Calculations

CLAY COUNTY

Glen R Wieger

Digitally signed by Glen R Wieger
Date: 2023.04.06 13:43:26 -04'00'

April 2023

Prepared By:

DUNN & ASSOCIATES, INC.
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256

GLEN ROBERT WIEGER LICENSE No. 81419 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Glen R. Wieger, P.E. on 04/06/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

INDEX

NARRATIVE
Permitting History
Existing Conditions Full Build Out
Proposed Conditions Full Build Out.....12
CSX
Impairment
DDA
Tailwater
Soils 13

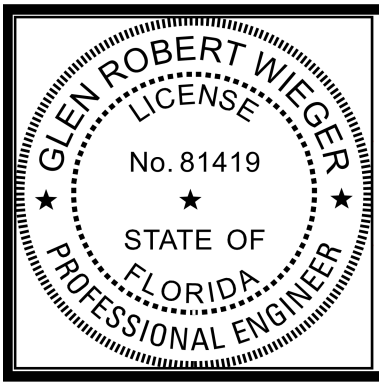
SUMMARY OF RESULTS.....14-15

PRE DEVELOPED DRAINAGE DATA: 16

Pre Basin 1
Basin Areas
Weighted Curve Numbers
Time of Concentration Calculation 17

Pre Basin 2
Basin Areas
Weighted Curve Numbers
Time of Concentration Calculation 18

Pre Basin 3
Basin Areas
Weighted Curve Numbers
Time of Concentration Calculation 19



This item has been electronically signed and sealed by Glen R. Wieger, P.E. on 04/06/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Dunn & Associates, Inc.
8647 Baypine Road, Suite 200
Jacksonville, FL 32256

Glen R. Wieger, PE
Registered Engineer #81419

Pre Basin 4
Basin Areas
Weighted Curve Numbers
Time of Concentration Calculation 20

Pre Basin 5
Basin Areas
Weighted Curve Numbers
Time of Concentration Calculation 21

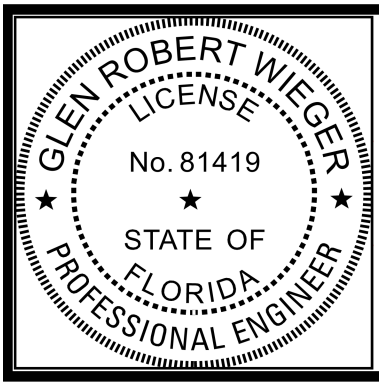
Pre Basin 6
Basin Areas
Weighted Curve Numbers
Time of Concentration Calculation 22

Pre Basin 7
Basin Areas
Weighted Curve Numbers
Time of Concentration Calculation 23

Pre Basin 8
Basin Areas
Weighted Curve Numbers
Time of Concentration Calculation 24

Pre Basin 9
Basin Areas
Weighted Curve Numbers
Time of Concentration Calculation 25

Pre Basin 10
Basin Areas
Weighted Curve Numbers
Time of Concentration Calculation 26



This item has been electronically signed and sealed by Glen R. Wieger, P.E. on 04/06/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Dunn & Associates, Inc.
8647 Baypine Road, Suite 200
Jacksonville, FL 32256

Glen R. Wieger, PE
Registered Engineer #81419

Pre Basin 11
Basin Areas
Weighted Curve Numbers
Time of Concentration Calculation 27

Pre Basin 12
Basin Areas
Weighted Curve Numbers
Time of Concentration Calculation 28

Pre Basin 13
Basin Areas
Weighted Curve Numbers
Time of Concentration Calculation 29

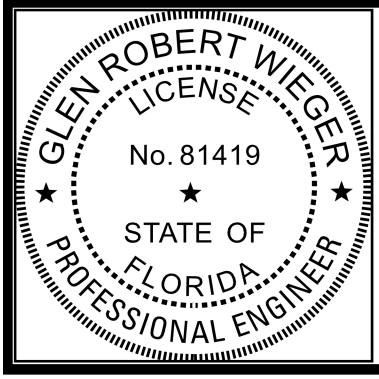
Pre Basin J1
Basin Areas
Weighted Curve Numbers
Time of Concentration Calculation 30

Pre Pond
Basin Areas
Weighted Curve Numbers
Pond Data 31

POST DEVELOPED DRAINAGE DATA: 32

Post Basin 1
Basin Data
Weighted Curve Numbers
Pond Data 33

Post Basin 2
Basin Data
Weighted Curve Numbers
Pond Data 34



This item has been electronically signed and sealed by Glen R. Wieger, P.E. on 04/06/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Dunn & Associates, Inc.
8647 Baypine Road, Suite 200
Jacksonville, FL 32256

Glen R. Wieger, PE
Registered Engineer #81419

Post Basin 3
Basin Data
Weighted Curve Numbers
Pond Data 35

Post Basin 4
Basin Data
Weighted Curve Numbers
Pond Data 36

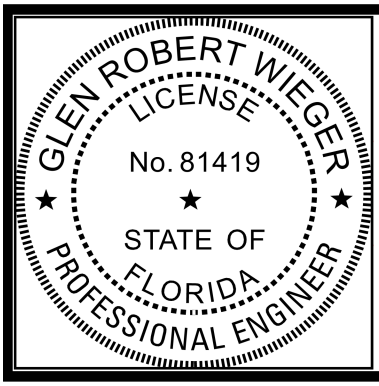
Post Basin 5
Basin Data
Weighted Curve Numbers
Pond Data 37

Post Basin 6
Basin Data
Weighted Curve Numbers
Pond Data 38

Post Basin 7
Basin Data
Weighted Curve Numbers
Pond Data 39

Post Basin 8
Basin Data
Weighted Curve Numbers
Pond Data 40

Post Basin 9
Basin Data
Weighted Curve Numbers
Pond Data 41



This item has been electronically signed and sealed by Glen R. Wieger, P.E. on 04/06/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Dunn & Associates, Inc.
8647 Baypine Road, Suite 200
Jacksonville, FL 32256

Glen R. Wieger, PE
Registered Engineer #81419

Post Basin 10
Basin Data
Weighted Curve Numbers
Pond Data 42

Post Basin 11
Basin Data
Weighted Curve Numbers
Pond Data 43

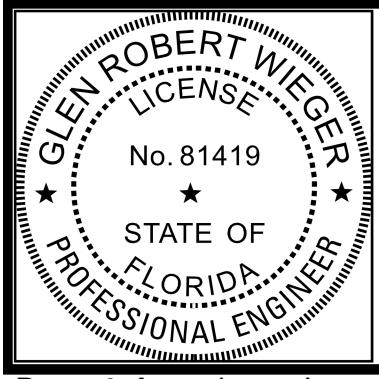
Post Basin 12
Basin Data
Weighted Curve Numbers
Pond Data 44

Post Basin 13
Basin Data
Weighted Curve Numbers
Pond Data 45

Post Basin 14
Basin Data
Weighted Curve Numbers
Pond Data 46

Combined Basins 1-14
Basin Data
Pond Data 47
Treatment Volume and Permanent Pool Volume 48
Anoxic Depth Calculations 49-50

Post Basin 15
Basin Data
Weighted Curve Numbers
Pond Data 51



This item has been electronically signed and sealed by Glen R. Wieger, P.E. on 04/06/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Dunn & Associates, Inc.
8647 Baypine Road, Suite 200
Jacksonville, FL 32256

Glen R. Wieger, PE
Registered Engineer #81419

Post Basin 16
Basin Data
Weighted Curve Numbers
Pond Data 52

Post Basin 17
Basin Data
Weighted Curve Numbers
Pond Data 53

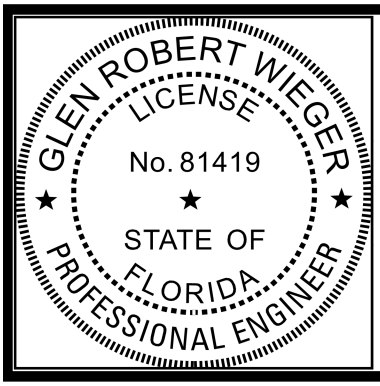
Post Basin 18
Basin Data
Weighted Curve Numbers
Pond Data 54

Post Basin 19
Basin Data
Weighted Curve Numbers
Pond Data 55

Post Basin 20
Basin Data
Weighted Curve Numbers
Pond Data 56

Post Basin 21
Basin Data
Weighted Curve Numbers
Pond Data 57

Post Basin 22
Basin Data
Weighted Curve Numbers
Pond Data 58



This item has been electronically signed and sealed by Glen R. Wieger, P.E. on 04/06/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Dunn & Associates, Inc.
8647 Baypine Road, Suite 200
Jacksonville, FL 32256

Glen R. Wieger, PE
Registered Engineer #81419

Post Basin 23
Basin Data
Weighted Curve Numbers
Pond Data 59

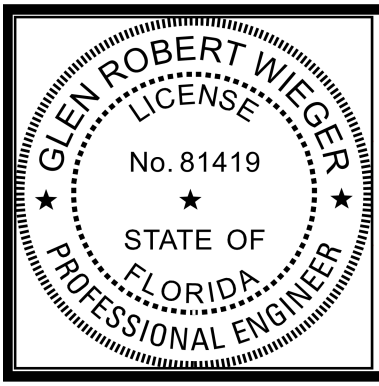
Combined Basins 15-23
Basin Data
Pond Data 60
Treatment Volume and Permanent Pool Volume 61
Anoxic Depth Calculations 62-63

Post Basin 24
Basin Data
Weighted Curve Numbers
Pond Data 64
Treatment Volume and Permanent Pool Volume 65
Anoxic Depth Calculations 66-67

Post Basin 25
Basin Data
Weighted Curve Numbers
Pond Data 68

Post Basin 26
Basin Data
Weighted Curve Numbers
Pond Data 69

Post Basin 27
Basin Data
Weighted Curve Numbers
Pond Data 70



This item has been electronically signed and sealed by Glen R. Wieger, P.E. on 04/06/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Dunn & Associates, Inc.
8647 Baypine Road, Suite 200
Jacksonville, FL 32256

Glen R. Wieger, PE
Registered Engineer #81419

Post Basin 28
Basin Data
Weighted Curve Numbers
Pond Data 71

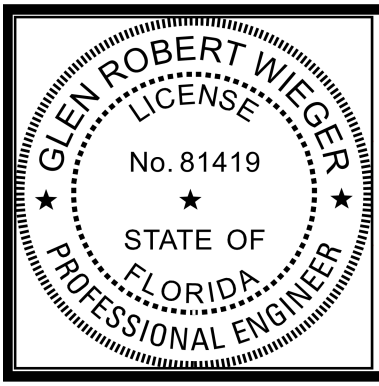
Post Basin 29
Basin Data
Weighted Curve Numbers
Pond Data 72

Combined Basins 25-29
Basin Data
Pond Data 73
Treatment Volume and Permanent Pool Volume 74
Anoxic Depth Calculations 75-76

Post Basin 30
Basin Data
Weighted Curve Numbers
Pond Data 77
Treatment Volume and Permanent Pool Volume 78
Anoxic Depth Calculations 79-80

Post Basin 31
Basin Data
Weighted Curve Numbers
Pond Data 81
Treatment Volume and Permanent Pool Volume 82
Anoxic Depth Calculations 83-84

Post Basin 32
Basin Data
Weighted Curve Numbers
Pond Data 85



This item has been electronically signed and sealed by Glen R. Wieger, P.E. on 04/06/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Dunn & Associates, Inc.
8647 Baypine Road, Suite 200
Jacksonville, FL 32256

Glen R. Wieger, PE
Registered Engineer #81419

Post Basin 33
Basin Data
Weighted Curve Numbers
Pond Data 86

Combined Basins 32-33
Basin Data
Pond Data 87
Treatment Volume and Permanent Pool Volume 88
Anoxic Depth Calculations 89-90

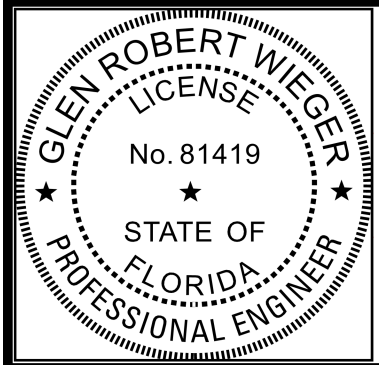
Post Basin J1
Basin Data
Weighted Curve Numbers
Pond Data 91
Treatment Volume and Permanent Pool Volume 92
Anoxic Depth Calculations 93-94

Post Pond
Basin Areas
Weighted Curve Numbers
Pond Data 95

DDA 1
Basin Data
Weighted Curve Numbers 96

DDA 2
Basin Data
Weighted Curve Numbers 97

DDA 3
Basin Data
Weighted Curve Numbers
Time of Concentration Calculation 98



This item has been electronically signed and sealed by Glen R. Wieger, P.E. on 04/06/2023 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Dunn & Associates, Inc.
8647 Baypine Road, Suite 200
Jacksonville, FL 32256

Glen R. Wieger, PE
Registered Engineer #81419

Overtreatment Calculations 99

PRE DRAINAGE CALCULATIONS (ICPR): 100

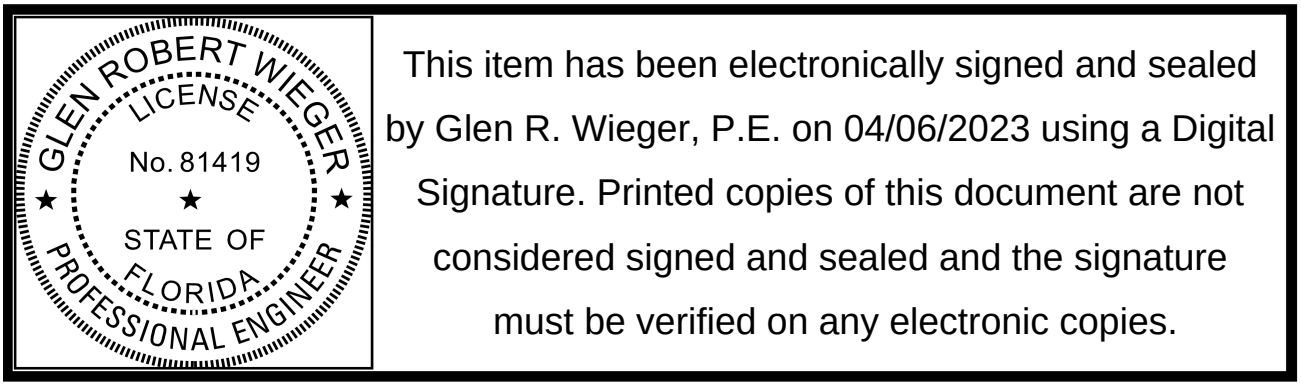
Nodal Diagram 101
Input Report 102-113
Basin Max Report 114
Node Max Report 115-116
Link Max Report 117

POST DRAINAGE CALCULATIONS (ICPR): 118

Nodal Diagram 119
Input Report 120-153
Basin Max Report 154-155
Node Max Report 156-158
Link Max Report 159-161

EXHIBITS: 162

NOAA Rainfall 163-166
Anoxic “C” Value Chart 167
Portions of SJRWMD Permit #142441-2 Plans and Calcs 168-171
Sidewalk Drainage Crossing 171-175
Storm Tabs 176-180
Email Correspondence with SJRWMD 181
PPV Exhibit 182



Dunn & Associates, Inc.
8647 Baypine Road, Suite 200
Jacksonville, FL 32256

Glen R. Wieger, PE
Registered Engineer #81419

NARRATIVE

Rookery, fka Ayrshire, is a proposed multi phase single family development located in Clay County, primarily located northeast of the CR15/Jersey Avenue intersection.

PERMITTING HISTORY

The site has a recent SJRWMD permit, 142441-2, that identifies many of the site basins. The permit was for the building of Jersey Avenue and the building of an aggregate facility. Phase 1 has been submitted for ERP permit approval as well concurrently with the master conceptual submittal.

EXISTING CONDITIONS FULL BUILD OUT

With the desire for several phases of development, a master conceptual buildout is proposed with several added boundary nodes. The development extends all the way south to Jersey Avenue. The identified boundary nodes are: Wetland for the existing wetland that cuts through the site and crosses Jersey Avenue; Jersey West for the crossing pipes immediately to the west of the large on site pond; Jersey East for the crossing pipes immediately to the west of the large on site pond; Jersey South for all area being developed south of Jersey Avenue; Northeast for the area across the CSX railroad flowing to the northeast section of the site and then three separate CSX points. CSX 1-3 are three identified areas of discharge into the CSX ROW to ensure that the existing CSX swale system is not overloaded upstream at any point with the proposed development. Per CSX requirements a 100 year analysis is performed. The existing pond from field visits and surveys has an existing control structure that is included in the calculations. The existing pond NWL was set at the surveyed control structure.

PROPOSED CONDITIONS FULL BUILD OUT

The phase 1 SWMF are interconnected with additional build out with SWMF 1-14 interconnected with the NWL set by the outfall ditch at Jersey West node and the system has weir outfalls at several points discharging to the large existing pond. The existing pond is modified to have a controlled NWL and with weirs for attenuation. The existing pond has a proposed series of new control structures with discharges to Jersey West and Jersey East. No additional treatment is offered by the big pond as the proposed weirs in the existing pond are for strictly attenuation.

SWMF 15-23 are interconnected with NWL controlled by the CSX ROW at boundary nodes 1 and 2. SWMF 24 is standalone handling the entrance road from the east with discharge to the Northeast boundary node. SWMF 25-29 are interconnected with discharge into CSX boundary node 3. SWMF 30 discharges into the Jersey East boundary node directly into the existing Jersey Avenue crossing there. SWMF 31-33 are on the west portion of the site with all discharging into the wetland boundary which flows south to the Jersey Avenue crossing. SWMF 31 is standalone and SWMF 32-33 are interconnected. SWMF J1 is the only developed proposed south of Jersey Avenue, it is a pond with a discharge into an existing ditch system that continues flow southeast, it discharges to Jersey South boundary node.

There are no changes proposed to existing Jersey Avenue drainage infrastructure. From the calculations the Post discharge is reduced from what is currently discharging to the existing infrastructure.

CSX

The site has discharge into CSX ROW. The CSX portion is broken up into three separate portions of discharge for analysis, each outfall point is identified as a boundary node in Pre/Post calculations. All 100 year calculations are included per CSX requirements to show no SWMF overtopping into system and Pre/Post met.

IMPAIRMENT

The site has been identified as impaired with a stated TMDL report. A report detailing the nutrient loading improvements is included separately.

DDA

The CSX bridge crossing has some areas of the bridge work that cannot be captured or treated due to the grading required. This area is accounted for in overtreatment calculations for the full build out treatment calculations. Those calculations are included in the attached report and accounted for in SWMF calculations.

TAILWATER

The tailwater values for the boundary nodes reflect the existing conditions for where the post conditions discharges will tie in. These values come from survey and field observations.

SOILS

The site has a combination of A, A/D and B/D soils. For drainage basins that have not already been permitted from previous calculations, the CN is calculated with A/D and B/D soils being treated as D soils and identified A soils treated as A soils.

MODELING

Standard 25- and 3-year analysis is performed and per CSX requirements, a 100 year rainfall event was modelled to verify there is no added discharge to the CSX ROW and its conveyance systems. Interconnected Channel & Pond Routing 3 (Icpr3) software was used for modeling.

SUMMARY OF RESULTS

Full Build Out Discharges

	100 Year (cfs)	25 Year (cfs)	3 Year (cfs)
Pre Wetland	40.38	22.12	5.49
Post Wetland	13.20	5.29	0.76
Pre Jersey East	70.22	46.17	21.28
Post Jersey East	36.02	22.89	5.65
Pre Jersey West	133.94	102.44	46.76
Post Jersey West	57.36	42.62	17.74
Pre Jersey South	53.56	30.01	8.55
Post Jersey South	2.43	1.55	0.71
Pre Northeast	30.59	15.71	2.95
Post Northeast	17.08	13.45	2.53
Pre CSX 1	117.74	80.21	37.63
Post CSX 1	67.22	46.51	18.33
Pre CSX 2	85.21	58.00	27.31
Post CSX 2	28.39	18.88	7.85
Pre CSX 3	84.77	53.85	23.03
Post CSX 3	43.00	26.32	9.99

Full Build Out Stages

	100 Year	25 Year	3 Year
SWMF #1	32.76	32.08	30.86
SWMF #2	32.91	32.07	30.86
SWMF #3	32.74	32.07	30.86
SWMF #4	32.77	32.06	30.86
SWMF #5	32.77	32.07	30.86
SWMF #6	32.77	32.06	30.86
SWMF #7	32.75	32.06	30.85
SWMF #8	32.72	32.07	30.86
SWMF #9	32.73	32.07	30.86
SWMF #10	32.64	32.06	30.86
SWMF #11	32.75	32.04	30.85
SWMF #12	32.75	31.98	30.80
SWMF #13	32.68	31.87	30.74
SWMF #14	32.61	31.74	30.64
SWMF #15	28.84	27.34	25.60
SWMF #16	28.19	26.96	25.48
SWMF #17	27.63	26.64	25.41
SWMF #18	27.52	26.49	25.27
SWMF #19	27.49	26.57	25.40
SWMF #20	26.94	26.32	25.36
SWMF #21	26.46	25.79	25.06
SWMF #22	27.51	26.58	25.41
SWMF #23	27.18	26.42	25.38
SWMF #24	24.74	23.63	22.63
SWMF #25	27.74	26.84	25.66
SWMF #26	27.72	26.83	25.66
SWMF #27	27.89	26.90	25.67
SWMF #28	27.96	26.93	25.67
SWMF #29	27.96	26.93	25.67
SWMF #30	31.25	30.70	29.89
SWMF #31	35.09	34.45	33.69
SWMF #32	35.13	34.46	33.80
SWMF #33	35.12	34.46	33.80
SWMF #J1	29.90	29.67	29.39
Existing Pond	32.38	31.98	31.71

PRE DEVELOPED DRAINAGE DATA

Project Name: **The Rookery** **DAI Project #:** 2008-499
Client: **D.R. Horton, Inc. - Jacksonville** **Engineer:** G. Wieger
Date: 12/1/22

Pre Developed Basin 1

Total Drainage Area	131.00	ac.
Impervious Pavement	16.35	ac.
Pasture "A"	22.21	ac.
Pasture "D"	92.44	ac.

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%
Impervious	16.35	98	0.95	1602.30	15.53	12.5%
Pasture "A"	22.21	39	0.25	866.19	5.55	17.0%
Pasture "D"	92.44	80	0.25	7395.20	23.11	70.6%
Pond	0.00	100	1.00	0.00	0.00	0.0%
Total Area (ac.):	131.00					
Weighted CN:	75.30					
Weighted C:	0.34					
Weighted K:	256					

Time of Concentration Calculation (Tc)

SHEET FLOW		Tt=(0.007(nL)^0.8 / P^0.5 S^0.4)*60							
Tt Path	urf. Des	Length (ft)	Up Stream	Dn Stream	Slope(ft/ft	n	P	Tt(min)	
AB	Woods	250	36.0	35	0.0040	0.4	5.04	67.8	
SHALLOW CONCENTRATED FLOW							Tt=L / V*60		
Tt Path	urf. Des	Length (ft)	Up Stream	Dn Stream	Slope(ft/ft	Velocity(fps)			
BC	Woods	2250	35	28.0	0.0031	0.9	Tc=	41.7	Min
							USE	110.0	Min

Project Name: **The Rookery** **DAI Project #:** 2008-499
Client: **D.R. Horton, Inc. - Jacksonville** **Engineer:** G. Wieger
Date: 12/1/22

Pre Developed Basin 2

Total Drainage Area	33.02	ac.
Impervious Pavement	0.00	ac.
Pasture "A"	0.00	ac.
Pasture "D"	33.02	ac.

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%
Impervious	0.00	98	0.95	0.00	0.00	0.0%
Pasture "A"	0.00	39	0.25	0.00	0.00	0.0%
Pasture "D"	33.02	80	0.25	2641.60	8.26	100.0%
Pond	0.00	100	1.00	0.00	0.00	0.0%
Total Area (ac.):	33.02					
Weighted CN:	80.00					
Weighted C:	0.25					
Weighted K:	256					

Time of Concentration Calculation (Tc)

SHEET FLOW				Tt=(0.007(nL)^0.8 / P^0.5 S^0.4)*60					
Tt Path	urf. Des	Length (ft)	Up Stream	Dn Stream	Slope(ft/ft	n	P	Tt(min)	
AB	Woods	70	33.0	30	0.0429	0.4	5.04	9.5	
SHALLOW CONCENTRATED FLOW							Tt=L / V*60		
Tt Path	urf. Des	Length (ft)	Up Stream	Dn Stream	Slope(ft/ft	Velocity(fps)			
BC	Woods	1745	30	24.9	0.0029	0.9	Tc=	33.2	Min
							USE	43.0	Min

Project Name: **The Rookery** **DAI Project #:** 2008-499
Client: **D.R. Horton, Inc. - Jacksonville** **Engineer:** G. Wieger
Date: 12/1/22

Pre Developed Basin 3

Total Drainage Area	47.05	ac.
Impervious Pavement	0.00	ac.
Pasture "A"	0.00	ac.
Pasture "D"	47.05	ac.

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%
Impervious	0.00	98	0.95	0.00	0.00	0.0%
Pasture "A"	0.00	39	0.25	0.00	0.00	0.0%
Pasture "D"	47.05	80	0.25	3764.00	11.76	100.0%
Pond	0.00	100	1.00	0.00	0.00	0.0%
Total Area (ac.):	47.05					
Weighted CN:	80.00					
Weighted C:	0.25					
Weighted K:	256					

Time of Concentration Calculation (Tc)

SHEET FLOW				Tt=(0.007(nL)^0.8 / P^0.5 S^0.4)*60					
Tt Path	urf. Des	Length (ft)	Up Stream	Dn Stream	Slope(ft/ft	n	P	Tt(min)	
AB	Woods	190	28.0	27	0.0053	0.4	5.04	48.8	
SHALLOW CONCENTRATED FLOW							Tt=L / V*60		
Tt Path	urf. Des	Length (ft)	Up Stream	Dn Stream	Slope(ft/ft	Velocity(fps)			
BC	Woods	785	27	23.0	0.0051	1.2	Tc=	11.4	Min
							USE	61.0	Min

Project Name: **The Rookery** **DAI Project #:** 2008-499
Client: **D.R. Horton, Inc. - Jacksonville** **Engineer:** G. Wieger
Date: 12/1/22

Pre Developed Basin 4

Total Drainage Area	0.82	ac.
Impervious Pavement	0.00	ac.
Pasture "D"	0.82	ac.

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%
Impervious	0.00	98	0.95	0.00	0.00	0.0%
Pasture "D"	0.82	80	0.25	65.60	0.21	100.0%
Pond	0.00	100	1.00	0.00	0.00	0.0%

Total Area (ac.):	0.82
Weighted CN:	80.00
Weighted C:	0.25
Weighted K:	256

A conservative TC of 10 mins is used for this area

Project Name: **The Rookery** **DAI Project #:** 2008-499
Client: **D.R. Horton, Inc. - Jacksonville** **Engineer:** G. Wieger
Date: 12/1/22

Pre Developed Basin 5

Total Drainage Area	20.34	ac.
Pasture "A"	14.87	ac.
Pasture "D"	5.47	ac.

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%
Impervious	0.00	98	0.95	0.00	0.00	0.0%
Pasture "A"	14.87	39	0.25	579.93	3.72	73.1%
Pasture "D"	5.47	80	0.25	437.60	1.37	26.9%
Pond	0.00	100	1.00	0.00	0.00	0.0%
Total Area (ac.):	20.34					
Weighted CN:	50.03					
Weighted C:	0.25					
Weighted K:	256					

Time of Concentration Calculation (Tc)

SHEET FLOW				Tt=(0.007(nL)^0.8 / P^0.5 S^0.4)*60					
Tt Path	urf. Des	Length (ft)	Up Stream	Dn Stream	Slope(ft/ft	n	P	Tt(min)	
AB	Woods	100	23.0	22.5	0.0050	0.4	5.04	29.8	
SHALLOW CONCENTRATED FLOW							Tt=L / V*60		
Tt Path	urf. Des	Length (ft)	Up Stream	Dn Stream	Slope(ft/ft	Velocity(fps)			
BC	Woods	250	22.5	21.5	0.0040	1.0	Tc=	4.1	Min
							USE	34.0	Min

Project Name: **The Rookery** **DAI Project #:** 2008-499
Client: **D.R. Horton, Inc. - Jacksonville** **Engineer:** G. Wieger
Date: 12/1/22

Pre Developed Basin 6

Total Drainage Area	36.73	ac.
Impervious Pavement	0.00	ac.
Pasture "D"	36.73	ac.

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%
Impervious	0.00	98	0.95	0.00	0.00	0.0%
Pasture "D"	36.73	80	0.25	2938.40	9.18	100.0%
Pond	0.00	100	1.00	0.00	0.00	0.0%
Total Area (ac.):	36.73					
Weighted CN:	80.00					
Weighted C:	0.25					
Weighted K:	256					

Time of Concentration Calculation (Tc)

SHEET FLOW				Tt=(0.007(nL)^0.8 / P^0.5 S^0.4)*60					
Tt Path	urf. Des	Length (ft)	Up Stream	Dn Stream	Slope(ft/ft	n	P	Tt(min)	
AB	Woods	175	32.0	26	0.0343	0.4	5.04	21.6	
SHALLOW CONCENTRATED FLOW							Tt=L / V*60		
Tt Path	urf. Des	Length (ft)	Up Stream	Dn Stream	Slope(ft/ft	Velocity(fps)			
BC	Woods	1500	26	23.0	0.0020	0.7	Tc=	34.6	Min
							USE	57.0	Min

Project Name: **The Rookery** **DAI Project #:** 2008-499
Client: **D.R. Horton, Inc. - Jacksonville** **Engineer:** G. Wieger
Date: 12/1/22

Pre Developed Basin 7

Total Drainage Area	34.13	ac.
Impervious Pavement	0.00	ac.
Pasture "D"	34.13	ac.

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%
Impervious	0.00	98	0.95	0.00	0.00	0.0%
Pasture "D"	34.13	80	0.25	2730.40	8.53	100.0%
Pond	0.00	100	1.00	0.00	0.00	0.0%
Total Area (ac.):	34.13					
Weighted CN:	80.00					
Weighted C:	0.25					
Weighted K:	256					

Time of Concentration Calculation (Tc)

SHEET FLOW				Tt=(0.007(nL)^0.8 / P^0.5 S^0.4)*60					
Tt Path	urf. Des	Length (ft)	Up Stream	Dn Stream	Slope(ft/ft	n	P	Tt(min)	
AB	Woods	190	35.0	29.5	0.0289	0.4	5.04	24.7	
SHALLOW CONCENTRATED FLOW							Tt=L / V*60		
Tt Path	urf. Des	Length (ft)	Up Stream	Dn Stream	Slope(ft/ft	Velocity(fps)			
BC	Woods	1000	29.5	27.5	0.0020	0.7	Tc=	23.1	Min
							USE	48.0	Min

Project Name: **The Rookery** **DAI Project #:** 2008-499
Client: **D.R. Horton, Inc. - Jacksonville** **Engineer:** G. Wieger
Date: 12/1/22

Pre Developed Basin 8

Total Drainage Area	10.86	ac.
Impervious Pavement	0.00	ac.
Pasture "D"	10.86	ac.

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%
Impervious	0.00	98	0.95	0.00	0.00	0.0%
Pasture "D"	10.86	80	0.25	868.80	2.72	100.0%
Pond	0.00	100	1.00	0.00	0.00	0.0%
Total Area (ac.):	10.86					
Weighted CN:	80.00					
Weighted C:	0.25					
Weighted K:	256					

Time of Concentration Calculation (Tc)

SHEET FLOW				Tt=(0.007(nL)^0.8 / P^0.5 S^0.4)*60					
Tt Path	urf. Des	Length (ft)	Up Stream	Dn Stream	Slope(ft/ft	n	P	Tt(min)	
AB	Woods	150	35.0	30	0.0333	0.4	5.04	19.3	
SHALLOW CONCENTRATED FLOW							Tt=L / V*60		
Tt Path	urf. Des	Length (ft)	Up Stream	Dn Stream	Slope(ft/ft	Velocity(fps)			
BC	Woods	1420	30	29.0	0.0007	0.4	Tc=	55.3	Min
							USE	75.0	Min

Project Name: **The Rookery** **DAI Project #:** 2008-499
Client: **D.R. Horton, Inc. - Jacksonville** **Engineer:** G. Wieger
Date: 12/1/22

Pre Developed Basin 9

Total Drainage Area	13.67	ac.
Impervious Pavement	0.00	ac.
Pasture "D"	13.67	ac.

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%
Impervious	0.00	98	0.95	0.00	0.00	0.0%
Pasture "D"	13.67	39	0.25	533.13	3.42	100.0%
Pond	0.00	100	1.00	0.00	0.00	0.0%
Total Area (ac.):	13.67					
Weighted CN:	39.00					
Weighted C:	0.25					
Weighted K:	256					

Time of Concentration Calculation (Tc)

SHEET FLOW				Tt=(0.007(nL)^0.8 / P^0.5 S^0.4)*60					
Tt Path	urf. Des	Length (ft)	Up Stream	Dn Stream	Slope(ft/ft	n	P	Tt(min)	
AB	Woods	100	31.0	30	0.0100	0.4	5.04	22.6	
SHALLOW CONCENTRATED FLOW							Tt=L / V*60		
Tt Path	urf. Des	Length (ft)	Up Stream	Dn Stream	Slope(ft/ft	Velocity(fps)			
BC	Woods	650	30	29.5	0.0008	0.4	Tc=	24.2	Min
							USE	47.0	Min

Project Name: **The Rookery** **DAI Project #:** 2008-499
Client: **D.R. Horton, Inc. - Jacksonville** **Engineer:** G. Wieger
Date: 12/1/22

Pre Developed Basin 10

Total Drainage Area	52.26	ac.
Pasture "A"	25.83	ac.
Pasture "D"	26.43	ac.

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%
Impervious	0.00	98	0.95	0.00	0.00	0.0%
Pasture "A"	25.83	39	0.25	1007.37	6.46	49.4%
Pasture "D"	26.43	80	0.25	2114.40	6.61	50.6%
Pond	0.00	100	1.00	0.00	0.00	0.0%
Total Area (ac.):	52.26					
Weighted CN:	59.74					
Weighted C:	0.25					
Weighted K:	256					

Time of Concentration Calculation (Tc)

SHEET FLOW				Tt=(0.007(nL)^0.8 / P^0.5 S^0.4)*60					
Tt Path	urf. Des	Length (ft)	Up Stream	Dn Stream	Slope(ft/ft	n	P	Tt(min)	
AB	Woods	65	35.0	29	0.0923	0.4	5.04	6.6	
SHALLOW CONCENTRATED FLOW							Tt=L / V*60		
Tt Path	urf. Des	Length (ft)	Up Stream	Dn Stream	Slope(ft/ft	Velocity(fps)			
BC	Woods	3100	29	27.1	0.0006	0.4	Tc=	129.3	Min
							USE	136.0	Min

Project Name: **The Rookery** **DAI Project #:** 2008-499
Client: **D.R. Horton, Inc. - Jacksonville** **Engineer:** G. Wieger
Date: 12/1/22

Pre Developed Basin 11

Total Drainage Area	19.04	ac.
Pasture "A"	0.15	ac.
Pasture "D"	18.89	ac.

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%
Impervious	0.00	98	0.95	0.00	0.00	0.0%
Pasture "A"	0.15	39	0.25	5.85	0.04	0.8%
Pasture "D"	18.89	80	0.25	1511.20	4.72	99.2%
Pond	0.00	100	1.00	0.00	0.00	0.0%
Total Area (ac.):	19.04					
Weighted CN:	79.68					
Weighted C:	0.25					
Weighted K:	256					

Time of Concentration Calculation (Tc)

SHEET FLOW				Tt=(0.007(nL)^0.8 / P^0.5 S^0.4)*60					
Tt Path	urf. Des	Length (ft)	Up Stream	Dn Stream	Slope(ft/ft	n	P	Tt(min)	
AB	Woods	152	36.0	32	0.0263	0.4	5.04	21.4	
SHALLOW CONCENTRATED FLOW							Tt=L / V*60		
Tt Path	urf. Des	Length (ft)	Up Stream	Dn Stream	Slope(ft/ft	Velocity(fps)			
BC	Woods	1400	32	26.9	0.0036	1.0	Tc=	24.0	Min
							USE	46.0	Min

Project Name: **The Rookery** **DAI Project #:** 2008-499
Client: **D.R. Horton, Inc. - Jacksonville** **Engineer:** G. Wieger
Date: 12/1/22

Pre Developed Basin 12

Total Drainage Area	9.24	ac.
Pasture "A"	6.74	ac.
Pasture "D"	2.50	ac.

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%
Impervious	0.00	98	0.95	0.00	0.00	0.0%
Pasture "A"	6.74	39	0.25	262.86	1.69	72.9%
Pasture "D"	2.50	80	0.25	200.00	0.63	27.1%
Pond	0.00	100	1.00	0.00	0.00	0.0%
Total Area (ac.):	9.24					
Weighted CN:	50.09					
Weighted C:	0.25					
Weighted K:	256					

Time of Concentration Calculation (Tc)

SHEET FLOW				Tt=(0.007(nL)^0.8 / P^0.5 S^0.4)*60					
Tt Path	urf. Des	Length (ft)	Up Stream	Dn Stream	Slope(ft/ft	n	P	Tt(min)	
AB	Woods	150	42.5	40	0.0167	0.4	5.04	25.5	
SHALLOW CONCENTRATED FLOW							Tt=L / V*60		
Tt Path	urf. Des	Length (ft)	Up Stream	Dn Stream	Slope(ft/ft	Velocity(fps)			
BC	Woods	330	40	33.0	0.0212	2.3	Tc=	2.3	Min
							USE	28.0	Min

Project Name: **The Rookery** **DAI Project #:** 2008-499
Client: **D.R. Horton, Inc. - Jacksonville** **Engineer:** G. Wieger
Date: 12/1/22

Pre Developed Basin 13

Total Drainage Area	16.14	ac.
Pasture "A"	8.64	ac.
Pasture "D"	7.50	ac.

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%
Impervious	0.00	98	0.95	0.00	0.00	0.0%
Pasture "A"	8.64	39	0.25	336.96	2.16	53.5%
Pasture "D"	7.50	80	0.25	600.00	1.88	46.5%
Pond	0.00	100	1.00	0.00	0.00	0.0%
Total Area (ac.):	16.14					
Weighted CN:	58.05					
Weighted C:	0.25					
Weighted K:	256					

Time of Concentration Calculation (Tc)

SHEET FLOW				Tt=(0.007(nL)^0.8 / P^0.5 S^0.4)*60					
Tt Path	urf. Des	Length (ft)	Up Stream	Dn Stream	Slope(ft/ft	n	P	Tt(min)	
AB	Woods	270	50.5	47	0.0130	0.4	5.04	45.0	
SHALLOW CONCENTRATED FLOW							Tt=L / V*60		
Tt Path	urf. Des	Length (ft)	Up Stream	Dn Stream	Slope(ft/ft	Velocity(fps)			
BC	Woods	775	47	32.0	0.0194	2.2	Tc=	5.8	Min
							USE	51.0	Min

Project Name: The Rookery **DAI Project #:** 2008-499
Client: D.R. Horton, Inc. - Jacksonville **Engineer:** G. Wieger
Date: 12/1/22

Pre Developed Basin J1

Total Drainage Area	25.97	ac.
Impervious Pavement	0.00	ac.
Pasture "A"	14.12	ac.
Pasture "D"	11.85	ac.

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%
Impervious	0.00	98	0.95	0.00	0.00	0.0%
Pasture "A"	14.12	39	0.25	550.68	3.53	54.4%
Pasture "D"	11.85	80	0.25	948.00	2.96	45.6%
Pond	0.00	100	1.00	0.00	0.00	0.0%
Total Area (ac.):	25.97					
Weighted CN:	57.71					
Weighted C:	0.25					
Weighted K:	256					

Time of Concentration Calculation (Tc)

SHEET FLOW		Tt=(0.007(nL)^0.8 / P^0.5 S^0.4)*60						50	
Tt Path	urf. Des	Length (ft)	Up Stream	Dn Stream	Slope(ft/ft	n	P	Tt(min)	
AB	Woods	65	35.0	32	0.0462	0.4	5.04	8.7	
SHALLOW CONCENTRATED FLOW							Tt=L / V*60		
Tt Path	urf. Des	Length (ft)	Up Stream	Dn Stream	Slope(ft/ft	Velocity(fps)			
BC	Woods	1000	32	30.0	0.0020	0.7	Tc=	23.1	Min
							USE	32.0	Min

Project Name: **The Rookery** **DAI Project #:** 2008-499
Client: **D.R. Horton, Inc. - Jacksonville** **Engineer:** G. Wieger
Date: 12/1/22

Pre Pond

Total Drainage Area	88.62	ac.
Impervious Building	0.00	ac.
Impervious Pavement	0.00	ac.
Pond @ NWL:	75.20	ac.
Open Space	13.42	ac.

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%
Impervious	0.00	98	0.95	0.00	0.00	0.0%
Open Space	13.42	80	0.25	1073.62	3.36	15.1%
Pond	75.20	100	1.00	7519.97	75.20	84.9%
Total Area (ac.):	88.62					
Weighted CN:	96.97					
Weighted C:	0.89					
Weighted K:	484					

Existing Pond

Stage ft	Area ac.	
34.5	87.12	**MIN TOB EL.**
33.0	75.20	
30.0	57.77	

POST DEVELOPED DRAINAGE DATA

Project Name: The Rookery
Client: D.R. Horton, Inc. - Jacksonville

DAI Project #: 2008-499
Engineer: G. Wieger
Date: 4/5/23

Post Developed Basin 1

Total Drainage Area	25.24 ac.	
Impervious Building	6.17 ac.	** 96 Single Family Lots*
Impervious Pavement	2.66 ac.	
Pond @ NWL:	4.78 ac.	
Open Space "A"	4.30 ac.	
Open Space "D"	7.33 ac.	

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%	
Impervious	8.83	98	0.95	865.42	8.39	35.0%	
Open Space "A"	4.30	39	0.25	167.67	1.07	17.0%	
Open Space "D"	7.33	80	0.25	586.40	1.83	29.0%	(Good Condition)
Pond	4.78	100	1.00	478.00	4.78	18.9%	
Total Area (ac.):	25.24						
Weighted CN:	83.10						
Weighted C:	0.64						
Weighted K:	484						

Pond 1
Storage Volume

Stage ft	Area ac.	Total Storage Volume (af)	
33.8	5.81	25.42	**MIN TOB EL.**
33.3	5.70	22.54	**MIN INTERCONNECTED TOB EL.**
30.0	4.99	4.89	**WEIR EL.**
29.0	4.78	0.00	**NWL EL.**

Provided Pool Volume

Stage ft	Area ac.	Storage Vol (acft)	Anoxic Vol (af)	Mean Depth	
29.0	4.78	98.28	27.37	5.73	**NWL EL.**
23.0	3.58	73.20			**SC**
22.4	3.52	70.91			**75% Anoxic Depth**
-17.0	0.08	0.00			**Max Bottom**
				Mean Pond Depth	
				>2,<8 O.K.	

Underdrain Flow (From ECS Report)

1485	LF of underdrain	0.014 gpm per LF =	0.04574	cfs
560	LF of underdrain	0.013 gpm per LF =	0.01602	cfs
285	LF of underdrain	0.009 gpm per LF =	0.00564	cfs

Groundwater Inflow (From ECS Report)

From ECS Report Groundwater 12.8 gpm = 0.0282 cfs

Pool Volume

Drainage Area (DA):	25.24 ac
Runoff Coeff. (C):	0.64
R:	30.00 in
RT:	21.1 days
WS:	153 days
CF:	12 in/ft

$$PPV = \frac{DA \times C \times R \times RT}{WS \times CF}$$

Required PPV =	5.53	ac-ft
Required PPV w/ GWF =	9.53	ac-ft
Provided PPV =	98.28	ac-ft
Provided PPV at = 75% Anoxic Depth	27.37	ac-ft

Project Name: The Rookery
Client: D.R. Horton, Inc. - Jacksonville

DAI Project #: 2008-499
Engineer: G. Wieger
Date: 4/5/23

Post Developed Basin 2

Total Drainage Area	17.69 ac.	
Impervious Building	4.69 ac.	** 73 Single Family Lots*
Impervious Pavement	2.07 ac.	
Pond @ NWL:	0.88 ac.	
Open Space "A"	5.43 ac.	
Open Space "D"	4.62 ac.	

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%	
Impervious	6.76	98	0.95	662.71	6.42	38.2%	
Open Space "A"	5.43	39	0.25	211.68	1.36	30.7%	
Open Space "D"	4.62	80	0.25	369.60	1.16	26.1%	(Good Condition)
Pond	0.88	100	1.00	88.00	0.88	5.0%	
Total Area (ac.):	17.69						
Weighted CN:	75.30						
Weighted C:	0.55						
Weighted K:	484						

Pond 2
Storage Volume

Stage ft	Area ac.	Total Storage Volume (af)	
33.8	1.39	5.45	**MIN TOB EL.**
33.3	1.34	4.77	**MIN INTERCONNECTED TOB EL.**
30.0	0.99	0.93	**WEIR EL.**
29.0	0.88	0.00	**NWL EL.**

Provided Pool Volume

Stage ft	Area ac.	Storage Vol (acft)	Anoxic Vol (af)	Mean Depth	
29.0	0.88	5.70	3.87	4.40	**NWL EL.**
23.0	0.34	2.04			**SC**
22.4	0.32	1.83			**75% Anoxic Depth**
11.0	0.00	0.00			**Max Bottom**
				Mean Pond Depth	
				>2,<8 O.K.	

Underdrain Flow (From ECS Report)

725 LF of underdrain	0.014 gpm per LF =	0.02233	cfs
615 LF of underdrain	0.009 gpm per LF =	0.01218	cfs
540 LF of underdrain	0.006 gpm per LF =	0.00713	cfs

Groundwater Inflow (From ECS Report)

From ECS Report Groundwater 2.62 gpm = 0.0058 cfs

Pool Volume

Drainage Area (DA):	17.69 ac
Runoff Coeff. (C):	0.55
R:	30.00 in
RT:	21.1 days
WS:	153 days
CF:	12 in/ft

$$PPV = \frac{DA \times C \times R \times RT}{WS \times CF}$$

Required PPV =	3.38 ac-ft
Required PPV w/ GWF =	5.36 ac-ft
Provided PPV =	5.70 ac-ft
Provided PPV at = 75% Anoxic Depth	3.87 ac-ft

Project Name: The Rookery
Client: D.R. Horton, Inc. - Jacksonville

DAI Project #: 2008-499
Engineer: G. Wieger
Date: 4/5/23

Post Developed Basin 3

Total Drainage Area	11.05 ac.	
Impervious Building	1.99 ac.	* 31 Single Family Lots
Impervious Pavement	1.49 ac.	
Pond @ NWL:	0.77 ac.	
Open Space "D"	6.80 ac.	

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%	
Impervious	3.48	98	0.95	341.30	3.31	31.5%	
Open Space	6.80	80	0.25	543.79	1.70	61.5%	(Good Condition)
Pond	0.77	100	1.00	77.00	0.77	7.0%	
Total Area (ac.):	11.05						
Weighted CN:	87.07						
Weighted C:	0.52						
Weighted K:	484						

Pond 3

Storage Volume

Stage ft	Area ac.	Total Storage Volume (af)	
33.8	1.15	4.61	**MIN TOB EL.**
33.3	1.11	4.04	**MIN INTERCONNECTED TOB EL.**
30.0	0.85	0.81	**WEIR EL.**
29.0	0.77	0.00	**NWL EL.**

Provided Pool Volume

Stage ft	Area ac.	Storage Vol (acft)	Anoxic Vol (af)	Mean Depth	
29.0	0.77	6.49	3.69	4.79	**NWL EL.**
23.0	0.38	3.04			**SC**
22.4	0.36	2.80			**75% Anoxic Depth**
7.0	0.00	0.00			**Max Bottom**
				Mean Pond Depth	
				>2,<8 O.K.	

Groundwater Inflow (From ECS Report)

From ECS Report Groundwater 2.8 gpm = 0.0062 cfs

Pool Volume

Drainage Area (DA):	11.05 ac
Runoff Coeff. (C):	0.52
R:	30.00 in
RT:	21.1 days
WS:	153 days
CF:	12 in/ft

$$PPV = \frac{DA \times C \times R \times RT}{WS \times CF}$$

Required PPV =	1.99 ac-ft
Required PPV w/ GWF =	2.25 ac-ft
Provided PPV =	6.49 ac-ft
Provided PPV at = 75% Anoxic Depth	3.69 ac-ft

Project Name: **The Rookery** **DAI Project #:** 2008-499
Client: **D.R. Horton, Inc. - Jacksonville** **Engineer:** G. Wieger
Date: 4/5/23

Post Developed Basin 4

Total Drainage Area	2.44	ac.	
Impervious Building	0.51	ac.	** 8 Single Family Lots*
Impervious Pavement	0.14	ac.	
Pond @ NWL:	0.40	ac.	
Open Space "A"	1.39	ac.	

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%	
Impervious	0.65	98	0.95	64.11	0.62	26.8%	
Open Space "A"	1.39	39	0.25	54.04	0.35	56.8%	(Good Condition)
Pond	0.40	100	1.00	40.00	0.40	16.4%	
Total Area (ac.):	2.44						
Weighted CN:	64.82						
Weighted C:	0.56						
Weighted K:	484						

Pond 4
Storage Volume

Stage ft	Area ac.	Total Storage Volume (af)	
33.7	0.74	2.68	**MIN TOB EL.**
33.3	0.71	2.39	**MIN INTERCONNECTED TOB EL.**
30.0	0.47	0.44	**WEIR EL.**
29.0	0.40	0.00	**NWL EL.**

Provided Pool Volume

Stage ft	Area ac.	Storage Vol (acft)	Anoxic Vol (af)	Mean Depth	
29.0	0.40	2.04	1.63	4.09	**NWL EL.**
23.0	0.12	0.48			**SC**
22.4	0.11	0.41			**75% Anoxic Depth**
15.0	0.00	0.00			**Max Bottom**
				Mean Pond Depth	
				>2,<8 O.K.	

Groundwater Inflow (From ECS Report)

From ECS Report Groundwater 0.08 gpm = 0.0002 cfs

Pool Volume

Drainage Area (DA):	2.44	ac
Runoff Coeff. (C):	0.56	
R:	30.00	in
RT:	21.1	days
WS:	153	days
CF:	12	in/ft

$$PPV = \frac{DA \times C \times R \times RT}{WS \times CF}$$

Required PPV =	0.47	ac-ft
Required PPV w/ GWF =	0.48	ac-ft
Provided PPV =	2.04	ac-ft
Provided PPV at = 75% Anoxic Depth	1.63	ac-ft

Project Name: **The Rookery** **DAI Project #:** 2008-499
Client: **D.R. Horton, Inc. - Jacksonville** **Engineer:** G. Wieger
Date: 4/5/23

Post Developed Basin 5

Total Drainage Area	4.64	ac.	
Impervious Building	1.35	ac.	** 21 Single Family Lots*
Impervious Pavement	0.31	ac.	
Pond @ NWL:	0.34	ac.	
Open Space "D"	2.64	ac.	

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%	
Impervious	1.66	98	0.95	162.67	1.58	35.8%	
Open Space	2.64	80	0.25	211.21	0.66	56.9%	(Good Condition)
Pond	0.34	100	1.00	34.00	0.34	7.3%	
Total Area (ac.):	4.64						
Weighted CN:	87.90						
Weighted C:	0.56						
Weighted K:	484						

Pond 5

Storage Volume

Stage ft	Area ac.	Total Storage Volume (af)	
33.7	0.59	2.19	**MIN TOB EL.**
33.3	0.57	1.95	**MIN INTERCONNECTED TOB EL.**
30.0	0.39	0.37	**WEIR EL.**
29.0	0.34	0.00	**NWL EL.**

Provided Pool Volume

Stage ft	Area ac.	Storage Vol (acft)	Anoxic Vol (af)	Mean Depth	
29.0	0.34	1.72	1.38	4.06	**NWL EL.**
23.0	0.10	0.40			**SC**
22.4	0.09	0.34			**75% Anoxic Depth**
15.0	0.00	0.00			**Max Bottom**
				Mean Pond Depth	
				>2,<8 O.K.	

Groundwater Inflow (From ECS Report)

From ECS Report Groundwater 0.24 gpm = 0.0005 cfs

Pool Volume

Drainage Area (DA):	4.64	ac
Runoff Coeff. (C):	0.56	
R:	30.00	in
RT:	21.1	days
WS:	153	days
CF:	12	in/ft

$$PPV = \frac{DA \times C \times R \times RT}{WS \times CF}$$

Required PPV =	0.89	ac-ft
Required PPV w/ GWF =	0.91	ac-ft
Provided PPV =	1.72	ac-ft
Provided PPV at = 75% Anoxic Depth	1.38	ac-ft

Project Name: **The Rookery** **DAI Project #:** 2008-499
Client: **D.R. Horton, Inc. - Jacksonville** **Engineer:** G. Wieger
Date: 4/5/23

Post Developed Basin 6

Total Drainage Area	12.08	ac.	
Impervious Building	3.21	ac.	** 50 Single Family Lots*
Impervious Pavement	1.21	ac.	
Pond @ NWL:	1.41	ac.	
Open Space "A"	4.56	ac.	
Open Space "D"	1.69	ac.	

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%	
Impervious	4.42	98	0.95	433.55	4.20	36.6%	
Open Space "A"	4.56	39	0.25	177.69	1.14	37.7%	
Open Space "D"	1.69	80	0.25	135.20	0.42	14.0%	(Good Condition)
Pond	1.41	100	1.00	141.00	1.41	11.7%	
Total Area (ac.):	12.08						
Weighted CN:	73.46						
Weighted C:	0.59						
Weighted K:	484						

Pond 6
Storage Volume

Stage ft	Area ac.	Total Storage Volume (af)	
33.7	2.12	8.30	**MIN TOB EL.**
33.3	2.06	7.46	**MIN INTERCONNECTED TOB EL.**
30.0	1.56	1.49	**WEIR EL.**
29.0	1.41	0.00	**NWL EL.**

Provided Pool Volume

Stage ft	Area ac.	Storage Vol (acft)	Anoxic Vol (af)	Mean Depth	
29.0	1.41	10.01	6.62	4.70	**NWL EL.**
23.0	0.66	3.80			**SC**
22.4	0.62	3.38			**75% Anoxic Depth**
12.0	0.03	0.00			**Max Bottom**
					Mean Pond Depth >2,<8 O.K.

Groundwater Inflow (From ECS Report)

From ECS Report Groundwater 1.13 gpm = 0.0025 cfs

Pool Volume

Drainage Area (DA):	12.08	ac
Runoff Coeff. (C):	0.59	
R:	30.00	in
RT:	21.1	days
WS:	153	days
CF:	12	in/ft

$$PPV = \frac{DA \times C \times R \times RT}{WS \times CF}$$

Required PPV =	2.47	ac-ft
Required PPV w/ GWF =	2.57	ac-ft
Provided PPV =	10.01	ac-ft
Provided PPV at = 75% Anoxic Depth	6.62	ac-ft

Project Name: The Rookery **DAI Project #:** 2008-499
Client: D.R. Horton, Inc. - Jacksonville **Engineer:** G. Wieger
Date: 4/5/23

Post Developed Basin 7

Total Drainage Area	5.60 ac.	
Impervious Building	1.93 ac.	** 30 Single Family Lots*
Impervious Pavement	0.35 ac.	
Pond @ NWL:	0.50 ac.	
Open Space "A"	1.97 ac.	
Open Space "D"	0.85 ac.	

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%	
Impervious	2.28	98	0.95	223.28	2.16	40.7%	
Open Space "A"	1.97	39	0.25	76.89	0.49	35.2%	
Open Space "D"	0.85	80	0.25	68.00	0.21	15.2%	(Good Condition)
Pond	0.50	100	1.00	50.00	0.50	8.9%	

Total Area (ac.):	5.60
Weighted CN:	74.67
Weighted C:	0.60
Weighted K:	484

Pond 7
Storage Volume

Stage ft	Area ac.	Total Storage Volume (af)	
33.7	0.85	3.17	**MIN TOB EL.**
33.3	0.82	2.84	**MIN INTERCONNECTED TOB EL.**
30.0	0.57	0.54	**WEIR EL.**
29.0	0.50	0.00	**NWL EL.**

Provided Pool Volume

Stage ft	Area ac.	Storage Vol (acft)	Anoxic Vol (af)	Mean Depth	
29.0	0.50	2.78	2.08	4.16	**NWL EL.**
23.0	0.16	0.80			**SC**
22.4	0.15	0.70			**75% Anoxic Depth**
13.0	0.00	0.00			**Max Bottom**

Mean Pond Depth
>2,<8 O.K.

No Groundwater Inflow (From ECS Report)

Pool Volume

Drainage Area (DA):	5.60	ac
Runoff Coeff. (C):	0.60	
R:	30.00	in
RT:	21.1	days
WS:	153	days
CF:	12	in/ft

$$PPV = \frac{DA \times C \times R \times RT}{WS \times CF}$$

Required PPV =	1.16	ac-ft
Provided PPV =	2.78	ac-ft
Provided PPV at = 75% Anoxic Depth	2.08	ac-ft

Project Name: The Rookery **DAI Project #:** 2008-499
Client: D.R. Horton, Inc. - Jacksonville **Engineer:** G. Wieger
Date: 4/5/23

Post Developed Basin 8

Total Drainage Area	8.36	ac.	
Impervious Building	2.19	ac.	** 34 Single Family Lots*
Impervious Pavement	0.71	ac.	
Pond @ NWL:	0.76	ac.	
Open Space "D"	4.70	ac.	

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%	
Impervious	2.90	98	0.95	283.76	2.75	34.6%	
Open Space	4.70	80	0.25	376.36	1.18	56.3%	(Good Condition)
Pond	0.76	100	1.00	76.00	0.76	9.1%	
Total Area (ac.):	8.36						
Weighted CN:	88.05						
Weighted C:	0.56						
Weighted K:	484						

Pond 8
Storage Volume

Stage ft	Area ac.	Total Storage Volume (af)	
33.7	1.13	4.44	**MIN TOB EL.**
33.3	1.10	4.00	**MIN INTERCONNECTED TOB EL.**
30.0	0.84	0.80	**WEIR EL.**
29.0	0.76	0.00	**NWL EL.**

Provided Pool Volume

Stage ft	Area ac.	Storage Vol (acft)	Anoxic Vol (af)	Mean Depth	
29.0	0.76	5.88	3.59	4.72	**NWL EL.**
23.0	0.36	2.52			**SC**
22.4	0.34	2.29			**75% Anoxic Depth**
9.0	0.00	0.00			**Max Bottom**
				Mean Pond Depth	
				>2,<8 O.K.	

Groundwater Inflow (From ECS Report)

From ECS Report Groundwater 0.13 gpm = 0.0003 cfs

Req'd Pool Volume

Drainage Area (DA):	8.36	ac
Runoff Coeff. (C):	0.56	
R:	30.00	in
RT:	21.1	days
WS:	153	days
CF:	12	in/ft

$$PPV = \frac{DA \times C \times R \times RT}{WS \times CF}$$

Required PPV =	1.61	ac-ft
Required PPV w/ GWF =	1.63	ac-ft
Provided PPV =	5.88	ac-ft
Provided PPV at = 75% Anoxic Depth	3.59	ac-ft

Project Name: **The Rookery** **DAI Project #:** 2008-499
Client: **D.R. Horton, Inc. - Jacksonville** **Engineer:** G. Wieger
Date: 4/5/23

Post Developed Basin 9

Total Drainage Area	3.93	ac.	
Impervious Building	0.71	ac.	** 11 Single Family Lots*
Impervious Pavement	0.12	ac.	
Pond @ NWL:	1.36	ac.	
Open Space "D"	1.74	ac.	

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%	
Impervious	0.83	98	0.95	81.05	0.79	21.0%	
Open Space	1.74	80	0.25	139.43	0.44	44.3%	(Good Condition)
Pond	1.36	100	1.00	136.00	1.36	34.6%	
Total Area (ac.):	3.93						
Weighted CN:	90.71						
Weighted C:	0.66						
Weighted K:	484						

Pond 9
Storage Volume

Stage ft	Area ac.	Total Storage Volume (af)	
33.7	1.93	7.73	**MIN TOB EL.**
33.3	1.88	6.97	**MIN INTERCONNECTED TOB EL.**
30.0	1.48	1.42	**WEIR EL.**
29.0	1.36	0.00	**NWL EL.**

Provided Pool Volume

Stage ft	Area ac.	Storage Vol (acft)	Anoxic Vol (af)	Mean Depth	
29.0	1.36	12.48	6.62	4.87	**NWL EL.**
23.0	0.70	6.30			**SC**
22.4	0.67	5.86			**75% Anoxic Depth**
5.0	0.00	0.00			**Max Bottom**
				Mean Pond Depth	
				>2,<8 O.K.	

No Groundwater Inflow (From ECS Report)

Pool Volume

Drainage Area (DA):	3.93	ac
Runoff Coeff. (C):	0.66	
R:	30.00	in
RT:	21.1	days
WS:	153	days
CF:	12	in/ft

$$PPV = \frac{DA \times C \times R \times RT}{WS \times CF}$$

Required PPV =	0.89	ac-ft
Provided PPV =	12.48	ac-ft
Provided PPV at = 75% Anoxic Depth	6.62	ac-ft

Project Name: **The Rookery** **DAI Project #:** 2008-499
Client: **D.R. Horton, Inc. - Jacksonville** **Engineer:** G. Wieger
Date: 4/5/23

Post Developed Basin 10

Total Drainage Area	7.74	ac.	
Impervious Building	2.12	ac.	** 33 Single Family Lots*
Impervious Pavement	0.54	ac.	
Pond @ NWL:	0.59	ac.	
Open Space "D"	4.49	ac.	

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%	
Impervious	2.66	98	0.95	260.80	2.53	34.4%	
Open Space	4.49	80	0.25	359.10	1.12	58.0%	(Good Condition)
Pond	0.59	100	1.00	59.00	0.59	7.6%	
Total Area (ac.):	7.74						
Weighted CN:	87.71						
Weighted C:	0.55						
Weighted K:	484						

Pond 10
Storage Volume

Stage ft	Area ac.	Total Storage Volume (af)	
33.3	0.89	3.18	**MIN TOB EL.**
30.0	0.66	0.62	**WEIR EL.**
29.0	0.59	0.00	**NWL EL.**

Provided Pool Volume

Stage ft	Area ac.	Storage Vol (acft)	Anoxic Vol (af)	Mean Depth	
29.0	0.59	4.05	2.64	4.48	**NWL EL.**
23.0	0.24	1.56			**SC**
22.4	0.23	1.41			**75% Anoxic Depth**
10.0	0.00	0.00			**Max Bottom**
				Mean Pond Depth	
				>2,<8 O.K.	

Groundwater Inflow (From ECS Report)

From ECS Report Groundwater 1.1 gpm = 0.0024 cfs

Pool Volume

Drainage Area (DA):	7.74 ac
Runoff Coeff. (C):	0.55
R:	30.00 in
RT:	21.1 days
WS:	153 days
CF:	12 in/ft

$$PPV = \frac{DA \times C \times R \times RT}{WS \times CF}$$

Required PPV =	1.46	ac-ft
Required PPV w/ GWF =	1.56	ac-ft
Provided PPV =	4.05	ac-ft
Provided PPV at = 75% Anoxic Depth	2.64	ac-ft

Project Name: The Rookery
Client: D.R. Horton, Inc. - Jacksonville

DAI Project #: 2008-499
Engineer: G. Wieger
Date: 4/5/23

Post Developed Basin 11

Total Drainage Area	18.85 ac.	
Impervious Building	5.46 ac.	** 85 Single Family Lots*
Impervious Pavement	1.90 ac.	
Pond @ NWL:	1.20 ac.	
Open Space "A"	8.44 ac.	
Open Space "D"	1.85 ac.	

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%	
Impervious	7.36	98	0.95	721.65	7.00	39.1%	
Open Space "A"	8.44	39	0.25	329.01	2.11	44.8%	
Open Space "D"	1.85	80	0.25	148.00	0.46	9.8%	(Good Condition)
Pond	1.20	100	1.00	120.00	1.20	6.4%	
Total Area (ac.):	18.85						
Weighted CN:	69.96						
Weighted C:	0.57						
Weighted K:	484						

Pond 11
Storage Volume

Stage ft	Area ac.	Total Storage Volume (af)	
33.6	1.75	6.79	**MIN TOB EL.**
33.3	1.71	6.27	**MIN INTERCONNECTED TOB EL.**
30.0	1.32	1.26	**WEIR EL.**
29.0	1.20	0.00	**NWL EL.**

Provided Pool Volume

Stage ft	Area ac.	Storage Vol (acft)	Anoxic Vol (af)	Mean Depth	
29.0	1.20	8.79	5.67	4.72	**NWL EL.**
23.0	0.57	3.48			**SC**
22.4	0.54	3.12			**75% Anoxic Depth**
11.0	0.01	0.00			**Max Bottom**
				Mean Pond Depth	
				>2,<8 O.K.	

Groundwater Inflow (From ECS Report)

From ECS Report Groundwater 0.4 gpm = 0.0009 cfs

Pool Volume

Drainage Area (DA):	18.85 ac
Runoff Coeff. (C):	0.57
R:	30.00 in
RT:	21.1 days
WS:	153 days
CF:	12 in/ft

$$PPV = \frac{DA \times C \times R \times RT}{WS \times CF}$$

Required PPV =	3.71 ac-ft
Required PPV w/ GWF =	3.74 ac-ft
Provided PPV =	8.79 ac-ft
Provided PPV at = 75% Anoxic Depth	5.67 ac-ft

Project Name: **The Rookery** **DAI Project #:** 2008-499
Client: **D.R. Horton, Inc. - Jacksonville** **Engineer:** G. Wieger
Date: 4/5/23

Post Developed Basin 12

Total Drainage Area	20.46	ac.	
Impervious Building	5.98	ac.	** 93 Single Family Lots*
Impervious Pavement	1.70	ac.	
Pond @ NWL:	2.28	ac.	
Open Space "A"	10.34	ac.	
Open Space "D"	0.16	ac.	

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%	
Impervious	7.68	98	0.95	752.44	7.29	37.5%	
Open Space "A"	10.34	39	0.25	403.34	2.59	50.5%	
Open Space "D"	0.16	80	0.25	12.80	0.04	0.8%	(Good Condition)
Pond	2.28	100	1.00	228.00	2.28	11.1%	
Total Area (ac.):	20.46						
Weighted CN:	68.26						
Weighted C:	0.60						
Weighted K:	484						

Pond 12
Storage Volume

Stage ft	Area ac.	Total Storage Volume (af)	
33.7	3.01	12.43	**MIN TOB EL.**
33.3	2.95	11.24	**MIN INTERCONNECTED TOB EL.**
30.0	2.44	2.36	**WEIR EL.**
29.0	2.28	0.00	**NWL EL.**

Provided Pool Volume

Stage ft	Area ac.	Storage Vol (acft)	Anoxic Vol (af)	Mean Depth	
29.0	2.28	24.84	12.07	5.29	**NWL EL.**
23.0	1.44	13.68			**SC**
22.4	1.39	12.77			**75% Anoxic Depth**
4.0	0.00	0.00			**Max Bottom**
					Mean Pond Depth >2,<8 O.K.

Groundwater Inflow (From ECS Report)

From ECS Report Groundwater 0.2 gpm = 0.0004 cfs

Pool Volume

Drainage Area (DA):	20.46	ac
Runoff Coeff. (C):	0.60	
R:	30.00	in
RT:	21.1	days
WS:	153	days
CF:	12	in/ft

$$PPV = \frac{DA \times C \times R \times RT}{WS \times CF}$$

Required PPV =	4.20	ac-ft
Required PPV w/ GWF =	4.22	ac-ft
Provided PPV =	24.84	ac-ft
Provided PPV at = 75% Anoxic Depth	12.07	ac-ft

Project Name: The Rookery
Client: D.R. Horton, Inc. - Jacksonville

DAI Project #: 2008-499
Engineer: G. Wieger
Date: 4/5/23

Post Developed Basin 13

Total Drainage Area	17.21 ac.	
Impervious Building	5.46 ac.	** 85 Single Family Lots*
Impervious Pavement	1.55 ac.	
Pond @ NWL:	0.77 ac.	
Open Space "A"	0.66 ac.	
Open Space "D"	8.77 ac.	

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%	
Impervious	7.01	98	0.95	687.35	6.66	40.8%	
Open Space "A"	0.66	39	0.25	25.59	0.16	3.8%	
Open Space "D"	8.77	80	0.25	701.60	2.19	51.0%	(Good Condition)
Pond	0.77	100	1.00	77.00	0.77	4.5%	
Total Area (ac.):	17.21						
Weighted CN:	86.67						
Weighted C:	0.57						
Weighted K:	484						

Pond 13
Storage Volume

Stage ft	Area ac.	Total Storage Volume (af)	
33.6	1.19	4.51	**MIN TOB EL.**
33.3	1.16	4.16	**MIN INTERCONNECTED TOB EL.**
30.0	0.86	0.82	**WEIR EL.**
29.0	0.77	0.00	**NWL EL.**

Provided Pool Volume

Stage ft	Area ac.	Storage Vol (acft)	Anoxic Vol (af)	Mean Depth	
29.0	0.77	4.23	3.36	4.36	**NWL EL.**
23.0	0.29	1.05			**SC**
22.4	0.26	0.87			**75% Anoxic Depth**
16.0	0.01	0.00			**Max Bottom**
				Mean Pond Depth	
				>2,<8 O.K.	

Groundwater Inflow (From ECS Report)

From ECS Report Groundwater 0.05 gpm = 0.0001 cfs

Pool Volume

Drainage Area (DA):	17.21 ac
Runoff Coeff. (C):	0.57
R:	30.00 in
RT:	21.1 days
WS:	153 days
CF:	12 in/ft

$$PPV = \frac{DA \times C \times R \times RT}{WS \times CF}$$

Required PPV =	3.36 ac-ft
Required PPV w/ GWF =	3.36 ac-ft
Provided PPV =	4.23 ac-ft
Provided PPV at = 75% Anoxic Depth	3.36 ac-ft

Project Name: The Rookery
Client: D.R. Horton, Inc. - Jacksonville

DAI Project #: 2008-499
Engineer: G. Wieger
Date: 4/5/23

Post Developed Basin 14

Total Drainage Area	13.46 ac.	
Impervious Building	3.79 ac.	** 59 Single Family Lots*
Impervious Pavement	1.22 ac.	
Pond @ NWL:	1.04 ac.	
Open Space "A"	3.48 ac.	
Open Space "D"	3.93 ac.	

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%	
Impervious	5.01	98	0.95	491.22	4.76	37.2%	
Open Space "A"	3.48	39	0.25	135.62	0.87	25.8%	
Open Space "D"	3.93	80	0.25	314.40	0.98	29.2%	(Good Condition)
Pond	1.04	100	1.00	104.00	1.04	7.7%	
Total Area (ac.):	13.46						
Weighted CN:	77.66						
Weighted C:	0.57						
Weighted K:	484						

Pond 14
Storage Volume

Stage ft	Area ac.	Total Storage Volume (af)	
33.5	1.46	5.63	**MIN TOB EL.**
33.3	1.44	5.33	**MIN INTERCONNECTED TOB EL.**
30.0	1.13	1.09	**WEIR EL.**
29.0	1.04	0.00	**NWL EL.**

Provided Pool Volume

Stage ft	Area ac.	Storage Vol (acft)	Anoxic Vol (af)	Mean Depth	
29.0	1.04	10.12	5.15	4.96	**NWL EL.**
23.0	0.56	5.32			**SC**
22.4	0.54	4.97			**75% Anoxic Depth**
4.0	0.00	0.00			**Max Bottom**
				Mean Pond Depth	
				>2,<8 O.K.	

Groundwater Inflow (From ECS Report)

SWMF system with bleeddown outfall

From ECS Report Groundwater 0.49 gpm = 0.0011 cfs

Pool Volume

Drainage Area (DA):	13.46	ac
Runoff Coeff. (C):	0.57	
R:	30.00	in
RT:	21.1	days
WS:	153	days
CF:	12	in/ft

$$PPV = \frac{DA \times C \times R \times RT}{WS \times CF}$$

Required PPV =	2.64	ac-ft
Required PPV w/ GWF =	2.68	ac-ft
Provided PPV =	10.12	ac-ft
Provided PPV at = 75% Anoxic Depth	5.15	ac-ft

Project Name: **The Rookery** **DAI Project #:** 2008-499
Client: **D.R. Horton, Inc. - Jacksonville** **Engineer:** G. Wieger
Date: 4/5/23

Post Developed Basins 1-14 Combined

Total Drainage Area	168.75	ac.
Impervious Building	53.61	ac.
Impervious Pavement	15.97	ac.
Pond @ NWL:	17.08	ac.
Open Space	90.13	ac.

Coverage	Area (ac.)	C	C*A	%
Impervious	69.58	0.95	66.10	41.2%
Open Space	90.13	0.25	22.53	53.4%
Pond	17.08	1.00	17.08	10.1%
Total Area (ac.):	176.78			
Weighted C:	0.63			
Weighted K:	484			

Ponds 1-14 Combined Data

Storage Volume

Stage ft	Area ac.	Total Storage Volume (af)	
33.3	23.45	90.04	**MIN TOB EL.**
30.0	18.56	18.34	**WEIR EL.**
29.0	17.08	0.00	**NWL EL.**

Provided Pool Volume

Stage ft	Area ac.	Storage Vol (acft)	Anoxic Vol (af)	Mean Depth	
29.0	17.08	204.23	89.93	5.27	**NWL EL.**
23.0	9.50	120.59			**SC**
22.4	9.17	114.30			**75% Anoxic Depth**

Mean Pond Depth
>2,<8 O.K.

Stormwater Management: Post Developed Basins 1-14 Combined
Req'd Treatment Volume for Pond (RTV) for SWMF's 1-14

Treatment Volume (1): 1.01 " of rainfall over the entire basin area
14.15 ac-ft

Treatment Volume (2): 2.53 " of rainfall over the impervious area
14.61 ac-ft

Use Weir Elevation 30.0

Req'd TV: 14.61 ac-ft
Provided TV: 18.34 ac-ft

Underdrain Flow (From ECS Report)

2210	LF of underdrain	0.014 gpm per LF =	0.06807	cfs
560	LF of underdrain	0.013 gpm per LF =	0.01602	cfs
900	LF of underdrain	0.009 gpm per LF =	0.01782	cfs
540	LF of underdrain	0.006 gpm per LF =	0.00713	cfs

Groundwater Baseflow (From ECS Report)

SWMF 1-14 24.55 gpm 0.05401 cfs

Req'd Pool Volume

Drainage Area (DA): 168.75 ac

Runoff Coeff. (C): 0.63
R: 30.00 in
RT: 21.1 days
WS: 153 days
CF: 12 in/ft

$$PPV = \frac{DA \times C \times R \times RT}{WS \times CF}$$

Drawdown Weir for Pond
Sized to Drawdown 1/2 of the RTV in 24-30 Hours

GWF	0.163	cfs	Ground Water Flow
TV Flow	3.52	cfs	Treatment Volume Flow
Notch Flow	3.68	cfs	GWF + TV Flow
t:	25.1	hrs	Recovery Time
CF:	3600	sec/hr	Conversion Factor
h:	0.75	ft	Head for Orifice
C:	0.6		Weir Coefficient
A:	0.88	sf	Weir Length
D:	1.06	ft	Weir Length

Required PPV = 36.39 ac-ft
Required PPV W/ GWF = 43.21 ac-ft
Provided PPV = 204.23 ac-ft
Provided PPV at = 75% Anoxic Depth 89.93 ac-ft

Orif Diameter = 12.7 in

Anoxic Depth Calculation for SWMF 1 - 14

Land Use = 168.75 **Ac Single Family Residential and Roadway**

Impervious/DCIA Areas

Residential area will be 41.2% **impervious,** 61.5% **of which will be DCIA**

Impervious Area = 41.2% of site = 69.58 acres

DCIA Area = 69.58 X 61% 42.77 acres

DCIA Percentage = 42.77 ÷ 168.75 = 25.3% of developed area

Calculate composite non-DCIA curve number

From Drainage Calc's		CN		
HSG from Calcs	100.00%	80	=	80.00
	0.00%	61	=	0.00
		HSG AVG =		80.0

Round to 80.0

Curve Number for lawns in good condition = 80.0

Area of lawns = 168.75 - 69.58 = 99.17 acres pervious area

Impervious area which is not DCIA = 69.58 - 42.77 = 26.81 acres

Assume a curve number of 98 for impervious areas

Non-DCIA curve number = 84

$$\frac{(\ 99.17 \times 80\ ) + (\ 26.81 \times 98\ )}{99.17 + 26.81}$$

Calculate the annual runoff for the project area

Drainage Area = 168.75 acres

project site with 26% DCIA and non DCIA CN= 84

For Clay County County the annual rainfall is 49 in/yr ARV

From Chart Annual C value = 0.32 C (taken from chart for 26% and 84, See Appendix)

Annual Generated runoff volume = AC*ARV*1/12*C = 221.38 ac-ft/YR

Estimate Required Pond Volume

Annual Generated runoff volume = 221.38 ac-ft

For a 21 day residence time, the required pond volume will be:

$$221.38 \text{ ac-ft} \times \frac{1 \text{ year}}{365 \text{ days}} * 21 \text{ days} = 12.74 \text{ ac-ft}$$

For a single family residential use, the EMC for TP =		0.327	mg/l
For Highway use, the EMC for TP =		0.2	mg/l
Single Family Area =	152.78 AC	0.327	mg/l
Roadway Area =	15.97 AC	0.2	mg/l
Weighted Average, the EMC for TP =		0.31	mg/l

Calculate TP loading to wet detention pond

TP load to pond =

$$221.38 \text{ ac-ft/yr} \times \frac{43{,}560 \text{ ft}^2}{\text{ac}} \times \frac{7.48 \text{ gal}}{\text{ft}^3} \times \frac{3.785 \text{ liter}}{\text{gal}} \times \frac{0.31}{\text{liter}} \text{ mg} \times \frac{1 \text{ Kg}}{10^6} = 84.64 \text{ kg TP/yr}$$

Calculate TP concentration in pond

At the proposed 21 day residence time, the TP removal was previously estimated as 65%
Annual mass of TP remaining in water column =
84.64 kg TP/yr X (1- 65%)= 29.62 kg TP/yr

This phosphorus mass will be distributed within the pond permanent pool 12.74 ac-ft and the pond outflow.
Assuming that inflow and outflow are approximately equal, the outflow will be 221.38 ac-ft.

Mean pond concentration =

$$29.62\ \frac{\text{kg TP}}{\text{yr}} \times \frac{1\ \text{yr}}{12.74 + 221.38\ \text{ac-ft}} \times \frac{1\ \text{ac}}{43{,}560\ \text{ft}^2} \times \frac{1\ \text{ft}^3}{7.48\ \text{gal}} \times \frac{1\ \text{gal}}{3.785\ \text{liter}} \times \frac{10^6\ \text{mg}}{\text{kg}} = 103\ \frac{\text{ug TP}}{\text{liter}}$$

0.10 mg TP/Liter

Calculate mean chlorophyll-a concentration in pond

ln(chyl-a) = 1.058 ln (TP) -.934

ln(chyl-a) = 3.97

chyl-a = 53.0 mg/m^3

Calculate mean Secchi disk depth

$$SD = \frac{24.2386 + [0.3041)(\text{chyl-a})]}{(6.0632+\text{chyl-a})}$$

SD = 0.68 meters = 2.23 ft

Calculate depth of anoxic condition in pond

Depth of DO<1 = 3.035 x Secchi + .02164 x (chyl-a) - .004979 x Total P

Depth of DO<1= Anoxic depth (m)

Secchi = Secchi disk depth (m)

chyl-a = chlorophyll-a concentration (mg/m^3)

Depth of Do < 1 = 2.70 meters = 8.86 ft
75 % of Anoxic Depth = 6.64 ft

Evaluate permanent pool volumes above Anoxic Depth

Permanent Pool Volume Required = 36.39 ac-ft

Permanent Pool Volume Provided at 75 % Anoxic Depth = 89.93 ac-ft

Permanent Pool provided above 75 % Anoxic Depth far exceeds required volume.

Project Name: **The Rookery** **DAI Project #:** 2008-499
Client: **D.R. Horton, Inc. - Jacksonville** **Engineer:** G. Wieger
Date: 4/5/23

Post Developed Basin 15

Total Drainage Area	23.91	ac.	
Impervious Building	8.03	ac.	** 125 Single Family Lots*
Impervious Pavement	2.43	ac.	
Pond @ NWL:	0.85	ac.	
Open Space "D"	12.60	ac.	

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%	
Impervious	10.46	98	0.95	1025.56	9.94	43.8%	
Open Space	12.60	80	0.25	1007.61	3.15	52.7%	(Good Condition)
Pond	0.85	100	1.00	85.00	0.85	3.6%	
Total Area (ac.):	23.91						
Weighted CN:	88.59						
Weighted C:	0.58						
Weighted K:	484						

Pond 15
Storage Volume

Stage ft	Area ac.	Total Storage Volume (af)	
28.8	1.23	4.99	**MIN TOB EL.**
27.0	1.09	2.91	**MIN INTERCONNECTED TOB EL.**
24.6	0.90	0.52	**WEIR EL.**
24.0	0.85	0.00	**NWL EL.**

Provided Pool Volume

Stage ft	Area ac.	Storage Vol (acft)	Anoxic Vol (af)	Mean Depth	
24.0	0.85	6.83	4.18	4.92	**NWL EL.**
18.0	0.45	2.93			**SC**
17.4	0.43	2.64			**75% Anoxic Depth**
5.0	0.00	0.00			**Max Bottom**
				Mean Pond Depth	
				>2,<8 O.K.	

Groundwater Inflow (From ECS Report)

From ECS Report Groundwater 3 gpm = 0.0066 cfs

Pool Volume

Drainage Area (DA):	23.91	ac
Runoff Coeff. (C):	0.58	
R:	30.00	in
RT:	21.1	days
WS:	153	days
CF:	12	in/ft

$$PPV = \frac{DA \times C \times R \times RT}{WS \times CF}$$

Required PPV =	4.80	ac-ft
Required PPV w/ GWF =	5.08	ac-ft
Provided PPV =	6.83	ac-ft
Provided PPV at = 75% Anoxic Depth	4.18	ac-ft

Project Name: **The Rookery** **DAI Project #:** 2008-499
Client: **D.R. Horton, Inc. - Jacksonville** **Engineer:** G. Wieger
Date: 4/5/23

Post Developed Basin 16

Total Drainage Area	10.30	ac.	
Impervious Building	2.64	ac.	** 41 Single Family Lots*
Impervious Pavement	0.79	ac.	
Pond @ NWL:	1.48	ac.	
Open Space "D"	5.39	ac.	

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%	
Impervious	3.43	98	0.95	335.69	3.25	33.3%	
Open Space	5.39	80	0.25	431.56	1.35	52.4%	(Good Condition)
Pond	1.48	100	1.00	148.00	1.48	14.4%	
Total Area (ac.):	10.30						
Weighted CN:	88.86						
Weighted C:	0.59						
Weighted K:	484						

Pond 16
Storage Volume

Stage ft	Area ac.	Total Storage Volume (af)	
28.7	2.01	8.20	**MIN TOB EL.**
27.0	1.82	4.95	**MIN INTERCONNECTED TOB EL.**
24.6	1.55	0.91	**WEIR EL.**
24.0	1.48	0.00	**NWL EL.**

Provided Pool Volume

Stage ft	Area ac.	Storage Vol (acft)	Anoxic Vol (af)	Mean Depth	
24.0	1.48	18.68	7.68	5.19	**NWL EL.**
18.0	0.89	11.57			**SC**
17.4	0.87	11.00			**75% Anoxic Depth**
-8.0	0.00	0.00			**Max Bottom**
				Mean Pond Depth	
				>2,<8 O.K.	

Groundwater Inflow (From ECS Report)

From ECS Report Groundwater 2.6 gpm = 0.0057 cfs

Pool Volume

Drainage Area (DA):	10.30	ac
Runoff Coeff. (C):	0.59	
R:	30.00	in
RT:	21.1	days
WS:	153	days
CF:	12	in/ft

$$PPV = \frac{DA \times C \times R \times RT}{WS \times CF}$$

Required PPV =	2.09	ac-ft
Required PPV w/ GWF =	2.33	ac-ft
Provided PPV =	18.68	ac-ft
Provided PPV at = 75% Anoxic Depth	7.68	ac-ft

Project Name: **The Rookery** **DAI Project #:** 2008-499
Client: **D.R. Horton, Inc. - Jacksonville** **Engineer:** G. Wieger
Date: 4/5/23

Post Developed Basin 17

Total Drainage Area	9.44	ac.	
Impervious Building	3.03	ac.	** 40 Single Family Lots and 22 TH Lots*
Impervious Pavement	0.66	ac.	
Pond @ NWL:	1.47	ac.	
Open Space "D"	4.28	ac.	

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%	
Impervious	3.69	98	0.95	361.20	3.50	39.0%	
Open Space	4.28	80	0.25	342.74	1.07	45.4%	(Good Condition)
Pond	1.47	100	1.00	147.00	1.47	15.6%	
Total Area (ac.):	9.44						
Weighted CN:	90.14						
Weighted C:	0.64						
Weighted K:	484						

Pond 17
Storage Volume

Stage ft	Area ac.	Total Storage Volume (af)	
28.1	1.89	6.89	**MIN TOB EL.**
27.0	1.78	4.87	**MIN INTERCONNECTED TOB EL.**
24.6	1.53	0.90	**WEIR EL.**
24.0	1.47	0.00	**NWL EL.**

Provided Pool Volume

Stage ft	Area ac.	Storage Vol (acft)	Anoxic Vol (af)	Mean Depth	
24.0	1.47	18.36	7.79	5.30	**NWL EL.**
18.0	0.93	11.16			**SC**
17.4	0.91	10.57			**75% Anoxic Depth**
-6.0	0.00	0.00			**Max Bottom**
				Mean Pond Depth	
				>2,<8 O.K.	

Groundwater Inflow (From ECS Report)

From ECS Report Groundwater 2.3 gpm = 0.0051 cfs

Pool Volume

Drainage Area (DA):	9.44	ac
Runoff Coeff. (C):	0.64	
R:	30.00	in
RT:	21.1	days
WS:	153	days
CF:	12	in/ft

$$PPV = \frac{DA \times C \times R \times RT}{WS \times CF}$$

Required PPV =	2.08	ac-ft
Required PPV w/ GWF =	2.29	ac-ft
Provided PPV =	18.36	ac-ft
Provided PPV at = 75% Anoxic Depth	7.79	ac-ft

Project Name: **The Rookery** **DAI Project #:** 2008-499
Client: **D.R. Horton, Inc. - Jacksonville** **Engineer:** G. Wieger
Date: 4/5/23

Post Developed Basin 18

Total Drainage Area	21.44	ac.	
Impervious Building	1.95	ac.	** 20 Single Family Lots and 32 TH Lots*
Impervious Pavement	3.13	ac.	
Pond @ NWL:	2.33	ac.	
Open Space "A"	3.93	ac.	
Open Space "D"	10.10	ac.	

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%	
Impervious	5.08	98	0.95	497.52	4.82	23.7%	
Open Space "A"	3.93	39	0.25	153.40	0.98	18.3%	
Open Space "D"	10.10	80	0.25	808.00	2.53	47.1%	(Good Condition)
Pond	2.33	100	1.00	233.00	2.33	10.9%	
Total Area (ac.):	21.44						
Weighted CN:	78.91						
Weighted C:	0.50						
Weighted K:	484						

Pond 18
Storage Volume

Stage ft	Area ac.	Total Storage Volume (af)	
28.5	3.12	12.26	**MIN TOB EL.**
27.0	2.86	7.78	**MIN INTERCONNECTED TOB EL.**
24.6	2.44	1.43	**WEIR EL.**
24.0	2.33	0.00	**NWL EL.**

Provided Pool Volume

Stage ft	Area ac.	Storage Vol (acft)	Anoxic Vol (af)	Mean Depth	
24.0	2.33	24.41	11.86	5.09	**NWL EL.**
18.0	1.34	13.40			**SC**
17.4	1.30	12.55			**75% Anoxic Depth**
-2.0	0.00	0.00			**Max Bottom**
					Mean Pond Depth >2,<8 O.K.

Groundwater Inflow (From ECS Report)
From ECS Report Groundwater 4.1 gpm = 0.0090 cfs

Pool Volume

Drainage Area (DA):	21.44	ac
Runoff Coeff. (C):	0.50	
R:	30.00	in
RT:	21.1	days
WS:	153	days
CF:	12	in/ft

$$PPV = \frac{DA \times C \times R \times RT}{WS \times CF}$$

Required PPV =	3.67	ac-ft
Required PPV w/ GWF =	4.05	ac-ft
Provided PPV =	24.41	ac-ft
Provided PPV at = 75% Anoxic Depth	11.86	ac-ft

Project Name: **The Rookery** **DAI Project #:** 2008-499
Client: **D.R. Horton, Inc. - Jacksonville** **Engineer:** G. Wieger
Date: 4/5/23

Post Developed Basin 19

Total Drainage Area	11.41	ac.	
Impervious Building	2.57	ac.	** 14 Single Family Lots and 81 TH Lots*
Impervious Pavement	1.91	ac.	
Pond @ NWL:	0.94	ac.	
Open Space "A"	2.88	ac.	
Open Space "D"	3.11	ac.	

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%	
Impervious	4.48	98	0.95	439.38	4.26	39.3%	
Open Space "A"	2.88	39	0.25	112.18	0.72	25.2%	
Open Space "D"	3.11	80	0.25	248.80	0.78	27.3%	(Good Condition)
Pond	0.94	100	1.00	94.00	0.94	8.2%	
Total Area (ac.):	11.41						
Weighted CN:	78.38						
Weighted C:	0.59						
Weighted K:	484						

Pond 19
Storage Volume

Stage ft	Area ac.	Total Storage Volume (af)	
27.8	1.28	4.22	**MIN TOB EL.**
27.0	1.21	3.22	**MIN INTERCONNECTED TOB EL.**
24.6	0.99	0.58	**WEIR EL.**
24.0	0.94	0.00	**NWL EL.**

Provided Pool Volume

Stage ft	Area ac.	Storage Vol (acft)	Anoxic Vol (af)	Mean Depth	
24.0	0.94	7.65	4.49	4.78	**NWL EL.**
18.0	0.46	3.45			**SC**
17.4	0.44	3.16			**75% Anoxic Depth**
3.0	0.00	0.00			**Max Bottom**
				Mean Pond Depth	
				>2,<8 O.K.	

Groundwater Inflow (From ECS Report)
From ECS Report Groundwater 1.2 gpm = 0.0026 cfs

Pool Volume

Drainage Area (DA):	11.41	ac
Runoff Coeff. (C):	0.59	
R:	30.00	in
RT:	21.1	days
WS:	153	days
CF:	12	in/ft

$$PPV = \frac{DA \times C \times R \times RT}{WS \times CF}$$

Required PPV =	2.31	ac-ft
Required PPV w/ GWF =	2.42	ac-ft
Provided PPV =	7.65	ac-ft
Provided PPV at = 75% Anoxic Depth	4.49	ac-ft

Project Name: **The Rookery** **DAI Project #:** 2008-499
Client: **D.R. Horton, Inc. - Jacksonville** **Engineer:** G. Wieger
Date: 4/5/23

Post Developed Basin 20

Total Drainage Area	3.34	ac.	
Impervious Building	1.14	ac.	** 12 Single Family Lots and 81 TH Lots*
Impervious Pavement	0.27	ac.	
Pond @ NWL:	0.39	ac.	
Open Space "A"	1.06	ac.	
Open Space "D"	0.48	ac.	

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%	
Impervious	1.41	98	0.95	138.50	1.34	42.3%	
Open Space "A"	1.06	39	0.25	41.21	0.26	31.6%	
Open Space "D"	0.48	80	0.25	38.40	0.12	14.4%	(Good Condition)
Pond	0.39	100	1.00	39.00	0.39	11.7%	
Total Area (ac.):	3.34						
Weighted CN:	76.98						
Weighted C:	0.63						
Weighted K:	484						

Pond 20
Storage Volume

Stage ft	Area ac.	Total Storage Volume (af)	
27.4	0.58	1.65	**MIN TOB EL.**
27.0	0.56	1.42	**MIN INTERCONNECTED TOB EL.**
24.6	0.42	0.24	**WEIR EL.**
24.0	0.39	0.00	**NWL EL.**

Provided Pool Volume

Stage ft	Area ac.	Storage Vol (acft)	Anoxic Vol (af)	Mean Depth	
24.0	0.39	2.08	1.64	4.21	**NWL EL.**
18.0	0.13	0.52			**SC**
17.4	0.12	0.44			**75% Anoxic Depth**
10.0	0.00	0.00			**Max Bottom**
					Mean Pond Depth >2,<8 O.K.

Groundwater Inflow (From ECS Report)

From ECS Report Groundwater 0.4 gpm = 0.0009 cfs

Pool Volume

Drainage Area (DA):	3.34	ac
Runoff Coeff. (C):	0.63	
R:	30.00	in
RT:	21.1	days
WS:	153	days
CF:	12	in/ft

$$PPV = \frac{DA \times C \times R \times RT}{WS \times CF}$$

Required PPV =	0.73	ac-ft
Required PPV w/ GWF =	0.77	ac-ft
Provided PPV =	2.08	ac-ft
Provided PPV at = 75% Anoxic Depth	1.64	ac-ft

Project Name: The Rookery
Client: D.R. Horton, Inc. - Jacksonville

DAI Project #: 2008-499
Engineer: G. Wieger
Date: 4/5/23

Post Developed Basin 21

Total Drainage Area	40.37 ac.	
Impervious Building	8.87 ac.	* 139 TH Lots and 6 acres of Amenity Center
Impervious Pavement	4.28 ac.	
Pond @ NWL:	12.42 ac.	
Open Space "A"	3.41 ac.	
Open Space "D"	11.39 ac.	

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%	
Impervious	13.15	98	0.95	1288.89	12.49	32.6%	
Open Space "A"	3.41	39	0.25	132.92	0.85	8.4%	
Open Space "D"	11.39	80	0.25	911.20	2.85	28.2%	(Good Condition)
Pond	12.42	100	1.00	1242.00	12.42	30.8%	
Total Area (ac.):	40.37						
Weighted CN:	88.56						
Weighted C:	0.71						
Weighted K:	484						

Pond 21 Data
Storage Volume

Stage ft	Area ac.	Total Storage Volume (af)	
28.0	13.29	51.42	**MIN TOB EL.**
27.0	13.07	38.24	**MIN INTERCONNECTED TOB EL.**
24.6	12.55	7.49	**WEIR EL.**
24.0	12.42	0.00	**NWL EL.**

Provided Pool Volume

Stage ft	Area ac.	Storage Vol (acft)	Anoxic Vol (af)	Mean Depth	
24.0	12.42	315.23	76.39	6.15	**NWL EL.**
18.0	10.75	245.72			**Partial SC**
17.4	10.61	238.84			**75% Anoxic Depth**
5.0	7.93	124.30			**Shelf**
-15.0	4.50	0.00			**Bottom**

Mean Pond Depth
>2,<8 O.K.

Groundwater Inflow (From ECS Report)
SWMF system with bleeddown outfall
From ECS Report Groundwater 0.8 gpm = 0.0018 cfs

Pool Volume

Drainage Area (DA):	40.37	ac
Runoff Coeff. (C):	0.71	
R:	30.00	in
RT:	21.1	days
WS:	153	days
CF:	12	in/ft

$$PPV = \frac{DA \times C \times R \times RT}{WS \times CF}$$

Required PPV =	9.85	ac-ft
Required PPV w/ GWF =	9.92	ac-ft
Provided PPV =	315.23	ac-ft
Provided PPV at = 75% Anoxic Depth	76.39	ac-ft

Project Name: The Rookery
Client: D.R. Horton, Inc. - Jacksonville

DAI Project #: 2008-499
Engineer: G. Wieger
Date: 4/5/23

Post Developed Basin 22

Total Drainage Area	12.61	ac.	
Impervious Building	3.28	ac.	** 51 Single Family Lots*
Impervious Pavement	1.16	ac.	
Pond @ NWL:	0.91	ac.	
Open Space "D"	7.26	ac.	

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%	
Impervious	4.44	98	0.95	434.95	4.22	35.2%	
Open Space	7.26	80	0.25	580.94	1.82	57.6%	(Good Condition)
Pond	0.91	100	1.00	91.00	0.91	7.2%	
Total Area (ac.):	12.61						
Weighted CN:	87.78						
Weighted C:	0.55						
Weighted K:	484						

Pond 22
Storage Volume

Stage ft	Area ac.	Total Storage Volume (af)	
27.8	1.29	4.18	**MIN TOB EL.**
27.0	1.21	3.18	**MIN INTERCONNECTED TOB EL.**
24.6	0.97	0.56	**WEIR EL.**
24.0	0.91	0.00	**NWL EL.**

Provided Pool Volume

Stage ft	Area ac.	Storage Vol (acft)	Anoxic Vol (af)	Mean Depth	
24.0	0.91	6.15	4.11	4.51	**NWL EL.**
18.0	0.38	2.28			**SC**
17.4	0.36	2.04			**75% Anoxic Depth**
6.0	0.00	0.00			**Max Bottom**
				Mean Pond Depth	
				>2,<8 O.K.	

Groundwater Inflow (From ECS Report)

From ECS Report Groundwater 0.9 gpm = 0.0020 cfs

Pool Volume

Drainage Area (DA):	12.61	ac
Runoff Coeff. (C):	0.55	
R:	30.00	in
RT:	21.1	days
WS:	153	days
CF:	12	in/ft

$$PPV = \frac{DA \times C \times R \times RT}{WS \times CF}$$

Required PPV =	2.39	ac-ft
Required PPV w/ GWF =	2.47	ac-ft
Provided PPV =	6.15	ac-ft
Provided PPV at = 75% Anoxic Depth	4.11	ac-ft

Project Name: The Rookery
Client: D.R. Horton, Inc. - Jacksonville

DAI Project #: 2008-499
Engineer: G. Wieger
Date: 4/5/23

Post Developed Basin 23

Total Drainage Area	7.02 ac.	
Impervious Building	2.12 ac.	* 15 Single Family Lots and 56 TH Lots
Impervious Pavement	0.76 ac.	
Pond @ NWL:	0.78 ac.	
Open Space "D"	3.36 ac.	

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%	
Impervious	2.88	98	0.95	282.36	2.74	41.0%	
Open Space	3.36	80	0.25	268.70	0.84	47.8%	(Good Condition)
Pond	0.78	100	1.00	78.00	0.78	11.1%	
Total Area (ac.):	7.02						
Weighted CN:	89.61						
Weighted C:	0.62						
Weighted K:	484						

Pond 23
Storage Volume

Stage ft	Area ac.	Total Storage Volume (af)	
27.4	1.06	3.13	**MIN TOB EL.**
27.0	1.03	2.71	**MIN INTERCONNECTED TOB EL.**
24.6	0.83	0.48	**WEIR EL.**
24.0	0.78	0.00	**NWL EL.**

Provided Pool Volume

Stage ft	Area ac.	Storage Vol (acft)	Anoxic Vol (af)	Mean Depth	
24.0	0.78	6.02	3.61	4.63	**NWL EL.**
18.0	0.35	2.63			**SC**
17.4	0.33	2.40			**75% Anoxic Depth**
3.0	0.00	0.00			**Max Bottom**
				Mean Pond Depth	
				>2,<8 O.K.	

Groundwater Inflow (From ECS Report)

From ECS Report Groundwater 0.5 gpm = 0.0011 cfs

Pool Volume

Drainage Area (DA):	7.02	ac
Runoff Coeff. (C):	0.62	
R:	30.00	in
RT:	21.1	days
WS:	153	days
CF:	12	in/ft

$$PPV = \frac{DA \times C \times R \times RT}{WS \times CF}$$

Required PPV =	1.50	ac-ft
Required PPV w/ GWF =	1.55	ac-ft
Provided PPV =	6.02	ac-ft
Provided PPV at = 75% Anoxic Depth	3.61	ac-ft

Project Name: **The Rookery** **DAI Project #:** 2008-499
Client: **D.R. Horton, Inc. - Jacksonville** **Engineer:** G. Wieger
Date: 4/5/23

Post Developed Basins 15-23

Total Drainage Area	139.84	ac.
Impervious Building	33.63	ac.
Impervious Pavement	15.39	ac.
Pond @ NWL:	21.57	ac.
Open Space	69.25	ac.

Coverage	Area (ac.)	C	C*A	%
Impervious	49.02	0.95	46.57	35.1%
Open Space	69.25	0.25	17.31	49.5%
Pond	21.57	1.00	21.57	15.4%
Total Area (ac.):	139.84			
Weighted C:	0.61			
Weighted K:	484			

Ponds 15-23 Combined Data

Storage Volume

Stage ft	Area ac.	Total Storage Volume (af)	
27.0	25.15	87.12	**MIN TOB EL.**
24.6	22.18	13.12	**WEIR EL.**
24.0	21.57	0.00	**NWL EL.**

Provided Pool Volume

Stage ft	Area ac.	Storage Vol (acft)	Anoxic Vol (af)	Mean Depth	
24.0	21.57	405.40	121.75	5.64	**NWL EL.**
18.0	15.68	293.65			**SC**
17.4	15.36	283.65			**75% Anoxic Depth**

Mean Pond Depth
>2,<8 O.K.

Stormwater Management: Post Developed Basins 15-23 Combined
Req'd Treatment Volume for Pond (RTV) for SWMF's 15-23

Treatment Volume (1): 1.01 " of rainfall over the entire basin area
11.72 ac-ft

Treatment Volume (2): 2.53 " of rainfall over the impervious area
10.29 ac-ft

Use Weir Elevation
24.6

Req'd TV: 11.72 ac-ft
Provided TV: 13.12 ac-ft

Groundwater Baseflow (From ECS Report)
SWMF 15-23 12.80 gpm 0.02816 cfs

Req'd Pool Volume
Drainage Area (DA): 139.84 ac

Runoff Coeff. (C): 0.61
R: 30.00 in
RT: 21.1 days
WS: 153 days
CF: 12 in/ft

$$PPV = \frac{DA \times C \times R \times RT}{WS \times CF}$$

Required PPV = 29.42 ac-ft
Required PPV W/ GWF = 30.60 ac-ft
Provided PPV = 405.40 ac-ft
Provided PPV at = 75% Anoxic Depth 121.75 ac-ft

Drawdown Weir for Pond
Sized to Drawdown 1/2 of the RTV in 24-30 Hours

GWF	0.028	cfs	Ground Water Flow
TV Flow	2.96	cfs	Treatment Volume Flow
Notch Flow	2.98	cfs	GWF + TV Flow
t:	24	hrs	Recovery Time
CF:	3600	sec/hr	Conversion Factor
h:	0.45	ft	Head for Orifice
C:	0.6		Weir Coefficient
A:	0.92	sf	Weir Length
D:	1.08	ft	Weir Length

Orif Diameter = 13.0 in

Anoxic Depth Calculation for SWMF 15 thru 23

Land Use = 139.84 **Ac Single Family Residential and Roadway**

Impervious/DCIA Areas

Residential area will be 35.1% **impervious,** 65.7% **of which will be DCIA**

Impervious Area = 35.1% of site = 49.02 acres

DCIA Area = 49.02 X 66% 32.21 acres

DCIA Percentage = 32.21 ÷ 139.84 = 23.0% of developed area

Calculate composite non-DCIA curve number

From Drainage Calc's CN

HSG from Calcs 100.00% 80 = 80.00

0.00% 61 = 0.00

HSG AVG = 80.0 Round to 80.0

Curve Number for lawns in good condition = 80.0

Area of lawns = 139.84 - 49.02 = 90.82 acres pervious area

Impervious area which is not DCIA = 49.02 - 32.21 = 16.81 acres

Assume a curve number of 98 for impervious areas

Non-DCIA curve number = 83

$$\frac{(90.82 \times 80) + (16.81 \times 98)}{90.82 + 16.81}$$

Calculate the annual runoff for the project area

Drainage Area = 139.84 acres

project site with 24% DCIA and non DCIA CN= 83

For Clay County County the annual rainfall is 49 in/yr ARV

From Chart Annual C value = 0.30 C (taken from chart for 23% and 83, See Appendix)

Annual Generated runoff volume = AC*ARV*1/12*C = 172.22 ac-ft/YR

Estimate Required Pond Volume

Annual Generated runoff volume = 172.22 ac-ft

For a 21 day residence time, the required pond volume will be:

$$172.22 \text{ ac-ft} \times \frac{1 \text{ year}}{365 \text{ days}} * 21 \text{ days} = 9.91 \text{ ac-ft}$$

For a single family residential use, the EMC for TP = 0.327 mg/l

For Highway use, the EMC for TP = 0.2 mg/l

Single Family Area = 124.45 AC 0.327 mg/l

Roadway Area = 15.39 AC 0.2 mg/l

Weighted Average, the EMC for TP = 0.31 mg/l

Calculate TP loading to wet detention pond

TP load to pond =

$$172.22 \text{ ac-ft/yr} \times \frac{43{,}560 \text{ ft}^2}{\text{ac}} \times \frac{7.48 \text{ gal}}{\text{ft}^3} \times \frac{3.785 \text{ liter}}{\text{gal}} \times \frac{0.31 \text{ mg}}{\text{liter}} \times \frac{1 \text{ Kg}}{10^6} = 65.84 \text{ kg TP/yr}$$

Calculate TP concentration in pond

At the proposed 21 day residence time, the TP removal was previously estimated as 65%
Annual mass of TP remaining in water column =
65.84 kg TP/yr X (1- 65%)= 23.04 kg TP/yr

This phosphorus mass will be distributed within the pond permanent pool 9.91 ac-ft and the pond outflow.
Assuming that inflow and outflow are approximately equal, the outflow will be 172.22 ac-ft.

Mean pond concentration =

$$23.04 \frac{\text{kg TP/yr}}{9.91 + 172.22 \text{ ac-ft}} \times \frac{1 \text{ yr}}{} \times \frac{1 \text{ ac}}{43{,}560 \text{ ft}^2} \times \frac{1 \text{ ft}^3}{7.48 \text{ gal}} \times \frac{1 \text{ gal}}{3.785 \text{ liter}} \times \frac{10^6 \text{ mg}}{\text{kg}} = 0.10 \text{ mg TP/Liter} = 103 \text{ ug TP/liter}$$

Calculate mean chlorophyll-a concentration in pond

ln(chyl-a) = 1.058 ln (TP) -.934

ln(chyl-a) = 3.97

chyl-a = 53.0 mg/m^3

Calculate mean Secchi disk depth

$$SD = \frac{24.2386 + [0.3041)(\text{chyl-a})]}{(6.0632+\text{chyl-a})}$$

SD = 0.68 meters = 2.23 ft

Calculate depth of anoxic condition in pond

Depth of DO<1 = 3.035 x Secchi + .02164 x (chyl-a) - .004979 x Total P

Depth of DO<1= Anoxic depth (m)

Secchi = Secchi disk depth (m)

chyl-a = chlorophyll-a concentration (mg/m^3)

Depth of Do < 1 = 2.70 meters = 8.86 ft
75 % of Anoxic Depth = 6.64 ft

Evaluate permanent pool volumes above Anoxic Depth

Permanent Pool Volume Required = 29.42 ac-ft

Permanent Pool Volume Provided at 75 % Anoxic Depth = 121.75 ac-ft

Permanent Pool provided above 75 % Anoxic Depth far exceeds required volume.

Project Name: **The Rookery** **DAI Project #:** 2008-499
Client: **D.R. Horton, Inc. - Jacksonville** **Engineer:** G. Wieger
Date: 4/5/23

Post Developed Basin 24

Total Drainage Area	20.72	ac.
Impervious Building	0.00	ac.
Impervious Pavement	12.97	ac.
Pond @ NWL:	2.25	ac.
Open Space "A"	4.02	ac.
Open Space "D"	1.48	ac.

** 10 acres of impervious for future development*

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%	
Impervious	12.97	98	0.95	1271.06	12.32	62.6%	
Open Space "A"	4.02	39	0.25	156.78	1.01	19.4%	
Open Space "D"	1.48	80	0.25	118.40	0.37	7.1%	(Good Condition)
Pond	2.25	100	1.00	225.00	2.25	10.9%	
Total Area (ac.):	20.72						
Weighted CN:	85.48						
Weighted C:	0.77						
Weighted K:	484						

Pond 24 Data

Storage Volume

Stage ft	Area ac.	Total Storage Volume (af)	
27.0	3.00	15.75	**MIN TOB EL.**
22.2	2.40	2.79	**WEIR EL.**
21.0	2.25	0.00	**NWL EL.**

Provided Pool Volume

Stage ft	Area ac.	Storage Vol (acft)	Anoxic Vol (af)	Mean Depth	
21.0	2.25	76.77	13.05	5.80	**NWL EL.**
15.0	1.59	65.25			**Partial SC**
14.0	1.51	63.72			**75% Anoxic Depth**
5.0	0.82	53.20			**Shelf**
-15.0	4.50	0.00			**Bottom**
				Mean Pond Depth	
				>2,<8 O.K.	

Stormwater Management: Post Developed Basin 24
Req'd Treatment Volume for Pond (RTV) for SWMF 24

Treatment Volume (1): 1.01 " of rainfall over the entire basin area
1.74 ac-ft

Treatment Volume (2): 2.53 " of rainfall over the impervious area
2.72 ac-ft

Use Weir Elevation
22.2

Req'd TV: 2.72 ac-ft
Provided TV: 2.79 ac-ft

Groundwater Baseflow (From ECS Report)
4.30 gpm 0.00946 cfs

Req'd Pool Volume

Drainage Area (DA): 20.72 ac

Runoff Coeff. (C): 0.77
R: 30.00 in
RT: 21.1 days
WS: 153 days
CF: 12 in/ft

$$PPV = \frac{DA \times C \times R \times RT}{WS \times CF}$$

Drawdown Weir for Pond
Sized to Drawdown 1/2 of the RTV in 24-30 Hours

GWF	0.009	cfs	Ground Water Flow
TV Flow	0.67	cfs	Treatment Volume Flow
Notch Flow	0.68	cfs	GWF + TV Flow
t:	24.5	hrs	Recovery Time
CF:	3600	sec/hr	Conversion Factor
h:	0.9	ft	Head for Orifice
C:	0.6		Weir Coefficient
A:	0.15	sf	Weir Length
D:	0.44	ft	Weir Length

Required PPV = 5.49 ac-ft
Required PPV W/ GWF = 5.89 ac-ft
Provided PPV = 76.77 ac-ft
Provided PPV at = 75% Anoxic Depth 13.05 ac-ft

Orif Diameter = 5.2 in

Anoxic Depth Calculation for SWMF 24

Land Use = **20.72** **Ac Single Family Residential and Roadway**

Impervious/DCIA Areas

Residential area will be 62.6% **impervious,** 100.0% **of which will be DCIA**

Impervious Area = 62.6% of site = 12.97 acres

DCIA Area = 12.97 X 100% 12.97 acres

DCIA Percentage = 12.97 ÷ 20.72 = 62.6% of developed area

Calculate composite non-DCIA curve number

From Drainage Calc's		CN		
HSG from Calcs	100.00%	80	=	80.00
	0.00%	61	=	0.00
		HSG AVG =		80.0

Round to 80.0

Curve Number for lawns in good condition = 80.0

Area of lawns = 20.72 - 12.97 = 7.75 acres pervious area

Impervious area which is not DCIA = 12.97 - 12.97 = - acres

Assume a curve number of 98 for impervious areas

Non-DCIA curve number = 80 =

$$\frac{(\ 7.75 \times 80\ ) + (\ - \times 98\ )}{7.75 + -}$$

Calculate the annual runoff for the project area

Drainage Area = 20.72 acres

project site with 63% DCIA and non DCIA CN= 80

For Clay County County the annual rainfall is 49 in/yr ARV

From Chart Annual C value = 0.32 C (taken from chart for 30% and 80, See Appendix)

Annual Generated runoff volume = AC*ARV*1/12*C = 27.07 ac-ft/YR

Estimate Required Pond Volume

Annual Generated runoff volume = 27.07 ac-ft

For a 21 day residence time, the required pond volume will be:

$$27.07 \text{ ac-ft} \times \frac{1 \text{ year}}{365 \text{ days}} * 21 \text{ days} = 1.56 \text{ ac-ft}$$

For a single family residential use, the EMC for TP =		0.327	mg/l
For Highway use, the EMC for TP =		0.2	mg/l
Single Family Area =	7.75 AC	0.327	mg/l
Roadway Area =	12.97 AC	0.2	mg/l
Weighted Average, the EMC for TP =		0.25	mg/l

Calculate TP loading to wet detention pond

TP load to pond =

$$27.07 \text{ ac-ft/yr} \times \frac{43{,}560 \text{ ft}^2}{\text{ac}} \times \frac{7.48 \text{ gal}}{\text{ft}^3} \times \frac{3.785 \text{ liter}}{\text{gal}} \times \frac{0.25}{\text{liter}} \text{ mg} \times \frac{1 \text{ Kg}}{10^6} = 8.35 \text{ kg TP/yr}$$

Calculate TP concentration in pond

At the proposed 21 day residence time, the TP removal was previously estimated as 65%
Annual mass of TP remaining in water column =
8.35 kg TP/yr X (1- 65%)= 2.92 kg TP/yr

This phosphorus mass will be distributed within the pond permanent pool 1.56 ac-ft and the pond outflow.
Assuming that inflow and outflow are approximately equal, the outflow will be 27.07 ac-ft.

Mean pond concentration =

$$2.92 \frac{\text{kg TP/yr}}{1.56 + 27.07 \text{ ac-ft}} \times \frac{1 \text{ yr}}{43{,}560 \text{ ft}^2} \times \frac{1 \text{ ac}}{7.48 \text{ gal}} \times \frac{1 \text{ ft}^3}{3.785 \text{ liter}} \times \frac{1 \text{ gal}}{\text{kg}} \times \frac{10^6 \text{ mg}}{\text{kg}} = 0.08 \text{ mg TP/Liter} = 83 \text{ ug TP/liter}$$

Calculate mean chlorophyll-a concentration in pond

ln(chyl-a) = 1.058 ln (TP) -.934

ln(chyl-a) = 3.74

chyl-a = 42.1 mg/m^3

Calculate mean Secchi disk depth

$$SD = \frac{24.2386 + [0.3041)(\text{chyl-a})]}{(6.0632+\text{chyl-a})}$$

SD = 0.77 meters = 2.53 ft

Calculate depth of anoxic condition in pond

Depth of DO<1 = 3.035 x Secchi + .02164 x (chyl-a) - .004979 x Total P

Depth of DO<1= Anoxic depth (m)

Secchi = Secchi disk depth (m)

chyl-a = chlorophyll-a concentration (mg/m^3)

Depth of Do < 1 = 2.84 meters = 9.32 ft
75 % of Anoxic Depth = 6.99 ft

Evaluate permanent pool volumes above Anoxic Depth

Permanent Pool Volume Required = 5.49 ac-ft

Permanent Pool Volume Provided at 75 % Anoxic Depth = 13.05 ac-ft

Permanent Pool provided above 75 % Anoxic Depth far exceeds required volume.

Project Name: The Rookery **DAI Project #:** 2008-499
Client: D.R. Horton, Inc. - Jacksonville **Engineer:** G. Wieger
Date: 4/5/23

Post Developed Basin 25

Total Drainage Area	5.64	ac.	
Impervious Building	1.24	ac.	* 60 TH Lots
Impervious Pavement	0.33	ac.	
Pond @ NWL:	0.40	ac.	
Open Space "D"	3.67	ac.	

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%	
Impervious	1.57	98	0.95	153.83	1.49	27.8%	
Open Space	3.67	80	0.25	293.63	0.92	65.1%	(Good Condition)
Pond	0.40	100	1.00	40.00	0.40	7.1%	
Total Area (ac.):	5.64						
Weighted CN:	86.43						
Weighted C:	0.50						
Weighted K:	484						

Pond 25
Storage Volume

Stage ft	Area ac.	Total Storage Volume (af)	
28.9	0.71	2.72	**MIN TOB EL.**
28.1	0.66	2.17	**MIN INTERCONNECTED TOB EL.**
25.0	0.46	0.43	**WEIR EL.**
24.0	0.40	0.00	**NWL EL.**

Provided Pool Volume

Stage ft	Area ac.	Storage Vol (acft)	Anoxic Vol (af)	Mean Depth	
24.0	0.40	2.10	1.63	4.08	**NWL EL.**
18.0	0.12	0.54			**SC**
17.4	0.11	0.47			**75% Anoxic Depth**
9.0	0.00	0.00			**Max Bottom**
				Mean Pond Depth	
				>2,<8 O.K.	

Groundwater Inflow (From ECS Report)

From ECS Report Groundwater 0.4 gpm = 0.0009 cfs

Pool Volume

Drainage Area (DA):	5.64	ac
Runoff Coeff. (C):	0.50	
R:	30.00	in
RT:	21.1	days
WS:	153	days
CF:	12	in/ft

$$PPV = \frac{DA \times C \times R \times RT}{WS \times CF}$$

Required PPV =	0.97	ac-ft
Required PPV w/ GWF =	1.00	ac-ft
Provided PPV =	2.10	ac-ft
Provided PPV at = 75% Anoxic Depth	1.63	ac-ft

Project Name: The Rookery
Client: D.R. Horton, Inc. - Jacksonville

DAI Project #: 2008-499
Engineer: G. Wieger
Date: 4/6/23

Post Developed Basin 26

Total Drainage Area	14.69	ac.	
Impervious Building	3.12	ac.	** 151 TH Lots*
Impervious Pavement	1.96	ac.	
Pond @ NWL:	1.59	ac.	
Open Space "D"	8.02	ac.	

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%	
Impervious	5.08	98	0.95	497.82	4.83	34.6%	
Open Space	8.02	80	0.25	641.61	2.01	54.6%	(Good Condition)
Pond	1.59	100	1.00	159.00	1.59	10.8%	
Total Area (ac.):	14.69						
Weighted CN:	88.39						
Weighted C:	0.57						
Weighted K:	484						

Pond 26
Storage Volume

Stage ft	Area ac.	Total Storage Volume (af)	
28.1	2.09	7.54	**MIN TOB EL.**
25.0	1.71	1.65	**WEIR EL.**
24.0	1.59	0.00	**NWL EL.**

Provided Pool Volume

Stage ft	Area ac.	Storage Vol (acft)	Anoxic Vol (af)	Mean Depth	
24.0	1.59	14.24	8.16	5.13	**NWL EL.**
18.0	0.94	6.65			**SC**
17.4	0.90	6.08			**75% Anoxic Depth**
4.0	0.01	0.00			**Max Bottom**
				Mean Pond Depth	
				>2,<8 O.K.	

Groundwater Inflow (From ECS Report)
SWMF system with bleeddown outfall
From ECS Report Groundwater 1.5 gpm = 0.0033 cfs

Pool Volume

Drainage Area (DA):	14.69	ac
Runoff Coeff. (C):	0.57	
R:	30.00	in
RT:	21.1	days
WS:	153	days
CF:	12	in/ft

$$PPV = \frac{DA \times C \times R \times RT}{WS \times CF}$$

Required PPV =	2.90	ac-ft
Required PPV w/ GWF =	3.04	ac-ft
Provided PPV =	14.24	ac-ft
Provided PPV at = 75% Anoxic Depth	8.16	ac-ft

Project Name: **The Rookery** **DAI Project #:** 2008-499
Client: **D.R. Horton, Inc. - Jacksonville** **Engineer:** G. Wieger
Date: 4/5/23

Post Developed Basin 27

Total Drainage Area	13.48	ac.	
Impervious Building	4.21	ac.	** 44 Single Family Lots and 67 TH Lots*
Impervious Pavement	1.07	ac.	
Pond @ NWL:	1.97	ac.	
Open Space "D"	6.23	ac.	

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%	
Impervious	5.28	98	0.95	517.69	5.02	39.2%	
Open Space	6.23	80	0.25	498.19	1.56	46.2%	(Good Condition)
Pond	1.97	100	1.00	197.00	1.97	14.6%	
Total Area (ac.):	13.48						
Weighted CN:	89.98						
Weighted C:	0.63						
Weighted K:	484						

Pond 27
Storage Volume

Stage ft	Area ac.	Total Storage Volume (af)	
28.5	2.72	10.55	**MIN TOB EL.**
28.1	2.65	9.48	**MIN INTERCONNECTED TOB EL.**
25.0	2.14	2.05	**WEIR EL.**
24.0	1.97	0.00	**NWL EL.**

Provided Pool Volume

Stage ft	Area ac.	Storage Vol (acft)	Anoxic Vol (af)	Mean Depth	
24.0	1.97	19.95	9.66	4.91	**NWL EL.**
18.0	1.04	10.92			**SC**
17.4	1.01	10.29			**75% Anoxic Depth**
-3.0	0.00	0.00			**Max Bottom**
				Mean Pond Depth	
				>2,<8 O.K.	

Groundwater Inflow (From ECS Report)

From ECS Report Groundwater 1.2 gpm = 0.0026 cfs

Pool Volume

Drainage Area (DA):	13.48	ac
Runoff Coeff. (C):	0.63	
R:	30.00	in
RT:	21.1	days
WS:	153	days
CF:	12	in/ft

$$PPV = \frac{DA \times C \times R \times RT}{WS \times CF}$$

Required PPV =	2.94	ac-ft
Required PPV w/ GWF =	3.05	ac-ft
Provided PPV =	19.95	ac-ft
Provided PPV at = 75% Anoxic Depth	9.66	ac-ft

Project Name: The Rookery
Client: D.R. Horton, Inc. - Jacksonville

DAI Project #: 2008-499
Engineer: G. Wieger
Date: 4/5/23

Post Developed Basin 28

Total Drainage Area	23.30 ac.	
Impervious Building	3.73 ac.	** 58 Single Family Lots*
Impervious Pavement	1.09 ac.	
Pond @ NWL:	2.04 ac.	
Open Space "D"	16.44 ac.	

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%	
Impervious	4.82	98	0.95	472.18	4.58	20.7%	
Open Space	16.44	80	0.25	1315.34	4.11	70.6%	(Good Condition)
Pond	2.04	100	1.00	204.00	2.04	8.8%	
Total Area (ac.):	23.30						
Weighted CN:	85.47						
Weighted C:	0.46						
Weighted K:	484						

Pond 28
Storage Volume

Stage ft	Area ac.	Total Storage Volume (af)	
28.6	2.59	10.65	**MIN TOB EL.**
28.1	2.53	9.37	**MIN INTERCONNECTED TOB EL.**
25.0	2.16	2.10	**WEIR EL.**
24.0	2.04	0.00	**NWL EL.**

Provided Pool Volume

Stage ft	Area ac.	Storage Vol (acft)	Anoxic Vol (af)	Mean Depth	
24.0	2.04	29.87	11.14	5.46	**NWL EL.**
18.0	1.39	19.58			**SC**
17.4	1.36	18.72			**75% Anoxic Depth**
-9.0	0.06	0.00			**Max Bottom**
				Mean Pond Depth	
				>2,<8 O.K.	

Groundwater Inflow (From ECS Report)

From ECS Report Groundwater 3.3 gpm = 0.0073 cfs

Pool Volume

Drainage Area (DA):	23.30 ac
Runoff Coeff. (C):	0.46
R:	30.00 in
RT:	21.1 days
WS:	153 days
CF:	12 in/ft

$$PPV = \frac{DA \times C \times R \times RT}{WS \times CF}$$

Required PPV =	3.69 ac-ft
Required PPV w/ GWF =	4.00 ac-ft
Provided PPV =	29.87 ac-ft
Provided PPV at = 75% Anoxic Depth	11.14 ac-ft

Project Name: The Rookery
Client: D.R. Horton, Inc. - Jacksonville

DAI Project #: 2008-499
Engineer: G. Wieger
Date: 4/5/23

Post Developed Basin 29

Total Drainage Area	3.34 ac.	
Impervious Building	0.64 ac.	** 10 Single Family Lots*
Impervious Pavement	0.12 ac.	
Pond @ NWL:	0.52 ac.	
Open Space "D"	2.06 ac.	

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%	
Impervious	0.76	98	0.95	74.75	0.72	22.8%	
Open Space	2.06	80	0.25	164.58	0.51	61.6%	(Good Condition)
Pond	0.52	100	1.00	52.00	0.52	15.6%	
Total Area (ac.):	3.34						
Weighted CN:	87.22						
Weighted C:	0.53						
Weighted K:	484						

Pond 29
Storage Volume

Stage ft	Area ac.	Total Storage Volume (af)	
28.9	0.94	3.58	**MIN TOB EL.**
28.1	0.87	2.85	**MIN INTERCONNECTED TOB EL.**
25.0	0.61	0.56	**WEIR EL.**
24.0	0.52	0.00	**NWL EL.**

Provided Pool Volume

Stage ft	Area ac.	Storage Vol (acft)	Anoxic Vol (af)	Mean Depth	
24.0	0.52	1.92	1.88	3.61	**NWL EL.**
18.0	0.09	0.09			**INTERCONNECTED SC**
17.4	0.06	0.04			**75% Anoxic Depth**
16.0	0.00	0.00			**Bottom**
				Mean Pond Depth	
				>2,<8 O.K.	

Groundwater Inflow (From ECS Report)

From ECS Report Groundwater 1.6 gpm = 0.0035 cfs

Pool Volume

Drainage Area (DA):	3.34 ac
Runoff Coeff. (C):	0.53
R:	30.00 in
RT:	21.1 days
WS:	153 days
CF:	12 in/ft

$$PPV = \frac{DA \times C \times R \times RT}{WS \times CF}$$

Required PPV =	0.61 ac-ft
Required PPV w/ GWF =	0.75 ac-ft
Provided PPV =	1.92 ac-ft
Provided PPV at = 75% Anoxic Depth	1.88 ac-ft

Project Name: **The Rookery** **DAI Project #:** 2008-499
Client: **D.R. Horton, Inc. - Jacksonville** **Engineer:** G. Wieger
Date: 4/5/23

Post Developed Basins 25-29 Combined

Total Drainage Area	60.45	ac.
Impervious Building	12.94	ac.
Impervious Pavement	4.57	ac.
Pond @ NWL:	6.52	ac.
Open Space	36.42	ac.

Coverage	Area (ac.)	C	C*A	%
Impervious	17.51	0.95	16.64	29.0%
Open Space	36.42	0.25	9.10	60.2%
Pond	6.52	1.00	6.52	10.8%
Total Area (ac.):	60.45			
Weighted C:	0.53			
Weighted K:	484			

Ponds 25-29 Combined Data

Storage Volume

Stage ft	Area ac.	Total Storage Volume (af)	
28.1	8.80	28.56	**MIN TOB EL.**
25.0	7.08	6.24	**WEIR EL.**
24.0	6.52	0.00	**NWL EL.**

Provided Pool Volume

Stage ft	Area ac.	Storage Vol (acft)	Anoxic Vol (af)	Mean Depth	
24.0	6.52	68.08	32.47	4.98	**NWL EL.**
18.0	3.58	37.78			**SC**
17.4	3.44	35.60			**75% Anoxic Depth**

Mean Pond Depth
>2,<8 O.K.

Stormwater Management: Post Developed Basins 25-29 Combined
Req'd Treatment Volume for Pond (RTV) for SWMF's 25-29

Treatment Volume (1): 1.01 " of rainfall over the entire basin area
5.07 ac-ft

Treatment Volume (2): 2.53 " of rainfall over the impervious area
3.68 ac-ft

Use Weir Elevation 25.0

Req'd TV: 5.07 ac-ft
Provided TV: 6.24 ac-ft

Groundwater Baseflow (From ECS Report)
SWMF 25-29 8.60 gpm 0.01892 cfs

Req'd Pool Volume

Drainage Area (DA): 60.45 ac

Runoff Coeff. (C): 0.53
R: 30.00 in
RT: 21.1 days
WS: 153 days
CF: 12 in/ft

$$PPV = \frac{DA \times C \times R \times RT}{WS \times CF}$$

Drawdown Weir for Pond
Sized to Drawdown 1/2 of the RTV in 24-30 Hours

GWF	0.019	cfs	Ground Water Flow
TV Flow	1.28	cfs	Treatment Volume Flow
Notch Flow	1.30	cfs	GWF + TV Flow
t:	24	hrs	Recovery Time
CF:	3600	sec/hr	Conversion Factor
h:	0.75	ft	Head for Orifice
C:	0.6		Weir Coefficient
A:	0.31	sf	Weir Length
D:	0.63	ft	Weir Length

Required PPV = 11.11 ac-ft
Required PPV W/ GWF = 11.90 ac-ft
Provided PPV = 68.08 ac-ft
Provided PPV at = 75% Anoxic Depth 32.47 ac-ft

Orif Diameter = 7.5 in

Anoxic Depth Calculation for SWMF 25 thru 29

Land Use = **60.45** **Ac Single Family Residential and Roadway**

Impervious/DCIA Areas

Residential area will be 29.0% **impervious,** 63.0% **of which will be DCIA**

Impervious Area = 29.0% of site = 17.51 acres

DCIA Area = 17.51 X 63% 11.04 acres

DCIA Percentage = 11.04 ÷ 60.45 = 18.3% of developed area

Calculate composite non-DCIA curve number

From Drainage Calc's		CN		
HSG from Calcs	100.00%	80	=	80.00
	0.00%	61	=	0.00
		HSG AVG =		80.0

Round to 80.0

Curve Number for lawns in good condition = 80.0

Area of lawns = 60.45 - 17.51 = 42.94 acres pervious area

Impervious area which is not DCIA = 17.51 - 11.04 = 6.47 acres

Assume a curve number of 98 for impervious areas

Non-DCIA curve number = 82

$$\frac{(\ 42.94 \times 80\ ) + (\ 6.47 \times 98\ )}{42.94 + 6.47}$$

Calculate the annual runoff for the project area

Drainage Area = 60.45 acres

project site with 19% DCIA and non DCIA CN= 82

For Clay County County the annual rainfall is 49 in/yr ARV

From Chart Annual C value = 0.28 C (taken from chart for 20% and 82, See Appendix)

Annual Generated runoff volume = AC*ARV*1/12*C = 70.30 ac-ft/YR

Estimate Required Pond Volume

Annual Generated runoff volume = 70.30 ac-ft

For a 21 day residence time, the required pond volume will be:

$$70.30 \text{ ac-ft} \times \frac{1 \text{ year}}{365 \text{ days}} * 21 \text{ days} = 4.04 \text{ ac-ft}$$

For a single family residential use, the EMC for TP =		0.327	mg/l
For Highway use, the EMC for TP =		0.2	mg/l
Single Family Area =	55.88 AC	0.327	mg/l
Roadway Area =	4.57 AC	0.2	mg/l
Weighted Average, the EMC for TP =		0.32	mg/l

Calculate TP loading to wet detention pond

TP load to pond =

$$70.30 \text{ ac-ft/yr} \times \frac{43{,}560 \text{ ft}^2}{\text{ac}} \times \frac{7.48 \text{ gal}}{\text{ft}^3} \times \frac{3.785 \text{ liter}}{\text{gal}} \times \frac{0.32}{\text{liter}} \text{ mg} \times \frac{1 \text{ Kg}}{10^6} = 27.74 \text{ kg TP/yr}$$

Calculate TP concentration in pond

At the proposed 21 day residence time, the TP removal was previously estimated as 65%
Annual mass of TP remaining in water column =
27.74 kg TP/yr X (1- 65%)= 9.71 kg TP/yr

This phosphorus mass will be distributed within the pond permanent pool 4.04 ac-ft and the pond outflow.
Assuming that inflow and outflow are approximately equal, the outflow will be 70.30 ac-ft.

Mean pond concentration =

$$9.71 \frac{\text{kg TP/yr}}{\text{yr}} \times \frac{1\ \text{yr}}{4.04 + 70.30\ \text{ac-ft}} \times \frac{1\ \text{ac}}{43{,}560\ \text{ft}^2} \times \frac{1\ \text{ft}^3}{7.48\ \text{gal}} \times \frac{1\ \text{gal}}{3.785\ \text{liter}} \times \frac{10^6\ \text{mg}}{\text{kg}} = 0.11\ \text{mg TP/Liter} = 106\ \text{ug TP/liter}$$

Calculate mean chlorophyll-a concentration in pond

ln(chyl-a) = 1.058 ln (TP) -.934

ln(chyl-a) = 4.00

chyl-a = 54.6 mg/m^3

Calculate mean Secchi disk depth

$$SD = \frac{24.2386 + [0.3041)(\text{chyl-a})]}{(6.0632+\text{chyl-a})}$$

SD = 0.67 meters = 2.20 ft

Calculate depth of anoxic condition in pond

Depth of DO<1 = 3.035 x Secchi + .02164 x (chyl-a) - .004979 x Total P

Depth of DO<1= Anoxic depth (m)

Secchi = Secchi disk depth (m)

chyl-a = chlorophyll-a concentration (mg/m^3)

Depth of Do < 1 = 2.69 meters = 8.83 ft
75 % of Anoxic Depth = 6.62 ft

Evaluate permanent pool volumes above Anoxic Depth

Permanent Pool Volume Required = 11.11 ac-ft

Permanent Pool Volume Provided at 75 % Anoxic Depth = 32.47 ac-ft

Permanent Pool provided above 75 % Anoxic Depth far exceeds required volume.

Project Name: **The Rookery** **DAI Project #:** 2008-499
Client: **D.R. Horton, Inc. - Jacksonville** **Engineer:** G. Wieger
Date: 4/5/23

Post Developed Basins 30

Total Drainage Area	7.24	ac.	
Impervious Building	1.22	ac.	** 33 Single Family Lots*
Impervious Pavement	0.74	ac.	
Pond @ NWL:	0.50	ac.	
Open Space "D"	4.78	ac.	

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%	
Impervious	1.96	98	0.95	192.08	1.86	27.1%	
Open Space	4.78	80	0.25	382.40	1.20	66.0%	(Good Condition)
Pond	0.50	100	1.00	50.00	0.50	6.9%	
Total Area (ac.):	7.24						
Weighted CN:	86.25						
Weighted C:	0.49						
Weighted K:	484						

Pond 30 Data
Storage Volume

Stage ft	Area ac.	Total Storage Volume (af)	
32.9	0.83	3.26	**MIN TOB EL.**
29.5	0.60	0.83	**WEIR EL.**
28.0	0.50	0.00	**NWL EL.**

Provided Pool Volume

Stage ft	Area ac.	Storage Vol (acft)	Anoxic Vol (af)	Mean Depth	
28.0	0.50	3.02	2.19	4.38	**NWL EL.**
22.0	0.19	0.95			**SC**
21.4	0.18	0.83			**75% Anoxic Depth**
12.0	0.00	0.00			**Bot**
				Mean Pond Depth	
				>2,<8 O.K.	

Stormwater Management: Post Developed Basin 30
Req'd Treatment Volume for Pond (RTV) for SWMF 30

Treatment Volume (1): 1.01 " of rainfall over the entire basin area
0.61 ac-ft

Treatment Volume (2): 2.53 " of rainfall over the impervious area
0.41 ac-ft

Use Weir Elevation
29.5

Req'd TV: 0.61 ac-ft
Provided TV: 0.83 ac-ft

No Groundwater Inflow (From ECS Report)

Req'd Pool Volume

Drainage Area (DA): 7.24 ac

Runoff Coeff. (C): 0.49
R: 30.00 in
RT: 21.1 days
WS: 153 days
CF: 12 in/ft

$$PPV = \frac{DA \times C \times R \times RT}{WS \times CF}$$

Required PPV = 1.22 ac-ft
Provided PPV = 3.02 ac-ft
Provided PPV at = 75% Anoxic Depth 2.19 ac-ft

Drawdown Weir for Pond
Sized to Drawdown 1/2 of the RTV in 24-30 Hours

GWF	0.000	cfs	Ground Water Flow
TV Flow	0.15	cfs	Treatment Volume Flow
Notch Flow	0.15	cfs	GWF + TV Flow
t:	24	hrs	Recovery Time
CF:	3600	sec/hr	Conversion Factor
h:	1.125	ft	Head for Orifice
C:	0.6		Weir Coefficient
A:	0.03	sf	Weir Length
D:	0.20	ft	Weir Length

Orif Diameter = 2.8 in

Anoxic Depth Calculation for SWMF 30

Land Use = **7.24** **Ac Single Family Residential and Roadway**

Impervious/DCIA Areas

Residential area will be 27.1% **impervious,** 68.9% **of which will be DCIA**

Impervious Area = 27.1% of site = 1.96 acres

DCIA Area = 1.96 X 69% 1.35 acres

DCIA Percentage = 1.35 ÷ 7.24 = 18.6% of developed area

Calculate composite non-DCIA curve number

From Drainage Calc's		CN		
HSG from Calcs	100.00%	80	=	80.00
	0.00%	61	=	0.00
	HSG AVG =			80.0

Round to 80.0

Curve Number for lawns in good condition = 80.0

Area of lawns = 7.24 - 1.96 = 5.28 acres pervious area

Impervious area which is not DCIA = 1.96 - 1.35 = 0.61 acres

Assume a curve number of 98 for impervious areas

Non-DCIA curve number = 82

$$\frac{(5.28 \times 80) + (0.61 \times 98)}{5.28 + 0.61}$$

Calculate the annual runoff for the project area

Drainage Area = 7.24 acres

project site with 19% DCIA and non DCIA CN= 82

For Clay County County the annual rainfall is 49 in/yr ARV

From Chart Annual C value = 0.26 C (taken from chart for 17% and 81, See Appendix)

Annual Generated runoff volume = AC*ARV*1/12*C = 7.58 ac-ft/YR

Estimate Required Pond Volume

Annual Generated runoff volume = 7.58 ac-ft

For a 21 day residence time, the required pond volume will be:

$$7.58 \text{ ac-ft} \times \frac{1 \text{ year}}{365 \text{ days}} * 21 \text{ days} = 0.44 \text{ ac-ft}$$

For a single family residential use, the EMC for TP =		0.327	mg/l
For Highway use, the EMC for TP =		0.2	mg/l
Single Family Area =	6.50 AC	0.327	mg/l
Roadway Area =	0.74 AC	0.2	mg/l
Weighted Average, the EMC for TP =		0.31	mg/l

Calculate TP loading to wet detention pond

TP load to pond =

$$7.58 \text{ ac-ft/yr} \times \frac{43{,}560 \text{ ft}^2}{\text{ac}} \times \frac{7.48 \text{ gal}}{\text{ft}^3} \times \frac{3.785 \text{ liter}}{\text{gal}} \times \frac{0.31 \text{ mg}}{\text{liter}} \times \frac{1 \text{ Kg}}{10^6} = 2.9 \text{ kg TP/yr}$$

Calculate TP concentration in pond

At the proposed 21 day residence time, the TP removal was previously estimated as 65%
Annual mass of TP remaining in water column =
2.9 kg TP/yr X (1- 65%)= 1.02 kg TP/yr

This phosphorus mass will be distributed within the pond permanent pool 0.44 ac-ft and the pond outflow.
Assuming that inflow and outflow are approximately equal, the outflow will be 7.58 ac-ft.

Mean pond concentration =

$$1.02 \frac{\text{kg TP/yr}}{0.44 + 7.58 \text{ ac-ft}} \times \frac{1 \text{ yr}}{} \times \frac{1 \text{ ac}}{43{,}560 \text{ ft}^2} \times \frac{1 \text{ ft}^3}{7.48 \text{ gal}} \times \frac{1 \text{ gal}}{3.785 \text{ liter}} \times \frac{10^6 \text{ mg}}{\text{kg}} = 103 \text{ ug TP/liter}$$

0.10 mg TP/Liter

Calculate mean chlorophyll-a concentration in pond

ln(chyl-a) = 1.058 ln (TP) -.934

ln(chyl-a) = 3.97

chyl-a = 53.0 mg/m^3

Calculate mean Secchi disk depth

$$SD = \frac{24.2386 + [0.3041)(\text{chyl-a})]}{(6.0632+\text{chyl-a})}$$

SD = 0.68 meters = 2.23 ft

Calculate depth of anoxic condition in pond

Depth of DO<1 = 3.035 x Secchi + .02164 x (chyl-a) - .004979 x Total P

Depth of DO<1= Anoxic depth (m)

Secchi = Secchi disk depth (m)

chyl-a = chlorophyll-a concentration (mg/m^3)

Depth of Do < 1 = 2.70 meters = 8.86 ft
75 % of Anoxic Depth = 6.64 ft

Evaluate permanent pool volumes above Anoxic Depth

Permanent Pool Volume Required = 1.22 ac-ft

Permanent Pool Volume Provided at 75 % Anoxic Depth = 2.19 ac-ft

Permanent Pool provided above 75 % Anoxic Depth far exceeds required volume.

Project Name: **The Rookery** **DAI Project #:** 2008-499
Client: **D.R. Horton, Inc. - Jacksonville** **Engineer:** G. Wieger
Date: 4/5/23

Post Developed Basins 31

Total Drainage Area	9.14	ac.	
Impervious Building	1.22	ac.	** 40 Single Family Lots*
Impervious Pavement	0.81	ac.	
Pond @ NWL:	0.92	ac.	
Open Space "A"	6.19	ac.	

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%	
Impervious	2.03	98	0.95	198.94	1.93	22.2%	
Open Space	6.19	39	0.25	241.41	1.55	67.7%	(Good Condition)
Pond	0.92	100	1.00	92.00	0.92	10.1%	
Total Area (ac.):	9.14						
Weighted CN:	58.24						
Weighted C:	0.48						
Weighted K:	484						

Pond 31 Data
Storage Volume

Stage ft	Area ac.	Total Storage Volume (af)	
36.6	1.21	3.83	**MIN TOB EL.**
34.0	1.00	0.96	**WEIR EL.**
33.0	0.92	0.00	**NWL EL.**

Provided Pool Volume

Stage ft	Area ac.	Storage Vol (acft)	Anoxic Vol (af)	Mean Depth	
33.0	0.92	9.39	4.63	5.03	**NWL EL.**
27.0	0.51	5.10			**SC**
26.3	0.49	4.76			**75% Anoxic Depth**
7.0	0.00	0.00			**Bot**
				Mean Pond Depth	
				>2,<8 O.K.	

Stormwater Management: Post Developed Basin 31
Req'd Treatment Volume for Pond (RTV) for SWMF 31

Treatment Volume (1): 1.01 " of rainfall over the entire basin area
0.77 ac-ft

Treatment Volume (2): 2.53 " of rainfall over the impervious area
0.43 ac-ft

Use Weir Elevation
34.0

Req'd TV: 0.77 ac-ft
Provided TV: 0.96 ac-ft

Groundwater Baseflow (From ECS Report)
0.80 gpm 0.00176 cfs

Req'd Pool Volume

Drainage Area (DA): 9.14 ac

Runoff Coeff. (C): 0.48
R: 30.00 in
RT: 21.1 days
WS: 153 days
CF: 12 in/ft

$$PPV = \frac{DA \times C \times R \times RT}{WS \times CF}$$

Drawdown Weir for Pond
Sized to Drawdown 1/2 of the RTV in 24-30 Hours

GWF	0.002	cfs	Ground Water Flow
TV Flow	0.19	cfs	Treatment Volume Flow
Notch Flow	0.19	cfs	GWF + TV Flow
t:	24	hrs	Recovery Time
CF:	3600	sec/hr	Conversion Factor
h:	0.75	ft	Head for Orifice
C:	0.6		Weir Coefficient
A:	0.05	sf	Weir Length
D:	0.24	ft	Weir Length

Required PPV = 1.51 ac-ft
Required PPV W/ GWF = 1.59 ac-ft
Provided PPV = 9.39 ac-ft
Provided PPV at = 75% Anoxic Depth 4.63 ac-ft

Orif Diameter = 2.9 in

Anoxic Depth Calculation for SWMF 31

Land Use = **9.14** **Ac Single Family Residential and Roadway**

Impervious/DCIA Areas

Residential area will be 22.2% **impervious,** 70.0% **of which will be DCIA**

Impervious Area = 22.2% of site = 2.03 acres

DCIA Area = 2.03 X 70% 1.42 acres

DCIA Percentage = 1.42 ÷ 9.14 = 15.5% of developed area

Calculate composite non-DCIA curve number

From Drainage Calc's		CN		
HSG from Calcs	100.00%	80	=	80.00
	0.00%	61	=	0.00
		HSG AVG =		80.0

Round to 80.0

Curve Number for lawns in good condition = 80.0

Area of lawns = 9.14 - 2.03 = 7.11 acres pervious area

Impervious area which is not DCIA = 2.03 - 1.42 **=** 0.61 acres

Assume a curve number of 98 for impervious areas

Non-DCIA curve number = 81 =

$$\frac{(\ 7.11\ X\ 80\ )+(\ 0.61\ X\ 98\ )}{7.11\ +\ 0.61}$$

Calculate the annual runoff for the project area

Drainage Area = 9.14 acres

project site with 16% DCIA and non DCIA CN= 81

For Duval County the annual rainfall is = 49 in/yr ARV

From Chart Annual C value = 0.25 C (taken from chart for 16% and 81, See Appendix)

Annual Generated runoff volume = AC*ARV*1/12*C **=** 9.31 ac-ft/YR

Estimate Required Pond Volume

Annual Generated runoff volume = 9.31 ac-ft

For a 21 day residence time, the required pond volume will be:

$$9.31\ \text{ac-ft}\ X\ \frac{1\ \text{year}}{365\ \text{days}}\ *\ 21\ \text{days} = 0.54\ \text{ac-ft}$$

For a single family residential use, the EMC for TP =			0.327	mg/l
For Highway use, the EMC for TP =			0.2	mg/l
Single Family Area =	8.33	AC	0.327	mg/l
Roadway Area =	0.81	AC	0.2	mg/l
Weighted Average, the EMC for TP =			0.32	mg/l

Calculate TP loading to wet detention pond

TP load to pond =

$$9.31\ \text{ac-ft/yr}\ X\ \frac{43{,}560\ \text{ft}^2}{\text{ac}}\ X\ \frac{7.48\ \text{gal}}{\text{ft}^3}\ X\ \frac{3.785\ \text{liter}}{\text{gal}}\ X\ \frac{0.32}{\text{liter}}\ \text{mg}\ X\ \frac{1\ \text{Kg}}{10^6} = 3.67\ \text{kg TP/yr}$$

Calculate TP concentration in pond

At the proposed 21 day residence time, the TP removal was previously estimated as 65%
Annual mass of TP remaining in water column =
3.67 kg TP/yr X (1- 65%)= 1.28 kg TP/yr

This phosphorus mass will be distributed within the pond permanent pool 0.54 ac-ft and the pond outflow.
Assuming that inflow and outflow are approximately equal, the outflow will be 9.31 ac-ft.

Mean pond concentration =

$$1.28 \frac{\text{kg TP/yr}}{0.54 + 9.31 \text{ ac-ft}} \times \frac{1 \text{ yr}}{} \times \frac{1 \text{ ac}}{43{,}560 \text{ ft}^2} \times \frac{1 \text{ ft}^3}{7.48 \text{ gal}} \times \frac{1 \text{ gal}}{3.785 \text{ liter}} \times \frac{10^6 \text{ mg}}{\text{kg}} = 0.11 \text{ mg TP/Liter} = 105 \text{ ug TP/liter}$$

Calculate mean chlorophyll-a concentration in pond

ln(chyl-a) = 1.058 ln (TP) -.934

ln(chyl-a) = 3.99

chyl-a = 54.0 mg/m^3

Calculate mean Secchi disk depth

$$SD = \frac{24.2386 + [0.3041)(\text{chyl-a})]}{(6.0632+\text{chyl-a})}$$

SD = 0.68 meters = 2.23 ft

Calculate depth of anoxic condition in pond

Depth of DO<1 = 3.035 x Secchi + .02164 x (chyl-a) - .004979 x Total P

Depth of DO<1= Anoxic depth (m)

Secchi = Secchi disk depth (m)

chyl-a = chlorophyll-a concentration (mg/m^3)

Depth of Do < 1 = 2.71 meters = 8.89 ft
75 % of Anoxic Depth = 6.67 ft

Evaluate permanent pool volumes above Anoxic Depth

Permanent Pool Volume Required = 1.51 ac-ft

Permanent Pool Volume Provided at 75 % Anoxic Depth = 4.63 ac-ft

Permanent Pool provided above 75 % Anoxic Depth far exceeds required volume.

Project Name: The Rookery **DAI Project #:** 2008-499
Client: D.R. Horton, Inc. - Jacksonville **Engineer:** G. Wieger
Date: 4/5/23

Post Developed Basin 32

Total Drainage Area	4.68 ac.	
Impervious Building	0.96 ac.	* 15 Single Family Lots
Impervious Pavement	0.31 ac.	
Pond @ NWL:	1.25 ac.	
Open Space "A"	2.16 ac.	

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%	
Impervious	1.27	98	0.95	124.87	1.21	27.2%	
Open Space	2.16	39	0.25	84.08	0.54	46.1%	(Good Condition)
Pond	1.25	100	1.00	125.00	1.25	26.7%	
Total Area (ac.):	4.68						
Weighted CN:	71.36						
Weighted C:	0.64						
Weighted K:	484						

Pond 32
Storage Volume

Stage ft	Area ac.	Total Storage Volume (af)	
37.7	1.76	7.07	**MIN TOB EL.**
37.6	1.75	6.90	**MIN INTERCONNECTED TOB EL.**
33.7	1.33	0.90	**WEIR EL.**
33.0	1.25	0.00	**NWL EL.**

Provided Pool Volume

Stage ft	Area ac.	Storage Vol (acft)	Anoxic Vol (af)	Mean Depth	
33.0	1.25	11.12	6.17	4.93	**NWL EL.**
27.0	0.67	5.36			**SC**
26.4	0.64	4.95			**75% Anoxic Depth**
11.0	0.00	0.00			**Max Bottom**
				Mean Pond Depth	
				>2,<8 O.K.	

Groundwater Inflow (From ECS Report)

From ECS Report Groundwater 0.4 gpm = 0.0009 cfs

Pool Volume

Drainage Area (DA):	4.68 ac
Runoff Coeff. (C):	0.64
R:	30.00 in
RT:	21.1 days
WS:	153 days
CF:	12 in/ft

$$PPV = \frac{DA \times C \times R \times RT}{WS \times CF}$$

Required PPV =	1.03 ac-ft
Required PPV w/ GWF =	1.07 ac-ft
Provided PPV =	11.12 ac-ft
Provided PPV at = 75% Anoxic Depth	6.17 ac-ft

Project Name: **The Rookery** **DAI Project #:** 2008-499
Client: **D.R. Horton, Inc. - Jacksonville** **Engineer:** G. Wieger
Date: 4/5/23

Post Developed Basin 33

Total Drainage Area	11.46	ac.	
Impervious Building	3.41	ac.	** 53 Single Family Lots*
Impervious Pavement	1.04	ac.	
Pond @ NWL:	1.10	ac.	
Open Space "A"	5.91	ac.	

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%	
Impervious	4.45	98	0.95	435.79	4.22	38.8%	
Open Space	5.91	39	0.25	230.61	1.48	51.6%	(Good Condition)
Pond	1.10	100	1.00	110.00	1.10	9.6%	
Total Area (ac.):	11.46						
Weighted CN:	67.75						
Weighted C:	0.59						
Weighted K:	484						

Pond 33
Storage Volume

Stage ft	Area ac.	Total Storage Volume (af)	
37.6	1.50	5.98	**MIN TOB EL.**
33.7	1.16	0.79	**WEIR EL.**
33.0	1.10	0.00	**NWL EL.**

Provided Pool Volume

Stage ft	Area ac.	Storage Vol (acft)	Anoxic Vol (af)	Mean Depth	
33.0	1.10	13.05	5.65	5.13	**NWL EL.**
27.0	0.65	7.80			**SC**
26.4	0.63	7.40			**75% Anoxic Depth**
3.0	0.00	0.00			**Max Bottom**

Mean Pond Depth
>2,<8 O.K.

No Groundwater Inflow (From ECS Report)
SWMF system with bleeddown outfall

Pool Volume

Drainage Area (DA):	11.46	ac
Runoff Coeff. (C):	0.59	
R:	30.00	in
RT:	21.1	days
WS:	153	days
CF:	12	in/ft

$$PPV = \frac{DA \times C \times R \times RT}{WS \times CF}$$

Required PPV =	2.34	ac-ft
Provided PPV =	13.05	ac-ft
Provided PPV at = 75% Anoxic Depth	5.65	ac-ft

Project Name: **The Rookery** **DAI Project #:** 2008-499
Client: **D.R. Horton, Inc. - Jacksonville** **Engineer:** G. Wieger
Date: 4/5/23

Post Developed Basins 32-33 Combined

Total Drainage Area	16.14	ac.
Impervious Building	4.37	ac.
Impervious Pavement	1.35	ac.
Pond @ NWL:	2.35	ac.
Open Space	8.07	ac.

Coverage	Area (ac.)	C	C*A	%
Impervious	5.72	0.95	5.43	35.4%
Open Space	8.07	0.25	2.02	50.0%
Pond	2.35	1.00	2.35	14.6%
Total Area (ac.):	16.14			
Weighted C:	0.61			
Weighted K:	484			

Ponds 32-33 Combined Data

Storage Volume

Stage ft	Area ac.	Total Storage Volume (af)	
37.6	3.25	12.88	**MIN TOB EL.**
33.7	2.49	1.69	**WEIR EL.**
33.0	2.35	0.00	**NWL EL.**

Provided Pool Volume

Stage ft	Area ac.	Storage Vol (acft)	Anoxic Vol (af)	Mean Depth	
33.0	2.35	24.17	11.81	5.03	**NWL EL.**
27.0	1.32	13.16			**SC**
26.4	1.28	12.36			**75% Anoxic Depth**

Mean Pond Depth
>2,<8 O.K.

Stormwater Management: Post Developed Basins 32-33 Combined
Req'd Treatment Volume for Pond (RTV) for SWMF's 32-33

Treatment Volume (1): 1.01 " of rainfall over the entire basin area
1.35 ac-ft

Treatment Volume (2): 2.53 " of rainfall over the impervious area
1.20 ac-ft

Use Weir Elevation
33.7

Req'd TV: 1.35 ac-ft
Provided TV: 1.69 ac-ft

Groundwater Baseflow (From ECS Report)
SWMF 32-33 0.20 gpm 0.00044 cfs

Req'd Pool Volume

Drainage Area (DA): 16.14 ac

Runoff Coeff. (C): 0.61
R: 30.00 in
RT: 21.1 days
WS: 153 days
CF: 12 in/ft

$$PPV = \frac{DA \times C \times R \times RT}{WS \times CF}$$

Drawdown Weir for Pond
Sized to Drawdown 1/2 of the RTV in 24-30 Hours

GWF	0.0004	cfs	Ground Water Flow
TV Flow	0.34	cfs	Treatment Volume Flow
Notch Flow	0.34	cfs	GWF + TV Flow
t:	24	hrs	Recovery Time
CF:	3600	sec/hr	Conversion Factor
h:	0.525	ft	Head for Orifice
C:	0.6		Weir Coefficient
A:	0.10	sf	Weir Length
D:	0.35	ft	Weir Length

Required PPV = 3.37 ac-ft
Required PPV W/ GWF = 3.39 ac-ft
Provided PPV = 24.17 ac-ft
Provided PPV at = 75% Anoxic Depth 11.81 ac-ft

Orif Diameter = 4.2 in

Anoxic Depth Calculation for SWMF 32 thru 33

Land Use = **16.14** **Ac Single Family Residential and Roadway**

Impervious/DCIA Areas

Residential area will be 35.4% **impervious,** 61.8% **of which will be DCIA**

Impervious Area = 35.4% of site = 5.72 acres

DCIA Area = 5.72 X 62% 3.54 acres

DCIA Percentage = 3.54 ÷ 16.14 = 21.9% of developed area

Calculate composite non-DCIA curve number

From Drainage Calc's		CN		
HSG from Calcs	100.00%	80	=	80.00
	0.00%	61	=	0.00
		HSG AVG =		80.0

Round to 80.0

Curve Number for lawns in good condition = 80.0

Area of lawns = 16.14 - 5.72 = 10.42 acres pervious area

Impervious area which is not DCIA = 5.72 - 3.54 = 2.18 acres

Assume a curve number of 98 for impervious areas

Non-DCIA curve number = 83

$$\frac{(\ 10.42 \times 80\ ) + (\ 2.18 \times 98\ )}{10.42 + 2.18}$$

Calculate the annual runoff for the project area

Drainage Area = 16.14 acres

project site with 22% DCIA and non DCIA CN= 83

For Clay County County the annual rainfall is 49 in/yr ARV

From Chart Annual C value = 0.30 C (taken from chart for 22% and 83, See Appendix)

Annual Generated runoff volume = AC*ARV*1/12*C = 19.69 ac-ft/YR

Estimate Required Pond Volume

Annual Generated runoff volume = 19.69 ac-ft

For a 21 day residence time, the required pond volume will be:

$$19.69 \text{ ac-ft} \times \frac{1 \text{ year}}{365 \text{ days}} * 21 \text{ days} = 1.13 \text{ ac-ft}$$

For a single family residential use, the EMC for TP =		0.327	mg/l
For Highway use, the EMC for TP =		0.2	mg/l
Single Family Area =	14.79 AC	0.327	mg/l
Roadway Area =	1.35 AC	0.2	mg/l
Weighted Average, the EMC for TP =		0.32	mg/l

Calculate TP loading to wet detention pond

TP load to pond =

$$19.69 \text{ ac-ft/yr} \times \frac{43{,}560 \text{ ft}^2}{\text{ac}} \times \frac{7.48 \text{ gal}}{\text{ft}^3} \times \frac{3.785 \text{ liter}}{\text{gal}} \times \frac{0.32 \text{ mg}}{\text{liter}} \times \frac{1 \text{ Kg}}{10^6} = 7.77 \text{ kg TP/yr}$$

Calculate TP concentration in pond

At the proposed 21 day residence time, the TP removal was previously estimated as 65%
Annual mass of TP remaining in water column =
7.77 kg TP/yr X (1- 65%)= 2.72 kg TP/yr

This phosphorus mass will be distributed within the pond permanent pool 1.13 ac-ft and the pond outflow.
Assuming that inflow and outflow are approximately equal, the outflow will be 19.69 ac-ft.

Mean pond concentration =

$$2.72 \frac{\text{kg TP/yr}}{1.13 + 19.69 \text{ ac-ft}} \times \frac{1 \text{ yr}}{} \times \frac{1 \text{ ac}}{43{,}560 \text{ ft}^2} \times \frac{1 \text{ ft}^3}{7.48 \text{ gal}} \times \frac{1 \text{ gal}}{3.785 \text{ liter}} \times \frac{10^6 \text{ mg}}{\text{kg}} = 0.11 \text{ mg TP/Liter} = 106 \text{ ug TP/liter}$$

Calculate mean chlorophyll-a concentration in pond

ln(chyl-a) = 1.058 ln (TP) -.934

ln(chyl-a) = 4.00

chyl-a = 54.6 mg/m^3

Calculate mean Secchi disk depth

$$SD = \frac{24.2386 + [0.3041)(\text{chyl-a})]}{(6.0632+\text{chyl-a})}$$

SD = 0.67 meters = 2.20 ft

Calculate depth of anoxic condition in pond

Depth of DO<1 = 3.035 x Secchi + .02164 x (chyl-a) - .004979 x Total P

Depth of DO<1= Anoxic depth (m)

Secchi = Secchi disk depth (m)

chyl-a = chlorophyll-a concentration (mg/m^3)

Depth of Do < 1 = 2.69 meters = 8.83 ft
75 % of Anoxic Depth = 6.62 ft

Evaluate permanent pool volumes above Anoxic Depth

Permanent Pool Volume Required = 3.37 ac-ft

Permanent Pool Volume Provided at 75 % Anoxic Depth = 11.81 ac-ft

Permanent Pool provided above 75 % Anoxic Depth far exceeds required volume.

Project Name: **The Rookery** **DAI Project #:** 2008-499
Client: **D.R. Horton, Inc. - Jacksonville** **Engineer:** G. Wieger
Date: 4/5/23

Post Developed Basin J1

Total Drainage Area	25.97	ac.
Impervious Building	0.00	ac.
Impervious Pavement	0.00	ac.
Pond @ NWL:	22.81	ac.
Open Space "D"	3.16	ac.

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%	
Impervious	0.00	98	0.95	0.00	0.00	0.0%	
Open Space	3.16	80	0.25	252.80	0.79	12.2%	(Good Condition)
Pond	22.81	100	1.00	2281.00	22.81	87.8%	
Total Area (ac.):	25.97						
Weighted CN:	97.57						
Weighted C:	0.91						
Weighted K:	484						

Pond J1 Data
Storage Volume

Stage ft	Area ac.	Total Storage Volume (af)	
31.2	23.62	51.07	**MIN TOB EL.**
29.2	22.88	4.57	**WEIR EL.**
29.0	22.81	0.00	**NWL EL.**

Provided Pool Volume

Stage ft	Area ac.	Storage Vol (acft)	Anoxic Vol (af)	Mean Depth	
29.0	22.81	768.41	142.66	6.25	**NWL EL.**
23.0	20.66	638.00			**SC**
22.4	20.52	625.75			**75% Anoxic Depth**
-17.0	11.24	0.00			**Bot**
				Mean Pond Depth	
				>2,<8 O.K.	

Stormwater Management: Post Developed Basin J1
Req'd Treatment Volume for Pond (RTV) for SWMF J1

Treatment Volume (1): 1.01 " of rainfall over the entire basin area
2.18 ac-ft

Treatment Volume (2): 2.53 " of rainfall over the impervious area
0.00 ac-ft

Use Weir Elevation
29.2

Req'd TV: 2.18 ac-ft
Provided TV: 4.57 ac-ft

Groundwater Baseflow (From ECS Report)
10.60 gpm 0.02332 cfs

Req'd Pool Volume

Drainage Area (DA): 25.97 ac

Runoff Coeff. (C): 0.91
R: 30.00 in
RT: 21.1 days
WS: 153 days
CF: 12 in/ft

$$PPV = \frac{DA \times C \times R \times RT}{WS \times CF}$$

Drawdown Weir for Pond
Sized to Drawdown 1/2 of the RTV in 24-30 Hours

GWF	0.023	cfs	Ground Water Flow
TV Flow	0.52	cfs	Treatment Volume Flow
Notch Flow	0.55	cfs	GWF + TV Flow
t:	25.1	hrs	Recovery Time
CF:	3600	sec/hr	Conversion Factor
h:	0.15	ft	Head for Orifice
C:	0.6		Weir Coefficient
A:	0.29	sf	Weir Length
D:	0.61	ft	Weir Length

Required PPV = 8.13 ac-ft
Required PPV W/ GWF = 9.10 ac-ft
Provided PPV = 768.41 ac-ft
Provided PPV at = 75% Anoxic Depth 142.66 ac-ft

Orif Diameter = 7.3 in

Anoxic Depth Calculation for SWMF J1

Land Use = 25.97 **Ac Single Family Residential and Roadway**

Impervious/DCIA Areas

Residential area will be 0.0% **impervious,** #DIV/0! **of which will be DCIA**

Impervious Area = 0.0% of site = 0.00 acres

DCIA Area = 0.00 X 0% - acres

DCIA Percentage = - ÷ 25.97 = 0.0% of developed area

Calculate composite non-DCIA curve number

From Drainage Calc's		CN				
HSG from Calcs	100.00%	80	=	80.00		
	0.00%	61	=	0.00		
		HSG AVG	=	80.0	Round to	80.0
Curve Number for lawns in good condition					=	80.0

Area of lawns = 25.97 - 0.00 = 25.97 acres pervious area

Impervious area which is not DCIA = 0.00 - - = - acres

Assume a curve number of 98 for impervious areas

Non-DCIA curve number = 80 =

$$\frac{(\ 25.97 \times 80\ ) + (\ - \times 98\ )}{25.97 + -}$$

Calculate the annual runoff for the project area

Drainage Area = 25.97 acres

project site with 0% DCIA and non DCIA CN= 80

For Clay County County the annual rainfall is 49 in/yr ARV

From Chart Annual C value = 0.23 C (taken from chart for 15% and 80, See Appendix)

Annual Generated runoff volume = AC*ARV*1/12*C = 24.81 ac-ft/YR

Estimate Required Pond Volume

Annual Generated runoff volume = 24.81 ac-ft

For a 21 day residence time, the required pond volume will be:

$$24.81 \text{ ac-ft} \times \frac{1 \text{ year}}{365 \text{ days}} * 21 \text{ days} = 1.43 \text{ ac-ft}$$

For a single family residential use, the EMC for TP =		0.327	mg/l
For Highway use, the EMC for TP =		0.2	mg/l
Single Family Area =	25.97 AC	0.327	mg/l
Roadway Area =	0.00 AC	0.2	mg/l
Weighted Average, the EMC for TP =		0.33	mg/l

Calculate TP loading to wet detention pond

TP load to pond =

$$24.81 \text{ ac-ft/yr} \times \frac{43{,}560 \text{ ft}^2}{\text{ac}} \times \frac{7.48 \text{ gal}}{\text{ft}^3} \times \frac{3.785 \text{ liter}}{\text{gal}} \times \frac{0.33 \text{ mg}}{\text{liter}} \times \frac{1 \text{ Kg}}{10^6} = 10.1 \text{ kg TP/yr}$$

Calculate TP concentration in pond

At the proposed 21 day residence time, the TP removal was previously estimated as 65%
Annual mass of TP remaining in water column =
10.1 kg TP/yr X (1- 65%)= 3.54 kg TP/yr

This phosphorus mass will be distributed within the pond permanent pool 1.43 ac-ft and the pond outflow.
Assuming that inflow and outflow are approximately equal, the outflow will be 24.81 ac-ft.

Mean pond concentration =

$$3.54 \frac{\text{kg TP/yr}}{1.43 + 24.81 \text{ ac-ft}} \times \frac{1 \text{ yr}}{} \times \frac{1 \text{ ac}}{43{,}560 \text{ ft}^2} \times \frac{1 \text{ ft}^3}{7.48 \text{ gal}} \times \frac{1 \text{ gal}}{3.785 \text{ liter}} \times \frac{10^6 \text{ mg}}{\text{kg}} = 0.11 \text{ mg TP/Liter} = 109 \text{ ug TP/liter}$$

Calculate mean chlorophyll-a concentration in pond

ln(chyl-a) = 1.058 ln (TP) -.934

ln(chyl-a) = 4.03

chyl-a = 56.2 mg/m^3

Calculate mean Secchi disk depth

$$SD = \frac{24.2386 + [0.3041)(\text{chyl-a})]}{(6.0632+\text{chyl-a})}$$

SD = 0.66 meters = 2.17 ft

Calculate depth of anoxic condition in pond

Depth of DO<1 = 3.035 x Secchi + .02164 x (chyl-a) - .004979 x Total P

Depth of DO<1= Anoxic depth (m)

Secchi = Secchi disk depth (m)

chyl-a = chlorophyll-a concentration (mg/m^3)

Depth of Do < 1 = 2.68 meters = 8.79 ft
75 % of Anoxic Depth = 6.59 ft

Evaluate permanent pool volumes above Anoxic Depth

Permanent Pool Volume Required = 8.13 ac-ft

Permanent Pool Volume Provided at 75 % Anoxic Depth = 142.66 ac-ft

Permanent Pool provided above 75 % Anoxic Depth far exceeds required volume.

Project Name: **The Rookery** **DAI Project #:** 2008-499
Client: **D.R. Horton, Inc. - Jacksonville** **Engineer:** G. Wieger
Date: 4/5/23

Post Pond

Total Drainage Area	88.62	ac.
Impervious Building	0.00	ac.
Impervious Pavement	0.00	ac.
Pond @ NWL:	63.62	ac.
Open Space	25.00	ac.

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%
Impervious	0.00	98	0.95	0.00	0.00	0.0%
Open Space	25.00	80	0.25	2000.37	6.25	28.2%
Pond	63.62	100	1.00	6361.53	63.62	71.8%
Total Area (ac.):	88.62					
Weighted CN:	94.36					
Weighted C:	0.79					
Weighted K:	484					

Existing Pond

Stage ft	Area ac.	
34.5	87.12	**MIN TOB EL.**
33.0	75.20	
31.4	63.62	
30.0	57.77	

Project Name: **The Rookery** **DAI Project #:** 2008-499
Client: **D.R. Horton, Inc. - Jacksonville** **Engineer:** G. Wieger
Date: 4/5/23

Post Developed Basin DDA 1

Total Drainage Area	0.30	ac.
Impervious Building	0.00	ac.
Impervious Pavement	0.00	ac.
Pond @ NWL:	0.00	ac.
Open Space "A"	0.30	ac.

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%	
Impervious	0.00	98	0.95	0.00	0.00	0.0%	
Open Space	0.30	39	0.25	11.70	0.08	100.0%	(Good Condition)
Pond	0.00	100	1.00	0.00	0.00	0.0%	
Total Area (ac.):	0.30						
Weighted CN:	39.00						
Weighted C:	0.25						
Weighted K:	484						

Project Name: **The Rookery** **DAI Project #:** 2008-499
Client: **D.R. Horton, Inc. - Jacksonville** **Engineer:** G. Wieger
Date: 4/5/23

Post Developed Basin DDA 2

Total Drainage Area	0.21	ac.
Impervious Building	0.00	ac.
Impervious Pavement	0.00	ac.
Pond @ NWL:	0.00	ac.
Open Space "A"	0.21	ac.

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%	
Impervious	0.00	98	0.95	0.00	0.00	0.0%	
Open Space	0.21	39	0.25	8.19	0.05	100.0%	(Good Condition)
Pond	0.00	100	1.00	0.00	0.00	0.0%	
Total Area (ac.):	0.21						
Weighted CN:	39.00						
Weighted C:	0.25						
Weighted K:	484						

Project Name: **The Rookery** **DAI Project #:** 2008-499
Client: **D.R. Horton, Inc. - Jacksonville** **Engineer:** G. Wieger
Date: 4/5/23

Post Developed Basin DDA 3

Total Drainage Area	1.66	ac.
Impervious Building	0.00	ac.
Impervious Pavement	0.00	ac.
Pond @ NWL:	0.00	ac.
Open Space "A"	0.70	ac.
Open Space "D"	0.96	ac.

Weighted Curve Numbers

Coverage	Area (ac.)	CN	C	CN*A	C*A	%	
Impervious	0.00	98	0.95	0.00	0.00	0.0%	
Open Space "A"	0.70	39	0.25	27.30	0.18	42.2%	
Open Space "D"	0.96	80	0.25	76.80	0.24	57.8%	(Good Condition)
Pond	0.00	100	1.00	0.00	0.00	0.0%	
Total Area (ac.):	0.96						
Weighted CN:	62.71						
Weighted C:	0.25						
Weighted K:	484						

Time of Concentration Calculation (Tc)

SHEET FLOW				Tt=(0.007(nL)^0.8 / P^0.5 S^0.4)*60				50	
Tt Path	urf. Des	Length (ft)	Up Stream	Dn Stream	Slope(ft/ft	n	P	Tt(min)	
AB	Woods	300	27.0	26.5	0.0017	0.4	5.04	111.3	
SHALLOW CONCENTRATED FLOW							Tt=L / V*60		
Tt Path	urf. Des	Length (ft)	Up Stream	Dn Stream	Slope(ft/ft	Velocity(fps)			
BC	Woods	650	26.5	22.8	0.0057	1.2	Tc=	8.9	Min
							USE	121.0	Min

Project Name: **The Rookery** **DAI Project #:** **2008-499**

Client: **D.R. Horton, Inc. - Jacksonville** **Engineer:** **G. Wieger**

Date: **4/5/23**

FULL BUILD OUT OVERTREATMENT CALULATIONS

Pond Treated Area:	448.25	ac.	
Total DDA Areas	2.17	ac.	DDA 1-3
Untreated DDA Area:	2.17	ac.	
Max Overtreatment Area @ 10%:	44.83	ac.	

Calculation for Required Treatment Efficiency =

$$\frac{\text{(Treated Area + Untreated Area) x 80\%}}{\text{Treated Area}} = \textbf{80.4\%}$$

Calculation for 40% or Less Impervious

80% Treatment over the Drainage area Requires	1	"
95% Treatment over the Drainage area Requires	1.2	"
80.4% Over Treatment over the Drainage area Requires	**1.01**	"

Calculation for More Than 40% Impervious

80% Treatment over the Drainage area Requires	2.5	"
95% Treatment over the Drainage area Requires	3.75	"
80.4% Over Treatment over the Drainage area Requires	**2.53**	"

Calculation for Residence Time

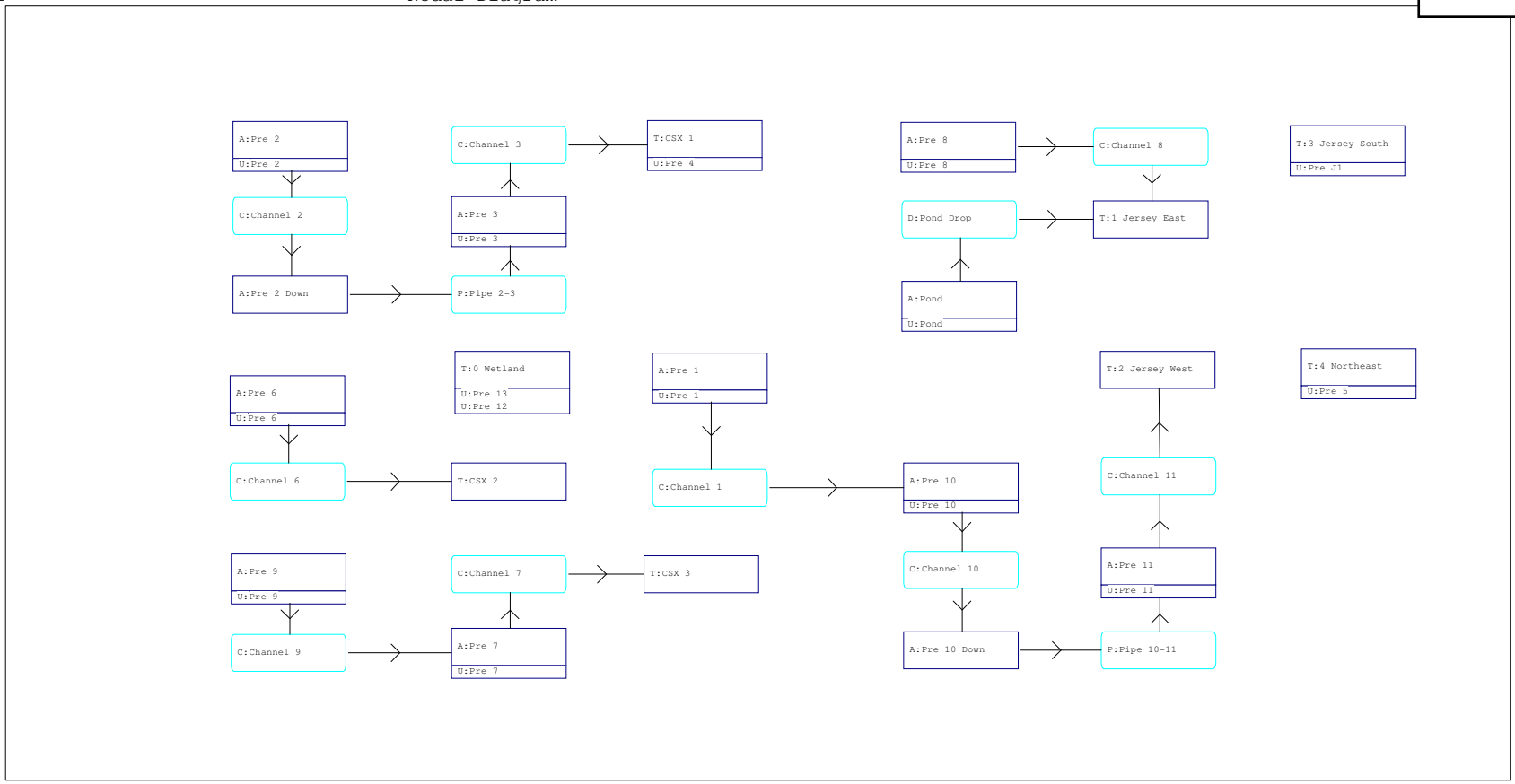
80% Treatment Requires	21	days
95% Treatment Requires	31.5	days
80.4% Over Treatment Requires	**21.07**	days

PRE DRAINAGE CALCULATIONS (ICPR)

Nodes
A Stage/Area
V Stage/Volume
T Time/Stage
M Manhole

Basins
O Overland Flow
U SCS Unit CN
S SBUH CN
Y SCS Unit GA
Z SBUH GA

Links
P Pipe
W Weir
C Channel
D Drop Structure
B Bridge
R Rating Curve
H Breach
E Percolation
F Filter
X Exfil Trench



P:\2008-499 Ayrshire\Engineering\Drainage\ICPR\Overall\Pre\ROOKERY PRE OVERALL MODIFY.ICP
12/1/2022 10:33:03 AM

```
================================================================================
==== Basins ====================================================================
================================================================================

        Name: Pond                  Node: Pond                  Status: Onsite
       Group: BASE                  Type: SCS Unit Hydrograph CN

      Unit Hydrograph: Uh484                Peaking Factor: 484.0
        Rainfall File: Flmod             Storm Duration(hrs): 0.00
  Rainfall Amount(in): 0.000               Time of Conc(min): 10.00
           Area(ac): 88.620                  Time Shift(hrs): 0.00
       Curve Number: 96.97              Max Allowable Q(cfs): 999999.000
            DCIA(%): 0.00


--------------------------------------------------------------------------------
        Name: Pre 1                 Node: Pre 1                 Status: Onsite
       Group: BASE                  Type: SCS Unit Hydrograph CN

      Unit Hydrograph: Uh256                Peaking Factor: 256.0
        Rainfall File: Flmod             Storm Duration(hrs): 0.00
  Rainfall Amount(in): 0.000               Time of Conc(min): 110.00
           Area(ac): 131.000                 Time Shift(hrs): 0.00
       Curve Number: 75.30              Max Allowable Q(cfs): 999999.000
            DCIA(%): 0.00


--------------------------------------------------------------------------------
        Name: Pre 10                Node: Pre 10                Status: Onsite
       Group: BASE                  Type: SCS Unit Hydrograph CN

      Unit Hydrograph: Uh256                Peaking Factor: 256.0
        Rainfall File: Flmod             Storm Duration(hrs): 0.00
  Rainfall Amount(in): 0.000               Time of Conc(min): 136.00
           Area(ac): 52.260                  Time Shift(hrs): 0.00
       Curve Number: 59.74              Max Allowable Q(cfs): 999999.000
            DCIA(%): 0.00


--------------------------------------------------------------------------------
        Name: Pre 11                Node: Pre 11                Status: Onsite
       Group: BASE                  Type: SCS Unit Hydrograph CN

      Unit Hydrograph: Uh256                Peaking Factor: 256.0
        Rainfall File: Flmod             Storm Duration(hrs): 0.00
  Rainfall Amount(in): 0.000               Time of Conc(min): 46.00
           Area(ac): 19.040                  Time Shift(hrs): 0.00
       Curve Number: 79.68              Max Allowable Q(cfs): 999999.000
            DCIA(%): 0.00


--------------------------------------------------------------------------------
        Name: Pre 12                Node: 0 Wetland             Status: Onsite
       Group: BASE                  Type: SCS Unit Hydrograph CN

      Unit Hydrograph: Uh256                Peaking Factor: 256.0
        Rainfall File: Flmod             Storm Duration(hrs): 0.00
  Rainfall Amount(in): 0.000               Time of Conc(min): 28.00
           Area(ac): 9.240                   Time Shift(hrs): 0.00
       Curve Number: 50.09              Max Allowable Q(cfs): 999999.000
            DCIA(%): 0.00


--------------------------------------------------------------------------------
        Name: Pre 13                Node: 0 Wetland             Status: Onsite
       Group: BASE                  Type: SCS Unit Hydrograph CN

      Unit Hydrograph: Uh256                Peaking Factor: 256.0
        Rainfall File: Flmod             Storm Duration(hrs): 0.00
```

Rainfall Amount(in): 0.000 Time of Conc(min): 51.00
Area(ac): 16.140 Time Shift(hrs): 0.00
Curve Number: 58.05 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: Pre 2 Node: Pre 2 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Flmod Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 43.00
Area(ac): 33.020 Time Shift(hrs): 0.00
Curve Number: 80.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: Pre 3 Node: Pre 3 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Flmod Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 61.00
Area(ac): 47.050 Time Shift(hrs): 0.00
Curve Number: 80.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: Pre 4 Node: CSX 1 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Flmod Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 0.820 Time Shift(hrs): 0.00
Curve Number: 80.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: Pre 5 Node: 4 Northeast Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Flmod Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 34.00
Area(ac): 20.340 Time Shift(hrs): 0.00
Curve Number: 50.03 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: Pre 6 Node: Pre 6 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Flmod Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 57.00
Area(ac): 36.730 Time Shift(hrs): 0.00
Curve Number: 80.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: Pre 7 Node: Pre 7 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Flmod Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 48.00
Area(ac): 34.130 Time Shift(hrs): 0.00
Curve Number: 80.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: Pre 8 Node: Pre 8 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Flmod Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 75.00
Area(ac): 10.860 Time Shift(hrs): 0.00
Curve Number: 80.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: Pre 9 Node: Pre 9 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Flmod Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 47.00
Area(ac): 13.670 Time Shift(hrs): 0.00
Curve Number: 39.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: Pre J1 Node: 3 Jersey South Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Flmod Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 32.00
Area(ac): 25.970 Time Shift(hrs): 0.00
Curve Number: 57.71 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

==========
==== Nodes ==========
==========

Name: 0 Wetland Base Flow(cfs): 0.000 Init Stage(ft): 31.000
Group: BASE Warn Stage(ft): 36.000
Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	31.000
12.00	33.000
24.00	31.000

Name: 1 Jersey East Base Flow(cfs): 0.000 Init Stage(ft): 27.000
Group: BASE Warn Stage(ft): 29.000
Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	27.000

12.00	28.000
24.00	27.000

Name: 2 Jersey West Base Flow(cfs): 0.000 Init Stage(ft): 27.000
Group: BASE Warn Stage(ft): 29.000
Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	27.000
12.00	28.000
24.00	27.000

Name: 3 Jersey South Base Flow(cfs): 0.000 Init Stage(ft): 27.000
Group: BASE Warn Stage(ft): 29.000
Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	27.000
12.00	28.000
24.00	27.000

Name: 4 Northeast Base Flow(cfs): 0.000 Init Stage(ft): 23.000
Group: BASE Warn Stage(ft): 26.000
Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	23.000
12.00	24.000
24.00	23.000

Name: CSX 1 Base Flow(cfs): 0.000 Init Stage(ft): 23.000
Group: BASE Warn Stage(ft): 26.000
Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	23.000
12.00	25.000
24.00	23.000

Name: CSX 2 Base Flow(cfs): 0.000 Init Stage(ft): 23.000
Group: BASE Warn Stage(ft): 26.000
Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	23.000
12.00	25.000
24.00	23.000

Name: CSX 3 Base Flow(cfs): 0.000 Init Stage(ft): 23.000
Group: BASE Warn Stage(ft): 26.000
Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	23.000
12.00	25.000
24.00	23.000

Name: Pond Base Flow(cfs): 0.000 Init Stage(ft): 33.000
Group: BASE Warn Stage(ft): 34.500
Type: Stage/Area

Stage(ft)	Area(ac)
30.000	57.7700
31.700	64.8700
34.500	87.1200

Name: Pre 1 Base Flow(cfs): 0.000 Init Stage(ft): 32.000
Group: BASE Warn Stage(ft): 35.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: Pre 10 Base Flow(cfs): 0.000 Init Stage(ft): 29.800
Group: BASE Warn Stage(ft): 35.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: Pre 10 Down Base Flow(cfs): 0.000 Init Stage(ft): 27.150
Group: BASE Warn Stage(ft): 30.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: Pre 11 Base Flow(cfs): 0.000 Init Stage(ft): 26.150
Group: BASE Warn Stage(ft): 33.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: Pre 2 Base Flow(cfs): 0.000 Init Stage(ft): 24.300
Group: BASE Warn Stage(ft): 30.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: Pre 2 Down Base Flow(cfs): 0.000 Init Stage(ft): 24.950
Group: BASE Warn Stage(ft): 30.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: Pre 3 Base Flow(cfs): 0.000 Init Stage(ft): 24.760
Group: BASE Warn Stage(ft): 27.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: Pre 6 Base Flow(cfs): 0.000 Init Stage(ft): 23.800
Group: BASE Warn Stage(ft): 29.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: Pre 7 Base Flow(cfs): 0.000 Init Stage(ft): 25.800
Group: BASE Warn Stage(ft): 30.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: Pre 8 Base Flow(cfs): 0.000 Init Stage(ft): 27.540
Group: BASE Warn Stage(ft): 30.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: Pre 9 Base Flow(cfs): 0.000 Init Stage(ft): 27.000
Group: BASE Warn Stage(ft): 30.000
Type: Stage/Area

Stage(ft)	Area(ac)

Pipes

Name: Pipe 10-11 From Node: Pre 10 Down Length(ft): 50.00
Group: BASE To Node: Pre 11 Count: 1
Friction Equation: Automatic
Solution Algorithm: Most Restrictive
Flow: Both
Entrance Loss Coef: 0.00
Exit Loss Coef: 1.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dc
Stabilizer Option: None

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	42.00	42.00
Rise(in):	42.00	42.00
Invert(ft):	27.150	26.150
Manning's N:	0.020000	0.020000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name:	Pipe 2-3	From Node:	Pre 2 Down	Length(ft): 60.00
Group:	BASE	To Node:	Pre 3	Count: 1

Friction Equation: Automatic
Solution Algorithm: Most Restrictive
Flow: Both
Entrance Loss Coef: 0.00
Exit Loss Coef: 1.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dc
Stabilizer Option: None

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	24.00	24.00
Rise(in):	24.00	24.00
Invert(ft):	24.950	24.760
Manning's N:	0.020000	0.020000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

==========
==== Channels ==========
==========

Name:	Channel 1	From Node:	Pre 1	Length(ft): 300.00
Group:	BASE	To Node:	Pre 10	Count: 1

Friction Equation: Automatic
Solution Algorithm: Automatic
Flow: Both
Contraction Coef: 0.100
Expansion Coef: 0.300
Entrance Loss Coef: 0.000
Exit Loss Coef: 0.000
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dc
Stabilizer Option: None

	UPSTREAM	DOWNSTREAM
Geometry:	Trapezoidal	Trapezoidal
Invert(ft):	32.000	29.800
TClpInitZ(ft):	9999.000	9999.000
Manning's N:	0.090000	0.090000
Top Clip(ft):	0.000	0.000
Bot Clip(ft):	0.000	0.000
Main XSec:		
AuxElev1(ft):		
Aux XSec1:		
AuxElev2(ft):		
Aux XSec2:		
Top Width(ft):		
Depth(ft):		
Bot Width(ft):	10.000	10.000
LtSdSlp(h/v):	3.00	3.00
RtSdSlp(h/v):	3.00	3.00

Name:	Channel 10	From Node:	Pre 10	Length(ft): 4965.00
Group:	BASE	To Node:	Pre 10 Down	Count: 1

Friction Equation: Automatic
Solution Algorithm: Automatic
Flow: Both
Contraction Coef: 0.100
Expansion Coef: 0.300
Entrance Loss Coef: 0.000
Exit Loss Coef: 0.000
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dc
Stabilizer Option: None

	UPSTREAM	DOWNSTREAM
Geometry:	Trapezoidal	Trapezoidal
Invert(ft):	29.800	27.150
TClpInitZ(ft):	9999.000	9999.000
Manning's N:	0.090000	0.090000
Top Clip(ft):	0.000	0.000
Bot Clip(ft):	0.000	0.000
Main XSec:		
AuxElev1(ft):		
Aux XSec1:		
AuxElev2(ft):		
Aux XSec2:		
Top Width(ft):		
Depth(ft):		
Bot Width(ft):	10.000	10.000
LtSdSlp(h/v):	3.00	3.00

RtSdSlp(h/v): 3.00 3.00

Name: Channel 11 From Node: Pre 11 Length(ft): 896.00
Group: BASE To Node: 2 Jersey West Count: 1

	UPSTREAM	DOWNSTREAM		
Geometry:	Trapezoidal	Trapezoidal	Friction Equation:	Automatic
Invert(ft):	26.150	27.050	Solution Algorithm:	Automatic
TClpInitZ(ft):	9999.000	9999.000	Flow:	Both
Manning's N:	0.090000	0.090000	Contraction Coef:	0.100
Top Clip(ft):	0.000	0.000	Expansion Coef:	0.300
Bot Clip(ft):	0.000	0.000	Entrance Loss Coef:	0.000
Main XSec:			Exit Loss Coef:	0.000
AuxElev1(ft):			Outlet Ctrl Spec:	Use dc or tw
Aux XSec1:			Inlet Ctrl Spec:	Use dc
AuxElev2(ft):			Stabilizer Option:	None
Aux XSec2:				
Top Width(ft):				
Depth(ft):				
Bot Width(ft):	10.000	10.000		
LtSdSlp(h/v):	3.00	3.00		
RtSdSlp(h/v):	3.00	3.00		

Name: Channel 2 From Node: Pre 2 Length(ft): 3250.00
Group: BASE To Node: Pre 2 Down Count: 1

	UPSTREAM	DOWNSTREAM		
Geometry:	Trapezoidal	Trapezoidal	Friction Equation:	Automatic
Invert(ft):	26.350	24.950	Solution Algorithm:	Automatic
TClpInitZ(ft):	9999.000	9999.000	Flow:	Both
Manning's N:	0.090000	0.090000	Contraction Coef:	0.100
Top Clip(ft):	0.000	0.000	Expansion Coef:	0.300
Bot Clip(ft):	0.000	0.000	Entrance Loss Coef:	0.000
Main XSec:			Exit Loss Coef:	0.000
AuxElev1(ft):			Outlet Ctrl Spec:	Use dc or tw
Aux XSec1:			Inlet Ctrl Spec:	Use dc
AuxElev2(ft):			Stabilizer Option:	None
Aux XSec2:				
Top Width(ft):				
Depth(ft):				
Bot Width(ft):	10.000	10.000		
LtSdSlp(h/v):	3.00	3.00		
RtSdSlp(h/v):	3.00	3.00		

Name: Channel 3 From Node: Pre 3 Length(ft): 1140.00
Group: BASE To Node: CSX 1 Count: 1

	UPSTREAM	DOWNSTREAM		
Geometry:	Trapezoidal	Trapezoidal	Friction Equation:	Automatic
Invert(ft):	24.760	22.500	Solution Algorithm:	Automatic
TClpInitZ(ft):	9999.000	9999.000	Flow:	Both
Manning's N:	0.090000	0.090000	Contraction Coef:	0.100
Top Clip(ft):	0.000	0.000	Expansion Coef:	0.300
Bot Clip(ft):	0.000	0.000	Entrance Loss Coef:	0.000
Main XSec:			Exit Loss Coef:	0.000
AuxElev1(ft):			Outlet Ctrl Spec:	Use dc or tw
Aux XSec1:			Inlet Ctrl Spec:	Use dc
AuxElev2(ft):			Stabilizer Option:	None
Aux XSec2:				
Top Width(ft):				
Depth(ft):				
Bot Width(ft):	10.000	10.000		
LtSdSlp(h/v):	3.00	3.00		
RtSdSlp(h/v):	3.00	3.00		

Name: Channel 6 From Node: Pre 6 Length(ft): 770.00
Group: BASE To Node: CSX 2 Count: 1

	UPSTREAM	DOWNSTREAM		
Geometry:	Trapezoidal	Trapezoidal	Friction Equation:	Automatic
Invert(ft):	23.800	22.700	Solution Algorithm:	Automatic
TClpInitZ(ft):	9999.000	9999.000	Flow:	Both
Manning's N:	0.090000	0.090000	Contraction Coef:	0.100
Top Clip(ft):	0.000	0.000	Expansion Coef:	0.300
Bot Clip(ft):	0.000	0.000	Entrance Loss Coef:	0.000
Main XSec:			Exit Loss Coef:	0.000
AuxElev1(ft):			Outlet Ctrl Spec:	Use dc or tw
Aux XSec1:			Inlet Ctrl Spec:	Use dc
AuxElev2(ft):			Stabilizer Option:	None
Aux XSec2:				
Top Width(ft):				
Depth(ft):				
Bot Width(ft):	5.000	5.000		
LtSdSlp(h/v):	3.00	3.00		
RtSdSlp(h/v):	3.00	3.00		

Name: Channel 7 From Node: Pre 7 Length(ft): 675.00
Group: BASE To Node: CSX 3 Count: 1

	UPSTREAM	DOWNSTREAM		
Geometry:	Trapezoidal	Trapezoidal	Friction Equation:	Automatic
Invert(ft):	25.800	24.900	Solution Algorithm:	Automatic
TClpInitZ(ft):	9999.000	9999.000	Flow:	Both
Manning's N:	0.090000	0.090000	Contraction Coef:	0.100
Top Clip(ft):	0.000	0.000	Expansion Coef:	0.300
Bot Clip(ft):	0.000	0.000	Entrance Loss Coef:	0.000
Main XSec:			Exit Loss Coef:	0.000
AuxElev1(ft):			Outlet Ctrl Spec:	Use dc or tw
Aux XSec1:			Inlet Ctrl Spec:	Use dc
AuxElev2(ft):			Stabilizer Option:	None
Aux XSec2:				
Top Width(ft):				
Depth(ft):				
Bot Width(ft):	10.000	10.000		
LtSdSlp(h/v):	4.00	4.00		
RtSdSlp(h/v):	4.00	4.00		

Name: Channel 8 From Node: Pre 8 Length(ft): 275.00
Group: BASE To Node: 1 Jersey East Count: 1

	UPSTREAM	DOWNSTREAM		
Geometry:	Trapezoidal	Trapezoidal	Friction Equation:	Automatic
Invert(ft):	27.540	27.050	Solution Algorithm:	Automatic
TClpInitZ(ft):	9999.000	9999.000	Flow:	Both
Manning's N:	0.090000	0.090000	Contraction Coef:	0.100
Top Clip(ft):	0.000	0.000	Expansion Coef:	0.300
Bot Clip(ft):	0.000	0.000	Entrance Loss Coef:	0.000
Main XSec:			Exit Loss Coef:	0.000
AuxElev1(ft):			Outlet Ctrl Spec:	Use dc or tw
Aux XSec1:			Inlet Ctrl Spec:	Use dc
AuxElev2(ft):			Stabilizer Option:	None
Aux XSec2:				
Top Width(ft):				
Depth(ft):				
Bot Width(ft):	10.000	10.000		
LtSdSlp(h/v):	6.00	6.00		
RtSdSlp(h/v):	6.00	6.00		

Name: Channel 9 From Node: Pre 9 Length(ft): 1700.00

Group: BASE To Node: Pre 7 Count: 1

	UPSTREAM	DOWNSTREAM
Geometry:	Trapezoidal	Trapezoidal
Invert(ft):	27.000	25.800
TClpInitZ(ft):	9999.000	9999.000
Manning's N:	0.090000	0.090000
Top Clip(ft):	0.000	0.000
Bot Clip(ft):	0.000	0.000
Main XSec:		
AuxElev1(ft):		
Aux XSec1:		
AuxElev2(ft):		
Aux XSec2:		
Top Width(ft):		
Depth(ft):		
Bot Width(ft):	10.000	10.000
LtSdSlp(h/v):	4.00	4.00
RtSdSlp(h/v):	4.00	4.00

Friction Equation: Automatic
Solution Algorithm: Automatic
Flow: Both
Contraction Coef: 0.100
Expansion Coef: 0.300
Entrance Loss Coef: 0.000
Exit Loss Coef: 0.000
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dc
Stabilizer Option: None

==========
==== Drop Structures ==========
==========

Name: Pond Drop From Node: Pond Length(ft): 50.00
Group: BASE To Node: 1 Jersey East Count: 1

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	36.00	36.00
Rise(in):	36.00	36.00
Invert(ft):	27.890	27.570
Manning's N:	0.012000	0.012000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

Friction Equation: Automatic
Solution Algorithm: Most Restrictive
Flow: Both
Entrance Loss Coef: 0.000
Exit Loss Coef: 1.000
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dc
Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

*** Weir 1 of 1 for Drop Structure Pond Drop ***

TABLE

Count: 1
Type: Horizontal
Flow: Both
Geometry: Rectangular
Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Disc Coef: 3.200
Orifice Disc Coef: 0.600

Span(in): 99.00
Rise(in): 76.00
Invert(ft): 33.000
Control Elev(ft): 33.000

==========
==== Hydrology Simulations ==========
==========

Name: 100 Year
Filename: P:\2008-499 AYRSHIRE\ENGINEERING\DRAINAGE\ICPR\OVERALL\PRE\100 Year.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Flmod
Rainfall Amount(in): 10.90

Time(hrs)	Print Inc(min)
30.000	15.00

Name: 25 Year

Filename: P:\2008-499 AYRSHIRE\ENGINEERING\DRAINAGE\ICPR\OVERALL\PRE\25 Year.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Flmod
Rainfall Amount(in): 8.06

Time(hrs)	Print Inc(min)
30.000	15.00

Name: 3 Year
Filename: P:\2008-499 AYRSHIRE\ENGINEERING\DRAINAGE\ICPR\OVERALL\PRE\3 Year.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Flmod
Rainfall Amount(in): 4.78

Time(hrs)	Print Inc(min)
30.000	15.00

==========
==== Routing Simulations ==========
==========

Name: 100 Year Hydrology Sim: 100 Year
Filename: P:\2008-499 AYRSHIRE\ENGINEERING\DRAINAGE\ICPR\OVERALL\PRE\100 Year.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 24.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
24.000	15.000

Group	Run
BASE	Yes

Name: 25 Year Hydrology Sim: 25 Year
Filename: P:\2008-499 AYRSHIRE\ENGINEERING\DRAINAGE\ICPR\OVERALL\PRE\25 Year.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 24.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
24.000	15.000

Group	Run
BASE	Yes

```
         Name: 3 Year              Hydrology Sim: 3 Year
     Filename: P:\2008-499 AYRSHIRE\ENGINEERING\DRAINAGE\ICPR\OVERALL\PRE\3 Year.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                    Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                    End Time(hrs): 24.00
     Min Calc Time(sec): 0.5000              Max Calc Time(sec): 60.0000
        Boundary Stages:                         Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
24.000          60.000

Group           Run
--------------- -----
BASE            Yes
```

Simulation	Basin	Group	Time Max hrs	Flow Max cfs	Volume in	Volume ft3
100 Year	Pond	BASE	12.00	705.02	10.520	3384100
100 Year	Pre 1	BASE	13.25	182.02	7.755	3687718
100 Year	Pre 10	BASE	13.67	43.39	5.598	1061983
100 Year	Pre 11	BASE	12.50	51.24	8.343	576620
100 Year	Pre 12	BASE	12.32	15.98	4.199	140848
100 Year	Pre 13	BASE	12.58	25.85	5.352	313538
100 Year	Pre 2	BASE	12.42	93.11	8.373	1003662
100 Year	Pre 3	BASE	12.67	106.51	8.376	1430533
100 Year	Pre 4	BASE	12.04	4.73	8.382	24949
100 Year	Pre 5	BASE	12.39	31.48	4.190	309374
100 Year	Pre 6	BASE	12.58	87.02	8.380	1117249
100 Year	Pre 7	BASE	12.50	90.06	8.379	1038144
100 Year	Pre 8	BASE	12.83	21.43	8.382	330423
100 Year	Pre 9	BASE	12.58	9.30	2.580	128040
100 Year	Pre J1	BASE	12.30	54.51	5.305	500110
25 Year	Pond	BASE	12.00	520.14	7.687	2472679
25 Year	Pre 1	BASE	13.25	119.74	5.128	2438484
25 Year	Pre 10	BASE	13.75	25.03	3.348	635082
25 Year	Pre 11	BASE	12.50	34.95	5.644	390088
25 Year	Pre 12	BASE	12.32	8.10	2.293	76917
25 Year	Pre 13	BASE	12.58	14.68	3.157	184956
25 Year	Pre 2	BASE	12.42	63.57	5.674	680074
25 Year	Pre 3	BASE	12.67	72.62	5.675	969318
25 Year	Pre 4	BASE	12.04	3.25	5.679	16905
25 Year	Pre 5	BASE	12.39	15.91	2.287	168831
25 Year	Pre 6	BASE	12.58	59.31	5.678	757040
25 Year	Pre 7	BASE	12.50	61.50	5.678	703439
25 Year	Pre 8	BASE	12.83	14.59	5.679	223892
25 Year	Pre 9	BASE	12.75	3.47	1.182	58678
25 Year	Pre J1	BASE	12.37	31.01	3.120	294156
3 Year	Pond	BASE	12.02	305.93	4.419	1421404
3 Year	Pre 1	BASE	13.33	51.88	2.296	1091654
3 Year	Pre 10	BASE	13.92	7.61	1.158	219598
3 Year	Pre 11	BASE	12.50	16.49	2.674	184780
3 Year	Pre 12	BASE	12.44	1.52	0.608	20399
3 Year	Pre 13	BASE	12.67	4.13	1.052	61606
3 Year	Pre 2	BASE	12.42	30.04	2.698	323421
3 Year	Pre 3	BASE	12.67	34.25	2.699	460976
3 Year	Pre 4	BASE	12.04	1.56	2.701	8040
3 Year	Pre 5	BASE	12.54	2.98	0.605	44678
3 Year	Pre 6	BASE	12.67	27.98	2.700	360023
3 Year	Pre 7	BASE	12.50	29.08	2.700	334533
3 Year	Pre 8	BASE	12.83	6.86	2.701	106476
3 Year	Pre 9	BASE	15.75	0.22	0.158	7831
3 Year	Pre J1	BASE	12.44	8.66	1.031	97190

Pre Rookery Overall — Node Max Report

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
0 Wetland	BASE	100 Year	12.00	33.00	36.00	0.0028	0	12.50	40.38	0.00	0.00
1 Jersey East	BASE	100 Year	12.00	28.00	29.00	0.0014	2926	13.00	70.22	0.00	0.00
2 Jersey West	BASE	100 Year	12.00	28.00	29.00	0.0014	8349	15.06	133.94	0.00	0.00
3 Jersey South	BASE	100 Year	12.00	28.00	29.00	0.0014	0	12.25	53.56	0.00	0.00
4 Northeast	BASE	100 Year	12.00	24.00	26.00	0.0014	0	12.50	30.59	0.00	0.00
CSX 1	BASE	100 Year	12.00	25.00	26.00	0.0028	14063	12.83	117.74	0.00	0.00
CSX 2	BASE	100 Year	12.00	25.00	26.00	0.0028	7546	12.63	85.21	0.00	0.00
CSX 3	BASE	100 Year	12.00	25.00	26.00	0.0028	5816	12.83	84.77	0.00	0.00
Pond	BASE	100 Year	13.61	33.66	34.50	0.0015	3503457	12.00	704.99	13.61	49.81
Pre 1	BASE	100 Year	13.97	36.87	35.00	0.0045	6431	13.25	182.01	13.26	179.77
Pre 10	BASE	100 Year	15.58	36.70	35.00	0.0050	142015	13.26	220.52	13.94	195.11
Pre 10 Down	BASE	100 Year	16.14	36.00	30.00	-0.0050	149418	13.94	195.11	16.14	123.37
Pre 11	BASE	100 Year	15.06	31.05	33.00	0.0050	15500	14.98	133.96	15.06	133.94
Pre 2	BASE	100 Year	14.59	31.38	30.00	-2.0500	68586	12.50	92.10	12.75	66.92
Pre 2 Down	BASE	100 Year	14.71	31.29	30.00	0.0044	74974	12.75	66.92	15.42	27.82
Pre 3	BASE	100 Year	12.84	28.78	27.00	0.0039	18153	12.75	118.14	12.84	116.71
Pre 6	BASE	100 Year	12.62	27.82	29.00	0.0050	10271	12.50	85.90	12.63	85.21
Pre 7	BASE	100 Year	12.83	29.02	30.00	0.0033	39200	12.54	88.98	12.83	84.77
Pre 8	BASE	100 Year	12.80	29.02	30.00	0.0016	3678	12.75	21.38	12.80	21.29
Pre 9	BASE	100 Year	12.96	29.10	30.00	0.0034	24774	12.75	9.09	13.30	9.90
0 Wetland	BASE	25 Year	12.00	33.00	36.00	0.0028	0	12.50	22.12	0.00	0.00
1 Jersey East	BASE	25 Year	12.00	28.00	29.00	0.0014	2861	13.01	46.17	0.00	0.00
2 Jersey West	BASE	25 Year	12.00	28.00	29.00	0.0014	7959	15.31	102.44	0.00	0.00
3 Jersey South	BASE	25 Year	12.00	28.00	29.00	0.0014	0	12.25	30.01	0.00	0.00
4 Northeast	BASE	25 Year	12.00	24.00	26.00	0.0014	0	12.50	15.71	0.00	0.00
CSX 1	BASE	25 Year	12.00	25.00	26.00	0.0028	13596	12.94	80.21	0.00	0.00
CSX 2	BASE	25 Year	12.00	25.00	26.00	0.0028	7247	12.69	58.00	0.00	0.00
CSX 3	BASE	25 Year	12.00	25.00	26.00	0.0028	5303	12.89	53.85	0.00	0.00
Pond	BASE	25 Year	13.74	33.50	34.50	0.0014	3447122	12.00	519.36	13.74	32.52
Pre 1	BASE	25 Year	13.99	35.71	35.00	0.0040	5363	13.25	119.73	13.26	118.31
Pre 10	BASE	25 Year	14.15	35.36	35.00	0.0050	111910	13.28	141.44	14.20	124.37
Pre 10 Down	BASE	25 Year	15.74	33.33	30.00	-0.0049	112990	14.20	124.37	15.74	94.85
Pre 11	BASE	25 Year	15.31	30.58	33.00	0.0050	14445	15.21	102.46	15.31	102.44
Pre 2	BASE	25 Year	14.14	30.12	30.00	-2.0500	56032	12.50	63.05	12.86	45.85
Pre 2 Down	BASE	25 Year	14.42	29.92	30.00	-0.0050	61860	12.86	45.85	15.03	23.12
Pre 3	BASE	25 Year	12.96	28.15	27.00	0.0041	16522	12.75	80.46	12.96	79.63
Pre 6	BASE	25 Year	12.67	27.28	29.00	0.0050	9332	12.50	58.38	12.69	58.00
Pre 7	BASE	25 Year	12.89	28.45	30.00	0.0040	33924	12.72	57.21	12.89	53.85
Pre 8	BASE	25 Year	12.82	28.79	30.00	0.0015	3398	12.75	14.53	12.82	14.45
Pre 9	BASE	25 Year	13.03	28.49	30.00	0.0033	20658	12.75	3.47	13.54	4.56
0 Wetland	BASE	3 Year	12.00	33.00	36.00	0.0028	0	12.75	5.49	0.00	0.00
1 Jersey East	BASE	3 Year	12.00	28.00	29.00	0.0014	2783	13.04	21.28	0.00	0.00
2 Jersey West	BASE	3 Year	12.00	28.00	29.00	0.0014	7701	15.55	46.76	0.00	0.00
3 Jersey South	BASE	3 Year	12.00	28.00	29.00	0.0014	0	12.50	8.55	0.00	0.00
4 Northeast	BASE	3 Year	12.00	24.00	26.00	0.0014	0	12.50	2.95	0.00	0.00
CSX 1	BASE	3 Year	12.00	25.00	26.00	0.0028	12994	13.23	37.63	0.00	0.00
CSX 2	BASE	3 Year	12.00	25.00	26.00	0.0028	6869	12.77	27.31	0.00	0.00
CSX 3	BASE	3 Year	12.00	25.00	26.00	0.0028	4497	13.03	23.03	0.00	0.00
Pond	BASE	3 Year	14.60	33.30	34.50	0.0012	3378978	12.00	305.26	14.60	15.20
Pre 1	BASE	3 Year	14.04	34.05	35.00	0.0049	3798	13.25	51.69	13.28	51.30
Pre 10	BASE	3 Year	14.53	33.44	35.00	0.0041	80280	13.50	58.25	14.61	47.58

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
Pre 10 Down	BASE	3 Year	15.72	30.20	30.00	0.0032	71865	14.61	47.58	15.70	43.07
Pre 11	BASE	3 Year	15.55	29.44	33.00	0.0050	11854	15.43	46.79	15.55	46.76
Pre 2	BASE	3 Year	13.12	28.84	30.00	-2.0500	40267	12.50	30.01	13.17	20.97
Pre 2 Down	BASE	3 Year	14.21	27.84	30.00	0.0042	42882	13.17	20.97	14.62	15.06
Pre 3	BASE	3 Year	13.33	27.01	27.00	0.0043	13530	13.02	38.01	13.24	37.42
Pre 6	BASE	3 Year	12.77	26.37	29.00	0.0049	7750	12.75	27.52	12.77	27.31
Pre 7	BASE	3 Year	13.03	27.61	30.00	0.0047	26286	12.50	25.13	13.03	23.03
Pre 8	BASE	3 Year	12.92	28.40	30.00	0.0025	2915	12.75	6.79	12.91	6.77
Pre 9	BASE	3 Year	13.07	27.61	30.00	0.0020	14817	15.75	0.22	13.97	0.79

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
Channel 1	BASE	100 Year	13.26	179.77	-0.191	13.97	36.87	15.58	36.70
Channel 10	BASE	100 Year	13.94	195.11	-0.169	15.58	36.70	16.14	36.00
Channel 11	BASE	100 Year	15.06	133.94	0.143	15.06	31.05	15.06	28.56
Channel 2	BASE	100 Year	12.75	66.92	0.104	14.59	31.38	14.71	31.29
Channel 3	BASE	100 Year	12.84	116.71	0.173	12.84	28.78	12.00	25.00
Channel 6	BASE	100 Year	12.63	85.21	0.138	12.62	27.82	12.00	25.00
Channel 7	BASE	100 Year	12.83	84.77	0.123	12.83	29.02	12.83	26.02
Channel 8	BASE	100 Year	12.80	21.29	0.026	12.80	29.02	12.00	28.00
Channel 9	BASE	100 Year	13.30	9.90	0.165	12.96	29.10	12.83	29.02
Pipe 10-11	BASE	100 Year	16.14	123.37	8.835	16.14	36.00	13.80	30.85
Pipe 2-3	BASE	100 Year	15.42	27.82	0.490	14.71	31.29	12.84	28.78
Pond Drop	BASE	100 Year	13.61	49.81	0.115	13.61	33.66	12.00	28.00
Channel 1	BASE	25 Year	13.26	118.31	-0.157	13.99	35.71	14.15	35.36
Channel 10	BASE	25 Year	14.20	124.37	-0.198	14.15	35.36	15.74	33.33
Channel 11	BASE	25 Year	15.31	102.44	-0.096	15.31	30.58	15.31	28.34
Channel 2	BASE	25 Year	12.86	45.85	0.084	14.14	30.12	14.42	29.92
Channel 3	BASE	25 Year	12.96	79.63	0.146	12.96	28.15	12.00	25.00
Channel 6	BASE	25 Year	12.69	58.00	0.122	12.67	27.28	12.00	25.00
Channel 7	BASE	25 Year	12.89	53.85	0.096	12.89	28.45	12.89	25.76
Channel 8	BASE	25 Year	12.82	14.45	0.023	12.82	28.79	12.00	28.00
Channel 9	BASE	25 Year	13.54	4.56	0.102	13.03	28.49	12.89	28.45
Pipe 10-11	BASE	25 Year	15.74	94.85	5.666	15.74	33.33	14.28	30.45
Pipe 2-3	BASE	25 Year	15.03	23.12	0.354	14.42	29.92	12.96	28.15
Pond Drop	BASE	25 Year	13.74	32.52	0.093	13.74	33.50	12.00	28.00
Channel 1	BASE	3 Year	13.28	51.30	0.089	14.04	34.05	14.53	33.44
Channel 10	BASE	3 Year	14.61	47.58	0.076	14.53	33.44	15.72	30.20
Channel 11	BASE	3 Year	15.55	46.76	0.173	15.55	29.44	12.00	28.00
Channel 2	BASE	3 Year	13.17	20.97	0.046	13.12	28.84	14.21	27.84
Channel 3	BASE	3 Year	13.24	37.42	0.080	13.33	27.01	12.00	25.00
Channel 6	BASE	3 Year	12.77	27.31	0.081	12.77	26.37	12.00	25.00
Channel 7	BASE	3 Year	13.03	23.03	0.069	13.03	27.61	13.03	25.41
Channel 8	BASE	3 Year	12.91	6.77	-0.051	12.92	28.40	12.00	28.00
Channel 9	BASE	3 Year	13.97	0.79	0.056	13.07	27.61	13.03	27.61
Pipe 10-11	BASE	3 Year	15.70	43.07	7.197	15.72	30.20	13.33	28.69
Pipe 2-3	BASE	3 Year	14.62	15.06	0.588	14.21	27.84	13.33	27.01
Pond Drop	BASE	3 Year	14.60	15.20	0.062	14.60	33.30	12.00	28.00

Interconnected Channel and Pond Routing Model (ICPR) ©2002 Streamline Technologies, Inc.

POST DRAINAGE CALCULATIONS (ICPR)

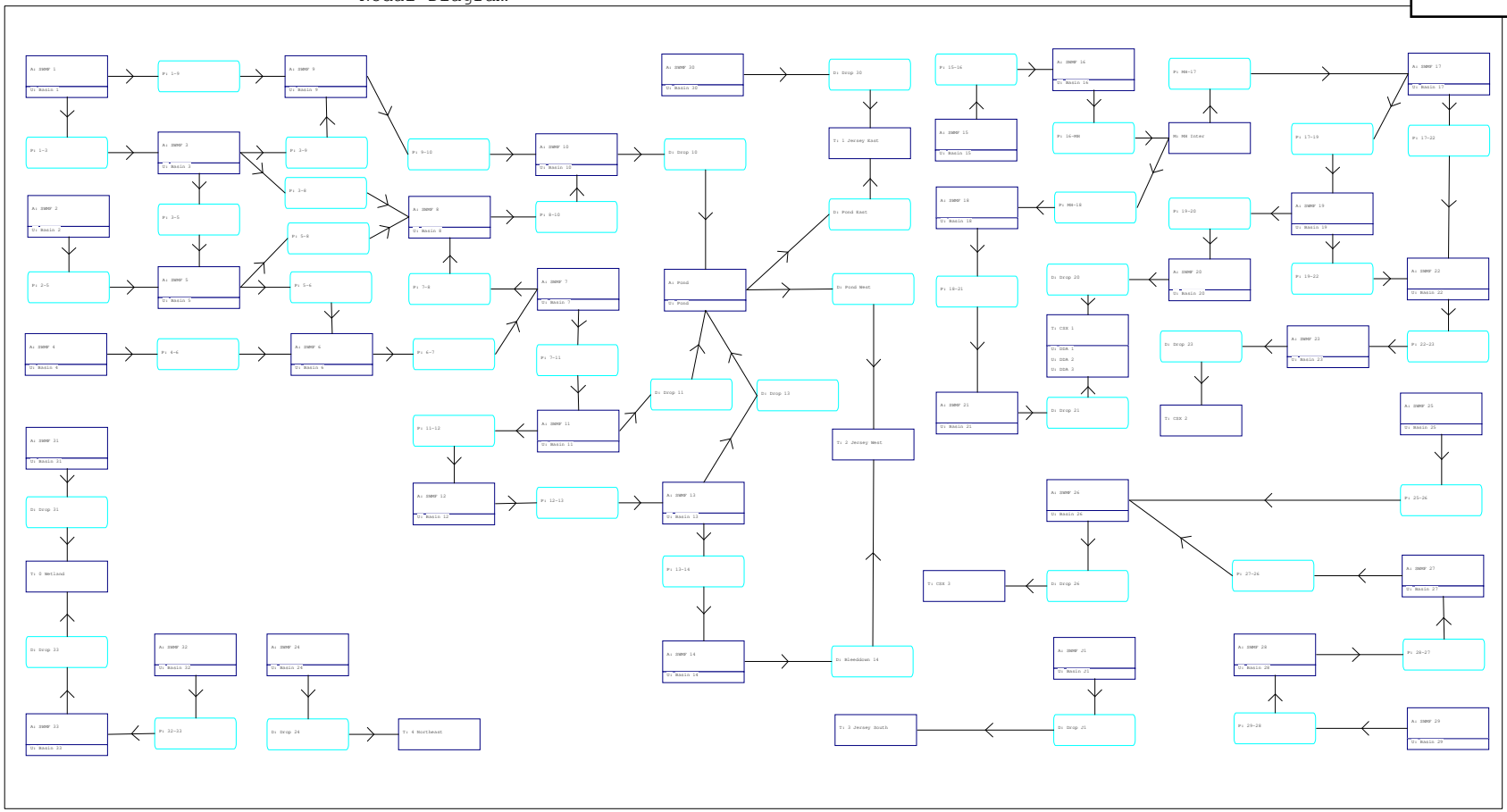
Rookery Overall

Nodal Diagram

Nodes
A Stage/Area
V Stage/Volume
T Time/Stage
M Manhole

Basins
O Overland Flow
U SCS Unit CN
S SBUH CN
Y SCS Unit GA
Z SBUH GA

Links
P Pipe
W Weir
C Channel
D Drop Structure
B Bridge
R Rating Curve
H Breach
E Percolation
F Filter
X Exfil Trench



P:\2008-499 Ayrshire\Engineering\Drainage\ICPR\Overall\Post\ROOKERY POST OVERALL.ICP
4/5/2023 5:32:07 PM

```
================================================================================
==== Basins ====================================================================
================================================================================

         Name: Basin 1                Node: SWMF 1                Status: Onsite
        Group: BASE                   Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh484                 Peaking Factor: 484.0
          Rainfall File: Flmod              Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                Time of Conc(min): 10.00
              Area(ac): 25.240                  Time Shift(hrs): 0.00
          Curve Number: 83.10              Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00


--------------------------------------------------------------------------------
         Name: Basin 10               Node: SWMF 10               Status: Onsite
        Group: BASE                   Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh484                 Peaking Factor: 484.0
          Rainfall File: Flmod              Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                Time of Conc(min): 10.00
              Area(ac): 7.740                   Time Shift(hrs): 0.00
          Curve Number: 87.71              Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00


--------------------------------------------------------------------------------
         Name: Basin 11               Node: SWMF 11               Status: Onsite
        Group: BASE                   Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh484                 Peaking Factor: 484.0
          Rainfall File: Flmod              Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                Time of Conc(min): 10.00
              Area(ac): 18.850                  Time Shift(hrs): 0.00
          Curve Number: 69.96              Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00


--------------------------------------------------------------------------------
         Name: Basin 12               Node: SWMF 12               Status: Onsite
        Group: BASE                   Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh484                 Peaking Factor: 484.0
          Rainfall File: Flmod              Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                Time of Conc(min): 10.00
              Area(ac): 20.460                  Time Shift(hrs): 0.00
          Curve Number: 68.26              Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00


--------------------------------------------------------------------------------
         Name: Basin 13               Node: SWMF 13               Status: Onsite
        Group: BASE                   Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh484                 Peaking Factor: 484.0
          Rainfall File: Flmod              Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                Time of Conc(min): 10.00
              Area(ac): 17.210                  Time Shift(hrs): 0.00
          Curve Number: 86.67              Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00


--------------------------------------------------------------------------------
         Name: Basin 14               Node: SWMF 14               Status: Onsite
        Group: BASE                   Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh484                 Peaking Factor: 484.0
          Rainfall File: Flmod              Storm Duration(hrs): 0.00
```

Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 13.460 Time Shift(hrs): 0.00
Curve Number: 77.66 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: Basin 15 Node: SWMF 15 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484 Peaking Factor: 484.0
Rainfall File: Flmod Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 23.910 Time Shift(hrs): 0.00
Curve Number: 88.59 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: Basin 16 Node: SWMF 16 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484 Peaking Factor: 484.0
Rainfall File: Flmod Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 10.300 Time Shift(hrs): 0.00
Curve Number: 88.86 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: Basin 17 Node: SWMF 17 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484 Peaking Factor: 484.0
Rainfall File: Flmod Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 9.440 Time Shift(hrs): 0.00
Curve Number: 90.14 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: Basin 18 Node: SWMF 18 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484 Peaking Factor: 484.0
Rainfall File: Flmod Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 21.440 Time Shift(hrs): 0.00
Curve Number: 78.91 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: Basin 19 Node: SWMF 19 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484 Peaking Factor: 484.0
Rainfall File: Flmod Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 11.410 Time Shift(hrs): 0.00
Curve Number: 78.38 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: Basin 2 Node: SWMF 2 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484 Peaking Factor: 484.0
Rainfall File: Flmod Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 17.690 Time Shift(hrs): 0.00
Curve Number: 75.30 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: Basin 20 Node: SWMF 20 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484 Peaking Factor: 484.0
Rainfall File: Flmod Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 3.340 Time Shift(hrs): 0.00
Curve Number: 76.98 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: Basin 21 Node: SWMF 21 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484 Peaking Factor: 484.0
Rainfall File: Flmod Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 40.370 Time Shift(hrs): 0.00
Curve Number: 88.56 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: Basin 22 Node: SWMF 22 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484 Peaking Factor: 484.0
Rainfall File: Flmod Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 12.610 Time Shift(hrs): 0.00
Curve Number: 87.78 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: Basin 23 Node: SWMF 23 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484 Peaking Factor: 484.0
Rainfall File: Flmod Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 7.020 Time Shift(hrs): 0.00
Curve Number: 89.61 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: Basin 24 Node: SWMF 24 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484 Peaking Factor: 484.0
Rainfall File: Flmod Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 20.720 Time Shift(hrs): 0.00
Curve Number: 85.48 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: Basin 25 Node: SWMF 25 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484 Peaking Factor: 484.0
Rainfall File: Flmod Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 5.640 Time Shift(hrs): 0.00
Curve Number: 86.43 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: Basin 26 Node: SWMF 26 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484 Peaking Factor: 484.0
Rainfall File: Flmod Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 14.690 Time Shift(hrs): 0.00
Curve Number: 88.39 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: Basin 27 Node: SWMF 27 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484 Peaking Factor: 484.0
Rainfall File: Flmod Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 13.480 Time Shift(hrs): 0.00
Curve Number: 89.98 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: Basin 28 Node: SWMF 28 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484 Peaking Factor: 484.0
Rainfall File: Flmod Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 23.300 Time Shift(hrs): 0.00
Curve Number: 85.47 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: Basin 29 Node: SWMF 29 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484 Peaking Factor: 484.0
Rainfall File: Flmod Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 3.340 Time Shift(hrs): 0.00
Curve Number: 87.22 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: Basin 3 Node: SWMF 3 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484 Peaking Factor: 484.0
Rainfall File: Flmod Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 11.050 Time Shift(hrs): 0.00
Curve Number: 87.07 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: Basin 30 Node: SWMF 30 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484 Peaking Factor: 484.0
Rainfall File: Flmod Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 7.240 Time Shift(hrs): 0.00
Curve Number: 86.25 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: Basin 31 Node: SWMF 31 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484 Peaking Factor: 484.0
Rainfall File: Flmod Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 9.140 Time Shift(hrs): 0.00
Curve Number: 58.24 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: Basin 32 Node: SWMF 32 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484 Peaking Factor: 484.0
Rainfall File: Flmod Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 4.680 Time Shift(hrs): 0.00
Curve Number: 71.36 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: Basin 33 Node: SWMF 33 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484 Peaking Factor: 484.0
Rainfall File: Flmod Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 11.460 Time Shift(hrs): 0.00
Curve Number: 67.75 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: Basin 4 Node: SWMF 4 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484 Peaking Factor: 484.0
Rainfall File: Flmod Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 2.440 Time Shift(hrs): 0.00
Curve Number: 64.82 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: Basin 5 Node: SWMF 5 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484 Peaking Factor: 484.0
Rainfall File: Flmod Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00

Area(ac): 4.640 Time Shift(hrs): 0.00
Curve Number: 87.90 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: Basin 6 Node: SWMF 6 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484 Peaking Factor: 484.0
Rainfall File: Flmod Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 12.080 Time Shift(hrs): 0.00
Curve Number: 73.46 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: Basin 7 Node: SWMF 7 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484 Peaking Factor: 484.0
Rainfall File: Flmod Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 5.600 Time Shift(hrs): 0.00
Curve Number: 74.67 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: Basin 8 Node: SWMF 8 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484 Peaking Factor: 484.0
Rainfall File: Flmod Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 8.360 Time Shift(hrs): 0.00
Curve Number: 88.05 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: Basin 9 Node: SWMF 9 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484 Peaking Factor: 484.0
Rainfall File: Flmod Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 3.930 Time Shift(hrs): 0.00
Curve Number: 90.71 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: Basin J1 Node: SWMF J1 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484 Peaking Factor: 484.0
Rainfall File: Flmod Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 25.970 Time Shift(hrs): 0.00
Curve Number: 97.57 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: DDA 1 Node: CSX 1 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484 Peaking Factor: 484.0
Rainfall File: Flmod Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 0.300 Time Shift(hrs): 0.00
Curve Number: 39.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: DDA 2 Node: CSX 1 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484 Peaking Factor: 484.0
Rainfall File: Flmod Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 0.210 Time Shift(hrs): 0.00
Curve Number: 39.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: DDA 3 Node: CSX 1 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484 Peaking Factor: 484.0
Rainfall File: Flmod Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 121.00
Area(ac): 1.660 Time Shift(hrs): 0.00
Curve Number: 62.71 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: Pond Node: Pond Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484 Peaking Factor: 484.0
Rainfall File: Flmod Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 88.620 Time Shift(hrs): 0.00
Curve Number: 94.36 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

==========
==== Nodes ==========
==========

Name: 0 Wetland Base Flow(cfs): 0.000 Init Stage(ft): 31.000
Group: BASE Warn Stage(ft): 36.000
Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	31.000
12.00	33.000
24.00	31.000

Name: 1 Jersey East Base Flow(cfs): 0.000 Init Stage(ft): 27.000
Group: BASE Warn Stage(ft): 29.000
Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	27.000
12.00	28.000

24.00	27.000	

Name: 2 Jersey West Base Flow(cfs): 0.000 Init Stage(ft): 27.000
Group: BASE Warn Stage(ft): 29.000
Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	27.000
12.00	28.000
24.00	27.000

Name: 3 Jersey South Base Flow(cfs): 0.000 Init Stage(ft): 27.000
Group: BASE Warn Stage(ft): 29.000
Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	27.000
12.00	28.000
24.00	27.000

Name: 4 Northeast Base Flow(cfs): 0.000 Init Stage(ft): 19.000
Group: BASE Warn Stage(ft): 22.000
Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	19.000
12.00	20.000
24.00	19.000

Name: CSX 1 Base Flow(cfs): 0.000 Init Stage(ft): 23.000
Group: BASE Warn Stage(ft): 26.000
Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	23.000
12.00	24.000
24.00	23.000

Name: CSX 2 Base Flow(cfs): 0.000 Init Stage(ft): 23.000
Group: BASE Warn Stage(ft): 26.000
Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	23.000
12.00	25.000
24.00	23.000

Name: CSX 3 Base Flow(cfs): 0.000 Init Stage(ft): 23.000
Group: BASE Warn Stage(ft): 26.000
Type: Time/Stage

Time(hrs) Stage(ft)

0.00	23.000
12.00	25.000
24.00	23.000

Name: MH Inter Base Flow(cfs): 0.000 Init Stage(ft): 24.000
Group: BASE Plunge Factor: 1.00 Warn Stage(ft): 29.000
Type: Manhole, Flat Floor

Stage(ft)	Area(ac)

Name: Pond Base Flow(cfs): 0.000 Init Stage(ft): 31.400
Group: BASE Warn Stage(ft): 34.500
Type: Stage/Area

Stage(ft)	Area(ac)
30.000	57.7700
31.700	64.8700
34.500	87.1200

Name: SWMF 1 Base Flow(cfs): 0.000 Init Stage(ft): 29.000
Group: BASE Warn Stage(ft): 33.800
Type: Stage/Area

Stage(ft)	Area(ac)
29.000	4.7800
30.000	4.9900
33.800	5.8100

Name: SWMF 10 Base Flow(cfs): 0.000 Init Stage(ft): 29.000
Group: BASE Warn Stage(ft): 33.300
Type: Stage/Area

Stage(ft)	Area(ac)
29.000	0.5900
33.300	0.8900

Name: SWMF 11 Base Flow(cfs): 0.000 Init Stage(ft): 29.000
Group: BASE Warn Stage(ft): 33.600
Type: Stage/Area

Stage(ft)	Area(ac)
29.000	1.2000
33.600	1.7500

Name: SWMF 12 Base Flow(cfs): 0.000 Init Stage(ft): 29.000
Group: BASE Warn Stage(ft): 33.700
Type: Stage/Area

Stage(ft)	Area(ac)
29.000	2.2800

33.700	3.0100

Name: SWMF 13 Base Flow(cfs): 0.000 Init Stage(ft): 29.000
Group: BASE Warn Stage(ft): 33.600
Type: Stage/Area

Stage(ft)	Area(ac)
29.000	0.7700
33.600	1.1900

Name: SWMF 14 Base Flow(cfs): 0.000 Init Stage(ft): 29.000
Group: BASE Warn Stage(ft): 33.500
Type: Stage/Area

Stage(ft)	Area(ac)
29.000	1.0400
33.500	1.4600

Name: SWMF 15 Base Flow(cfs): 0.000 Init Stage(ft): 24.000
Group: BASE Warn Stage(ft): 28.800
Type: Stage/Area

Stage(ft)	Area(ac)
24.000	0.8500
28.800	1.2300

Name: SWMF 16 Base Flow(cfs): 0.000 Init Stage(ft): 24.000
Group: BASE Warn Stage(ft): 28.700
Type: Stage/Area

Stage(ft)	Area(ac)
24.000	1.4800
28.700	2.0100

Name: SWMF 17 Base Flow(cfs): 0.000 Init Stage(ft): 24.000
Group: BASE Warn Stage(ft): 28.100
Type: Stage/Area

Stage(ft)	Area(ac)
24.000	1.4700
28.100	1.8900

Name: SWMF 18 Base Flow(cfs): 0.000 Init Stage(ft): 24.000
Group: BASE Warn Stage(ft): 28.500
Type: Stage/Area

Stage(ft)	Area(ac)
24.000	2.3300
28.500	3.1200

Name: SWMF 19 Base Flow(cfs): 0.000 Init Stage(ft): 24.000
Group: BASE Warn Stage(ft): 27.800
Type: Stage/Area

Stage(ft)	Area(ac)
24.000	0.9400
27.800	1.2800

Name: SWMF 2 Base Flow(cfs): 0.000 Init Stage(ft): 29.000
Group: BASE Warn Stage(ft): 33.800
Type: Stage/Area

Stage(ft)	Area(ac)
29.000	0.8800
30.000	0.9900
33.800	1.3900

Name: SWMF 20 Base Flow(cfs): 0.000 Init Stage(ft): 24.000
Group: BASE Warn Stage(ft): 27.400
Type: Stage/Area

Stage(ft)	Area(ac)
24.000	0.3900
27.400	0.5800

Name: SWMF 21 Base Flow(cfs): 0.000 Init Stage(ft): 24.000
Group: BASE Warn Stage(ft): 28.000
Type: Stage/Area

Stage(ft)	Area(ac)
24.000	12.4200
28.000	13.2900

Name: SWMF 22 Base Flow(cfs): 0.000 Init Stage(ft): 24.000
Group: BASE Warn Stage(ft): 27.800
Type: Stage/Area

Stage(ft)	Area(ac)
24.000	0.9100
27.800	1.2900

Name: SWMF 23 Base Flow(cfs): 0.000 Init Stage(ft): 24.000
Group: BASE Warn Stage(ft): 27.400
Type: Stage/Area

Stage(ft)	Area(ac)
24.000	0.7800
27.400	1.0600

Name: SWMF 24 Base Flow(cfs): 0.000 Init Stage(ft): 21.000
Group: BASE Warn Stage(ft): 27.000

Type: Stage/Area

Stage(ft)	Area(ac)
21.000	2.2500
27.000	3.0000

Name: SWMF 25 Base Flow(cfs): 0.000 Init Stage(ft): 24.000
Group: BASE Warn Stage(ft): 28.900
Type: Stage/Area

Stage(ft)	Area(ac)
24.000	0.4000
28.900	0.7100

Name: SWMF 26 Base Flow(cfs): 0.000 Init Stage(ft): 24.000
Group: BASE Warn Stage(ft): 28.100
Type: Stage/Area

Stage(ft)	Area(ac)
24.000	1.5900
28.100	2.0900

Name: SWMF 27 Base Flow(cfs): 0.000 Init Stage(ft): 24.000
Group: BASE Warn Stage(ft): 28.500
Type: Stage/Area

Stage(ft)	Area(ac)
24.000	1.9700
28.500	2.7200

Name: SWMF 28 Base Flow(cfs): 0.000 Init Stage(ft): 24.000
Group: BASE Warn Stage(ft): 28.600
Type: Stage/Area

Stage(ft)	Area(ac)
24.000	2.0400
28.600	2.5900

Name: SWMF 29 Base Flow(cfs): 0.000 Init Stage(ft): 24.000
Group: BASE Warn Stage(ft): 28.900
Type: Stage/Area

Stage(ft)	Area(ac)
24.000	0.5200
28.900	0.9400

Name: SWMF 3 Base Flow(cfs): 0.000 Init Stage(ft): 29.000
Group: BASE Warn Stage(ft): 33.800
Type: Stage/Area

Stage(ft)	Area(ac)
29.000	0.7700
33.800	1.1500

Name: SWMF 30 Base Flow(cfs): 0.000 Init Stage(ft): 28.000
Group: BASE Warn Stage(ft): 32.900
Type: Stage/Area

Stage(ft)	Area(ac)
28.000	0.5000
32.900	0.8300

Name: SWMF 31 Base Flow(cfs): 0.000 Init Stage(ft): 33.000
Group: BASE Warn Stage(ft): 36.600
Type: Stage/Area

Stage(ft)	Area(ac)
33.000	0.9200
36.600	1.2100

Name: SWMF 32 Base Flow(cfs): 0.000 Init Stage(ft): 33.000
Group: BASE Warn Stage(ft): 37.700
Type: Stage/Area

Stage(ft)	Area(ac)
33.000	1.2500
37.700	1.7600

Name: SWMF 33 Base Flow(cfs): 0.000 Init Stage(ft): 33.000
Group: BASE Warn Stage(ft): 37.600
Type: Stage/Area

Stage(ft)	Area(ac)
33.000	1.1000
37.600	1.5000

Name: SWMF 4 Base Flow(cfs): 0.000 Init Stage(ft): 29.000
Group: BASE Warn Stage(ft): 33.700
Type: Stage/Area

Stage(ft)	Area(ac)
29.000	0.4000
33.700	0.7400

Name: SWMF 5 Base Flow(cfs): 0.000 Init Stage(ft): 29.000
Group: BASE Warn Stage(ft): 33.700
Type: Stage/Area

Stage(ft)	Area(ac)

29.000	0.3400
33.700	0.5900

Name: SWMF 6 Base Flow(cfs): 0.000 Init Stage(ft): 29.000
Group: BASE Warn Stage(ft): 33.700
Type: Stage/Area

Stage(ft)	Area(ac)
29.000	1.4100
33.700	2.1200

Name: SWMF 7 Base Flow(cfs): 0.000 Init Stage(ft): 29.000
Group: BASE Warn Stage(ft): 33.700
Type: Stage/Area

Stage(ft)	Area(ac)
29.000	0.5000
33.700	0.8500

Name: SWMF 8 Base Flow(cfs): 0.000 Init Stage(ft): 29.000
Group: BASE Warn Stage(ft): 33.700
Type: Stage/Area

Stage(ft)	Area(ac)
29.000	0.7600
33.700	1.1300

Name: SWMF 9 Base Flow(cfs): 0.000 Init Stage(ft): 29.000
Group: BASE Warn Stage(ft): 33.700
Type: Stage/Area

Stage(ft)	Area(ac)
29.000	1.3600
33.700	1.9300

Name: SWMF J1 Base Flow(cfs): 0.000 Init Stage(ft): 29.000
Group: BASE Warn Stage(ft): 31.200
Type: Stage/Area

Stage(ft)	Area(ac)
29.000	22.8100
31.200	23.6200

Pipes

Name: 1-3 From Node: SWMF 1 Length(ft): 300.00
Group: BASE To Node: SWMF 3 Count: 1
Friction Equation: Automatic
Solution Algorithm: Most Restrictive
Flow: Both
Entrance Loss Coef: 0.00
Exit Loss Coef: 1.00
Bend Loss Coef: 0.00

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	36.00	36.00
Rise(in):	36.00	36.00
Invert(ft):	25.000	25.000

Manning's N:	0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in):	0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name:	1-9	From Node: SWMF 1	Length(ft): 300.00
Group:	BASE	To Node: SWMF 9	Count: 1
			Friction Equation: Automatic
	UPSTREAM	DOWNSTREAM	Solution Algorithm: Most Restrictive
Geometry:	Circular	Circular	Flow: Both
Span(in):	36.00	36.00	Entrance Loss Coef: 0.00
Rise(in):	36.00	36.00	Exit Loss Coef: 1.00
Invert(ft):	25.000	25.000	Bend Loss Coef: 0.00
Manning's N:	0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in):	0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name:	11-12	From Node: SWMF 11	Length(ft): 300.00
Group:	BASE	To Node: SWMF 12	Count: 1
			Friction Equation: Automatic
	UPSTREAM	DOWNSTREAM	Solution Algorithm: Most Restrictive
Geometry:	Circular	Circular	Flow: Both
Span(in):	36.00	36.00	Entrance Loss Coef: 0.00
Rise(in):	36.00	36.00	Exit Loss Coef: 1.00
Invert(ft):	25.000	25.000	Bend Loss Coef: 0.00
Manning's N:	0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in):	0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name:	12-13	From Node: SWMF 12	Length(ft): 300.00
Group:	BASE	To Node: SWMF 13	Count: 1
			Friction Equation: Automatic
	UPSTREAM	DOWNSTREAM	Solution Algorithm: Most Restrictive
Geometry:	Circular	Circular	Flow: Both
Span(in):	36.00	36.00	Entrance Loss Coef: 0.00
Rise(in):	36.00	36.00	Exit Loss Coef: 1.00
Invert(ft):	25.000	25.000	Bend Loss Coef: 0.00
Manning's N:	0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in):	0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name: 13-14		From Node: SWMF 13		Length(ft):	300.00
Group: BASE		To Node: SWMF 14		Count:	1
				Friction Equation:	Automatic
	UPSTREAM	DOWNSTREAM		Solution Algorithm:	Most Restrictive
Geometry:	Circular	Circular		Flow:	Both
Span(in):	36.00	36.00		Entrance Loss Coef:	0.00
Rise(in):	36.00	36.00		Exit Loss Coef:	1.00
Invert(ft):	25.000	25.000		Bend Loss Coef:	0.00
Manning's N:	0.012000	0.012000		Outlet Ctrl Spec:	Use dc or tw
Top Clip(in):	0.000	0.000		Inlet Ctrl Spec:	Use dc
Bot Clip(in):	0.000	0.000		Stabilizer Option:	None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name: 15-16		From Node: SWMF 15		Length(ft):	300.00
Group: BASE		To Node: SWMF 16		Count:	1
				Friction Equation:	Automatic
	UPSTREAM	DOWNSTREAM		Solution Algorithm:	Most Restrictive
Geometry:	Circular	Circular		Flow:	Both
Span(in):	48.00	48.00		Entrance Loss Coef:	0.00
Rise(in):	48.00	48.00		Exit Loss Coef:	1.00
Invert(ft):	20.000	20.000		Bend Loss Coef:	0.00
Manning's N:	0.012000	0.012000		Outlet Ctrl Spec:	Use dc or tw
Top Clip(in):	0.000	0.000		Inlet Ctrl Spec:	Use dc
Bot Clip(in):	0.000	0.000		Stabilizer Option:	None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name: 16-MH		From Node: SWMF 16		Length(ft):	100.00
Group: BASE		To Node: MH Inter		Count:	1
				Friction Equation:	Automatic
	UPSTREAM	DOWNSTREAM		Solution Algorithm:	Most Restrictive
Geometry:	Circular	Circular		Flow:	Both
Span(in):	48.00	48.00		Entrance Loss Coef:	0.00
Rise(in):	48.00	48.00		Exit Loss Coef:	1.00
Invert(ft):	20.000	20.000		Bend Loss Coef:	0.00
Manning's N:	0.012000	0.012000		Outlet Ctrl Spec:	Use dc or tw
Top Clip(in):	0.000	0.000		Inlet Ctrl Spec:	Use dc
Bot Clip(in):	0.000	0.000		Stabilizer Option:	None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name: 17-19	From Node: SWMF 17	Length(ft): 150.00	
Group: BASE	To Node: SWMF 19	Count: 1	
		Friction Equation: Automatic	
	UPSTREAM	DOWNSTREAM	Solution Algorithm: Most Restrictive
Geometry:	Circular	Circular	Flow: Both
Span(in):	36.00	36.00	Entrance Loss Coef: 0.00
Rise(in):	36.00	36.00	Exit Loss Coef: 1.00
Invert(ft):	20.000	20.000	Bend Loss Coef: 0.00
Manning's N:	0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in):	0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name: 17-22	From Node: SWMF 17	Length(ft): 250.00	
Group: BASE	To Node: SWMF 22	Count: 1	
		Friction Equation: Automatic	
	UPSTREAM	DOWNSTREAM	Solution Algorithm: Most Restrictive
Geometry:	Circular	Circular	Flow: Both
Span(in):	36.00	36.00	Entrance Loss Coef: 0.00
Rise(in):	36.00	36.00	Exit Loss Coef: 1.00
Invert(ft):	20.000	20.000	Bend Loss Coef: 0.00
Manning's N:	0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in):	0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name: 18-21	From Node: SWMF 18	Length(ft): 300.00	
Group: BASE	To Node: SWMF 21	Count: 1	
		Friction Equation: Automatic	
	UPSTREAM	DOWNSTREAM	Solution Algorithm: Most Restrictive
Geometry:	Circular	Circular	Flow: Both
Span(in):	36.00	36.00	Entrance Loss Coef: 0.00
Rise(in):	36.00	36.00	Exit Loss Coef: 1.00
Invert(ft):	20.000	20.000	Bend Loss Coef: 0.00
Manning's N:	0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in):	0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name: 19-20	From Node: SWMF 19	Length(ft): 120.00	
Group: BASE	To Node: SWMF 20	Count: 1	
		Friction Equation: Automatic	

	UPSTREAM	DOWNSTREAM		
Geometry:	Circular	Circular	Solution Algorithm:	Most Restrictive
Span(in):	36.00	36.00	Flow:	Both
Rise(in):	36.00	36.00	Entrance Loss Coef:	0.00
Invert(ft):	20.000	20.000	Exit Loss Coef:	1.00
Manning's N:	0.012000	0.012000	Bend Loss Coef:	0.00
Top Clip(in):	0.000	0.000	Outlet Ctrl Spec:	Use dc or tw
Bot Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dc
			Stabilizer Option:	None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name:	19-22	From Node: SWMF 19	Length(ft): 120.00
Group:	BASE	To Node: SWMF 22	Count: 1
			Friction Equation: Automatic

	UPSTREAM	DOWNSTREAM		
Geometry:	Circular	Circular	Solution Algorithm:	Most Restrictive
Span(in):	36.00	36.00	Flow:	Both
Rise(in):	36.00	36.00	Entrance Loss Coef:	0.00
Invert(ft):	20.000	20.000	Exit Loss Coef:	1.00
Manning's N:	0.012000	0.012000	Bend Loss Coef:	0.00
Top Clip(in):	0.000	0.000	Outlet Ctrl Spec:	Use dc or tw
Bot Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dc
			Stabilizer Option:	None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name:	2-5	From Node: SWMF 2	Length(ft): 300.00
Group:	BASE	To Node: SWMF 5	Count: 1
			Friction Equation: Automatic

	UPSTREAM	DOWNSTREAM		
Geometry:	Circular	Circular	Solution Algorithm:	Most Restrictive
Span(in):	48.00	48.00	Flow:	Both
Rise(in):	48.00	48.00	Entrance Loss Coef:	0.00
Invert(ft):	25.000	25.000	Exit Loss Coef:	1.00
Manning's N:	0.012000	0.012000	Bend Loss Coef:	0.00
Top Clip(in):	0.000	0.000	Outlet Ctrl Spec:	Use dc or tw
Bot Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dc
			Stabilizer Option:	None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name:	22-23	From Node: SWMF 22	Length(ft): 300.00
Group:	BASE	To Node: SWMF 23	Count: 1
			Friction Equation: Automatic

	UPSTREAM	DOWNSTREAM		
Geometry:	Circular	Circular	Solution Algorithm:	Most Restrictive
Span(in):	36.00	36.00	Flow:	Both
Rise(in):	36.00	36.00	Entrance Loss Coef:	0.00
Invert(ft):	20.000	20.000	Exit Loss Coef:	1.00
Manning's N:	0.012000	0.012000	Bend Loss Coef:	0.00
			Outlet Ctrl Spec:	Use dc or tw

Top Clip(in):	0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in):	0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name:	25-26	From Node:	SWMF 25	Length(ft): 300.00
Group:	BASE	To Node:	SWMF 26	Count: 1
				Friction Equation: Automatic
	UPSTREAM	DOWNSTREAM		Solution Algorithm: Most Restrictive
Geometry:	Circular	Circular		Flow: Both
Span(in):	36.00	36.00		Entrance Loss Coef: 0.00
Rise(in):	36.00	36.00		Exit Loss Coef: 1.00
Invert(ft):	20.000	20.000		Bend Loss Coef: 0.00
Manning's N:	0.012000	0.012000		Outlet Ctrl Spec: Use dc or tw
Top Clip(in):	0.000	0.000		Inlet Ctrl Spec: Use dc
Bot Clip(in):	0.000	0.000		Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name:	27-26	From Node:	SWMF 27	Length(ft): 300.00
Group:	BASE	To Node:	SWMF 26	Count: 1
				Friction Equation: Automatic
	UPSTREAM	DOWNSTREAM		Solution Algorithm: Most Restrictive
Geometry:	Circular	Circular		Flow: Both
Span(in):	48.00	48.00		Entrance Loss Coef: 0.00
Rise(in):	48.00	48.00		Exit Loss Coef: 1.00
Invert(ft):	20.000	20.000		Bend Loss Coef: 0.00
Manning's N:	0.012000	0.012000		Outlet Ctrl Spec: Use dc or tw
Top Clip(in):	0.000	0.000		Inlet Ctrl Spec: Use dc
Bot Clip(in):	0.000	0.000		Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name:	28-27	From Node:	SWMF 28	Length(ft): 300.00
Group:	BASE	To Node:	SWMF 27	Count: 1
				Friction Equation: Automatic
	UPSTREAM	DOWNSTREAM		Solution Algorithm: Most Restrictive
Geometry:	Circular	Circular		Flow: Both
Span(in):	48.00	48.00		Entrance Loss Coef: 0.00
Rise(in):	48.00	48.00		Exit Loss Coef: 1.00
Invert(ft):	20.000	20.000		Bend Loss Coef: 0.00
Manning's N:	0.012000	0.012000		Outlet Ctrl Spec: Use dc or tw
Top Clip(in):	0.000	0.000		Inlet Ctrl Spec: Use dc
Bot Clip(in):	0.000	0.000		Stabilizer Option: None

Upstream FHWA Inlet Edge Description:

Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name: 29-28		From Node: SWMF 29		Length(ft):	300.00
Group: BASE		To Node: SWMF 28		Count:	1
			Friction Equation:		Automatic
	UPSTREAM	DOWNSTREAM	Solution Algorithm:		Most Restrictive
Geometry:	Circular	Circular		Flow:	Both
Span(in):	48.00	48.00	Entrance Loss Coef:		0.00
Rise(in):	48.00	48.00	Exit Loss Coef:		1.00
Invert(ft):	20.000	20.000	Bend Loss Coef:		0.00
Manning's N:	0.012000	0.012000	Outlet Ctrl Spec:		Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec:		Use dc
Bot Clip(in):	0.000	0.000	Stabilizer Option:		None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name: 3-5		From Node: SWMF 3		Length(ft):	300.00
Group: BASE		To Node: SWMF 5		Count:	1
			Friction Equation:		Automatic
	UPSTREAM	DOWNSTREAM	Solution Algorithm:		Most Restrictive
Geometry:	Circular	Circular		Flow:	Both
Span(in):	36.00	36.00	Entrance Loss Coef:		0.00
Rise(in):	36.00	36.00	Exit Loss Coef:		1.00
Invert(ft):	25.000	25.000	Bend Loss Coef:		0.00
Manning's N:	0.012000	0.012000	Outlet Ctrl Spec:		Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec:		Use dc
Bot Clip(in):	0.000	0.000	Stabilizer Option:		None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name: 3-8		From Node: SWMF 3		Length(ft):	300.00
Group: BASE		To Node: SWMF 8		Count:	1
			Friction Equation:		Automatic
	UPSTREAM	DOWNSTREAM	Solution Algorithm:		Most Restrictive
Geometry:	Circular	Circular		Flow:	Both
Span(in):	36.00	36.00	Entrance Loss Coef:		0.00
Rise(in):	36.00	36.00	Exit Loss Coef:		1.00
Invert(ft):	25.000	25.000	Bend Loss Coef:		0.00
Manning's N:	0.012000	0.012000	Outlet Ctrl Spec:		Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec:		Use dc
Bot Clip(in):	0.000	0.000	Stabilizer Option:		None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name: 3-9		From Node: SWMF 3	Length(ft): 200.00
Group: BASE		To Node: SWMF 9	Count: 1
			Friction Equation: Automatic
	UPSTREAM	DOWNSTREAM	Solution Algorithm: Most Restrictive
Geometry:	Circular	Circular	Flow: Both
Span(in):	36.00	36.00	Entrance Loss Coef: 0.00
Rise(in):	36.00	36.00	Exit Loss Coef: 1.00
Invert(ft):	25.000	25.000	Bend Loss Coef: 0.00
Manning's N:	0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in):	0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name: 32-33		From Node: SWMF 32	Length(ft): 300.00
Group: BASE		To Node: SWMF 33	Count: 1
			Friction Equation: Automatic
	UPSTREAM	DOWNSTREAM	Solution Algorithm: Most Restrictive
Geometry:	Circular	Circular	Flow: Both
Span(in):	30.00	30.00	Entrance Loss Coef: 0.00
Rise(in):	30.00	30.00	Exit Loss Coef: 1.00
Invert(ft):	28.000	28.000	Bend Loss Coef: 0.00
Manning's N:	0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in):	0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name: 4-6		From Node: SWMF 4	Length(ft): 300.00
Group: BASE		To Node: SWMF 6	Count: 1
			Friction Equation: Automatic
	UPSTREAM	DOWNSTREAM	Solution Algorithm: Most Restrictive
Geometry:	Circular	Circular	Flow: Both
Span(in):	36.00	36.00	Entrance Loss Coef: 0.00
Rise(in):	36.00	36.00	Exit Loss Coef: 1.00
Invert(ft):	25.000	25.000	Bend Loss Coef: 0.00
Manning's N:	0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in):	0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name: 5-6		From Node: SWMF 5	Length(ft): 300.00
Group: BASE		To Node: SWMF 6	Count: 1
			Friction Equation: Automatic
	UPSTREAM	DOWNSTREAM	Solution Algorithm: Most Restrictive

Geometry:	Circular	Circular	Flow: Both
Span(in):	36.00	36.00	Entrance Loss Coef: 0.00
Rise(in):	36.00	36.00	Exit Loss Coef: 1.00
Invert(ft):	25.000	25.000	Bend Loss Coef: 0.00
Manning's N:	0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in):	0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name:	5-8	From Node: SWMF 5	Length(ft): 200.00
Group:	BASE	To Node: SWMF 8	Count: 1
			Friction Equation: Automatic
	UPSTREAM	DOWNSTREAM	Solution Algorithm: Most Restrictive
Geometry:	Circular	Circular	Flow: Both
Span(in):	30.00	30.00	Entrance Loss Coef: 0.00
Rise(in):	30.00	30.00	Exit Loss Coef: 1.00
Invert(ft):	25.000	25.000	Bend Loss Coef: 0.00
Manning's N:	0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in):	0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name:	6-7	From Node: SWMF 6	Length(ft): 300.00
Group:	BASE	To Node: SWMF 7	Count: 1
			Friction Equation: Automatic
	UPSTREAM	DOWNSTREAM	Solution Algorithm: Most Restrictive
Geometry:	Circular	Circular	Flow: Both
Span(in):	48.00	48.00	Entrance Loss Coef: 0.00
Rise(in):	48.00	48.00	Exit Loss Coef: 1.00
Invert(ft):	25.000	25.000	Bend Loss Coef: 0.00
Manning's N:	0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in):	0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name:	7-11	From Node: SWMF 7	Length(ft): 200.00
Group:	BASE	To Node: SWMF 11	Count: 1
			Friction Equation: Automatic
	UPSTREAM	DOWNSTREAM	Solution Algorithm: Most Restrictive
Geometry:	Circular	Circular	Flow: Both
Span(in):	48.00	48.00	Entrance Loss Coef: 0.00
Rise(in):	48.00	48.00	Exit Loss Coef: 1.00
Invert(ft):	25.000	25.000	Bend Loss Coef: 0.00
Manning's N:	0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec: Use dc

Bot Clip(in):	0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name:	7-8	From Node: SWMF 7	Length(ft): 300.00
Group:	BASE	To Node: SWMF 8	Count: 1
			Friction Equation: Automatic
	UPSTREAM	DOWNSTREAM	Solution Algorithm: Most Restrictive
Geometry:	Circular	Circular	Flow: Both
Span(in):	36.00	36.00	Entrance Loss Coef: 0.00
Rise(in):	36.00	36.00	Exit Loss Coef: 1.00
Invert(ft):	25.000	25.000	Bend Loss Coef: 0.00
Manning's N:	0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in):	0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name:	8-10	From Node: SWMF 8	Length(ft): 300.00
Group:	BASE	To Node: SWMF 10	Count: 1
			Friction Equation: Automatic
	UPSTREAM	DOWNSTREAM	Solution Algorithm: Most Restrictive
Geometry:	Circular	Circular	Flow: Both
Span(in):	36.00	36.00	Entrance Loss Coef: 0.00
Rise(in):	36.00	36.00	Exit Loss Coef: 1.00
Invert(ft):	25.000	25.000	Bend Loss Coef: 0.00
Manning's N:	0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in):	0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name:	9-10	From Node: SWMF 9	Length(ft): 300.00
Group:	BASE	To Node: SWMF 10	Count: 1
			Friction Equation: Automatic
	UPSTREAM	DOWNSTREAM	Solution Algorithm: Most Restrictive
Geometry:	Circular	Circular	Flow: Both
Span(in):	36.00	36.00	Entrance Loss Coef: 0.00
Rise(in):	36.00	36.00	Exit Loss Coef: 1.00
Invert(ft):	25.000	25.000	Bend Loss Coef: 0.00
Manning's N:	0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in):	0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name: MH-17		From Node: MH Inter	Length(ft):	100.00
Group: BASE		To Node: SWMF 17	Count:	1
			Friction Equation:	Automatic
	UPSTREAM	DOWNSTREAM	Solution Algorithm:	Most Restrictive
Geometry:	Circular	Circular	Flow:	Both
Span(in):	36.00	36.00	Entrance Loss Coef:	0.00
Rise(in):	36.00	36.00	Exit Loss Coef:	1.00
Invert(ft):	20.000	20.000	Bend Loss Coef:	0.00
Manning's N:	0.012000	0.012000	Outlet Ctrl Spec:	Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dc
Bot Clip(in):	0.000	0.000	Stabilizer Option:	None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name: MH-18		From Node: MH Inter	Length(ft):	40.00
Group: BASE		To Node: SWMF 18	Count:	1
			Friction Equation:	Automatic
	UPSTREAM	DOWNSTREAM	Solution Algorithm:	Most Restrictive
Geometry:	Circular	Circular	Flow:	Both
Span(in):	36.00	36.00	Entrance Loss Coef:	0.00
Rise(in):	36.00	36.00	Exit Loss Coef:	1.00
Invert(ft):	20.000	20.000	Bend Loss Coef:	0.00
Manning's N:	0.012000	0.012000	Outlet Ctrl Spec:	Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dc
Bot Clip(in):	0.000	0.000	Stabilizer Option:	None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

==========
==== Drop Structures ====
==========

Name: Bleeddown 14		From Node: SWMF 14	Length(ft):	300.00
Group: BASE		To Node: 2 Jersey West	Count:	1
			Friction Equation:	Automatic
	UPSTREAM	DOWNSTREAM	Solution Algorithm:	Most Restrictive
Geometry:	Circular	Circular	Flow:	Both
Span(in):	36.00	36.00	Entrance Loss Coef:	0.000
Rise(in):	36.00	36.00	Exit Loss Coef:	1.000
Invert(ft):	28.900	26.800	Outlet Ctrl Spec:	Use dc or tw
Manning's N:	0.012000	0.012000	Inlet Ctrl Spec:	Use dc
Top Clip(in):	0.000	0.000	Solution Incs:	10
Bot Clip(in):	0.000	0.000		

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

*** Weir 1 of 2 for Drop Structure Bleeddown 14 ***

TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Horizontal	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Circular	Orifice Disc Coef:	0.600
Span(in):	12.70	Invert(ft):	28.500
Rise(in):	12.70	Control Elev(ft):	29.000

*** Weir 2 of 2 for Drop Structure Bleeddown 14 ***

TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Vertical: Mavis	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Rectangular	Orifice Disc Coef:	0.600
Span(in):	84.00	Invert(ft):	30.000
Rise(in):	999.00	Control Elev(ft):	30.000

Name:	Drop 10	From Node:	SWMF 10	Length(ft):	300.00
Group:	BASE	To Node:	Pond	Count:	1

	UPSTREAM	DOWNSTREAM		
Geometry:	Circular	Circular	Friction Equation:	Automatic
Span(in):	48.00	48.00	Solution Algorithm:	Most Restrictive
Rise(in):	48.00	48.00	Flow:	Both
Invert(ft):	29.000	28.000	Entrance Loss Coef:	0.000
Manning's N:	0.013000	0.013000	Exit Loss Coef:	1.000
Top Clip(in):	0.000	0.000	Outlet Ctrl Spec:	Use dc or tw
Bot Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dc
			Solution Incs:	10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

*** Weir 1 of 2 for Drop Structure Drop 10 ***

TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Vertical: Mavis	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Rectangular	Orifice Disc Coef:	0.600
Span(in):	120.00	Invert(ft):	31.500
Rise(in):	12.00	Control Elev(ft):	31.500

*** Weir 2 of 2 for Drop Structure Drop 10 ***

TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Horizontal	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Rectangular	Orifice Disc Coef:	0.600
Span(in):	79.00	Invert(ft):	32.500
Rise(in):	36.00	Control Elev(ft):	32.500

Name:	Drop 11	From Node:	SWMF 11	Length(ft):	300.00
Group:	BASE	To Node:	Pond	Count:	1

	UPSTREAM	DOWNSTREAM		
Geometry:	Circular	Circular	Friction Equation:	Automatic
Span(in):	36.00	36.00	Solution Algorithm:	Most Restrictive
Rise(in):	36.00	36.00	Flow:	Both
Invert(ft):	29.000	28.000	Entrance Loss Coef:	0.000
Manning's N:	0.013000	0.013000	Exit Loss Coef:	1.000
Top Clip(in):	0.000	0.000	Outlet Ctrl Spec:	Use dc or tw
			Inlet Ctrl Spec:	Use dc

Bot Clip(in): 0.000 0.000 Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

*** Weir 1 of 2 for Drop Structure Drop 11 ***

TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Vertical: Mavis	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Rectangular	Orifice Disc Coef:	0.600
Span(in):	108.00	Invert(ft):	31.500
Rise(in):	12.00	Control Elev(ft):	31.500

*** Weir 2 of 2 for Drop Structure Drop 11 ***

TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Horizontal	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Rectangular	Orifice Disc Coef:	0.600
Span(in):	54.00	Invert(ft):	32.500
Rise(in):	36.00	Control Elev(ft):	32.500

Name:	Drop 13	From Node: SWMF 13	Length(ft): 300.00
Group:	BASE	To Node: Pond	Count: 1

	UPSTREAM	DOWNSTREAM		
			Friction Equation:	Automatic
Geometry:	Circular	Circular	Solution Algorithm:	Most Restrictive
Span(in):	48.00	48.00	Flow:	Both
Rise(in):	48.00	48.00	Entrance Loss Coef:	0.000
Invert(ft):	29.000	28.000	Exit Loss Coef:	1.000
Manning's N:	0.012000	0.012000	Outlet Ctrl Spec:	Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dc
Bot Clip(in):	0.000	0.000	Solution Incs:	10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

*** Weir 1 of 2 for Drop Structure Drop 13 ***

TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Vertical: Mavis	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Rectangular	Orifice Disc Coef:	0.600
Span(in):	120.00	Invert(ft):	31.500
Rise(in):	12.00	Control Elev(ft):	31.500

*** Weir 2 of 2 for Drop Structure Drop 13 ***

TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Horizontal	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Rectangular	Orifice Disc Coef:	0.600
Span(in):	79.00	Invert(ft):	32.500
Rise(in):	36.00	Control Elev(ft):	32.500

Name: Drop 20 From Node: SWMF 20 Length(ft): 40.00

Group: BASE To Node: CSX 1 Count: 1

	UPSTREAM	DOWNSTREAM		
Geometry:	Circular	Circular	Friction Equation:	Automatic
Span(in):	48.00	48.00	Solution Algorithm:	Most Restrictive
Rise(in):	48.00	48.00	Flow:	Both
Invert(ft):	23.900	23.800	Entrance Loss Coef:	0.000
Manning's N:	0.013000	0.013000	Exit Loss Coef:	1.000
Top Clip(in):	0.000	0.000	Outlet Ctrl Spec:	Use dc or tw
Bot Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dc
			Solution Incs:	10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

*** Weir 1 of 1 for Drop Structure Drop 20 ***

TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Vertical: Mavis	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Rectangular	Orifice Disc Coef:	0.600
Span(in):	120.00	Invert(ft):	24.600
Rise(in):	999.00	Control Elev(ft):	24.600

Name: Drop 21 From Node: SWMF 21 Length(ft): 31.00
Group: BASE To Node: CSX 1 Count: 1

	UPSTREAM	DOWNSTREAM		
Geometry:	Circular	Circular	Friction Equation:	Automatic
Span(in):	30.00	30.00	Solution Algorithm:	Most Restrictive
Rise(in):	30.00	30.00	Flow:	Both
Invert(ft):	22.800	22.500	Entrance Loss Coef:	0.000
Manning's N:	0.012000	0.012000	Exit Loss Coef:	1.000
Top Clip(in):	0.000	0.000	Outlet Ctrl Spec:	Use dc or tw
Bot Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dc
			Solution Incs:	10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

*** Weir 1 of 2 for Drop Structure Drop 21 ***

TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Horizontal	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Circular	Orifice Disc Coef:	0.600
Span(in):	13.00	Invert(ft):	23.500
Rise(in):	13.00	Control Elev(ft):	24.000

*** Weir 2 of 2 for Drop Structure Drop 21 ***

TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Vertical: Mavis	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Rectangular	Orifice Disc Coef:	0.600
Span(in):	96.00	Invert(ft):	24.600
Rise(in):	999.00	Control Elev(ft):	24.600

Name: Drop 23 From Node: SWMF 23 Length(ft): 120.00
Group: BASE To Node: CSX 2 Count: 1

	UPSTREAM	DOWNSTREAM		
Geometry:	Circular	Circular	Friction Equation:	Automatic
Span(in):	36.00	36.00	Solution Algorithm:	Most Restrictive
Rise(in):	36.00	36.00	Flow:	Both
Invert(ft):	23.900	23.800	Entrance Loss Coef:	0.000
Manning's N:	0.013000	0.013000	Exit Loss Coef:	1.000
Top Clip(in):	0.000	0.000	Outlet Ctrl Spec:	Use dc or tw
Bot Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dc
			Solution Incs:	10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

*** Weir 1 of 1 for Drop Structure Drop 23 ***

TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Vertical: Mavis	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Rectangular	Orifice Disc Coef:	0.600
Span(in):	86.00	Invert(ft):	24.600
Rise(in):	999.00	Control Elev(ft):	24.600

Name:	Drop 24	From Node:	SWMF 24	Length(ft):	1300.00
Group:	BASE	To Node:	4 Northeast	Count:	1

	UPSTREAM	DOWNSTREAM		
Geometry:	Circular	Circular	Friction Equation:	Automatic
Span(in):	30.00	30.00	Solution Algorithm:	Most Restrictive
Rise(in):	30.00	30.00	Flow:	Both
Invert(ft):	19.900	19.400	Entrance Loss Coef:	0.000
Manning's N:	0.012000	0.012000	Exit Loss Coef:	1.000
Top Clip(in):	0.000	0.000	Outlet Ctrl Spec:	Use dc or tw
Bot Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dc
			Solution Incs:	10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

*** Weir 1 of 3 for Drop Structure Drop 24 ***

TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Horizontal	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Circular	Orifice Disc Coef:	0.600
Span(in):	5.10	Invert(ft):	20.500
Rise(in):	5.10	Control Elev(ft):	21.000

*** Weir 2 of 3 for Drop Structure Drop 24 ***

TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Vertical: Mavis	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Rectangular	Orifice Disc Coef:	0.600
Span(in):	12.00	Invert(ft):	22.200
Rise(in):	9999.00	Control Elev(ft):	22.200

*** Weir 3 of 3 for Drop Structure Drop 24 ***

TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Vertical: Mavis	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200

Geometry: Rectangular Orifice Disc Coef: 0.600

Span(in): 60.00 Invert(ft): 22.500
Rise(in): 9999.00 Control Elev(ft): 22.500

Name: Drop 26 From Node: SWMF 26 Length(ft): 40.00
Group: BASE To Node: CSX 3 Count: 1

	UPSTREAM	DOWNSTREAM		
			Friction Equation:	Automatic
Geometry:	Circular	Circular	Solution Algorithm:	Most Restrictive
Span(in):	36.00	36.00	Flow:	Both
Rise(in):	36.00	36.00	Entrance Loss Coef:	0.000
Invert(ft):	23.900	23.800	Exit Loss Coef:	1.000
Manning's N:	0.013000	0.013000	Outlet Ctrl Spec:	Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dc
Bot Clip(in):	0.000	0.000	Solution Incs:	10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

*** Weir 1 of 3 for Drop Structure Drop 26 ***

TABLE

Count: 1 Bottom Clip(in): 0.000
Type: Horizontal Top Clip(in): 0.000
Flow: Both Weir Disc Coef: 3.200
Geometry: Circular Orifice Disc Coef: 0.600

Span(in): 7.50 Invert(ft): 23.500
Rise(in): 7.50 Control Elev(ft): 24.000

*** Weir 2 of 3 for Drop Structure Drop 26 ***

TABLE

Count: 1 Bottom Clip(in): 0.000
Type: Horizontal Top Clip(in): 0.000
Flow: Both Weir Disc Coef: 3.200
Geometry: Rectangular Orifice Disc Coef: 0.600

Span(in): 54.00 Invert(ft): 27.000
Rise(in): 36.00 Control Elev(ft): 27.000

*** Weir 3 of 3 for Drop Structure Drop 26 ***

TABLE

Count: 1 Bottom Clip(in): 0.000
Type: Vertical: Mavis Top Clip(in): 0.000
Flow: Both Weir Disc Coef: 3.200
Geometry: Rectangular Orifice Disc Coef: 0.600

Span(in): 96.00 Invert(ft): 25.000
Rise(in): 25.20 Control Elev(ft): 25.000

Name: Drop 30 From Node: SWMF 30 Length(ft): 40.00
Group: BASE To Node: 1 Jersey East Count: 1

	UPSTREAM	DOWNSTREAM		
			Friction Equation:	Automatic
Geometry:	Circular	Circular	Solution Algorithm:	Most Restrictive
Span(in):	30.00	30.00	Flow:	Both
Rise(in):	30.00	30.00	Entrance Loss Coef:	0.000
Invert(ft):	26.800	26.700	Exit Loss Coef:	1.000
Manning's N:	0.013000	0.013000	Outlet Ctrl Spec:	Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dc
Bot Clip(in):	0.000	0.000	Solution Incs:	10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:

Circular Concrete: Square edge w/ headwall

*** Weir 1 of 3 for Drop Structure Drop 30 ***

TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Vertical: Mavis	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Rectangular	Orifice Disc Coef:	0.600
Span(in):	60.00	Invert(ft):	29.500
Rise(in):	24.00	Control Elev(ft):	29.500

*** Weir 2 of 3 for Drop Structure Drop 30 ***

TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Horizontal	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Circular	Orifice Disc Coef:	0.600
Span(in):	2.80	Invert(ft):	27.500
Rise(in):	2.80	Control Elev(ft):	28.000

*** Weir 3 of 3 for Drop Structure Drop 30 ***

TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Horizontal	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Rectangular	Orifice Disc Coef:	0.600
Span(in):	54.00	Invert(ft):	31.500
Rise(in):	36.00	Control Elev(ft):	31.500

Name:	Drop 31	From Node:	SWMF 31
Group:	BASE	To Node:	0 Wetland

Length(ft):	40.00	
Count:	1	
Friction Equation:	Automatic	
Solution Algorithm:	Most Restrictive	
Flow:	Both	
Entrance Loss Coef:	0.000	
Exit Loss Coef:	1.000	
Outlet Ctrl Spec:	Use dc or tw	
Inlet Ctrl Spec:	Use dc	
Solution Incs:	10	

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	18.00	18.00
Rise(in):	18.00	18.00
Invert(ft):	32.500	32.000
Manning's N:	0.013000	0.013000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

*** Weir 1 of 2 for Drop Structure Drop 31 ***

TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Horizontal	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Circular	Orifice Disc Coef:	0.600
Span(in):	2.90	Invert(ft):	32.500
Rise(in):	2.90	Control Elev(ft):	33.000

*** Weir 2 of 2 for Drop Structure Drop 31 ***

TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Vertical: Mavis	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Rectangular	Orifice Disc Coef:	0.600
Span(in):	18.00	Invert(ft):	34.000
Rise(in):	999.00	Control Elev(ft):	34.000

```
         Name: Drop 33             From Node: SWMF 33           Length(ft): 40.00
        Group: BASE                  To Node: 0 Wetland             Count: 1

               UPSTREAM       DOWNSTREAM                Friction Equation: Automatic
     Geometry: Circular       Circular                 Solution Algorithm: Most Restrictive
     Span(in): 18.00          18.00                                Flow: Both
     Rise(in): 18.00          18.00                   Entrance Loss Coef: 0.000
   Invert(ft): 32.500         32.000                      Exit Loss Coef: 1.000
  Manning's N: 0.013000       0.013000                  Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                      Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                        Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall


*** Weir 1 of 2 for Drop Structure Drop 33 ***
                                                                          TABLE
                  Count: 1                      Bottom Clip(in): 0.000
                   Type: Horizontal                Top Clip(in): 0.000
                   Flow: Both                   Weir Disc Coef: 3.200
               Geometry: Circular              Orifice Disc Coef: 0.600

               Span(in): 4.20                        Invert(ft): 32.500
               Rise(in): 4.20                  Control Elev(ft): 33.000

*** Weir 2 of 2 for Drop Structure Drop 33 ***
                                                                          TABLE
                  Count: 1                      Bottom Clip(in): 0.000
                   Type: Vertical: Mavis           Top Clip(in): 0.000
                   Flow: Both                   Weir Disc Coef: 3.200
               Geometry: Rectangular           Orifice Disc Coef: 0.600

               Span(in): 18.00                       Invert(ft): 33.700
               Rise(in): 999.00                Control Elev(ft): 33.700


---------------------------------------------------------------------------------------------------
         Name: Drop J1             From Node: SWMF J1           Length(ft): 40.00
        Group: BASE                  To Node: 3 Jersey South        Count: 1

               UPSTREAM       DOWNSTREAM                Friction Equation: Automatic
     Geometry: Circular       Circular                 Solution Algorithm: Most Restrictive
     Span(in): 24.00          24.00                                Flow: Both
     Rise(in): 24.00          24.00                   Entrance Loss Coef: 0.000
   Invert(ft): 28.900         28.800                      Exit Loss Coef: 1.000
  Manning's N: 0.012000       0.012000                  Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                      Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                        Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall


*** Weir 1 of 2 for Drop Structure Drop J1 ***
                                                                          TABLE
                  Count: 1                      Bottom Clip(in): 0.000
                   Type: Horizontal                Top Clip(in): 0.000
                   Flow: Both                   Weir Disc Coef: 3.200
               Geometry: Circular              Orifice Disc Coef: 0.600

               Span(in): 7.30                        Invert(ft): 28.500
               Rise(in): 7.30                  Control Elev(ft): 29.000
```

*** Weir 2 of 2 for Drop Structure Drop J1 ***

TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Vertical: Mavis	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Rectangular	Orifice Disc Coef:	0.600
Span(in):	18.00	Invert(ft):	29.200
Rise(in):	9999.00	Control Elev(ft):	29.200

Name:	Pond East	From Node:	Pond	Length(ft):	300.00
Group:	BASE	To Node:	1 Jersey East	Count:	1

	UPSTREAM	DOWNSTREAM		
Geometry:	Circular	Circular	Friction Equation:	Automatic
Span(in):	48.00	48.00	Solution Algorithm:	Most Restrictive
Rise(in):	48.00	48.00	Flow:	Both
Invert(ft):	29.000	28.000	Entrance Loss Coef:	0.000
Manning's N:	0.013000	0.013000	Exit Loss Coef:	1.000
Top Clip(in):	0.000	0.000	Outlet Ctrl Spec:	Use dc or tw
Bot Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dc
			Solution Incs:	10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

*** Weir 1 of 2 for Drop Structure Pond East ***

TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Horizontal	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Circular	Orifice Disc Coef:	0.600
Span(in):	10.00	Invert(ft):	30.900
Rise(in):	10.00	Control Elev(ft):	31.400

*** Weir 2 of 2 for Drop Structure Pond East ***

TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Horizontal	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Rectangular	Orifice Disc Coef:	0.600
Span(in):	99.00	Invert(ft):	32.000
Rise(in):	76.00	Control Elev(ft):	32.000

Name:	Pond West	From Node:	Pond	Length(ft):	300.00
Group:	BASE	To Node:	2 Jersey West	Count:	1

	UPSTREAM	DOWNSTREAM		
Geometry:	Circular	Circular	Friction Equation:	Automatic
Span(in):	24.00	24.00	Solution Algorithm:	Most Restrictive
Rise(in):	24.00	24.00	Flow:	Both
Invert(ft):	29.000	28.000	Entrance Loss Coef:	0.000
Manning's N:	0.013000	0.013000	Exit Loss Coef:	1.000
Top Clip(in):	0.000	0.000	Outlet Ctrl Spec:	Use dc or tw
Bot Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dc
			Solution Incs:	10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

*** Weir 1 of 1 for Drop Structure Pond West ***

TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Horizontal	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Rectangular	Orifice Disc Coef:	0.600
Span(in):	54.00	Invert(ft):	31.400
Rise(in):	36.00	Control Elev(ft):	31.400

==========
==== Hydrology Simulations ====
==========

Name: 100 Year
Filename: P:\2008-499 Ayrshire\Engineering\Drainage\ICPR\Overall\Post\100 Year.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Flmod
Rainfall Amount(in): 10.90

Time(hrs)	Print Inc(min)
30.000	15.00

Name: 25 Year
Filename: P:\2008-499 Ayrshire\Engineering\Drainage\ICPR\Overall\Post\25 Year.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Flmod
Rainfall Amount(in): 8.06

Time(hrs)	Print Inc(min)
30.000	15.00

Name: 3 Year
Filename: P:\2008-499 Ayrshire\Engineering\Drainage\ICPR\Overall\Post\3 Year.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Flmod
Rainfall Amount(in): 4.78

Time(hrs)	Print Inc(min)
30.000	15.00

==========
==== Routing Simulations ====
==========

Name: 100 Year Hydrology Sim: 100 Year
Filename: P:\2008-499 Ayrshire\Engineering\Drainage\ICPR\Overall\Post\100 Year.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 24.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
24.000	15.000

Group Run

BASE	Yes

Name: 25 Year Hydrology Sim: 25 Year
Filename: P:\2008-499 Ayrshire\Engineering\Drainage\ICPR\Overall\Post\25 Year.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 24.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
24.000	15.000

Group	Run
BASE	Yes

Name: 3 Year Hydrology Sim: 3 Year
Filename: P:\2008-499 Ayrshire\Engineering\Drainage\ICPR\Overall\Post\3 Year.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 24.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
24.000	60.000

Group	Run
BASE	Yes

Simulation	Basin	Group	Time Max hrs	Flow Max cfs	Volume in	Volume ft3
100 Year	Basin 1	BASE	12.02	185.76	8.778	804250
100 Year	Basin 10	BASE	12.02	59.12	9.369	263243
100 Year	Basin 11	BASE	12.02	117.15	7.024	480628
100 Year	Basin 12	BASE	12.02	123.46	6.790	504289
100 Year	Basin 13	BASE	12.02	130.47	9.237	577059
100 Year	Basin 14	BASE	12.02	93.46	8.064	394009
100 Year	Basin 15	BASE	12.02	183.68	9.481	822871
100 Year	Basin 16	BASE	12.02	79.26	9.515	355754
100 Year	Basin 17	BASE	12.02	73.20	9.676	331571
100 Year	Basin 18	BASE	12.02	151.09	8.230	640491
100 Year	Basin 19	BASE	12.02	79.91	8.160	337955
100 Year	Basin 2	BASE	12.02	119.17	7.749	497598
100 Year	Basin 20	BASE	12.02	23.00	7.974	96674
100 Year	Basin 21	BASE	12.02	310.07	9.477	1388793
100 Year	Basin 22	BASE	12.02	96.36	9.378	429282
100 Year	Basin 23	BASE	12.02	54.27	9.609	244874
100 Year	Basin 24	BASE	12.02	155.65	9.085	683304
100 Year	Basin 25	BASE	12.02	42.68	9.206	188485
100 Year	Basin 26	BASE	12.02	112.71	9.456	504213
100 Year	Basin 27	BASE	12.02	104.43	9.656	472489
100 Year	Basin 28	BASE	12.02	175.02	9.084	768279
100 Year	Basin 29	BASE	12.02	25.42	9.307	112841
100 Year	Basin 3	BASE	12.02	84.02	9.288	372556
100 Year	Basin 30	BASE	12.02	54.72	9.183	241351
100 Year	Basin 31	BASE	12.02	44.31	5.379	178461
100 Year	Basin 32	BASE	12.02	29.76	7.216	122584
100 Year	Basin 33	BASE	12.02	68.52	6.719	279526
100 Year	Basin 4	BASE	12.02	13.79	6.311	55901
100 Year	Basin 5	BASE	12.02	35.48	9.393	158216
100 Year	Basin 6	BASE	12.02	79.30	7.501	328924
100 Year	Basin 7	BASE	12.02	37.40	7.664	155800
100 Year	Basin 8	BASE	12.02	64.00	9.412	285638
100 Year	Basin 9	BASE	12.02	30.57	9.747	139057
100 Year	Basin J1	BASE	12.00	206.82	10.593	998573
100 Year	DDA 1	BASE	12.04	0.65	2.576	2806
100 Year	DDA 2	BASE	12.04	0.45	2.576	1964
100 Year	DDA 3	BASE	13.25	2.91	6.023	36292
100 Year	Pond	BASE	12.02	700.14	10.201	3281408
25 Year	Basin 1	BASE	12.02	130.79	6.038	553249
25 Year	Basin 10	BASE	12.02	42.49	6.584	184974
25 Year	Basin 11	BASE	12.02	76.21	4.505	308274
25 Year	Basin 12	BASE	12.02	79.31	4.310	320090
25 Year	Basin 13	BASE	12.02	93.38	6.460	403593
25 Year	Basin 14	BASE	12.02	63.92	5.399	263816
25 Year	Basin 15	BASE	12.02	132.48	6.688	580473
25 Year	Basin 16	BASE	12.02	57.23	6.720	251256
25 Year	Basin 17	BASE	12.02	53.09	6.872	235488
25 Year	Basin 18	BASE	12.02	104.07	5.546	431615
25 Year	Basin 19	BASE	12.02	54.88	5.484	227126
25 Year	Basin 2	BASE	12.02	80.35	5.124	329034
25 Year	Basin 20	BASE	12.02	15.66	5.320	64500
25 Year	Basin 21	BASE	12.02	223.61	6.684	979557
25 Year	Basin 22	BASE	12.02	69.28	6.592	301740
25 Year	Basin 23	BASE	12.02	39.29	6.809	173514
25 Year	Basin 24	BASE	12.02	110.83	6.320	475313
25 Year	Basin 25	BASE	12.02	30.52	6.432	131682
25 Year	Basin 26	BASE	12.02	81.23	6.664	355369
25 Year	Basin 27	BASE	12.02	75.70	6.853	335338
25 Year	Basin 28	BASE	12.02	124.61	6.318	534398
25 Year	Basin 29	BASE	12.02	18.24	6.526	79117
25 Year	Basin 3	BASE	12.02	60.23	6.508	261035
25 Year	Basin 30	BASE	12.02	39.09	6.411	168479
25 Year	Basin 31	BASE	12.04	26.02	3.178	105440
25 Year	Basin 32	BASE	12.02	19.55	4.667	79281
25 Year	Basin 33	BASE	12.02	43.84	4.251	176856
25 Year	Basin 4	BASE	12.02	8.61	3.917	34694
25 Year	Basin 5	BASE	12.02	25.52	6.606	111268
25 Year	Basin 6	BASE	12.02	52.85	4.910	215305
25 Year	Basin 7	BASE	12.02	25.12	5.051	102669
25 Year	Basin 8	BASE	12.02	46.06	6.624	201015
25 Year	Basin 9	BASE	12.02	22.21	6.940	99004
25 Year	Basin J1	BASE	12.00	152.71	7.758	731381
25 Year	DDA 1	BASE	12.07	0.24	1.181	1286

Simulation	Basin	Group	Time Max hrs	Flow Max cfs	Volume in	Volume ft3
25 Year	DDA 2	BASE	12.07	0.17	1.181	900
25 Year	DDA 3	BASE	13.33	1.75	3.683	22194
25 Year	Pond	BASE	12.02	514.11	7.375	2372381
3 Year	Basin 1	BASE	12.02	66.86	2.981	273133
3 Year	Basin 10	BASE	12.02	23.01	3.427	96277
3 Year	Basin 11	BASE	12.04	31.55	1.869	127899
3 Year	Basin 12	BASE	12.04	31.79	1.742	129343
3 Year	Basin 13	BASE	12.02	49.96	3.323	207627
3 Year	Basin 14	BASE	12.02	30.21	2.493	121821
3 Year	Basin 15	BASE	12.02	72.48	3.515	305100
3 Year	Basin 16	BASE	12.02	31.41	3.543	132456
3 Year	Basin 17	BASE	12.02	29.54	3.674	125899
3 Year	Basin 18	BASE	12.02	50.13	2.602	202494
3 Year	Basin 19	BASE	12.02	26.23	2.556	105847
3 Year	Basin 2	BASE	12.02	36.58	2.294	147301
3 Year	Basin 20	BASE	12.02	7.33	2.435	29523
3 Year	Basin 21	BASE	12.02	122.30	3.512	514690
3 Year	Basin 22	BASE	12.02	37.55	3.434	157175
3 Year	Basin 23	BASE	12.02	21.74	3.619	92230
3 Year	Basin 24	BASE	12.02	58.43	3.207	241236
3 Year	Basin 25	BASE	12.02	16.28	3.300	67560
3 Year	Basin 26	BASE	12.02	44.34	3.495	186371
3 Year	Basin 27	BASE	12.02	42.05	3.657	178969
3 Year	Basin 28	BASE	12.02	65.69	3.206	271193
3 Year	Basin 29	BASE	12.02	9.82	3.378	40954
3 Year	Basin 3	BASE	12.02	32.38	3.363	134895
3 Year	Basin 30	BASE	12.02	20.81	3.282	86262
3 Year	Basin 31	BASE	12.04	8.01	1.063	35273
3 Year	Basin 32	BASE	12.02	8.31	1.977	33586
3 Year	Basin 33	BASE	12.04	17.40	1.704	70884
3 Year	Basin 4	BASE	12.04	3.21	1.494	13236
3 Year	Basin 5	BASE	12.02	13.86	3.446	58037
3 Year	Basin 6	BASE	12.02	23.32	2.143	93990
3 Year	Basin 7	BASE	12.02	11.32	2.242	45573
3 Year	Basin 8	BASE	12.02	25.05	3.461	105023
3 Year	Basin 9	BASE	12.02	12.43	3.733	53260
3 Year	Basin J1	BASE	12.02	90.05	4.488	423051
3 Year	DDA 1	BASE	12.56	0.01	0.158	172
3 Year	DDA 2	BASE	12.56	0.00	0.158	120
3 Year	DDA 3	BASE	13.42	0.59	1.352	8146
3 Year	Pond	BASE	12.02	297.41	4.125	1327030

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
0 Wetland	BASE	100 Year	12.00	33.00	36.00	0.0028	0	13.05	13.20	0.00	0.00
1 Jersey East	BASE	100 Year	12.00	28.00	29.00	0.0014	0	12.30	36.02	0.00	0.00
2 Jersey West	BASE	100 Year	12.00	28.00	29.00	0.0014	0	12.38	57.36	0.00	0.00
3 Jersey South	BASE	100 Year	12.00	28.00	29.00	0.0014	0	24.00	2.43	0.00	0.00
4 Northeast	BASE	100 Year	12.00	20.00	22.00	0.0014	0	12.89	17.08	0.00	0.00
CSX 1	BASE	100 Year	12.00	24.00	26.00	0.0014	0	13.25	67.22	0.00	0.00
CSX 2	BASE	100 Year	12.00	25.00	26.00	0.0028	0	12.62	28.39	0.00	0.00
CSX 3	BASE	100 Year	12.00	25.00	26.00	0.0028	0	12.94	43.00	0.00	0.00
MH Inter	BASE	100 Year	12.78	27.83	29.00	-0.0237	134	12.61	51.99	12.58	51.70
Pond	BASE	100 Year	17.02	32.38	34.50	0.0005	3061466	12.00	698.60	17.02	41.39
SWMF 1	BASE	100 Year	14.59	32.76	33.80	0.0021	243321	12.00	185.10	15.29	10.27
SWMF 10	BASE	100 Year	14.58	32.64	33.30	0.0021	36806	12.00	38.61	14.00	23.03
SWMF 11	BASE	100 Year	12.82	32.75	33.60	0.0022	71825	12.00	98.08	14.41	23.51
SWMF 12	BASE	100 Year	12.73	32.75	33.70	0.0027	124739	12.00	131.43	13.40	18.61
SWMF 13	BASE	100 Year	12.24	32.68	33.60	0.0026	48203	12.00	102.88	12.17	48.29
SWMF 14	BASE	100 Year	12.36	32.61	33.50	0.0022	60004	12.00	112.54	12.37	41.81
SWMF 15	BASE	100 Year	12.37	28.84	28.80	0.0035	53755	12.00	183.38	12.13	73.99
SWMF 16	BASE	100 Year	12.71	28.19	28.70	0.0031	85107	12.00	147.45	12.61	51.99
SWMF 17	BASE	100 Year	12.83	27.63	28.10	0.0024	80275	12.00	83.47	13.23	29.68
SWMF 18	BASE	100 Year	13.14	27.52	28.50	0.0022	128470	12.00	174.72	12.71	39.82
SWMF 19	BASE	100 Year	12.72	27.49	27.80	0.0022	54588	12.00	76.02	13.02	26.58
SWMF 2	BASE	100 Year	12.47	32.91	33.80	0.0026	56512	12.00	118.34	12.18	35.41
SWMF 20	BASE	100 Year	12.67	26.94	27.40	0.0016	24159	12.00	43.87	12.67	35.47
SWMF 21	BASE	100 Year	15.88	26.46	28.00	0.0012	564310	12.00	340.90	15.88	32.62
SWMF 22	BASE	100 Year	12.70	27.51	27.80	0.0021	54985	12.00	78.51	13.15	20.03
SWMF 23	BASE	100 Year	12.62	27.18	27.40	0.0018	45406	12.00	66.56	12.62	28.39
SWMF 24	BASE	100 Year	12.89	24.74	27.00	0.0022	118370	12.00	155.24	12.89	17.08
SWMF 25	BASE	100 Year	12.89	27.74	28.90	0.0020	27749	12.00	42.58	12.07	10.99
SWMF 26	BASE	100 Year	12.95	27.72	28.10	0.0021	89074	12.00	123.67	12.94	43.00
SWMF 27	BASE	100 Year	13.10	27.89	28.50	0.0023	114087	12.00	126.70	13.75	28.24
SWMF 28	BASE	100 Year	13.09	27.96	28.60	0.0022	109548	12.00	158.76	12.12	24.30
SWMF 29	BASE	100 Year	13.10	27.96	28.90	0.0024	37472	12.00	25.37	14.76	3.08
SWMF 3	BASE	100 Year	14.47	32.74	33.80	0.0020	46523	12.00	60.98	15.01	8.98
SWMF 30	BASE	100 Year	12.19	31.25	32.90	-0.0022	31326	12.00	54.59	12.19	32.59
SWMF 31	BASE	100 Year	12.88	35.09	36.60	0.0018	47418	12.00	43.52	12.88	5.71
SWMF 32	BASE	100 Year	13.67	35.13	37.70	0.0017	64516	12.00	29.49	14.89	2.72
SWMF 33	BASE	100 Year	13.60	35.12	37.60	0.0015	55948	12.00	55.92	13.60	7.63
SWMF 4	BASE	100 Year	12.88	32.77	33.70	0.0030	29338	12.00	13.61	13.08	2.01
SWMF 5	BASE	100 Year	12.84	32.77	33.70	0.0023	23634	12.00	54.14	12.13	25.27
SWMF 6	BASE	100 Year	12.86	32.77	33.70	0.0026	86310	12.00	80.29	13.35	10.71
SWMF 7	BASE	100 Year	12.84	32.75	33.70	0.0023	34015	12.00	17.74	13.03	14.79
SWMF 8	BASE	100 Year	14.15	32.72	33.70	0.0022	45928	12.00	59.53	12.56	16.23
SWMF 9	BASE	100 Year	14.56	32.73	33.70	0.0024	79018	12.00	46.45	14.34	10.27
SWMF J1	BASE	100 Year	24.00	29.90	31.20	0.0004	1007976	12.00	206.77	24.00	2.43
0 Wetland	BASE	25 Year	12.00	33.00	36.00	0.0028	0	14.66	5.29	0.00	0.00
1 Jersey East	BASE	25 Year	12.00	28.00	29.00	0.0014	0	12.22	22.89	0.00	0.00
2 Jersey West	BASE	25 Year	12.00	28.00	29.00	0.0014	0	12.48	42.62	0.00	0.00
3 Jersey South	BASE	25 Year	12.00	28.00	29.00	0.0014	0	24.00	1.55	0.00	0.00
4 Northeast	BASE	25 Year	12.00	20.00	22.00	0.0014	0	12.79	13.45	0.00	0.00
CSX 1	BASE	25 Year	12.00	24.00	26.00	0.0014	0	13.50	46.51	0.00	0.00
CSX 2	BASE	25 Year	12.00	25.00	26.00	0.0028	0	12.70	18.88	0.00	0.00

Rookery Overall

Node Max Report

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
CSX 3	BASE	25 Year	12.00	25.00	26.00	0.0028	0	13.22	26.32	0.00	0.00
MH Inter	BASE	25 Year	12.72	26.73	29.00	-0.0312	134	12.48	42.93	12.45	42.54
Pond	BASE	25 Year	17.75	31.98	34.50	0.0004	2922806	12.00	502.06	17.75	16.74
SWMF 1	BASE	25 Year	16.79	32.08	33.80	0.0017	236941	12.00	130.06	17.93	4.53
SWMF 10	BASE	25 Year	16.71	32.06	33.30	0.0020	35058	12.00	26.78	16.55	6.83
SWMF 11	BASE	25 Year	16.62	32.04	33.60	0.0021	68149	12.00	65.32	17.20	12.74
SWMF 12	BASE	25 Year	16.16	31.98	33.70	0.0023	119510	12.00	84.54	24.00	12.11
SWMF 13	BASE	25 Year	12.43	31.87	33.60	0.0026	45005	12.00	68.73	15.57	15.16
SWMF 14	BASE	25 Year	12.47	31.74	33.50	0.0023	56476	12.00	77.62	12.47	28.42
SWMF 15	BASE	25 Year	12.35	27.34	28.80	0.0031	48566	12.00	132.10	12.11	58.84
SWMF 16	BASE	25 Year	12.63	26.96	28.70	0.0024	79029	12.00	111.76	12.48	42.93
SWMF 17	BASE	25 Year	12.79	26.64	28.10	0.0020	75845	12.00	60.04	12.89	19.32
SWMF 18	BASE	25 Year	13.05	26.49	28.50	0.0018	120545	12.00	126.43	12.67	33.38
SWMF 19	BASE	25 Year	12.75	26.57	27.80	0.0020	51002	12.00	52.26	12.91	17.86
SWMF 2	BASE	25 Year	16.67	32.07	33.80	0.0023	52667	12.00	79.52	12.15	26.16
SWMF 20	BASE	25 Year	12.76	26.32	27.40	0.0017	22642	12.01	29.87	12.76	23.70
SWMF 21	BASE	25 Year	15.75	25.79	28.00	0.0009	558034	12.00	248.89	15.74	24.59
SWMF 22	BASE	25 Year	12.74	26.58	27.80	0.0019	50932	12.00	54.33	12.91	13.59
SWMF 23	BASE	25 Year	12.71	26.42	27.40	0.0018	42682	12.00	47.05	12.70	18.88
SWMF 24	BASE	25 Year	12.79	23.63	27.00	0.0020	112329	12.00	110.35	12.79	13.45
SWMF 25	BASE	25 Year	13.24	26.84	28.90	0.0019	25273	12.00	30.40	12.04	8.28
SWMF 26	BASE	25 Year	13.48	26.83	28.10	0.0019	84370	12.00	87.30	13.22	26.32
SWMF 27	BASE	25 Year	13.51	26.90	28.50	0.0019	106939	12.00	90.76	13.79	17.49
SWMF 28	BASE	25 Year	13.51	26.93	28.60	0.0020	104187	12.00	113.46	12.10	16.48
SWMF 29	BASE	25 Year	13.51	26.93	28.90	0.0021	33626	12.00	18.17	14.76	1.81
SWMF 3	BASE	25 Year	16.72	32.07	33.80	0.0019	44224	12.00	41.74	18.01	4.10
SWMF 30	BASE	25 Year	12.22	30.70	32.90	0.0017	29694	12.00	38.94	12.22	21.09
SWMF 31	BASE	25 Year	14.67	34.45	36.60	0.0013	45156	12.00	25.33	14.67	1.69
SWMF 32	BASE	25 Year	14.69	34.46	37.70	0.0012	61366	12.00	19.29	16.78	1.24
SWMF 33	BASE	25 Year	14.65	34.46	37.60	0.0013	53453	12.00	34.59	14.65	3.60
SWMF 4	BASE	25 Year	16.69	32.06	33.70	0.0023	27102	12.00	8.45	18.78	0.41
SWMF 5	BASE	25 Year	16.69	32.07	33.70	0.0021	22018	12.00	38.79	12.09	19.82
SWMF 6	BASE	25 Year	16.69	32.06	33.70	0.0021	81657	12.00	54.39	17.77	5.49
SWMF 7	BASE	25 Year	16.67	32.06	33.70	0.0021	31771	12.00	11.03	17.76	6.38
SWMF 8	BASE	25 Year	16.69	32.07	33.70	0.0020	43707	12.00	40.64	12.35	4.28
SWMF 9	BASE	25 Year	16.73	32.07	33.70	0.0019	75540	12.00	32.66	16.79	3.29
SWMF J1	BASE	25 Year	24.00	29.67	31.20	0.0003	1004303	12.00	152.66	24.00	1.55
0 Wetland	BASE	3 Year	12.00	33.00	36.00	0.0028	0	23.73	0.76	0.00	0.00
1 Jersey East	BASE	3 Year	12.00	28.00	29.00	0.0014	0	12.57	5.65	0.00	0.00
2 Jersey West	BASE	3 Year	12.00	28.00	29.00	0.0014	0	17.61	17.74	0.00	0.00
3 Jersey South	BASE	3 Year	12.00	28.00	29.00	0.0014	0	24.00	0.71	0.00	0.00
4 Northeast	BASE	3 Year	12.00	20.00	22.00	0.0014	0	15.63	2.53	0.00	0.00
CSX 1	BASE	3 Year	12.00	24.00	26.00	0.0014	0	14.65	18.33	0.00	0.00
CSX 2	BASE	3 Year	12.00	25.00	26.00	0.0028	0	12.75	7.85	0.00	0.00
CSX 3	BASE	3 Year	12.00	25.00	26.00	0.0028	0	14.40	9.99	0.00	0.00
MH Inter	BASE	3 Year	12.68	25.41	29.00	-0.0237	134	12.32	28.69	12.30	28.86
Pond	BASE	3 Year	13.95	31.71	34.50	0.0001	2830611	12.00	294.08	13.95	9.92
SWMF 1	BASE	3 Year	24.00	30.86	33.80	0.0006	225516	12.00	66.15	6.55	2.78
SWMF 10	BASE	3 Year	24.00	30.86	33.30	0.0006	31406	12.00	13.43	0.00	0.00
SWMF 11	BASE	3 Year	23.75	30.85	33.60	0.0007	61946	12.00	30.03	24.00	6.21
SWMF 12	BASE	3 Year	23.68	30.80	33.70	0.0007	111539	12.00	33.89	24.00	8.28

Rookery Overall

Node Max Report

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
SWMF 13	BASE	3 Year	23.53	30.74	33.60	0.0008	40509	12.00	32.58	24.00	9.11
SWMF 14	BASE	3 Year	23.54	30.64	33.50	0.0008	51998	12.00	36.16	23.54	11.22
SWMF 15	BASE	3 Year	12.35	25.60	28.80	0.0009	42583	12.00	72.06	12.08	36.88
SWMF 16	BASE	3 Year	12.54	25.48	28.70	0.0008	71799	12.00	65.96	12.32	28.69
SWMF 17	BASE	3 Year	12.72	25.41	28.10	0.0007	70354	12.00	32.62	12.53	5.47
SWMF 18	BASE	3 Year	13.07	25.27	28.50	0.0006	111270	12.00	69.31	12.59	23.24
SWMF 19	BASE	3 Year	12.73	25.40	27.80	0.0007	46446	12.00	24.14	12.69	6.64
SWMF 2	BASE	3 Year	24.00	30.86	33.80	0.0006	47102	12.00	35.89	12.12	13.26
SWMF 20	BASE	3 Year	12.76	25.36	27.40	0.0007	20319	12.07	13.80	12.76	9.48
SWMF 21	BASE	3 Year	15.97	25.06	28.00	0.0004	551057	12.00	139.09	15.97	11.48
SWMF 22	BASE	3 Year	12.73	25.41	27.80	0.0007	45812	12.00	23.58	12.61	5.24
SWMF 23	BASE	3 Year	12.75	25.38	27.40	0.0006	38958	12.00	19.24	12.75	7.85
SWMF 24	BASE	3 Year	15.63	22.63	27.00	0.0007	106887	12.00	57.93	15.63	2.53
SWMF 25	BASE	3 Year	14.52	25.66	28.90	0.0007	22020	12.00	16.15	12.04	4.37
SWMF 26	BASE	3 Year	14.53	25.66	28.10	0.0007	78125	12.00	42.61	14.40	9.99
SWMF 27	BASE	3 Year	14.53	25.67	28.50	0.0007	97986	12.00	47.22	14.76	6.63
SWMF 28	BASE	3 Year	14.52	25.67	28.60	0.0007	97634	12.00	59.82	12.02	5.48
SWMF 29	BASE	3 Year	14.53	25.67	28.90	0.0007	28927	12.00	9.75	16.25	0.63
SWMF 3	BASE	3 Year	24.00	30.86	33.80	0.0005	40044	12.00	21.02	4.21	3.15
SWMF 30	BASE	3 Year	12.56	29.89	32.90	0.0010	27332	12.00	20.64	12.56	4.22
SWMF 31	BASE	3 Year	24.00	33.69	36.60	0.0003	42483	12.00	7.40	24.00	0.18
SWMF 32	BASE	3 Year	23.71	33.80	37.70	0.0003	58263	12.00	8.11	24.00	0.18
SWMF 33	BASE	3 Year	23.71	33.80	37.60	0.0003	50975	12.00	13.00	23.71	0.57
SWMF 4	BASE	3 Year	24.00	30.86	33.70	0.0007	23297	12.00	3.07	6.56	0.12
SWMF 5	BASE	3 Year	24.00	30.86	33.70	0.0006	19209	12.00	20.40	12.06	12.02
SWMF 6	BASE	3 Year	24.00	30.86	33.70	0.0007	73711	12.00	25.54	24.00	2.72
SWMF 7	BASE	3 Year	23.97	30.85	33.70	0.0007	27869	12.00	4.70	24.00	2.94
SWMF 8	BASE	3 Year	24.00	30.86	33.70	0.0006	39567	12.00	18.65	12.46	2.70
SWMF 9	BASE	3 Year	24.00	30.86	33.70	0.0006	69140	12.00	16.72	0.00	0.00
SWMF J1	BASE	3 Year	24.00	29.39	31.20	0.0001	999921	12.00	90.04	24.00	0.71

Rookery Overall

Link Max Report

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
1-3	BASE	100 Year	15.84	4.94	-0.325	14.59	32.76	14.47	32.74
1-9	BASE	100 Year	15.02	5.39	0.444	14.59	32.76	14.56	32.73
11-12	BASE	100 Year	12.03	9.57	-0.867	12.82	32.75	12.73	32.75
12-13	BASE	100 Year	13.40	18.61	1.290	12.73	32.75	12.24	32.68
13-14	BASE	100 Year	18.24	25.34	-0.114	12.24	32.68	12.36	32.61
15-16	BASE	100 Year	12.13	73.99	-0.495	12.37	28.84	12.71	28.19
16-MH	BASE	100 Year	12.61	51.99	8.321	12.71	28.19	12.78	27.83
17-19	BASE	100 Year	13.18	16.20	0.219	12.83	27.63	12.72	27.49
17-22	BASE	100 Year	13.26	13.49	0.582	12.83	27.63	12.70	27.51
18-21	BASE	100 Year	12.71	39.82	0.147	13.14	27.52	15.88	26.46
19-20	BASE	100 Year	12.82	31.97	0.152	12.72	27.49	12.67	26.94
19-22	BASE	100 Year	0.00	0.00	0.150	12.72	27.49	12.70	27.51
2-5	BASE	100 Year	12.18	35.41	-0.262	12.47	32.91	12.84	32.77
22-23	BASE	100 Year	13.15	20.03	0.117	12.70	27.51	12.62	27.18
25-26	BASE	100 Year	12.07	10.99	-0.115	12.89	27.74	12.95	27.72
27-26	BASE	100 Year	13.75	28.24	-0.237	13.10	27.89	12.95	27.72
28-27	BASE	100 Year	12.12	24.30	-0.230	13.09	27.96	13.10	27.89
29-28	BASE	100 Year	14.76	3.08	0.287	13.10	27.96	13.09	27.96
3-5	BASE	100 Year	19.02	1.59	0.351	14.47	32.74	12.84	32.77
3-8	BASE	100 Year	14.91	5.58	0.351	14.47	32.74	14.15	32.72
3-9	BASE	100 Year	12.10	25.77	0.621	14.47	32.74	14.56	32.73
32-33	BASE	100 Year	14.89	2.72	0.326	13.67	35.13	13.60	35.12
4-6	BASE	100 Year	13.08	2.01	-0.127	12.88	32.77	12.86	32.77
5-6	BASE	100 Year	12.09	16.41	0.136	12.84	32.77	12.86	32.77
5-8	BASE	100 Year	12.32	9.67	-0.099	12.84	32.77	14.15	32.72
6-7	BASE	100 Year	13.35	10.71	0.293	12.86	32.77	12.84	32.75
7-11	BASE	100 Year	14.91	16.55	0.287	12.84	32.75	12.82	32.75
7-8	BASE	100 Year	12.69	10.42	0.270	12.84	32.75	14.15	32.72
8-10	BASE	100 Year	12.56	16.23	-0.378	14.15	32.72	14.58	32.64
9-10	BASE	100 Year	14.34	10.27	-0.567	14.56	32.73	14.58	32.64
Bleeddown 14	BASE	100 Year	12.37	41.81	0.037	12.36	32.61	12.00	28.00
Drop 10	BASE	100 Year	14.00	23.03	0.182	14.58	32.64	17.02	32.38
Drop 11	BASE	100 Year	12.72	20.56	-1.421	12.82	32.75	17.02	32.38
Drop 13	BASE	100 Year	12.22	34.13	0.258	12.24	32.68	17.02	32.38
Drop 20	BASE	100 Year	12.67	35.47	0.031	12.67	26.94	12.00	24.00
Drop 21	BASE	100 Year	15.88	32.62	0.020	15.88	26.46	12.00	24.00
Drop 23	BASE	100 Year	12.62	28.39	0.030	12.62	27.18	12.00	25.00
Drop 24	BASE	100 Year	12.89	17.08	0.032	12.89	24.74	12.00	20.00
Drop 26	BASE	100 Year	12.94	43.00	0.821	12.95	27.72	12.00	25.00
Drop 30	BASE	100 Year	12.19	32.59	-0.051	12.19	31.25	12.00	28.00
Drop 31	BASE	100 Year	12.88	5.71	0.011	12.88	35.09	12.00	33.00
Drop 33	BASE	100 Year	13.60	7.63	0.016	13.60	35.12	12.00	33.00
Drop J1	BASE	100 Year	24.00	2.43	0.002	24.00	29.90	12.00	28.00
MH-17	BASE	100 Year	12.69	20.20	-4.364	12.78	27.83	12.83	27.63
MH-18	BASE	100 Year	12.51	31.82	5.168	12.78	27.83	13.14	27.52
Pond East	BASE	100 Year	17.02	24.55	0.022	17.02	32.38	12.00	28.00
Pond West	BASE	100 Year	17.02	16.84	0.014	17.02	32.38	12.00	28.00
1-3	BASE	25 Year	2.87	2.99	0.309	16.79	32.08	16.72	32.07
1-9	BASE	25 Year	17.93	2.27	0.163	16.79	32.08	16.73	32.07
11-12	BASE	25 Year	24.00	9.79	-0.413	16.62	32.04	16.16	31.98
12-13	BASE	25 Year	24.00	12.11	0.164	16.16	31.98	12.43	31.87

Rookery Overall

Link Max Report

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
13-14	BASE	25 Year	18.41	21.47	-0.114	12.43	31.87	12.47	31.74
15-16	BASE	25 Year	12.11	58.84	0.863	12.35	27.34	12.63	26.96
16-MH	BASE	25 Year	12.48	42.93	-10.404	12.63	26.96	12.72	26.73
17-19	BASE	25 Year	12.87	10.61	-0.428	12.79	26.64	12.75	26.57
17-22	BASE	25 Year	12.90	8.71	-0.368	12.79	26.64	12.74	26.58
18-21	BASE	25 Year	12.67	33.38	-0.221	13.05	26.49	15.75	25.79
19-20	BASE	25 Year	12.73	21.65	-0.497	12.75	26.57	12.76	26.32
19-22	BASE	25 Year	2.21	0.27	0.150	12.75	26.57	12.74	26.58
2-5	BASE	25 Year	12.15	26.16	0.948	16.67	32.07	16.69	32.07
22-23	BASE	25 Year	12.91	13.59	-0.236	12.74	26.58	12.71	26.42
25-26	BASE	25 Year	12.04	8.28	0.116	13.24	26.84	13.48	26.83
27-26	BASE	25 Year	13.79	17.49	0.245	13.51	26.90	13.48	26.83
28-27	BASE	25 Year	12.10	16.48	0.228	13.51	26.93	13.51	26.90
29-28	BASE	25 Year	14.76	1.81	0.285	13.51	26.93	13.51	26.93
3-5	BASE	25 Year	23.91	1.57	-0.318	16.72	32.07	16.69	32.07
3-8	BASE	25 Year	17.85	2.57	-0.314	16.72	32.07	16.69	32.07
3-9	BASE	25 Year	12.09	19.71	-0.333	16.72	32.07	16.73	32.07
32-33	BASE	25 Year	16.78	1.24	-0.074	14.69	34.46	14.65	34.46
4-6	BASE	25 Year	18.78	0.41	0.123	16.69	32.06	16.69	32.06
5-6	BASE	25 Year	12.06	13.07	-0.459	16.69	32.07	16.69	32.06
5-8	BASE	25 Year	12.16	6.96	0.144	16.69	32.07	16.69	32.07
6-7	BASE	25 Year	17.77	5.49	0.264	16.69	32.06	16.67	32.06
7-11	BASE	25 Year	17.77	9.94	0.318	16.67	32.06	16.62	32.04
7-8	BASE	25 Year	12.78	8.52	0.314	16.67	32.06	16.69	32.07
8-10	BASE	25 Year	12.35	4.28	0.273	16.69	32.07	16.71	32.06
9-10	BASE	25 Year	16.79	3.29	-0.203	16.73	32.07	16.71	32.06
Bleeddown 14	BASE	25 Year	12.47	28.42	0.038	12.47	31.74	12.00	28.00
Drop 10	BASE	25 Year	16.55	6.83	0.009	16.71	32.06	17.75	31.98
Drop 11	BASE	25 Year	16.14	4.33	-0.007	16.62	32.04	17.75	31.98
Drop 13	BASE	25 Year	0.00	0.00	0.013	12.43	31.87	17.75	31.98
Drop 20	BASE	25 Year	12.76	23.70	0.025	12.76	26.32	12.00	24.00
Drop 21	BASE	25 Year	15.74	24.59	0.021	15.75	25.79	12.00	24.00
Drop 23	BASE	25 Year	12.70	18.88	0.019	12.71	26.42	12.00	25.00
Drop 24	BASE	25 Year	12.79	13.45	0.039	12.79	23.63	12.00	20.00
Drop 26	BASE	25 Year	13.22	26.32	0.027	13.48	26.83	12.00	25.00
Drop 30	BASE	25 Year	12.22	21.09	0.036	12.22	30.70	12.00	28.00
Drop 31	BASE	25 Year	14.67	1.69	0.002	14.67	34.45	12.00	33.00
Drop 33	BASE	25 Year	14.65	3.60	0.007	14.65	34.46	12.00	33.00
Drop J1	BASE	25 Year	24.00	1.55	0.002	24.00	29.67	12.00	28.00
MH-17	BASE	25 Year	12.51	14.10	5.495	12.72	26.73	12.79	26.64
MH-18	BASE	25 Year	12.41	28.55	6.244	12.72	26.73	13.05	26.49
Pond East	BASE	25 Year	17.75	2.00	0.002	17.75	31.98	12.00	28.00
Pond West	BASE	25 Year	17.75	14.74	0.016	17.75	31.98	12.00	28.00
1-3	BASE	3 Year	24.00	0.80	-0.327	24.00	30.86	24.00	30.86
1-9	BASE	3 Year	3.59	2.55	0.448	24.00	30.86	24.00	30.86
11-12	BASE	3 Year	24.00	7.51	-0.127	23.75	30.85	23.68	30.80
12-13	BASE	3 Year	24.00	8.28	-0.112	23.68	30.80	23.53	30.74
13-14	BASE	3 Year	23.53	10.59	0.116	23.53	30.74	23.54	30.64
15-16	BASE	3 Year	12.08	36.88	-0.495	12.35	25.60	12.54	25.48
16-MH	BASE	3 Year	12.32	28.69	8.321	12.54	25.48	12.68	25.41
17-19	BASE	3 Year	12.52	3.30	-0.140	12.72	25.41	12.73	25.40

Rookery Overall

Link Max Report

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
17-22	BASE	3 Year	17.75	2.24	0.129	12.72	25.41	12.73	25.41
18-21	BASE	3 Year	12.59	23.24	0.147	13.07	25.27	15.97	25.06
19-20	BASE	3 Year	12.46	8.78	0.152	12.73	25.40	12.76	25.36
19-22	BASE	3 Year	0.00	0.00	0.153	12.73	25.40	12.73	25.41
2-5	BASE	3 Year	12.12	13.26	-0.258	24.00	30.86	24.00	30.86
22-23	BASE	3 Year	12.61	5.24	0.120	12.73	25.41	12.75	25.38
25-26	BASE	3 Year	12.04	4.37	0.115	14.52	25.66	14.53	25.66
27-26	BASE	3 Year	14.76	6.63	0.232	14.53	25.67	14.53	25.66
28-27	BASE	3 Year	12.02	5.48	0.228	14.52	25.67	14.53	25.67
29-28	BASE	3 Year	16.25	0.63	-0.246	14.53	25.67	14.52	25.67
3-5	BASE	3 Year	24.00	1.10	0.354	24.00	30.86	24.00	30.86
3-8	BASE	3 Year	24.00	1.06	0.354	24.00	30.86	24.00	30.86
3-9	BASE	3 Year	12.06	10.97	0.627	24.00	30.86	24.00	30.86
32-33	BASE	3 Year	24.00	0.18	-0.070	23.71	33.80	23.71	33.80
4-6	BASE	3 Year	6.56	0.12	-0.118	24.00	30.86	24.00	30.86
5-6	BASE	3 Year	12.04	8.66	-0.133	24.00	30.86	24.00	30.86
5-8	BASE	3 Year	12.15	3.59	-0.097	24.00	30.86	24.00	30.86
6-7	BASE	3 Year	24.00	2.72	-0.242	24.00	30.86	23.97	30.85
7-11	BASE	3 Year	24.00	5.54	0.287	23.97	30.85	23.75	30.85
7-8	BASE	3 Year	12.75	4.85	0.176	23.97	30.85	24.00	30.86
8-10	BASE	3 Year	12.46	2.70	-0.380	24.00	30.86	24.00	30.86
9-10	BASE	3 Year	0.00	0.00	-0.572	24.00	30.86	24.00	30.86
Bleeddown 14	BASE	3 Year	23.54	11.22	0.010	23.54	30.64	12.00	28.00
Drop 10	BASE	3 Year	0.00	0.00	-0.002	24.00	30.86	13.95	31.71
Drop 11	BASE	3 Year	0.00	0.00	-0.002	23.75	30.85	13.95	31.71
Drop 13	BASE	3 Year	0.00	0.00	-0.002	23.53	30.74	13.95	31.71
Drop 20	BASE	3 Year	12.76	9.48	0.008	12.76	25.36	12.00	24.00
Drop 21	BASE	3 Year	15.97	11.48	0.003	15.97	25.06	12.00	24.00
Drop 23	BASE	3 Year	12.75	7.85	0.050	12.75	25.38	12.00	25.00
Drop 24	BASE	3 Year	15.63	2.53	0.001	15.63	22.63	12.00	20.00
Drop 26	BASE	3 Year	14.40	9.99	0.029	14.53	25.66	12.00	25.00
Drop 30	BASE	3 Year	12.56	4.22	0.008	12.56	29.89	12.00	28.00
Drop 31	BASE	3 Year	24.00	0.18	0.000	24.00	33.69	12.00	33.00
Drop 33	BASE	3 Year	23.71	0.57	0.000	23.71	33.80	12.00	33.00
Drop J1	BASE	3 Year	24.00	0.71	0.001	24.00	29.39	12.00	28.00
MH-17	BASE	3 Year	12.30	5.52	4.478	12.68	25.41	12.72	25.41
MH-18	BASE	3 Year	12.30	23.34	-6.711	12.68	25.41	13.07	25.27
Pond East	BASE	3 Year	13.95	1.47	0.001	13.95	31.71	12.00	28.00
Pond West	BASE	3 Year	13.95	8.45	0.005	13.95	31.71	12.00	28.00

EXHIBITS

NOAA Atlas 14, Volume 9, Version 2
Location name: Green Cove Springs, Florida, USA*
Latitude: 29.9671°, Longitude: -81.6854°
Elevation: 26.93 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Deborah Martin, Sandra Pavlovic, Ishani Roy, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Michael Yekta, Geoffery Bonnin

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.508 (0.409-0.633)	0.577 (0.464-0.719)	0.686 (0.550-0.856)	0.773 (0.617-0.968)	0.888 (0.685-1.13)	0.974 (0.736-1.25)	1.06 (0.773-1.38)	1.14 (0.800-1.51)	1.24 (0.840-1.67)	1.31 (0.871-1.80)
10-min	0.744 (0.600-0.927)	0.845 (0.680-1.05)	1.00 (0.806-1.25)	1.13 (0.904-1.42)	1.30 (1.00-1.65)	1.43 (1.08-1.83)	1.55 (1.13-2.01)	1.66 (1.17-2.21)	1.81 (1.23-2.45)	1.92 (1.27-2.63)
15-min	0.907 (0.731-1.13)	1.03 (0.829-1.28)	1.22 (0.983-1.53)	1.38 (1.10-1.73)	1.59 (1.22-2.01)	1.74 (1.31-2.23)	1.89 (1.38-2.46)	2.03 (1.43-2.69)	2.21 (1.50-2.98)	2.34 (1.56-3.21)
30-min	1.41 (1.13-1.75)	1.60 (1.29-2.00)	1.91 (1.54-2.39)	2.16 (1.73-2.71)	2.49 (1.92-3.15)	2.73 (2.06-3.49)	2.96 (2.16-3.85)	3.18 (2.24-4.21)	3.45 (2.34-4.66)	3.65 (2.42-5.00)
60-min	1.83 (1.47-2.28)	2.10 (1.69-2.61)	2.53 (2.03-3.16)	2.90 (2.31-3.63)	3.41 (2.63-4.35)	3.80 (2.88-4.89)	4.19 (3.08-5.49)	4.59 (3.24-6.12)	5.13 (3.49-6.96)	5.54 (3.68-7.59)
2-hr	2.25 (1.83-2.79)	2.59 (2.10-3.20)	3.15 (2.55-3.91)	3.64 (2.92-4.52)	4.32 (3.38-5.50)	4.87 (3.72-6.25)	5.43 (4.02-7.08)	6.01 (4.28-7.97)	6.80 (4.67-9.19)	7.42 (4.97-10.1)
3-hr	2.45 (2.00-3.02)	2.82 (2.30-3.48)	3.47 (2.81-4.28)	4.04 (3.26-4.99)	4.87 (3.84-6.22)	5.56 (4.28-7.14)	6.29 (4.68-8.20)	7.06 (5.06-9.37)	8.15 (5.62-11.0)	9.01 (6.05-12.2)
6-hr	2.84 (2.33-3.48)	3.26 (2.68-3.99)	4.03 (3.29-4.93)	4.74 (3.85-5.82)	5.83 (4.64-7.43)	6.75 (5.25-8.65)	7.75 (5.83-10.1)	8.85 (6.40-11.7)	10.4 (7.26-14.0)	11.7 (7.91-15.8)
12-hr	3.33 (2.75-4.04)	3.80 (3.14-4.61)	4.68 (3.85-5.68)	5.51 (4.51-6.72)	6.82 (5.49-8.67)	7.95 (6.23-10.1)	9.19 (6.97-11.9)	10.6 (7.70-13.9)	12.6 (8.81-16.8)	14.2 (9.65-19.0)
24-hr	3.87 (3.22-4.65)	4.43 (3.68-5.33)	5.49 (4.55-6.61)	6.49 (5.35-7.85)	8.06 (6.54-10.2)	9.42 (7.43-11.9)	10.9 (8.33-14.0)	12.6 (9.21-16.4)	14.9 (10.6-19.9)	16.9 (11.6-22.5)
2-day	4.44 (3.72-5.30)	5.17 (4.33-6.17)	6.50 (5.42-7.77)	7.74 (6.43-9.29)	9.65 (7.87-12.1)	11.3 (8.96-14.2)	13.1 (10.0-16.7)	15.0 (11.1-19.5)	17.8 (12.7-23.5)	20.1 (13.9-26.6)
3-day	4.89 (4.12-5.81)	5.69 (4.78-6.76)	7.15 (5.99-8.51)	8.50 (7.09-10.2)	10.6 (8.66-13.2)	12.4 (9.85-15.4)	14.3 (11.0-18.1)	16.4 (12.1-21.2)	19.4 (13.9-25.5)	21.9 (15.1-28.8)
4-day	5.29 (4.46-6.26)	6.12 (5.16-7.25)	7.63 (6.42-9.06)	9.04 (7.56-10.8)	11.2 (9.19-13.9)	13.0 (10.4-16.2)	15.0 (11.6-19.0)	17.2 (12.8-22.2)	20.3 (14.5-26.6)	22.9 (15.9-30.0)
7-day	6.33 (5.38-7.45)	7.18 (6.09-8.45)	8.72 (7.38-10.3)	10.2 (8.54-12.0)	12.3 (10.2-15.2)	14.2 (11.4-17.5)	16.2 (12.6-20.3)	18.4 (13.7-23.5)	21.5 (15.5-28.0)	24.1 (16.8-31.4)
10-day	7.26 (6.19-8.50)	8.13 (6.93-9.54)	9.71 (8.24-11.4)	11.1 (9.41-13.1)	13.3 (11.0-16.2)	15.1 (12.2-18.6)	17.1 (13.3-21.3)	19.2 (14.4-24.4)	22.2 (16.0-28.8)	24.7 (17.3-32.1)
20-day	9.87 (8.48-11.5)	11.0 (9.41-12.8)	12.8 (11.0-14.9)	14.4 (12.2-16.8)	16.6 (13.7-19.9)	18.4 (14.9-22.3)	20.3 (15.8-24.9)	22.2 (16.7-27.8)	24.8 (17.9-31.7)	26.8 (18.9-34.7)
30-day	12.1 (10.4-14.0)	13.4 (11.6-15.6)	15.6 (13.4-18.1)	17.4 (14.8-20.2)	19.8 (16.3-23.4)	21.6 (17.5-25.9)	23.4 (18.3-28.6)	25.2 (19.0-31.4)	27.6 (20.0-35.0)	29.4 (20.8-37.8)
45-day	15.0 (13.0-17.3)	16.7 (14.4-19.2)	19.3 (16.7-22.3)	21.4 (18.3-24.8)	24.1 (19.9-28.3)	26.0 (21.1-30.9)	27.9 (21.9-33.8)	29.7 (22.4-36.6)	31.9 (23.2-40.2)	33.4 (23.7-42.8)
60-day	17.5 (15.2-20.1)	19.5 (16.9-22.4)	22.5 (19.5-25.9)	24.9 (21.5-28.8)	27.9 (23.2-32.6)	30.1 (24.4-35.6)	32.0 (25.2-38.6)	33.9 (25.6-41.6)	36.0 (26.2-45.2)	37.4 (26.7-47.9)

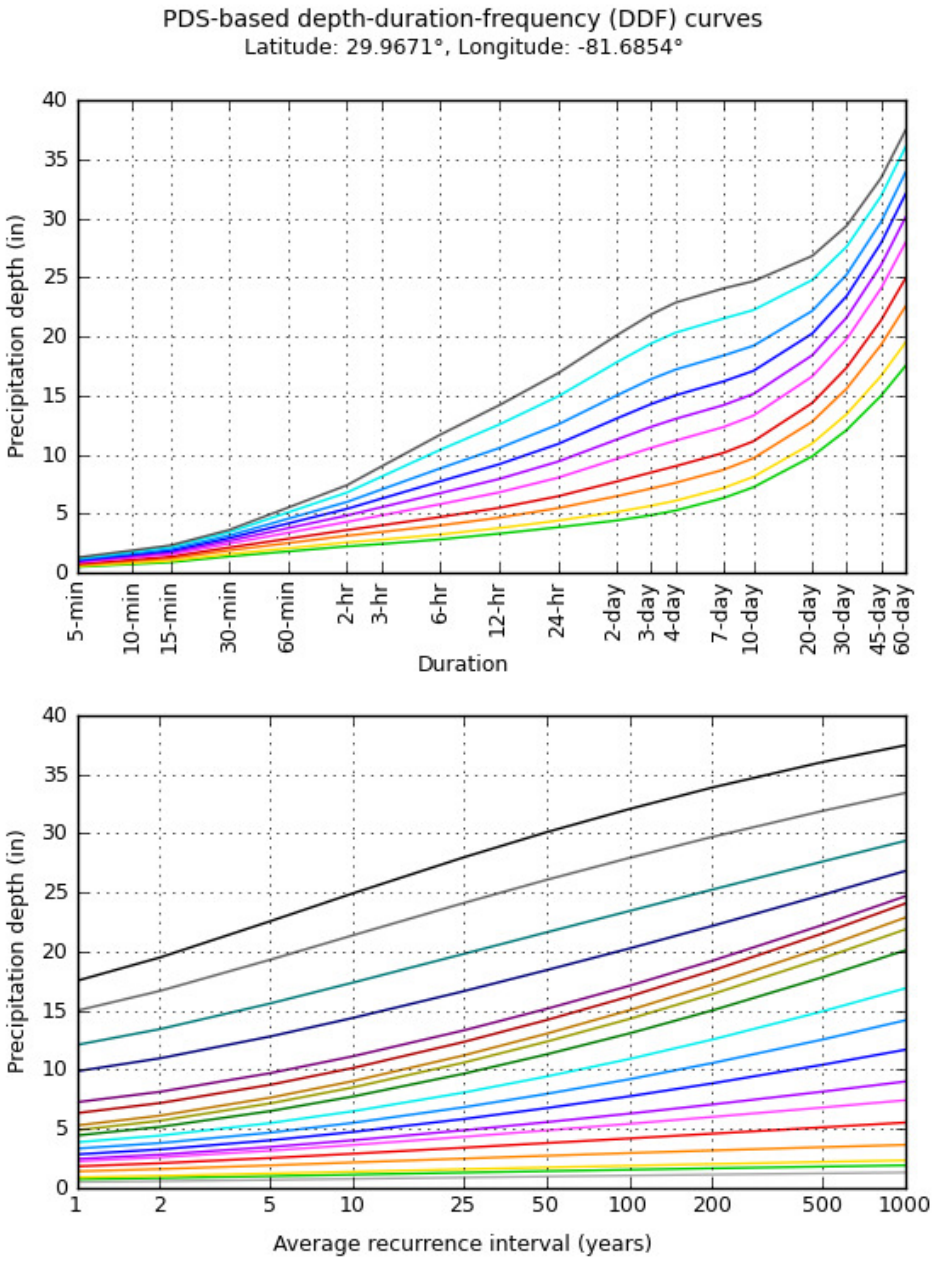
[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

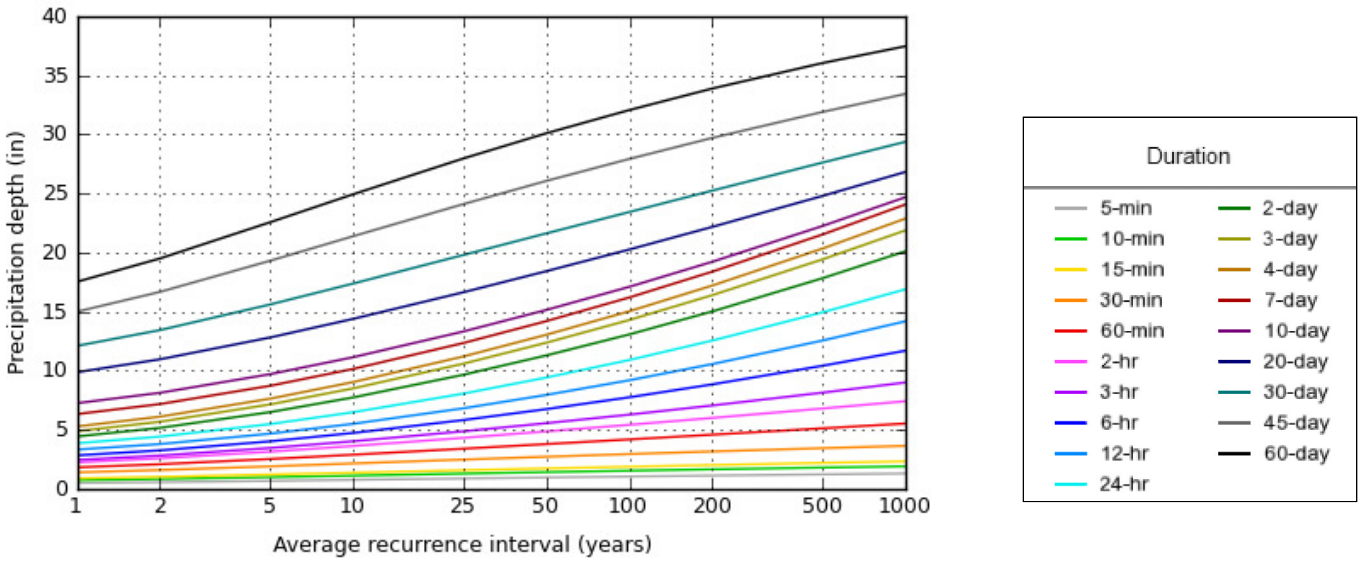
Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

Back to Top

PF graphical





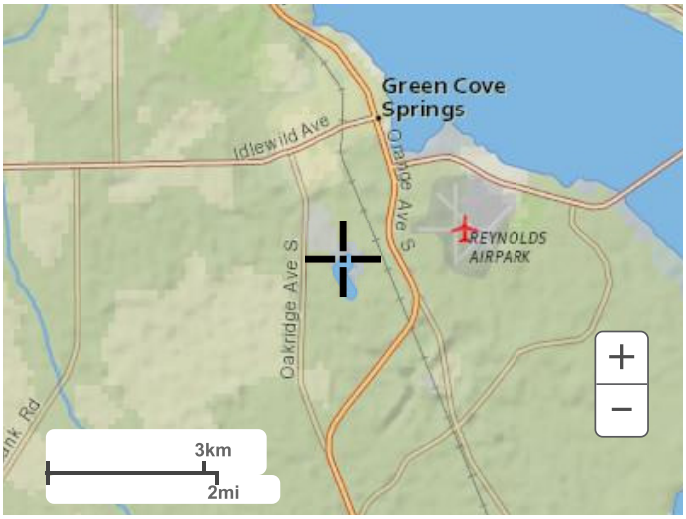
NOAA Atlas 14, Volume 9, Version 2

Created (GMT): Tue Jan 18 21:08:34 2022

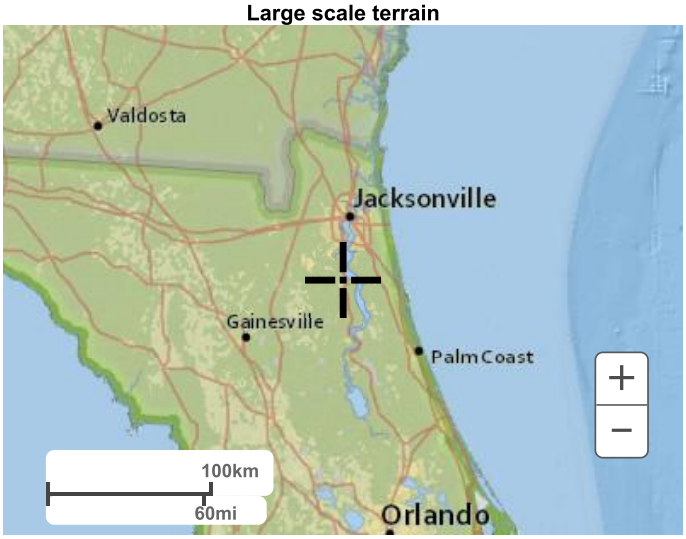
Back to Top

Maps & aerials

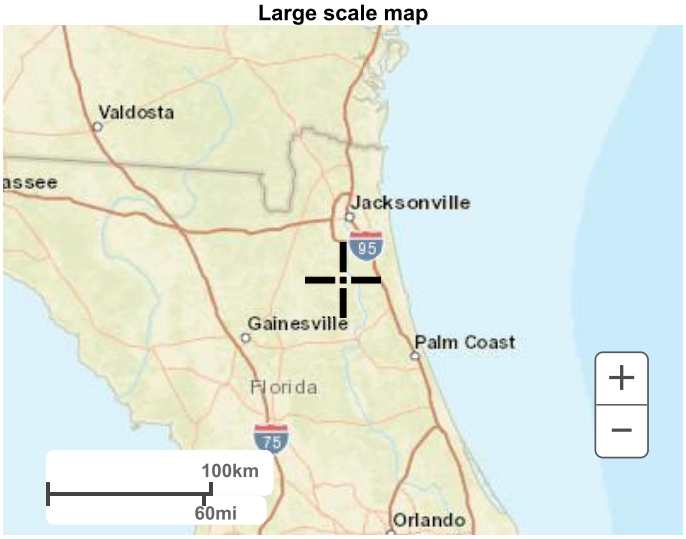
Small scale terrain



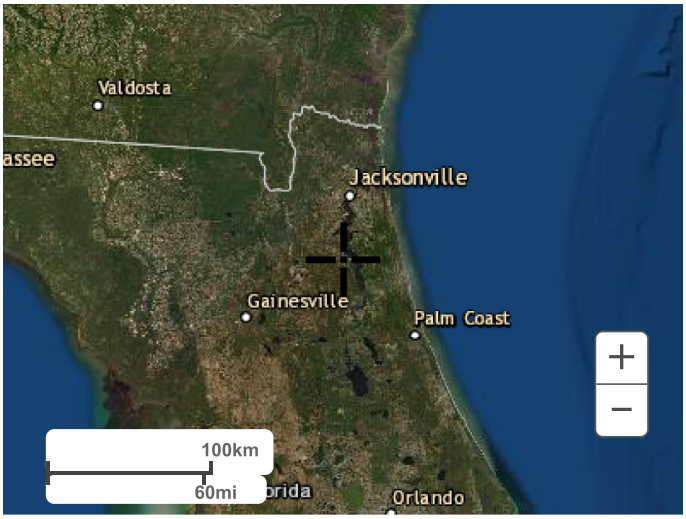
Large scale terrain



Large scale map



Large scale aerial



Back to Top

US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

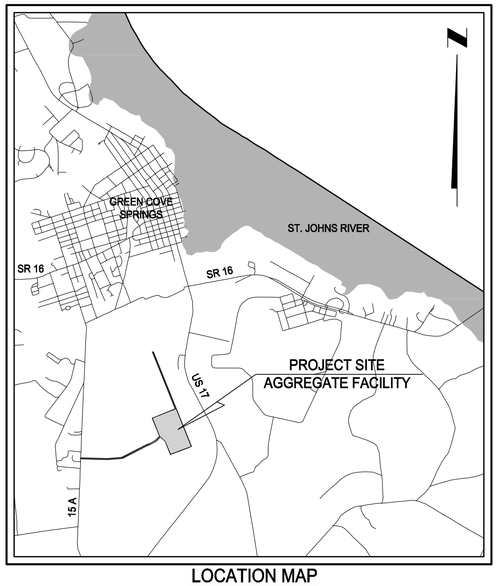
NDCIA			Percent DCIA													
CN	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
60	0.158	0.166	0.174	0.181	0.189	0.197	0.203	0.208	0.214	0.219	0.225	0.2328	0.2406	0.2484	0.2562	0.264
61	0.160	0.168	0.176	0.184	0.191	0.199	0.205	0.210	0.216	0.221	0.227	0.23456	0.24232	0.25008	0.25784	0.2656
62	0.162	0.170	0.178	0.186	0.194	0.201	0.207	0.212	0.218	0.223	0.229	0.23632	0.24404	0.25176	0.25948	0.2672
63	0.165	0.172	0.180	0.188	0.196	0.204	0.209	0.214	0.220	0.225	0.230	0.23808	0.24576	0.25344	0.26112	0.2688
64	0.167	0.175	0.182	0.190	0.198	0.206	0.211	0.216	0.222	0.227	0.232	0.23984	0.24748	0.25512	0.26276	0.2704
65	0.169	0.177	0.185	0.192	0.200	0.208	0.213	0.218	0.224	0.229	0.234	0.2416	0.2492	0.2568	0.2644	0.272
66	0.172	0.180	0.188	0.195	0.203	0.211	0.216	0.221	0.226	0.231	0.236	0.2438	0.2514	0.259	0.2666	0.2742
67	0.175	0.183	0.191	0.198	0.206	0.214	0.219	0.224	0.229	0.234	0.238	0.246	0.2536	0.2612	0.2688	0.2764
68	0.178	0.186	0.194	0.201	0.209	0.217	0.222	0.226	0.231	0.236	0.241	0.2482	0.2558	0.2634	0.271	0.2786
69	0.181	0.189	0.197	0.204	0.212	0.220	0.225	0.229	0.234	0.238	0.243	0.2504	0.258	0.2656	0.2732	0.2808
70	0.184	0.192	0.199	0.207	0.214	0.222	0.227	0.231	0.236	0.240	0.245	0.2526	0.2602	0.2678	0.2754	0.283
71	0.188	0.196	0.203	0.211	0.218	0.226	0.230	0.235	0.239	0.244	0.248	0.25592	0.26344	0.27096	0.27848	0.286
72	0.197	0.203	0.210	0.216	0.223	0.230	0.234	0.238	0.243	0.247	0.252	0.25924	0.26668	0.27412	0.28156	0.289
73	0.201	0.207	0.214	0.220	0.227	0.233	0.238	0.242	0.246	0.251	0.255	0.26256	0.26992	0.27728	0.28464	0.292
74	0.205	0.211	0.218	0.224	0.231	0.237	0.241	0.246	0.250	0.254	0.259	0.26588	0.27316	0.28044	0.28772	0.295
75	0.205	0.212	0.219	0.227	0.234	0.241	0.245	0.249	0.254	0.258	0.262	0.2692	0.2764	0.2836	0.2908	0.298
76	0.211	0.218	0.225	0.232	0.239	0.246	0.250	0.254	0.259	0.263	0.267	0.27376	0.28092	0.28808	0.29524	0.3024
77	0.217	0.224	0.231	0.238	0.245	0.252	0.256	0.260	0.263	0.267	0.271	0.27832	0.28544	0.29256	0.29968	0.3068
78	0.222	0.229	0.236	0.243	0.250	0.257	0.261	0.265	0.268	0.272	0.276	0.28288	0.28996	0.29704	0.30412	0.3112
79	0.228	0.235	0.242	0.249	0.256	0.263	0.266	0.270	0.273	0.277	0.280	0.28744	0.29448	0.30152	0.30856	0.3156
80	0.234	0.241	0.248	0.254	0.261	0.268	0.271	0.275	0.278	0.282	0.285	0.292	0.299	0.306	0.313	0.32
81	0.243	0.250	0.256	0.263	0.270	0.276	0.280	0.283	0.286	0.289	0.292	0.29932	0.30624	0.31316	0.32008	0.327
82	0.252	0.258	0.265	0.272	0.278	0.285	0.288	0.291	0.294	0.297	0.300	0.30664	0.31348	0.32032	0.32716	0.334
83	0.260	0.267	0.274	0.280	0.287	0.293	0.296	0.299	0.302	0.304	0.307	0.31396	0.32072	0.32748	0.33424	0.341
84	0.269	0.276	0.282	0.289	0.295	0.302	0.304	0.307	0.309	0.312	0.315	0.32128	0.32796	0.33464	0.34132	0.348
85	0.278	0.284	0.291	0.297	0.304	0.31	0.312	0.315	0.317	0.320	0.322	0.3286	0.3352	0.3418	0.3484	0.355
86	0.287	0.293	0.299	0.306	0.312	0.318	0.320	0.322	0.325	0.327	0.329	0.33648	0.34396	0.35144	0.35892	0.3664
87	0.296	0.302	0.308	0.314	0.320	0.326	0.328	0.330	0.332	0.334	0.336	0.34436	0.35272	0.36108	0.36944	0.3778
88	0.305	0.311	0.317	0.322	0.328	0.334	0.336	0.338	0.339	0.341	0.343	0.35224	0.36148	0.37072	0.37996	0.3892
89	0.314	0.320	0.325	0.331	0.336	0.342	0.344	0.345	0.347	0.348	0.35	0.36012	0.37024	0.38036	0.39048	0.4006
90											0.384	0.3896	0.3952	0.4008	0.4064	0.412

AGGREGATE FACILITY

CLAY COUNTY, FLORIDA

PREPARED FOR
GUSTAFSON'S CATTLE, INC.

P.O. BOX 600337
JACKSONVILLE, FLORIDA 32260



LOCATION MAP

N.T.S.

IF YOU DIG IN FLORIDA...
CALL US FIRST!
811
SUNSHINE STATE ONE-CALL OF FLORIDA, INC.
IT'S THE LAW

VISION ▪ EXPERIENCE ▪ RESULTS

England-Thims & Miller, Inc.
14775 Old St. Augustine Road
Jacksonville, FL 32258
TEL: (904) 642-8990
FAX: (904) 646-9485
CA - 00002584 LC - 0000316

REVISED: JUNE, 2015

DRAWING INDEX	
SHEET NUMBER	SHEET TITLE
1	COVER SHEET
2	GENERAL NOTES AND LEGEND
3	PRE DEVELOPMENT DRAINAGE PLAN
4	POST DEVELOPMENT DRAINAGE PLAN
5	MASTER SITE PLAN
6A–6E	ROADWAY PLAN AND PROFILE
6F	C.R. 15A TURN LANE PLAN
6G–6H	C.R. 15A ROADWAY CROSS SECTIONS
7A–7G	ROADWAY CROSS SECTIONS
8A–8B	PAVING AND DRAINAGE PLAN
8C–8D	RAIL SPUR CULVERT PLAN
9A–9F	RAIL SPUR PLAN AND PROFILE
10A–10J	RAIL SPUR CROSS SECTIONS
11A–11C	POND GEOMETRY AND CROSS SECTIONS
12A–12B	PAVING AND DRAINAGE DETAILS
12C	CONTROL STRUCTURE DETAILS
12D	DITCH CROSS SECTIONS
13	SEDIMENT AND EROSION CONTROL PLAN
14	SEDIMENT AND EROSION CONTROL DETAILS
15	STORMWATER POLLUTION PREVENTION PLAN
16	STORMWATER POLLUTION PREVENTION CONTRACTORS CERTIFICATION
17	DEWATERING PLAN
18	DEWATERING PLAN
P1	PRE DEVELOPMENT NODAL DIAGRAM
P2	POST DEVELOPMENT NODAL DIAGRAM
TCP1	TRAFFIC CONTROL PLAN
LC–01	COVER SHEET NOTES
LC–02–LC–04	LANDSCAPE PLAN
LC–05	LANDSCAPE SPECIFICATIONS

PLANS PREPARED UNDER THE DIRECTION OF:

SCOTT A. WILD, P.E.
P.E. NUMBER: 47030

REVISIONS:

ETM NO. 11-070-02	DRAWN BY: MKJ	DESIGNED BY: SAW	CHECKED BY: SAW	DATE: JUNE, 2015

England-Thims & Miller, Inc.
14775 Old St. Augustine Road
Jacksonville, FL 32258
TEL: (904) 642-8990
FAX: (904) 646-9485
CA - 00002584 LC - 0000316

VISION ▪ EXPERIENCE ▪ RESULTS

COVER SHEET

AGGREGATE FACILITY FOR GUSTAFSON'S CATTLE, INC.

DRAWING NUMBER
1

PLOTTED: December 10, 2015 – 4:54 PM, BY: Kevin

G:\11-070\11-070-02\Design\Plots\11-070-02 Co.dwg

NOTE:
1. DITCH NODE N017 AND RR DITCH NODES N007, N008, N009B AND N011 DATA FROM FLOOD STUDY BY:
JIM HUMPHRIES, PE
HUMPHRIES CONSULTING & ENGINEERING, INC.

2. ELEVATION CONTOURS SHOWN ARE FROM LIDAR TOPO. WITHIN PROJECT BOUNDARY AND C.R. 15A, TOPOGRAPHIC SURVEY PROVIDED BY ROBERT M. ANGAS AND ASSOCIATES, INC. DATED 06-08-15

GRAPHIC SCALE
0 200 400 800

GOVERNORS CREEK

PRE BASIN 11
39.30 Ac
CN = 79
Tc = 166 Min.
K' = 256

PRE BASIN 12
16.43 Ac
CN = 79
Tc = 147 Min.
K' = 256

PRE BASIN 13
42.40 Ac
CN = 79
Tc = 172 Min.
K' = 256

PRE BASIN 10
24.28 Ac
CN = 79
Tc = 56 Min.
K' = 323

PRE BASIN 9
177 Ac
CN = 68
Tc = 108 Min.
K' = 323

PRE BASIN 6
68.14 Ac
CN = 79
Tc = 57 Min.
K' = 323

PRE BASIN 7A
51.55 Ac
CN = 79
Tc = 130 Min.
K' = 256

PRE BASIN 2
44.93 Ac
CN = 79
Tc = 166 Min.
K' = 256

PRE BASIN 7
23.15 Ac
CN = 79
Tc = 128 Min.
K' = 256

PRE BASIN 8
14.49 Ac
CN = 79
Tc = 98 Min.
K' = 256

PRE BASIN 1
72.74 Ac
CN = 79
Tc = 113 Min.
K' = 256

PRE BASIN 3
3.09 Ac
CN = 79
Tc = 69 Min.
K' = 323

PRE BASIN 4
2.62 Ac
CN = 79
Tc = 98 Min.
K' = 256

PRE BASIN 5
2.53 Ac
CN = 79
Tc = 95 Min.
K' = 256

Tc Path L=1,409 FT
Tc Path L=1,131 FT
Tc Path L=1,624 FT
Tc Path L=2,119 FT
Tc Path L=1,480 FT
Tc Path L=1,337 FT
Tc Path L=1,420 FT
Tc Path L=1,938 FT
Tc Path L=1,110 FT
Tc Path L=1,709 FT
Tc Path L=1,360 FT

EX. 24" CMP
EX. DBL. 24"x38" ERCP CULVERT
EX. 8'x3' CONC. BOX CULVERT
EX. 42" CMP
EX. 30" CMP

RR NODE N007
EX. 24" RCP UNDER RR
RR NODE N008
EX. DBL. 42" CMP UNDER RR
RR NODE N009B
EX. 30" RCP UNDER RR
RR NODE N011
EX. 30" RCP UNDER RR
NODE N017

GUSTAFSON'S WASTE STORAGE POND
FDEP PERMIT No. FLA011384

C.R. 15A
U.S. 17

PROPOSED STATE ROAD No. 23
(FIRST COAST OUTER BELTWAY)
(PER FLORIDA DEPARTMENT RIGHT OF WAY MAP SECTION No. 71493)
25' TEMPORARY CONSTRUCTION EASEMENT O.R.B. 3192, PG. 37
50' GAS EASEMENT O.R.B. 3192, PG. 37
PROPOSED N'ly L.A.R.W.
PROPOSED S'ly L.A.R.W.

PLANS PREPARED UNDER THE DIRECTION OF:
SCOTT A. WILD, P.E.
P.E. NUMBER: 47030

REVISIONS:

ETM NO. 11-070-02
DRAWN BY: MKJ
DESIGNED BY: SAW
CHECKED BY: SAW
DATE: JUNE, 2015

England-Thims & Miller, Inc.
14775 Old St. Augustine Road
Jacksonville, FL 32258
TEL: (904) 642-8990
FAX: (904) 646-9485
CA - 00002584 LC - 0000316

ETM
VISION • EXPERIENCE • RESULTS

PRE DEVELOPMENT DRAINAGE PLAN

AGGREGATE FACILITY
FOR
GUSTAFSON'S CATTLE, INC.

DRAWING NUMBER
3

PLOTTED: December 10, 2015 – 3:43 PM, BY: Kevin Jones
G:\11-070\11-070-02\Design\Plots\11-070-02 Pre.dwg

NOTE:
1. DITCH NODE N017 AND RR DITCH NODES N007, N008, N009B AND N011 DATA FROM FLOOD STUDY BY:
JIM HUMPHRIES, PE
HUMPHRIES CONSULTING & ENGINEERING, INC.

2. ELEVATION CONTOURS SHOWN ARE FROM LIDAR TOPO. WITHIN PROJECT BOUNDARY AND C.R. 15A, TOPOGRAPHIC SURVEY PROVIDED BY ROBERT M. ANGAS AND ASSOCIATES, INC. DATED 06-08-15

APPROXIMATE DRAINAGE AREA TO WASTE STORAGE POND, IF RE-DEVELOPED IN THE FUTURE, AREA CAN OUTFALL, AFTER APPROPRIATE STORMWATER MANAGEMENT, EASTERLY TO CULVERTS UNDER THE RAILROAD TRACKS OR SOUTHERLY TO CROSS DRAINS UNDER PROPOSED ROAD.

GRAPHIC SCALE
0 200 400 800

GOVERNORS CREEK

165.2 Ac.

OFFSITE BASIN 11
39.30 Ac
CN = 79
Tc = 166 Min.
K' = 256

OFFSITE BASIN 12
16.43 Ac
CN = 79
Tc = 147 Min.
K' = 256

Tc Path
L=1,409 FT

EX. 24" CMP

Tc Path
L=1,131 FT

Tc Path
L=1,624 FT

RR NODE N007

EX. 24" RCP UNDER RR

OFFSITE BASIN 10
24.28 Ac
CN = 79
Tc = 56 Min.
K' = 323

EX. CULVERT

Tc Path
L=1,480 FT

OFFSITE BASIN 6
68.14 Ac
CN = 79
Tc = 57 Min.
K' = 323

GUSTAFSON'S
WASTE STORAGE POND
FDEP PERMIT No. FLA011384

OFFSITE BASIN 13
42.40 Ac
CN = 79
Tc = 172 Min.
K' = 256

RR NODE N008

EX. DBL. 42" CMP UNDER RR

Tc Path
L=2,119 FT

OFFSITE BASIN 9
177 Ac
CN = 68
Tc = 108 Min.
K' = 323

C.R. 15A

Tc Path
L=1,337 FT

OFFSITE BASIN 7A
51.55 Ac
CN = 79
Tc = 130 Min.
K' = 256

OFFSITE BASIN 2
39.17 Ac
CN = 79
Tc = 155 Min.
K' = 256

STORMWATER MANAGEMENT FACILITY 2
TOB EL. = 27.00 (7.10 Ac.)
WEIR EL. = N/A
NWL EL. = 23.00 (6.08 Ac.)
BOT EL. = -3.00 (0.44 Ac.)
DHW (25 yr) = 25.80
DHW (3 yr) = 24.79
DHW (MA) = 24.46

EX. 8'x3' CONC. BOX CULVERT

Tc Path
L=1,420 FT

OFFSITE BASIN 8
14.49 Ac
CN = 79
Tc = 98 Min.
K' = 256

Tc Path
L=1,400 FT

RR NODE N009B

U.S. 17

EX. 42" CMP

Tc Path
L=1,110 FT

Tc Path
L=600 FT

OFFSITE BASIN 7
23.15 Ac
CN = 79
Tc = 128 Min.
K' = 256

OFFSITE BASIN 1
17.25 Ac
CN = 79
Tc = 88 Min.
K' = 256

BASIN 2
27.78 Ac
CN = 94
Tc = 15 Min.
K' = 484

MAXIMUM IMPERVIOUS AREA=13.60 Ac

Tc Path
L=1,360 FT

BASIN RD3
3.09 Ac
CN = 89
Tc = 14 Min.
K' = 484

MAXIMUM IMPERVIOUS AREA=13.90 Ac

STORMWATER MANAGEMENT FACILITY 3
TOB EL. = 33.50 (0.45 Ac.)
WEIR EL. = N/A
NWL EL. = 29.50 (0.27 Ac.)
BOT EL. = 21.50 (0.03 Ac.)
DHW (25 yr) = 32.54
DHW (3 yr) = 32.02
DHW (MA) = 31.92

BASIN RD4
2.62 Ac
CN = 87
Tc = 32 Min.
K' = 484

STORMWATER MANAGEMENT FACILITY 4
TOB EL. = 32.50 (0.42 Ac.)
WEIR EL. = N/A
NWL EL. = 28.00 (0.23 Ac.)
BOT EL. = 20.00 (0.02 Ac.)
DHW (25 yr) = 31.48
DHW (3 yr) = 29.78
DHW (MA) = 29.57

BASIN RD5
2.53 Ac
CN = 87
Tc = 38 Min.
K' = 484

Tc Path
L=250 FT

OFFSITE BASIN 3
1.94 Ac
CN = 79
Tc = 42 Min.
K' = 323

BASIN 1
30.53 Ac
CN = 91
Tc = 15 Min.
K' = 484

C S X R A I L R O A D
(FORMERLY ATLANTIC COASTLINE RAILROAD)

EX. 30" RCP UNDER RR

RR NODE N011

STORMWATER MANAGEMENT FACILITY 1
TOB EL. = 27.00 (5.43 Ac.)
WEIR EL. = N/A
NWL EL. = 23.00 (4.27 Ac.)
BOT EL. = 11.00 (1.03 Ac.)
DHW (25 yr) = 25.77
DHW (3 yr) = 24.75
DHW (MA) = 24.42

STORMWATER MANAGEMENT FACILITY 5
TOB EL. = 32.00 (0.40 Ac.)
WEIR EL. = N/A
NWL EL. = 28.00 (0.23 Ac.)
BOT EL. = 20.00 (0.01 Ac.)
DHW (25 yr) = 30.58
DHW (3 yr) = 29.72
DHW (MA) = 29.52

EX. 30" CMP

NODE N017

EX. 30" RCP UNDER RR

PROPOSED STATE ROAD No. 23
(FIRST COAST OUTER BELTWAY)
(PER FLORIDA DEPARTMENT RIGHT OF WAY MAP SECTION No. 71493)

25' TEMPORARY CONSTRUCTION EASEMENT O.R.B. 3192, PG. 37

GAS EASEMENT O.R.B. 3192 PG. 37

PROPOSED S/J L.A.R.W.

PLANS PREPARED UNDER THE DIRECTION OF:

SCOTT A. WILD, P.E.
P.E. NUMBER: 47030

REVISIONS:

ETM NO. 11-070-02
DRAWN BY: MKJ
DESIGNED BY: SAW
CHECKED BY: SAW
DATE: JUNE, 2015

England-Thims & Miller, Inc.
14775 Old St. Augustine Road
Jacksonville, FL 32258
TEL: (904) 642-8990
FAX: (904) 646-9485
CA - 00002584 LC - 0000316

ETM
VISION * EXPERIENCE * RESULTS

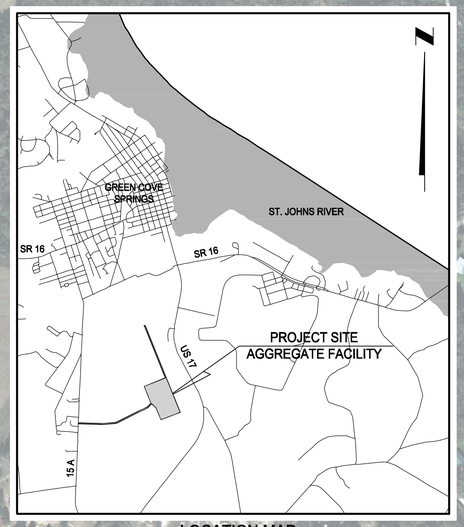
POST DEVELOPMENT DRAINAGE PLAN

AGGREGATE FACILITY
FOR
GUSTAFSON'S CATTLE, INC.

DRAWING NUMBER
4

PLOTTED: December 10, 2015 - 3:46 PM, BY: Kevin Jo

C:\11-070\11-070-02\Design\Plots\11-070-02 Post.dwg



LOCATION MAP

N.T.S.

GRAPHIC SCALE

0 150 300 600

OWNER/ DEVELOPER:	GUSTAFSON'S CATTLE, INC. P.O. BOX 600337 JACKSONVILLE, FLORIDA 32260
ENGINEER:	ENGLAND–THIMS & MILLER, INC. 14775 OLD ST. AUGUSTINE ROAD JACKSONVILLE, FLORIDA 32258 (904)642–8990
LANDSCAPE ARCHITECT:	ENGLAND–THIMS & MILLER, INC. 14775 OLD ST. AUGUSTINE ROAD JACKSONVILLE, FLORIDA 32258 (904)642–8990
SURVEYOR:	ROBERT M. ANGAS ASSOCIATES, INC. 14775 OLD ST. AUGUSTINE ROAD JACKSONVILLE, FLORIDA 32258 (904)642–8550

PROPOSED RAIL SPUR

CR 15A

SMF3

PROPOSED 4,800± L.F. ENTRANCE DRIVEWAY

SMF4

SMF5

SMF2

FUTURE ASPHALT FACILITY

SCALE HOUSE

PROPOSED AGGREGATE FACILITY

PROPOSED RAIL SPUR

SMF1

C S X R A I L R O A D (FORMERLY ATLANTIC COASTLINE RAILROAD) (100' R/W)

PROPOSED R/W LINE

PROPOSED R/W LINE

PROPOSED R/W LINE

FDOT POND SITE

PROPOSED N.ly L.A.R.W.

PROPOSED STATE ROAD No. 23 (FIRST COAST OUTER BELTWAY) (PER FLORIDA DEPARTMENT RIGHT OF WAY MAP SECTION No. 71493)

25' TEMPORARY CONSTRUCTION EASEMENT O.R.B. 3192, PG. 37

50' GAS EASEMENT O.R.B. 3192, PG. 37

FIRST COAST OUTER BELTWAY R/W

PROPOSED S.ly L.A.R.W.

PROPOSED S.ly L.A.R.W.

PLANS PREPARED UNDER THE DIRECTION OF:

SCOTT A. WILD, P.E.
P.E. NUMBER: 47030

PLOTTED: December 10, 2015 – 3:47 PM, BY: Kevin Jones

REVISIONS:

ETM NO. 11-070-02

DRAWN BY: MKJ

DESIGNED BY: SAW

CHECKED BY: SAW

DATE: JUNE, 2015

England-Thims & Miller, Inc.
14775 Old St. Augustine Road
Jacksonville, FL 32258
TEL: (904) 642-8990
FAX: (904) 646-9485
CA - 00002584 LC - 0000316

ETM
VISION • EXPERIENCE • RESULTS

MASTER SITE PLAN

AGGREGATE FACILITY FOR GUSTAFSON'S CATTLE, INC.

DRAWING NUMBER

5

C:\11-070\11-070-02\Design\Plots\11-070-02 MSP.dwg

Sections of offsite sidewalk are proposed along CR15 running in sections north from the site. This sidewalk crosses existing tie in points for offsite flow to get into the existing swale system along CR15. For sections where sidewalk is proposed there are 2 crossings where 12”x18” elliptical pipes are proposed, Crossings 1 and 2 from the exhibit below. The worst-case flow is analyzed to show that proposed same size crossings at each sidewalk point will be able to handle the flow without overtopping the proposed sidewalk. This is for offsite flow coming to the Right of Way and will travel under the proposed sidewalk not the combined flow that is running N/S in the CR 15 Right of Way. These are placed at existing ditches and do not negatively affect any offsite areas. Future sidewalk may be built along CR15, outside of what the current plans propose, at a later date and those crossings and sidewalk designs will be done by others.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

NORTH

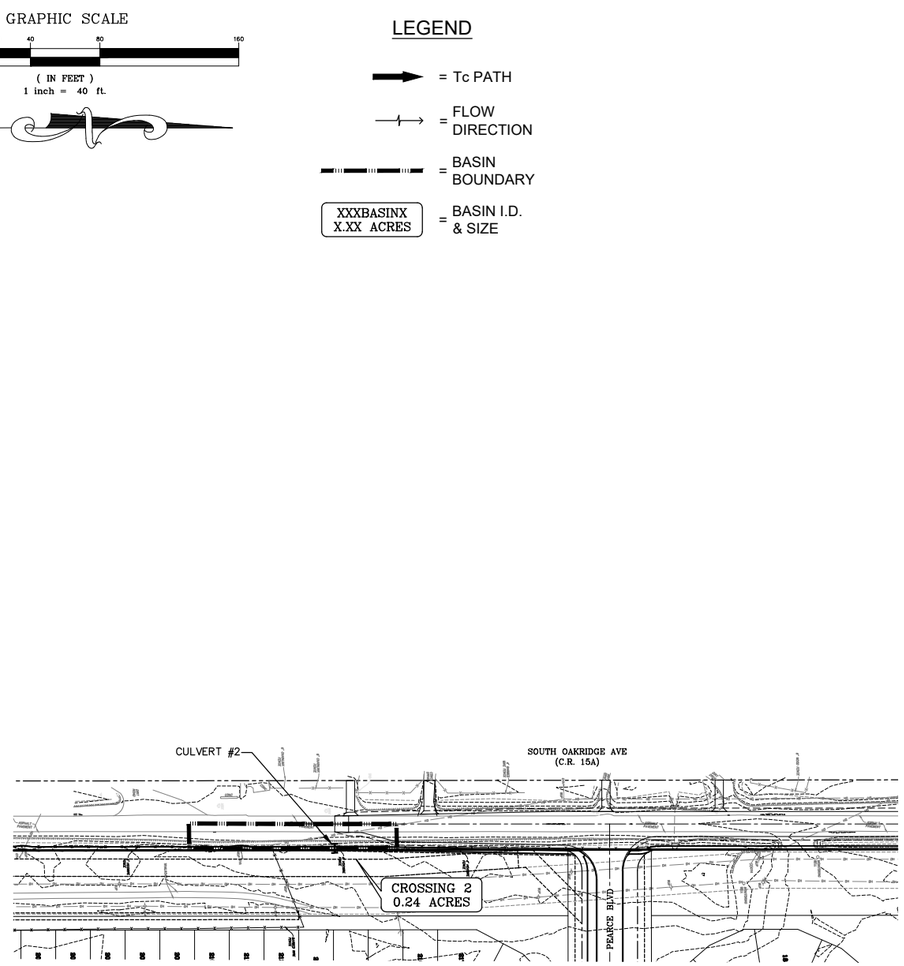
LEGEND

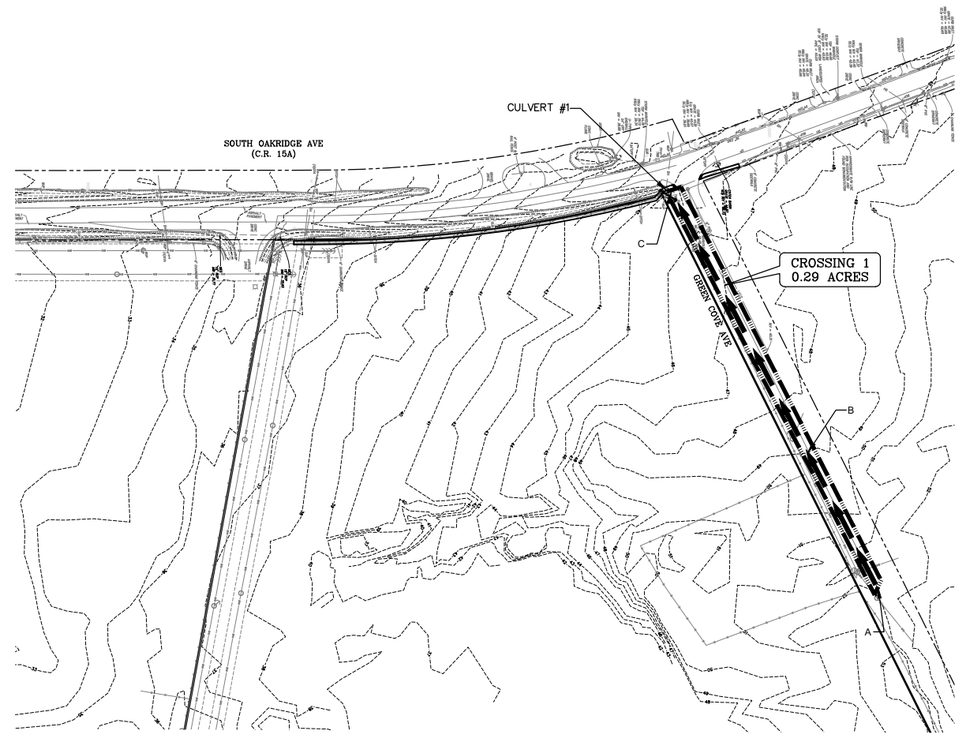
= Tc PATH

= FLOW DIRECTION

= BASIN BOUNDARY

XXXBASINX
X.XX ACRES = BASIN I.D. & SIZE





P:\2008-499 AYRSHIRE\EXHIBITS\499 OFFSITE SIDEWALK CULVERT DIVIDES.DWG 5/11/2022 11:43 AM Mike Reilly

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
–	–	–	–

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 100'
DATE:	5/11/2022
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1
FOR:
D.R. HORTON, INC. – JACKSONVILLE
CLAY COUNTY, FLORIDA
OFFSITE SIDEWALK CULVERT DIVIDES

VINCENT J. DUNN ENGINEER NO. 39452
DAVID M. TAYLOR ENGINEER NO. 44164
GLEN R. WIEGER ENGINEER NO. 81419

Sheet No. 1 of 1

OSC-1
DWG. NO.

THE ROOKERY – PHASE 1

NOT RELEASED FOR CONSTRUCTION

Project Name: The Rookery **DAI Project #:** 2008-499
Client: DR Horton, Inc. - Jacksonville **Engineer:** GRW
Date: 5/11/22

SIDEWALK CROSSING CULVERT SIZING

Crossing 1

Time of Concentration Calculation (Tc)

SHEET FLOW				Tt=(0.007(nL)^0.8 / P^0.5 S^0.4)*60				
Tt Path	Surf. Desc.	Length (ft)	Up Stream	Dn Stream	Slope(ft/ft)	n	P	Tt(min)
AB	Woods	220	52.0	49	0.0136	0.4	5.04	37.5
SHALLOW CONCENTRATED FLOW							Tt=L / V*60	
Tt Path	Surf. Desc	Length (ft)	Up Stream	Dn Stream	Slope(ft/ft)	Velocity(fps)		
BC	Woods	420	49	43.0	0.0143	1.9	Tc=	3.6 Min
							USE	42.0 Min

Rational Method Calculation (Q= cIA)

Total Basin Area (A)	0.29	acres	
Impervious	0.12	acres	(C = 0.95)
Open Space	0.17	acres	(C = 0.2)
Runoff Coefficient (C) =	0.51		
Rainfall Intensity (I) =	145/(Tc+20)^0.93		
Rainfall Intensity (I) =	3.12	in/hr	
Q =	0.46	cfs	

Crossing 2

Time of Concentration (Tc) is conservatively assumed t0 be 10 mins for this basin

Rational Method Calculation (Q= cIA)

Total Basin Area (A)	0.24	acres	
Impervious	0.14	acres	(C = 0.95)
Open Space	0.10	acres	(C = 0.2)
Runoff Coefficient (C) =	0.64		
Rainfall Intensity (I) =	145/(Tc+20)^0.93		
Rainfall Intensity (I) =	6.13	in/hr	
Q =	0.94	cfs	

CR 15 Sidewalk

Culverts

CIVIL TOOLS PRO
English Units
05-11-2022 11:29:51

Data Entered

Diameter	=	12.00 in
Length	=	40.00 ft
Manning's N	=	0.012
Ent+Exit Coefficients	=	0.600
Inlet Control Coefficients	=	1.200
Invert Elevation Out	=	33.30 ft
Invert Elevation In	=	33.40 ft
Tailwater Elevation	=	34.00 ft
Elevation Increment	=	0.10 ft

Results

Headwater (ft)	Control	Flow (cfs)
34.40	OC	1.54
34.50	OC	2.18
34.60	OC	2.67
34.70	OC	3.09
34.80	OC	3.45
34.90	OC	3.78
35.00	OC	4.08
35.10	OC	4.37
35.20	OC	4.63
35.30	OC	4.88
35.40	OC	5.12
35.50	OC	5.35
35.60	OC	5.57
35.70	OC	5.78
35.80	OC	5.98

FL-DOT Report

Line No	To Line	Type of struc	n - Value	Len	Drainage Area			Time of conc	Time of Flow in sect	Inten (I)	Total CA	Add Q	Inlet elev	Elev of HGL			Rise	HGL	ADD		Date: 4/25/2022
					C1 = 0.2 C2 = 0.5 C3 = 0.9							Total Flow		Elev of Crown			Span	Pipe	Full Flow		Frequency: 5 yrs
														Elev of Invert							Proj: Rookery Phase 1 Sto
					Increment (ac)	Sub-Total (ac)	Sum CA					Q		Up	Down	Fall	Size	Slope	Vel	Cap	
				(ft)				(min)	(min)	(in/hr)		(cfs)	(ft)	(ft)	(ft)	(ft)	(in)	(%)	(ft/s)	(cfs)	Line description
30	29	Comb	0.013	32.854	0.00	0.00	0.00	10.00	0.72	6.25	0.15	0.00	34.17	32.32	32.31	0.00	15	0.01	0.79	0.94	S-56 - S-57
					0.30	0.30	0.15					0.94		32.45	32.35		15	0.30	2.90	3.56	
					0.00	0.00	0.00							31.20	31.10	0.10	Cir				
29	28	Comb	0.013	152.119	0.00	0.00	0.00	10.72	0.89	6.13	0.57	0.00	34.17	32.19	31.79	0.40	15	0.26	3.06	3.46	S-57 - S-58
					0.83	1.13	0.57					3.46		32.35	31.95		15	0.26	2.70	3.31	
					0.00	0.00	0.00							31.10	30.70	0.40	Cir				
28	End	MH	0.013	81.501	0.01	0.01	0.00	11.60	0.49	6.00	0.57	0.00	34.70	31.08	30.85	0.23	15	0.28	2.77	3.40	S-58 - S-59
					0.00	1.13	0.57					3.40		29.25	29.00		15	0.31	2.91	3.58	
					0.00	0.00	0.00							28.00	27.75	0.25	Cir				
---	---																				
27	24	Comb	0.013	39.503	0.00	0.00	0.00	10.00	0.81	6.25	0.16	0.00	33.25	31.15	31.14	0.01	15	0.02	0.81	1.00	S-53C - S-53D
					0.32	0.32	0.16					1.00		30.95	30.85		15	0.25	2.65	3.25	
					0.00	0.00	0.00							29.70	29.60	0.10	Cir				
---	---																				
26	25	Comb	0.013	44.287	0.00	0.00	0.00	10.00	0.34	6.25	0.43	0.00	33.25	31.53	31.46	0.07	15	0.17	2.16	2.65	S-53A - S-53B
					0.85	0.85	0.43					2.65		31.30	31.20		15	0.23	2.50	3.07	
					0.00	0.00	0.00							30.05	29.95	0.10	Cir				
25	24	Comb	0.013	52.542	0.00	0.00	0.00	10.34	0.31	6.19	0.82	0.00	33.25	31.27	31.14	0.12	18	0.23	2.86	5.05	S-53B - S-53D
					0.78	1.63	0.82					5.05		31.20	31.10		18	0.19	2.59	4.58	
					0.00	0.00	0.00							29.70	29.60	0.10	Cir				
24	End	Comb	0.013	167.236	0.00	0.00	0.00	10.81	1.20	6.12	1.19	0.00	33.25	31.02	30.85	0.17	24	0.10	2.31	7.25	S-53D - S-53
					0.42	2.37	1.19					7.25		30.85	30.60		24	0.15	2.78	8.74	
					0.00	0.00	0.00							28.85	28.60	0.25	Cir				
---	---																				
23	22	Comb	0.013	28.115	0.00	0.00	0.00	10.00	0.17	6.25	0.54	0.00	33.44	31.49	31.42	0.08	15	0.27	2.72	3.34	S-43 - S-44
					1.07	1.07	0.54					3.34		30.50	30.40		15	0.36	3.14	3.85	
					0.00	0.00	0.00							29.25	29.15	0.10	Cir				
22	21	Comb	0.013	65.042	0.00	0.00	0.00	10.17	0.36	6.22	0.85	0.00	33.44	31.35	31.18	0.16	18	0.25	2.99	5.29	S-44 - S-45
					0.63	1.70	0.85					5.29		30.40	30.25		18	0.23	2.85	5.04	
					0.00	0.00	0.00							28.90	28.75	0.15	Cir				
21	End	MH	0.013	114.421	0.01	0.01	0.00	10.53	0.64	6.16	0.85	0.00	34.50	31.14	30.85	0.29	18	0.25	2.97	5.25	S-45 - S-46
					0.00	1.70	0.85					5.25		30.25	30.00		18	0.22	2.78	4.91	
					0.00	0.00	0.00							28.75	28.50	0.25	Cir				
---	---																				

NOTES: Intensity = 125.14 / (Inlet time + 22.80) ^ 0.86 (in/hr) ; Time of flow in section is based on full flow.

Project File: Rookery Phase 1 Storm Sewers.stm

FL-DOT Report

Line No	To Line	Type of struc	n - Value	Len	Drainage Area			Time of conc	Time of Flow in sect	Inten (I)	Total CA	Add Q	Inlet elev	Elev of HGL			Rise	HGL	ADD		Date: 4/25/2022
					C1 = 0.2 C2 = 0.5 C3 = 0.9							Total Flow		Elev of Crown			Span	Pipe	Full Flow		Frequency: 5 yrs
														Elev of Invert							Proj: Rookery Phase 1 Sto
					Increment (ac)	Sub-Total (ac)	Sum CA					Q		Up	Down	Fall	Size	Slope	Vel	Cap	
				(ft)				(min)	(min)	(in/hr)		(cfs)	(ft)	(ft)	(ft)	(ft)	(in)	(%)	(ft/s)	(cfs)	Line description
20	19	Comb	0.013	29.888	0.00	0.00	0.00	10.00	0.10	6.25	0.97	0.00	34.34	33.54	33.28	0.26	15	0.88	4.94	6.06	S-39 - S-40
					1.94	1.94	0.97					6.06		32.80	32.70		15	0.33	3.04	3.74	
					0.00	0.00	0.00							31.55	31.45	0.10	Cir				
19	End	Comb	0.013	152.245	0.00	0.00	0.00	10.10	0.42	6.23	1.20	0.00	34.34	32.89	30.85	2.04	15	1.34	6.09	7.48	S-40 - S-41
					0.46	2.40	1.20					7.48		29.50	29.00		15	0.33	3.02	3.70	
					0.00	0.00	0.00							28.25	27.75	0.50	Cir				
---	---																				
18	17	Comb	0.013	39.510	0.00	0.00	0.00	10.00	0.53	6.25	0.25	0.00	35.39	32.94	32.91	0.03	15	0.07	1.78	1.53	S-31 - S-32
					0.49	0.49	0.25					1.53		33.40	33.30		15	0.25	2.65	3.25	
					0.00	0.00	0.00							32.15	32.05	0.10	Cir				
17	16	Comb	0.013	200.026	0.00	0.00	0.00	10.53	1.96	6.16	0.49	0.00	35.39	32.77	32.60	0.17	18	0.08	2.11	2.99	S-32 - S-33
					0.48	0.97	0.49					2.99		33.30	32.70		18	0.30	3.25	5.75	
					0.00	0.00	0.00							31.80	31.20	0.60	Cir				
16	12	MH	0.013	184.206	0.01	0.01	0.00	12.49	1.86	5.87	0.49	0.00	37.40	32.60	32.47	0.12	18	0.07	1.64	2.86	S-33 - S-34
					0.00	0.97	0.49					2.86		32.70	32.15		18	0.30	3.25	5.74	
					0.00	0.00	0.00							31.20	30.65	0.55	Cir				
---	---																				
15	14	Comb	0.013	31.098	0.00	0.00	0.00	10.00	0.12	6.25	0.82	0.00	35.64	34.66	34.46	0.20	15	0.63	4.17	5.12	S-28 - S-29
					1.64	1.64	0.82					5.12		34.25	34.15		15	0.32	2.98	3.66	
					0.00	0.00	0.00							33.00	32.90	0.10	Cir				
14	13	Comb	0.013	196.486	0.00	0.00	0.00	10.12	0.99	6.23	1.67	0.00	35.64	34.33	33.91	0.42	24	0.21	3.31	10.40	S-29 - S-30
					1.70	3.34	1.67					10.40		34.15	33.75		24	0.20	3.25	10.21	
					0.00	0.00	0.00							32.15	31.75	0.40	Cir				
13	12	Comb	0.013	40.522	0.00	0.00	0.00	11.12	0.18	6.07	1.92	0.00	35.76	33.81	33.70	0.11	24	0.27	3.71	11.65	S-30 - S-34
					0.50	3.84	1.92					11.65		33.75	33.70		24	0.12	2.53	7.94	
					0.00	0.00	0.00							31.75	31.70	0.05	Cir				
12	11	Comb	0.013	176.490	0.00	0.01	0.00	14.34	0.93	5.61	2.66	0.00	35.76	32.26	32.02	0.23	30	0.13	3.04	14.91	S-34 - S-35
					0.50	5.31	2.66					14.91		32.15	31.90		30	0.14	3.14	15.44	
					0.00	0.00	0.00							29.65	29.40	0.25	Cir				
11	10	Comb	0.013	27.908	0.00	0.01	0.00	15.28	0.11	5.49	3.56	0.00	34.34	31.90	31.85	0.05	30	0.18	3.98	19.55	S-35 - S-36
					1.80	7.11	3.56					19.55		31.90	31.85		30	0.18	3.54	17.36	
					0.00	0.00	0.00							29.40	29.35	0.05	Cir				

NOTES: Intensity = 125.14 / (Inlet time + 22.80) ^ 0.86 (in/hr) ; Time of flow in section is based on full flow.

Project File: Rookery Phase 1 stm

FL-DOT Report

Item #17.

Line No	To Line	Type of struc	n - Value	Len	Drainage Area			Time of conc	Time of Flow in sect	Inten (I)	Total CA	Add Q	Inlet elev	Elev of HGL			Rise	HGL	ADD		Date: 4/25/2022
					C1 = 0.2 C2 = 0.5 C3 = 0.9							Total Flow		Elev of Crown			Span	Pipe	Full Flow		Frequency: 5 yrs
														Elev of Invert							Proj: Rookery Phase 1 Sto
					Increment (ac)	Sub-Total (ac)	Sum CA					Q		Up	Down	Fall	Size	Slope	Vel	Cap	
				(ft)				(min)	(min)	(in/hr)		(cfs)	(ft)	(ft)	(ft)	(ft)	(in)	(%)	(ft/s)	(cfs)	Line description
10	9	Comb	0.013	136.500	0.00	0.01	0.00	15.39	0.51	5.48	3.86	0.00	34.34	31.35	31.03	0.32	30	0.23	4.88	21.14	S-36 - S-37
					0.60	7.71	3.86					21.14		31.85	31.40		30	0.33	4.80	23.55	
					0.00	0.00	0.00							29.35	28.90	0.45	Cir				
9	End	MH	0.013	19.039	0.01	0.02	0.00	15.91	0.07	5.42	3.86	0.00	33.90	30.90	30.85	0.05	30	0.26	4.26	20.91	S-37 - S-38
					0.00	7.71	3.86					20.91		29.10	29.00		30	0.53	6.06	29.72	
					0.00	0.00	0.00							26.60	26.50	0.10	Cir				
---	---																				
8	End	Genr	0.013	32.796	0.00	0.00	0.00	10.00	0.18	6.25	1.50	0.00	33.10	30.92	30.86	0.06	24	0.17	2.98	9.37	S-24 - S-25
					3.00	3.00	1.50					9.37		29.10	29.00		24	0.30	3.98	12.49	
					0.00	0.00	0.00							27.10	27.00	0.10	Cir				
---	---																				
7	End	Comb	0.013	32.890	0.00	0.00	0.00	10.00	0.86	6.25	0.13	0.00	33.29	30.86	30.86	0.00	15	0.01	0.64	0.78	S-19 - S-20
					0.25	0.25	0.13					0.78		30.25	30.15		15	0.30	2.90	3.56	
					0.00	0.00	0.00							29.00	28.90	0.10	Cir				
---	---																				
6	End	Comb	0.013	39.827	0.00	0.00	0.00	10.00	1.37	6.25	0.10	0.00	33.93	30.86	30.86	0.00	15	0.01	0.66	0.59	S-16 - S-17
					0.19	0.19	0.10					0.59		31.30	31.20		15	0.25	2.64	3.24	
					0.00	0.00	0.00							30.05	29.95	0.10	Cir				
---	---																				
5	End	Comb	0.013	41.978	0.00	0.00	0.00	10.00	0.42	6.25	0.33	0.00	34.57	32.04	31.77	0.27	15	0.65	3.24	2.06	S-9 - S-12
					0.66	0.66	0.33					2.06		32.55	32.45		15	0.24	2.57	3.15	
					0.00	0.00	0.00							31.30	31.20	0.10	Cir				
---	---																				
4	3	Comb	0.013	27.899	0.00	0.00	0.00	10.00	0.10	6.25	0.95	0.00	34.96	34.38	34.15	0.23	15	0.84	4.81	5.90	S-10 - S-11
					1.89	1.89	0.95					5.90		32.95	32.85		15	0.36	3.15	3.87	
					0.00	0.00	0.00							31.70	31.60	0.10	Cir				
3	End	Comb	0.013	357.691	0.00	0.00	0.00	10.10	1.39	6.23	2.17	0.00	34.96	33.72	31.72	2.00	24	0.56	5.22	13.52	S-11 - S-12
					2.45	4.34	2.17					13.52		32.85	32.40		24	0.13	2.55	8.02	
					0.00	0.00	0.00							30.85	30.40	0.45	Cir				
---	---																				
2	1	Comb	0.013	31.573	0.00	0.00	0.00	10.00	0.10	6.25	1.04	0.00	33.44	31.87	31.55	0.32	15	1.01	5.29	6.50	S-1 - S-2
					2.08	2.08	1.04					6.50		31.65	31.55		15	0.32	2.96	3.63	
					0.00	0.00	0.00							30.40	30.30	0.10	Cir				
1	End	Comb	0.013	155.341	0.00	0.00	0.00	10.10	0.84	6.23	1.57	0.00	33.44	31.15	30.86	0.29	24	0.19	3.10	9.75	S-2 - S-3
					1.05	3.13	1.57					9.75		29.50	29.00		24	0.32	4.08	12.83	
					0.00	0.00	0.00							27.50	27.00	0.50	Cir				

NOTES: Intensity = 125.14 / (Inlet time + 22.80) ^ 0.86 (in/hr) ; Time of flow in section is based on full flow.

Project File: Rookery Phase [illegible]stm

Item #17.

FL-DOT Report

Line No	To Line	Type of struc	n - Value	Len (ft)	Drainage Area C1 = 0.2 C2 = 0.5 C3 = 0.9 Increment (ac)	Drainage Area Sub-Total (ac)	Drainage Area Sum CA	Time of conc (min)	Time of Flow in sect (min)	Inten (I) (in/hr)	Total CA	Add Q Total Flow Q (cfs)	Inlet elev (ft)	Elev of HGL / Elev of Crown / Elev of Invert Up (ft)	Down (ft)	Fall (ft)	Rise / Span Size (in)	HGL / Pipe Slope (%)	ADD / Full Flow Vel (ft/s)	Cap (cfs)	Date: 10/24/2022 / Frequency: 5 yrs / Proj: Rookery Phase 1 Ame — Line description
11	9	MH	0.012	63.000	0.00	0.00	0.00	10.00	2.58	6.25	0.08	0.00	33.20	31.91	31.91	0.00	15	0.01	0.41	0.50	S-24A - S-24C
					0.16	0.16	0.08					0.50		31.20	31.05		15	0.23	2.74	3.37	
					0.00	0.00	0.00							29.95	29.80	0.15	Cir				
---	---																				
10	9	MH	0.012	46.001	0.65	0.65	0.13	10.00	1.16	6.25	0.13	0.00	33.20	31.92	31.91	0.01	15	0.01	0.66	0.81	S-24B - S-24C
					0.00	0.00	0.00					0.81		31.20	31.05		15	0.33	3.28	4.02	
					0.00	0.00	0.00							29.95	29.80	0.15	Cir				
9	8	Genr	0.012	60.000	0.00	0.65	0.13	12.58	0.56	5.85	0.35	0.00	33.20	31.84	31.79	0.05	15	0.09	1.69	2.07	S-24C - S-24D
					0.00	0.16	0.08					2.07		31.05	30.90		15	0.24	2.79	3.43	
					0.16	0.16	0.14							29.80	29.65	0.14	Cir				
8	7	Genr	0.012	61.654	0.00	0.65	0.13	13.14	0.41	5.77	0.50	0.00	33.20	31.74	31.63	0.10	15	0.17	2.34	2.88	S-24D - S-24E
					0.00	0.16	0.08					2.88		30.90	30.75		15	0.25	2.84	3.49	
					0.16	0.32	0.29							29.65	29.50	0.15	Cir				
7	1	MH	0.012	106.001	0.00	0.65	0.13	13.55	0.58	5.72	0.62	0.00	33.20	31.57	31.30	0.27	15	0.26	2.90	3.56	S-24E - S-24
					0.25	0.41	0.21					3.56		30.75	30.50		15	0.24	2.78	3.41	
					0.00	0.32	0.29							29.50	29.25	0.25	Cir				
---	---																				
6	5	MH	0.012	65.431	0.20	0.20	0.04	10.00	5.36	6.25	0.04	0.00	33.20	31.81	31.81	0.00	15	0.00	0.20	0.25	S-24F - S-24G
					0.00	0.00	0.00					0.25		31.20	31.05		15	0.23	2.74	3.36	
					0.00	0.00	0.00							29.95	29.80	0.15	Cir				
5	4	Genr	0.012	60.000	0.00	0.20	0.04	15.36	0.94	5.49	0.21	0.00	33.20	31.80	31.79	0.02	15	0.03	0.94	1.16	S-24G - S-24H
					0.00	0.00	0.00					1.16		31.05	30.90		15	0.25	2.85	3.50	
					0.19	0.19	0.17							29.80	29.65	0.15	Cir				
4	3	Genr	0.012	43.500	0.00	0.20	0.04	16.30	0.38	5.37	0.38	0.00	33.20	31.77	31.73	0.04	15	0.09	1.67	2.05	S-24H - S-24I
					0.00	0.00	0.00					2.05		30.90	30.75		15	0.34	3.31	4.07	
					0.19	0.38	0.34							29.65	29.50	0.15	Cir				
3	2	MH	0.012	119.509	0.26	0.46	0.09	16.68	0.93	5.33	0.43	0.00	33.20	31.72	31.59	0.13	15	0.11	1.88	2.31	S-24I - S-24J
					0.00	0.00	0.00					2.31		30.75	30.45		15	0.25	2.85	3.50	
					0.00	0.38	0.34							29.50	29.20	0.30	Cir				
2	1	MH	0.012	162.022	0.31	0.77	0.15	17.61	1.12	5.22	0.50	0.00	33.20	31.52	31.30	0.22	15	0.14	2.11	2.59	S-24J - S-24
					0.00	0.00	0.00					2.59		30.45	30.05		15	0.25	2.85	3.49	
					0.00	0.38	0.34							29.20	28.80	0.40	Cir				

NOTES: Intensity = 125.14 / (Inlet time + 22.80) ^ 0.86 (in/hr) ; Time of flow in section is based on full flow.

Project File: Rookery Ph stm

Item #17.

FL-DOT Report

Line No	To Line	Type of struc	n - Value	Len	Drainage Area			Time of conc	Time of Flow in sect	Inten (I)	Total CA	Add Q	Inlet elev	Elev of HGL			Rise	HGL	ADD		Date: 10/24/2022
					C1 = 0.2 C2 = 0.5 C3 = 0.9							Total Flow		Elev of Crown			Span	Pipe	Full Flow		Frequency: 5 yrs
					Increment (ac)	Sub-Total (ac)	Sum CA							Elev of Invert							Proj: Rookery Phase 1 Ame
				(ft)				(min)	(min)	(in/hr)		(cfs)	(ft)	Up (ft)	Down (ft)	Fall (ft)	Size (in)	Slope (%)	Vel (ft/s)	Cap (cfs)	Line description
1	End	Genr	0.012	42.497	0.45 0.00 0.00	1.87 0.41 0.70	0.37 0.21 0.63	18.73	0.18	5.10	1.21	0.00 6.17	33.20	31.01 29.50 28.00	30.89 29.00 27.50	0.12 0.50	18 18 Cir	0.29 1.17	3.49 6.98	6.17 12.33	S-24 - S-25

NOTES: Intensity = 125.14 / (Inlet time + 22.80) ^ 0.86 (in/hr) ; Time of flow in section is based on full flow.

Project File: Rookery Ph stm

From: Cammie Dewey <cdewey@sjrwmd.com>
Sent: Thursday, August 11, 2022 4:28 PM
To: Glen Wieger <gwieger@dunneng.com>
Cc: David Taylor <dtaylor@dunneng.com>; Vince Dunn <vdunn@dunneng.com>; Everett Frye <efrye@sjrwmd.com>; Amy Maxwell <amaxwell@sjrwmd.com>; Melissa Parsons <MParsons@sjrwmd.com>
Subject: RE: Loading Rates for Lower St Johns River

Glen,

I'm sorry for my delay. I wasn't able to connect with my counterparts in the SWFWMD and SFWMD to ask them about how their staff evaluates a proposed project design with multiple inter-connected wet ponds, all having the same NWL, and with one orifice control/outfall structure as quickly as I had hoped. If I am able to connect with them in the next 2-3 days I'll follow up with a summary of my findings.

I have read through the land use information. I understand that the land use has continued to remain agricultural. Since the cattle have been removed for a number of years, I think the most appropriate land use listed in BMPTrains to use for the ag areas would be Ag General, the Ag pasture would represent active livestock use of the land and based on our discussions – livestock have not utilized the area since the early 2000's. For the non-Ag areas, please use the appropriate Undeveloped land use based upon the vegetation, soils, and topography description found in the BMPTrains model.

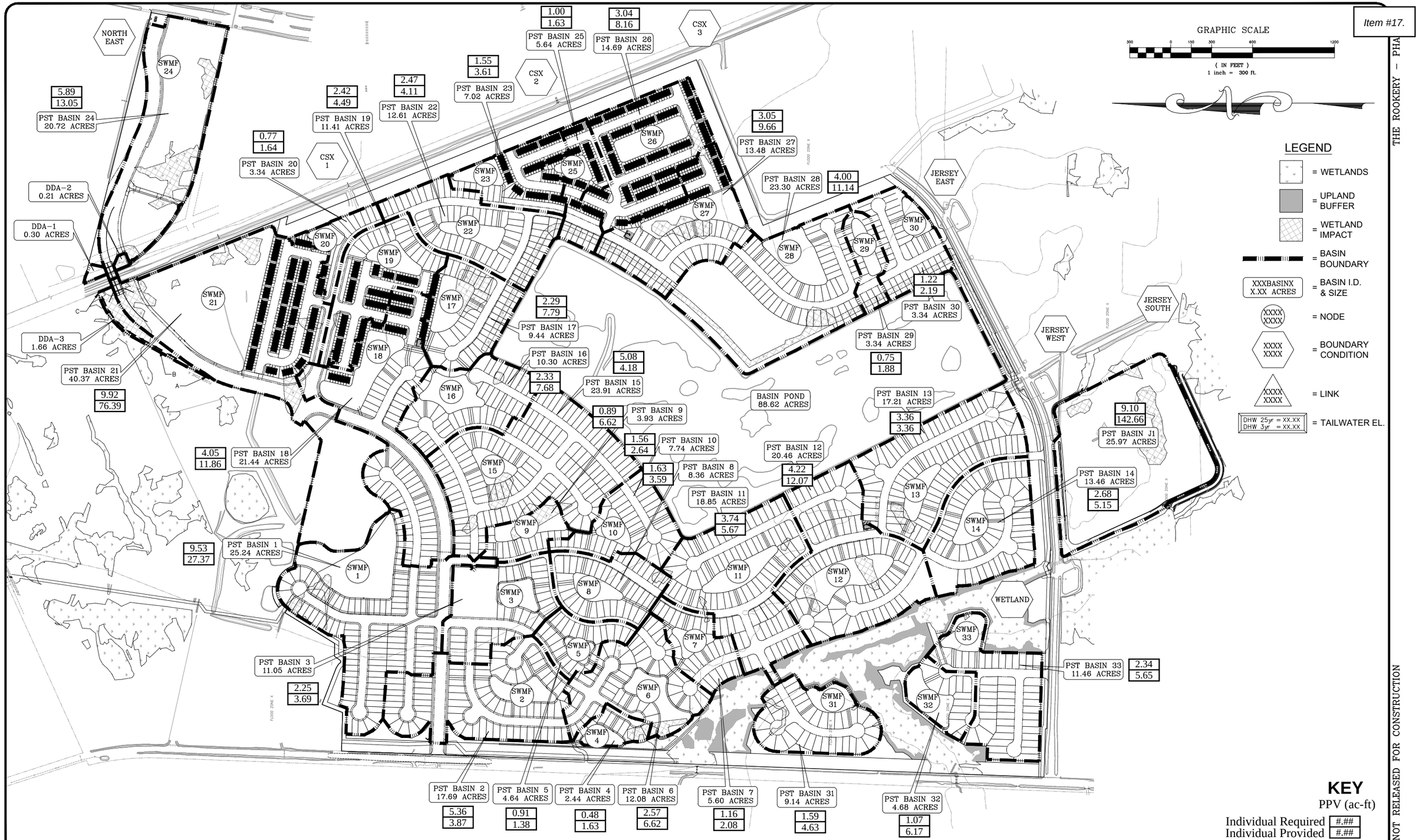
Based on your summary, to address the required treatment volume (RTV). My understanding from the Teams meeting was that the outfall from SWMF6 contained the control structure with the orifice. The required treatment volume is calculated between the orifice invert and the weir (assuming the NWL is at the orifice invert), so the RTV is estimated over all of the pond areas (ponds 1-6). Since the pond system is not cascading, the volume provided by the entire 6 pond system between the orifice invert and the weir can be used for the RTV for the combined basins 1-6. As we discussed the PPV provides the main treatment mechanism for a wet detention pond system. Based on your PPV numbers for the Phase 1, ponds 1-6 system, each pond provides for each immediate contributing basin required PPV. This system for Phase 1 is seems acceptable.

The larger development adds more weir discharge points, more ponds and moves the orifice location from the Phase 1 system. I agree, pond 15 is a little short on the required PPV, but 16 has excess when you combine the two basins/pond PPVs. Otherwise, like the Phase 1 design, the remaining basin for the entire development indicate adequate PPV is provided within each respective basin's wet pond.

The two other design features we discussed was: first, the placement of an orifice in the stormsewer collection/conveyance system and not being located in a dedicated outfall pipe system. When the orifice is located within a combined system, the stormwater runoff is short-circuited and can exit through the orifice and not enter the pond/PPV for treatment. Second, we also discussed flow paths from the inflow stormsewer pipe conveying water through the pond to an outflow pipe. Again to address short-circuiting.

Please let me know if you have any further questions. Have a nice evening.

Cammie



THE ROOKERY – PHASE 1

NOT RELEASED FOR CONSTRUCTION

P:\2008-499 AYRSHIRE\ENG PLANS\499 PRE-PST.DWG12/1/2022 4:14 PMGlen Wieger

REVISIONS			
NO.	DATE	DESCRIPTION	BY:
–	–	–	–

DESIGNED BY:	DAI
DRAWN BY:	MR/SM/SS/NS
CHECKED BY:	VJD
SCALE:	1" = 300'
DATE:	12/1/2022
PROJ. NO.:	2008-499

Dunn & Associates, Inc.
CIVIL ENGINEERS / LAND PLANNERS
8647 Baypine Road, Suite 200
Jacksonville, Florida 32256
Phone: (904)363-8916 Fax: (904)363-8917
www.dunneng.com

THE ROOKERY – PHASE 1
FOR:
D.R. HORTON, INC. – JACKSONVILLE
CLAY COUNTY, FLORIDA
PPV Exhibit - Full Buildout

VINCENT J. DUNN ENGINEER NO. 39452 | DAVID M. TAYLOR ENGINEER NO. 44164 | GLEN R. WIEGER ENGINEER NO. 81419

PPV-FB

ECS FLORIDA, LLC
"One Firm. One Mission."
Geotechnical • Construction Materials • Environmental • Facilities

April 6, 2022

Mr. John Gislason
DR Horton
4220 Race Track Road
St. Johns County, Florida 32259

ECS Project No. 35:31217-E

Reference: Report of Geotechnical Engineering Services
The Rookery Stormwater Ponds
Pearce Boulevard
Clay County, Florida

Dear Mr. Gislason:

As requested, ECS Florida, LLC (ECS) has completed the requested geotechnical engineering analyses of the stormwater management facilities for the above-referenced project. This letter presents the field testing performed, presents the data obtained, our evaluation of the drawdown of the groundwater level in the adjacent wetlands that could occur due to the pond construction, our evaluation of the groundwater baseflow into the ponds, and the groundwater baseflow into the underdrains. Note ECS previously performed geotechnical explorations for the subject site (ECS Report Nos. 35:30682, 35:30682-A, 35:31217, 35:31217-C). The results of our previous explorations were utilized herein.

Our services were provided in accordance with our Proposal No. 35:20184-GPR, which includes our Terms and Conditions of Service, dated February 8, 2023, as authorized by Mr. John Gislason on February 13, 2023 and Change Order No. 1, dated April 3, 2023.

FIELD EXPLORATION AND RESULTS

Our exploration procedures are explained in greater detail in Appendix B including the insert titled Subsurface Exploration Procedures. Our scope of work included drilling four Standard Penetration Test (SPT) borings and performing 30 field permeability tests. Our borings and permeability tests were located with a handheld GPS unit and their approximate locations are shown on the Field Exploration Diagram (Figure 2) in Appendix A. Our recent borings were extended deeper from previous borings from ESC Report Nos. 35:30682 and 35:30682-A and are presented in our borings logs in Appendix B.

We located and performed 30 field permeability tests adjacent to our previously performed boring locations within several proposed stormwater ponds. The field permeability tests were performed by installing a solid-walled, open-bottom PVC casing snugly fit into a 4-inch diameter, between 6 feet

and 30 feet deep auger boreholes. The solid-walled PVC casing was constructed with a 1.5-feet long section of PVC slotted screen, with 0.010-inch openings, attached to the bottom of the casing. The pipe was filled to the top with water. The tests were conducted as a "falling head" test in which the rate of water drop within the pipe was measured over a 24-hour period.

Relatively undisturbed Shelby tubes pushed horizontally below the ground surface were also collected and returned to our laboratory for permeability testing. The tube samples were collected on soils within the upper aquifer that were above the existing groundwater level at the time of our field exploration. The results of the permeability testing are presented in Table 1.

DRAWDOWN ANALYSES

Drawdown analyses were performed for Ponds SWMF No. 4, 6, 7, 12, 14, 21, 31, 32, 33, and J1 to estimate the potential drawdown of the groundwater level within the wetlands adjacent the proposed ponds that could occur as a result of the ponds' construction. The primary variables affecting drawdown are: (1) the difference between the wetland seasonal high groundwater table and the pond control elevation (i.e., NWL), (2) the hydraulic conductivity of the soil, and (3) the size and geometry of the pond.

Stormwater Ponds SWMF No. 4, 6, 7, 12, 14, 21, 31, 32, 33

To simulate the pond conditions for Ponds SWMF No. 4, 6, 7, 12, 14, 21, 31, 32, 33, design parameters estimated from the subsurface soil information and the results of the field and laboratory permeability tests were used in the computer program "PONDS, Version 3.3" which utilizes the "MODFLOW" program to conduct background seepage analyses. The program model can be used to simulate actual loading conditions and predict the resultant drawdown and background water seepage during a specific time period.

The input parameters for this project included normal seasonal high groundwater levels at the wetland locations, and pond design NWL and pond dimensions as provided by Dunn & Associates, Inc. An estimated 1-foot seasonal water table fluctuation, a soil porosity of 25 percent, and a simulation period of 153 days (i.e., the length of wet season) were also used in our analyses. Average soil permeability values (horizontal hydraulic conductivity), calculated from results the laboratory permeability test for the ponds, were used for the surficial, unconfined aquifers (see Table 2 and the attached calculation sheet for pond-specific values). These values were used in the drawdown analyses modeled without the installation of a cut-off wall to determine the extent of the groundwater drawdown.

Stormwater Pond SWMF J1

To simulate the pond conditions of SWMF J1, design parameters estimated from the subsurface soil information and the results of the field and laboratory permeability tests were used in the computer program "Groundwater Modeling System (GMS), Version 10.6.6" which utilizes the "MODFLOW" program to conduct three-dimensional background seepage analysis. The program model can be used to simulate actual loading conditions and predict the resultant drawdown and background water seepage during a specific time period.

The input parameters for this project included the following:

- Pre-development estimated seasonal high groundwater levels established from the topographic information and wetland boundaries provided by Dunn & Associates, Inc. Boundary condition seasonal high groundwater levels were estimated using a combination of provided LIDAR data and the USDA Web Soil Survey. The seasonal high groundwater levels between our test locations and boundary conditions were estimated using interpolation tools within GMS.

- Pre-development and post-development ground surface topography was input for on-site grades using LIDAR data and proposed grading information provided by Dunn & Associates, Inc.

- The design NWL at the pond location. This parameter was also modeled using the Time Variant Specified Head (CHD) package, as it allows groundwater to be removed from the specified cells at the specified elevation.

- Pond design dimensions as provided by Dunn & Associates, Inc. The pond dimensions were modeled in a three-dimensional grid that has a total size of 3,400 feet x 3,200 feet x 58 feet. The grid was subdivided into cells with sizes varying between 25 feet and 100 feet. The grid refinement was focused on the pond areas. The pond geometry was modeled by assigning a high permeability soil value to the pond area.

- An estimated 1-foot seasonal water table fluctuation. This was modeled utilizing the Recharge (RCH) package. The model recharge was set to simulate 1-foot of water table fluctuation across 153 days (i.e., the length of wet season) in a soil that exhibits a porosity of 25 percent.

- Soil permeability values (horizontal hydraulic conductivity), calculated from results the laboratory and field permeability tests for the pond, were used for the surficial, unconfined aquifers. These values were used in the drawdown analyses modeled without the installation of a cut-off wall to determine the extent of the groundwater drawdown.

Drawdown Analysis Results

Based on the results of our drawdown analysis, as presented in Table 1, it is our opinion that SWMF Nos. 7, 12, and 14 will not require cut-off walls to preclude impacts to the wetlands.

Also presented in Table 1, it is our opinion that SWMF Nos. 4, 6, 21, 31, 32, 33, and J1 will require a cut-off wall to preclude impacts to the wetlands. The cut-off walls should be constructed to the horizontal extents shown in Plates 1-8 and should be imbedded at least one foot into the restrictive layer. A recommended typical detail for cut-off wall construction is indicated on Plate 9. The estimated depths to the restrictive layers are presented on the table below.

Pond	Soil Boring	Depth of restrictive layer encountered in the boring (feet below existing ground surface)
SWMF No. 4	BB9	7
SWMF No. 6	B41	12
SWMF No. 21	PB1	6
SWMF No. 31	BB12	12
SWMF No. 32	BB14	10
SWMF No. 33	B36	4
SWMF J1	BB4	3

The recommended cut-off wall may be constructed of clayey soils compacted to obtain a permeability of $1x10^{-7}$ cm/sec or less, or 30-mil PVC or HDPE (or equivalent) material.

GROUNDWATER BASEFLOW INTO THE STORMWATER PONDS

Groundwater baseflow analyses were performed for SWMF No. 1 through SWMF No. 33 to estimate the amount of groundwater inflow to the stormwater ponds. The primary variables affecting drawdown are: (1) the difference between the seasonal high groundwater table and the pond control elevation (i.e., NWL), (2) the hydraulic conductivity of the soil, and (3) the size and geometry of the pond. To simulate the pond conditions, design parameters estimated from the subsurface soil information and the results of the field and laboratory permeability tests were used in the computer program "PONDS, Version 3.3" which utilizes the "MODFLOW" program to conduct background seepage analyses. The program model can be used to simulate actual loading conditions and estimate background water seepage during a specific time period.

The input parameters for this project included normal seasonal high groundwater levels adjacent to the ponds, pond design NWL, and pond dimensions as provided by Dunn & Associates, Inc. An estimated soil porosity of 25 percent, and a simulation period of 153 days (i.e., the length of wet season) were also used in our analyses. Average soil permeability values (horizontal hydraulic conductivity), calculated from results of the laboratory permeability tests for the ponds, were used for the surficial, unconfined aquifers (see Table 2). Note weighted permeability values of stormwater ponds where testing was not performed were estimated based on the results of nearby stormwater ponds. Average soil permeability values (horizontal hydraulic conductivity), calculated from results of the field permeability tests for the ponds and the standard permeability value of a cut-off wall, were used for the surficial, unconfined aquifers with a cut-off wall installed (see Table 3). These values were used in the baseflow analyses to estimate the rate of groundwater baseflow into the ponds during seasonal high groundwater conditions (see Table 4). Note, factors of safety were not applied to the calculated baseflow rates. We recommend an appropriate factor of safety be applied when designing the stormwater ponds.

The parameters and results of the baseflow analyses at the pond locations are presented in Table 4 (attached). Output sheets and Groundwater Baseflow curves generated by the "PONDS" program are also attached in Appendix A.

GROUNDWATER BASEFLOW INTO UNDERDRAINS

Based on the underdrain locations shown in the *Paving and Drainage Plans* prepared by Dun & Associates, Inc. dated December 12, 2022, as well as the results of our previously performed borings, we performed a groundwater baseflow analysis to determine the groundwater flow rate into the roadway underdrains.

To simulate the underdrain conditions, design parameters estimated from the subsurface soil information and the results of the field and laboratory permeability tests were used in the computer program "PONDS, Version 3.3" which utilizes the "MODFLOW" program to conduct background seepage analyses. The program model can be used to simulate actual loading conditions and predict the background water seepage during a specific time period. Note the simulations were performed utilizing a 500 foot long pond. Therefore, the calculated baseflow was divided by 500 feet to provide a flow rate per linear foot of underdrain. Based on these results, we estimate the groundwater flow rate into the following underdrain systems will be approximately as shown in the table below during seasonal high groundwater conditions. The results of our evaluation are included in Appendix A.

Roadway Name	Approximate Station	Estimated Groundwater Baseflow Per Linear Foot of Underdrain (gpm)
White Ibis Lane	13+50 to 15+50	0.009
White Ibis Lane	17+50 to 20+00	0.006
Lark Sparrow Street	3+00 to 6+25	0.014
Lark Sparrow Street	9+00 to 9+75	0.009
Audubon Avenue	15+50 to 16+50	0.009
Little Heron Place	3+00 to 9+75	0.014
Pearce Boulevard	62+25 to 65+00	0.013

Factors of safety were not applied to the calculated baseflow rates. We recommend an appropriate factor of safety be applied when designing the stormwater ponds.

CLOSURE

We appreciate this opportunity to be of service as your geotechnical consultant on this phase of the project. If you have any questions concerning this report, or if we may be of any further service, please contact us.

Respectfully Submitted,
ECS Florida, LLC

Christopher M. Egan, State of Florida Professional Engineer, License No. 79645
This item has been digitally signed and sealed by Christopher Egan on the date indicated here.
Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

2023.04.06 12:58:39-04'00'

Nathan D. Hildreth, E.I.
Geotechnical Project Manager
NHildreth@ecslimited.com

Chris M. Egan, P.E.
Associate Principal Engineer
Registered, Florida No. 79645
CEgan@ecslimited.com

TABLES

Table 1	Results of Drawdown Analyses
Table 2	Weighted Average Hydraulic Conductivity Calculation Sheet
Table 3	Weighted Average Hydraulic Conductivity With Cut-Off Walls
Table 4	Results of Baseflow Analyses

PLATES

Plates 1 - 6	Cut-Off Wall Location Plans
Plate 7	Pre-Development Groundwater Contours and Cut-Off Wall for SWMF J1
Plate 8	Post-Development Groundwater Contours and Cut-Off Wall for SWMF J1
Plate 9	Cut-Off Wall Detail Section

Appendix A – Drawings & Reports

Figure 1 - Site Location Diagram
Figure 2 - Field Exploration Diagram
Figure 3 - Generalized Subsurface Profiles

Appendix B – Field Operations

Reference Notes for Boring Logs
Subsurface Exploration Procedure: Standard Penetration Testing (SPT)
Boring Logs

Appendix C – PONDS Output

Drawdown and Baseflow Analyses
Underdrain Baseflow Analyses

TABLES

Table 1 Results of Drawdown Analyses
Table 2 Weighted Average Hydraulic Conductivity Calculation Sheet
Table 3 Weighted Average Hydraulic Conductivity With Cut-Off Walls
Table 4 Results of Baseflow Analyses

TABLE 1
RESULTS OF DRAWDOWN ANALYSES
The Rookery Phase 1
ECS Project No. 35:31217-E

Pond No.	Average Modeled Pond Dimension [L x W, ft]	Pond Design Normal Water Elevation[1] [ft]	Measured Horizontal Hydraulic Conductivities (k_h)				Wetland Information[1]			Distance From NWL to a Drawdown of 0.01 feet	
			Test Number	Test Depth[2] [ft]	[cm/s]	[ft/day]	Wetland Direction	Shortest Distance from Pond NWL to Wetland [ft]	Estimated Seasonal High Groundwater Elevation[3] [ft]	Modeled Without a Cut-off Wall[4]	Modeled With a Cut-off Wall[5]
SWMF 4	226 X 77	29.00	BB9 LAB	1	2.96E-03	8.378	East	172	32.00	436	22
			BB9 A	8.5 - 10	1.21E-06	0.003					
			BB9 B	18.5 - 20	9.37E-07	0.003	Southeast	167	33.00	468	24
			Weighted Average Surficial Aquifer[4]			1.096					
			Weighted Average with Cut of wall			0.002	South	236	34.00	495	25
SWMF 6	504 X 122	29.00	B41 LAB	1	1.70E-03	4.822	North	43	32.00	396	29
			B41 A	6.5 - 8	4.78E-06	0.014					
			B41 B	13.5 - 15	2.06E-06	0.006	South	42	33.00	420	31
			Weighted Average Surficial Aquifer[4]			0.587					
			Weighted Average with Cut of wall			0.003					
SWMF 7	270 X 80	29.00	B43 LAB	1	3.16E-04	0.897	West	311	31.00	135	NR[6]
			B43 A	7 - 8.5	1.68E-05	0.048					
			B43 B	13.5-15	1.38E-06	0.004					
			Weighted Average Surficial Aquifer[4]			0.095	Southwest	335	32.00	149	NR[6]
			Weighted Average with Cut of wall			0.012					

(1) Based on the Master Grading Plans provided by Dunn & Associates, Inc.
(2) Feet below existing grade.
(3) Estimated from the Master Grading Plans provided by Dunn & Associates, Inc.
(4) The Weighted Average of the Measured Horizontal Hydraulic Conductivities (k_h) was used for the surficial aquifer for each pond.
(5) Measured Horizontal Hydraulic Conductivity used for the pond model with a cut-off wall installed.
(6) NR Not Required, the Distance from NWL to Drawdown of 0.01 feet is less than the shortest distance from the pond NWL to Wetland.

TABLE 1
RESULTS OF DRAWDOWN ANALYSES
The Rookery Phase 1
ECS Project No. 35:31217-E

Pond No.	Average Modeled Pond Dimension [L x W, ft]	Pond Design Normal Water Elevation[1] [ft]	Measured Horizontal Hydraulic Conductivities (k_h)				Wetland Information[1]			Distance From NWL to a Drawdown of 0.01 feet	
			Test Number	Test Depth[2] [ft]	[cm/s]	[ft/day]	Wetland Direction	Shortest Distance from Pond NWL to Wetland [ft]	Estimated Seasonal High Groundwater Elevation[3] [ft]	Modeled Without a Cut-off Wall[4]	Modeled With a Cut-off Wall[5]
SWMF 12	624 X 159	29.00	BB13 LAB	1	1.84E-05	0.052	Northwest	272	31.00	58	NR[6]
			BB13 A	6.5-8	3.72E-06	0.011					
			BB13 B	18.5-20	2.60E-06	0.007	West	330	32.00	63	NR[6]
			Weighted Average Surficial Aquifer[4]			0.011					
			Weighted Average with Cut of wall			0.008	Southwest	335	30.00	45	NR[6]
SWMF 14	292 X 155	29.00	BB16 LAB	1	5.04E-05	0.143	West	324	31.00	103	NR[6]
			BB16 A	4.5-6	1.16E-06	0.003					
			BB16 B	18.5-20	9.23E-06	0.026	Southwest	371	32.00	112	NR[6]
			Weighted Average Surficial Aquifer[4]			0.030					
			Weighted Average with Cut of wall			0.018					
SWMF 21	991 X 546	24.00	PB1 LAB	1	4.91E-03	13.922	North	261	24.58	401	27
			PB1 A	4.5 - 6	2.60E-06	0.007					
			PB1 B	28.5 - 30	2.10E-06	0.006	Northwest	252	25.43	635	43
			Weighted Average Surficial Aquifer[4]			1.216	West	243	26.00	692	47
			Weighted Average with Cut of wall			0.005	South	195	27.00	763	51

(1) Based on the Master Grading Plans provided by Dunn & Associates, Inc.
(2) Feet below existing grade.
(3) Estimated from the Master Grading Plans provided by Dunn & Associates, Inc.
(4) The Weighted Average of the Measured Horizontal Hydraulic Conductivities (k_h) was used for the surficial aquifer for each pond.
(5) Measured Horizontal Hydraulic Conductivity used for the pond model with a cut-off wall installed.
(6) NR Not Required, the Distance from NWL to Drawdown of 0.01 feet is less than the shortest distance from the pond NWL to Wetland.

TABLE 1
RESULTS OF DRAWDOWN ANALYSES
The Rookery Phase 1
ECS Project No. 35:31217-E

Pond No.	Average Modeled Pond Dimension [L x W, ft]	Pond Design Normal Water Elevation[1] [ft]	Measured Horizontal Hydraulic Conductivities (k_h)				Wetland Information[1]			Distance From NWL to a Drawdown of 0.01 feet	
			Test Number	Test Depth[2] [ft]	[cm/s]	[ft/day]	Wetland Direction	Shortest Distance from Pond NWL to Wetland [ft]	Estimated Seasonal High Groundwater Elevation[3] [ft]	Modeled Without a Cut-off Wall[4]	Modeled With a Cut-off Wall[5]
SWMF 31	363 X 110	33.00	BB12 LAB	1	4.09E-04	1.159	South	33	34.00	410	31
			BB12 A	6.5-8	4.48E-04	1.271					
			BB12 B	18.5-20	2.65E-06	0.008					
			Weighted Average Surficial Aquifer[4]			0.460					
			Weighted Average with Cut of wall			0.005					
SWMF 32	456 X 119	33.00	BB14 LAB	1	2.29E-03	6.505	North	61	34.00	239	39
			BB14 A	8.5-10	7.36E-06	0.021	Northwest	46	34.00	239	39
			BB14 B	18.5-20	2.43E-06	0.007	West	47	35.00	309	41
			Weighted Average Surficial Aquifer[4]			0.438	Southwest	47	36.00	340	45
							South-Southwest	110	37.00	365	58
			Weighted Average with Cut of wall			0.006	South	179	40.00	413	65
SWMF 33	353 X 136	33.00	B36 LAB	1	1.14E-03	3.235	South1	60	34.00	243	36
			B36 A	6.5-8	8.14E-06	0.023					
			B36 B	18.5-20	4.89E-07	0.001	South2	257	35.00	312	46
			Weighted Average Surficial Aquifer[4]			0.288	South 3	281	36.00	339	50
			Weighted Average with Cut of wall			0.006	South4	462	37.00	363	NR[6]

(1) Based on the Master Grading Plans provided by Dunn & Associates, Inc.
(2) Feet below existing grade.
(3) Estimated from the Master Grading Plans provided by Dunn & Associates, Inc.
(4) The Weighted Average of the Measured Horizontal Hydraulic Conductivities (k_h) was used for the surficial aquifer for each pond.
(5) Measured Horizontal Hydraulic Conductivity used for the pond model with a cut-off wall installed.
(6) NR Not Required, the Distance from NWL to Drawdown of 0.01 feet is less than the shortest distance from the pond NWL to Wetland.

TABLE 1
RESULTS OF DRAWDOWN ANALYSES
The Rookery Phase 1
ECS Project No. 35:31217-E

Pond No.	Average Modeled Pond Dimension [L x W, ft]	Pond Design Normal Water Elevation[1] [ft]	Measured Horizontal Hydraulic Conductivities (k_h)				Wetland Information[1]			Distance From NWL to a Drawdown of 0.01 feet	
			Test Number	Test Depth[2] [ft]	[cm/s]	[ft/day]	Wetland Direction	Shortest Distance from Pond NWL to Wetland [ft]	Estimated Seasonal High Groundwater Elevation[3] [ft]	Modeled Without a Cut-off Wall[4]	Modeled With a Cut-off Wall[5]
SWMF J1	997 X 997	29.00	BB4 LAB	1	5.57E-04	1.580	Northeast	39	30.00	Varies[7]	Varies[7]
			BB4 A	8.5-10	1.73E-07	0.000					
			BB4 B	23.5-25	9.74E-06	0.028	East	23	31.00	Varies[7]	Varies[7]
			Weighted Average Surficial Aquifer[4]			0.076					
							Southwest	88	32.00	Varies[7]	Varies[7]
			Weighted Average with Cut of wall			0.022	West	127	33.00	Varies[7]	Varies[7]
							Northwest	69	34.00	Varies[7]	Varies[7]

(1) Based on the plan provided by Almond Engineering
(2) Feet below existing grade.
(3) Estimated from Topographic Plan provided by Almond Engineering
(4) The Weighted Average of the Measured Horizontal Hydraulic Conductivities (k_h) was used for the surficial aquifer for each pond.
(5) Measured Horizontal Hydraulic Conductivity used for the pond model with a cut-off wall installed.
(6) NR Not Required, the Distance from NWL to Drawdown of 0.01 feet is less than the shortest distance from the pond NWL to Wetland.
(7) Drawdown distance varies due to 3-dimensional modeling. See attached groundwater elevation contours on Plates 7 and 8 for graphical representation.

TABLE 2
Weighted Average Hydraulic Conductivity Calculation Sheet
The Rookery Phase 1
ECS Project No. 35:31217-E

SWMF 1							
Depth [ft]		Layer Thickness	Test Number	Permeability [cm/sec]	Permeability [ft/day]	Layer Thickness x Permeability [ft^2/day]	Weighted Average [ft/day]
0	3	3	B71 LAB	8.26E-03	23.402	70.21	
3	22	19	B71 A	4.84E-07	0.001	0.03	
22	54	32	B71 B	6.48E-07	0.002	0.06	
Total		**54.0**				**70.29**	**1.302**

SWMF 4							
Depth [ft]		Layer Thickness	Test Number	Permeability [cm/sec]	Permeability [ft/day]	Layer Thickness x Permeability [ft^2/day]	Weighted Average [ft/day]
0	3	3	BB9 LAB	2.96E-03	8.378	25.13	
3	17	14	BB9 A	1.21E-06	0.003	0.05	
17	23	6	BB9 B	9.37E-07	0.003	0.02	
Total		**23.0**				**25.20**	**1.096**

SWMF 6							
Depth [ft]		Layer Thickness	Test Number	Permeability [cm/sec]	Permeability [ft/day]	Layer Thickness x Permeability [ft^2/day]	Weighted Average [ft/day]
0	3	3	B41 LAB	1.70E-03	4.822	14.47	
3	12	9	B41 A	4.78E-06	0.014	0.12	
12	25	13	B41 B	2.06E-06	0.006	0.08	
Total		**25.0**				**14.66**	**0.587**

TABLE 2
Weighted Average Hydraulic Conductivity Calculation Sheet
The Rookery Phase 1
ECS Project No. 35:31217-E

SWMF 7							
Depth [ft]		Layer Thickness	Test Number	Permeability [cm/sec]	Permeability [ft/day]	Layer Thickness x Permeability [ft^2/day]	Weighted Average [ft/day]
0	2	2	B43 LAB	3.16E-04	0.897	1.79	
2	12	10	B43 A	1.68E-05	0.048	0.48	
12	24.5	12.5	B43 B	1.38E-06	0.004	0.05	
Total		24.5				2.32	0.095

SWMF 10							
Depth [ft]		Layer Thickness	Test Number	Permeability [cm/sec]	Permeability [ft/day]	Layer Thickness x Permeability [ft^2/day]	Weighted Average [ft/day]
0	3	3	B54 LAB	3.15E-03	8.920	26.76	
3	12	9	B54 A	3.34E-06	0.009	0.09	
12	26	14	B54 B	1.22E-07	0.000	0.00	
Total		26.0				26.85	1.033

SWMF 12							
Depth [ft]		Layer Thickness	Test Number	Permeability [cm/sec]	Permeability [ft/day]	Layer Thickness x Permeability [ft^2/day]	Weighted Average [ft/day]
0	2	2	BB13 LAB	1.84E-05	0.052	0.10	
2	12	10	BB13 A	3.72E-06	0.011	0.11	
12	33	21	BB13 B	2.60E-06	0.007	0.15	
Total		33.0				0.36	0.011

TABLE 2
Weighted Average Hydraulic Conductivity Calculation Sheet
The Rookery Phase 1
ECS Project No. 35:31217-E

SWMF 14							
Depth [ft]		Layer Thickness	Test Number	Permeability [cm/sec]	Permeability [ft/day]	Layer Thickness x Permeability [ft^2/day]	Weighted Average [ft/day]
0	3	3	BB16 LAB	5.04E-05	0.143	0.43	
3	12	9	BB16 A	1.16E-06	0.003	0.03	
12	37	25	BB16 B	9.23E-06	0.026	0.65	
Total		**37.0**				**1.11**	**0.030**

SWMF 17							
Depth [ft]		Layer Thickness	Test Number	Permeability [cm/sec]	Permeability [ft/day]	Layer Thickness x Permeability [ft^2/day]	Weighted Average [ft/day]
0	3	3	B103 LAB	1.71E-03	4.837	14.51	
3	20	17	B103 A	1.58E-06	0.004	0.08	
20	38	18	B103 B	3.74E-07	0.001	0.02	
Total		**38.0**				**14.61**	**0.384**

SWMF 21							
Depth [ft]		Layer Thickness	Test Number	Permeability [cm/sec]	Permeability [ft/day]	Layer Thickness x Permeability [ft^2/day]	Weighted Average [ft/day]
0	4	4	PB1 LAB	4.91E-03	13.922	55.69	
4	12	8	PB1 A	2.60E-06	0.007	0.06	
12	46	34	PB1 B	2.10E-06	0.006	0.20	
Total		**46.0**				**55.95**	**1.216**

TABLE 2
Weighted Average Hydraulic Conductivity Calculation Sheet
The Rookery Phase 1
ECS Project No. 35:31217-E

SWMF No. 26							
Depth [ft]		Layer Thickness	Test Number	Permeability [cm/sec]	Permeability [ft/day]	Layer Thickness x Permeability [ft²/day]	Weighted Average [ft/day]
0	3	3	BB18 LAB	5.58E-04	1.582	4.74	
3	8	5	BB18 A	6.31E-06	0.018	0.09	
8	29	21	BB18 B	1.70E-07	0.000	0.01	
Total		29.0				4.84	0.167

SWMF No. 30							
Depth [ft]		Layer Thickness	Test Number	Permeability [cm/sec]	Permeability [ft/day]	Layer Thickness x Permeability [ft²/day]	Weighted Average [ft/day]
0	2	2	BB23 LAB	2.88E-03	8.178	16.36	
2	10	8	BB23 A	3.18E-06	0.009	0.07	
10	24	14	BB23 B	4.12E-07	0.001	0.02	
Total		24.0				16.44	0.685

SWMF 31							
Depth [ft]		Layer Thickness	Test Number	Permeability [cm/sec]	Permeability [ft/day]	Layer Thickness x Permeability [ft²/day]	Weighted Average [ft/day]
0	2	2	BB12 LAB	4.09E-04	1.159	2.32	
2	12	10	BB12 A	4.48E-04	1.271	12.71	
12	33	21	BB12 B	2.65E-06	0.008	0.16	
Total		33.0				15.18	0.460

TABLE 2
Weighted Average Hydraulic Conductivity Calculation Sheet
The Rookery Phase 1
ECS Project No. 35:31217-E

SWMF 32							
Depth [ft]		Layer Thickness	Test Number	Permeability [cm/sec]	Permeability [ft/day]	Layer Thickness x Permeability [ft^2/day]	Weighted Average [ft/day]
0	2	2	BB14 LAB	2.29E-03	6.505	13.01	
2	12	10	BB14 A	7.36E-06	0.021	0.21	
12	30.5	18.5	BB14 B	2.43E-06	0.007	0.13	
Total		30.5				13.35	0.438

SWMF 33							
Depth [ft]		Layer Thickness	Test Number	Permeability [cm/sec]	Permeability [ft/day]	Layer Thickness x Permeability [ft^2/day]	Weighted Average [ft/day]
0	3	3	B36 LAB	1.14E-03	3.235	9.70	
3	12	9	B36 A	8.14E-06	0.023	0.21	
12	34.5	22.5	B36 B	4.89E-07	0.001	0.03	
Total		34.5				9.94	0.288

TABLE 3
Weighted Average Hydraulic Conductivity Calculation Sheet With Cut - Off Walls
The Rookery Phase 1
ECS Project No. 35:31217-E

SWMF 4							
Depth [ft]		Layer Thickness	Test Number	Permeability [cm/sec]	Permeability [ft/day]	Layer Thickness x Permeability [ft²/day]	Weighted Average [ft/day]
0	7	7	N/A	1.00E-07	0.000	0.00	
7	17	10	BB9 A	1.21E-06	0.003	0.03	
17	23	6	BB9 B	9.37E-07	0.003	0.02	
Total		**23.0**				**0.05**	**0.002**

SWMF 6							
Depth [ft]		Layer Thickness	Test Number	Permeability [cm/sec]	Permeability [ft/day]	Layer Thickness x Permeability [ft²/day]	Weighted Average [ft/day]
0	12	12	N/A	1.00E-07	0.000	0.00	
12	12	0	B41 A	4.78E-06	0.014	0.00	
12	25	13	B41 B	2.06E-06	0.006	0.08	
Total		**25.0**				**0.08**	**0.003**

SWMF 7							
Depth [ft]		Layer Thickness	Test Number	Permeability [cm/sec]	Permeability [ft/day]	Layer Thickness x Permeability [ft²/day]	Weighted Average [ft/day]
0	7	7	N/A	1.00E-07	0.000	0.00	
7	12	5	B43 A	1.68E-05	0.048	0.24	
12	24.5	12.5	B43 B	1.38E-06	0.004	0.05	
Total		**24.5**				**0.29**	**0.012**

TABLE 3
Weighted Average Hydraulic Conductivity Calculation Sheet With Cut - Off Walls
The Rookery Phase 1
ECS Project No. 35:31217-E

SWMF 12							
Depth [ft]		Layer Thickness	Test Number	Permeability [cm/sec]	Permeability [ft/day]	Layer Thickness x Permeability [ft²/day]	Weighted Average [ft/day]
0	3	3	N/A	1.00E-07	0.000	0.00	
3	12	9	BB13 A	3.72E-06	0.011	0.09	
12	33	21	BB13 B	2.60E-06	0.007	0.15	
Total		**33.0**				**0.25**	**0.008**

SWMF 14							
Depth [ft]		Layer Thickness	Test Number	Permeability [cm/sec]	Permeability [ft/day]	Layer Thickness x Permeability [ft²/day]	Weighted Average [ft/day]
0	4	4	N/A	1.00E-07	0.000	0.00	
4	12	8	BB16 A	1.16E-06	0.003	0.03	
12	37	25	BB16 B	9.23E-06	0.026	0.65	
Total		**37.0**				**0.68**	**0.018**

SWMF 21							
Depth [ft]		Layer Thickness	Test Number	Permeability [cm/sec]	Permeability [ft/day]	Layer Thickness x Permeability [ft²/day]	Weighted Average [ft/day]
0	6	6	N/A	1.00E-07	0.000	0.00	
6	12	6	PB1 A	2.60E-06	0.007	0.04	
12	46	34	PB1 B	2.10E-06	0.006	0.20	
Total		**46.0**				**0.25**	**0.005**

TABLE 3
Weighted Average Hydraulic Conductivity Calculation Sheet With Cut - Off Walls
The Rookery Phase 1
ECS Project No. 35:31217-E

SWMF 31							
Depth [ft]		Layer Thickness	Test Number	Permeability [cm/sec]	Permeability [ft/day]	Layer Thickness x Permeability [ft²/day]	Weighted Average [ft/day]
0	12	12	N/A	1.00E-07	0.000	0.00	
12	12	0	BB12 A	4.48E-04	1.271	0.00	
12	33	21	BB12 B	2.65E-06	0.008	0.16	
Total		**33.0**				**0.16**	**0.005**

SWMF 32							
Depth [ft]		Layer Thickness	Test Number	Permeability [cm/sec]	Permeability [ft/day]	Layer Thickness x Permeability [ft²/day]	Weighted Average [ft/day]
0	10	10	N/A	1.00E-07	0.000	0.00	
10	12	2	BB14 A	7.36E-06	0.021	0.04	
12	33	21	BB14 B	2.43E-06	0.007	0.14	
Total		**33.0**				**0.19**	**0.006**

SWMF 33							
Depth [ft]		Layer Thickness	Test Number	Permeability [cm/sec]	Permeability [ft/day]	Layer Thickness x Permeability [ft²/day]	Weighted Average [ft/day]
0	4	4	N/A	1.00E-07	0.000	0.00	
4	12	8	B36 A	8.14E-06	0.023	0.18	
12	34.5	22.5	B36 B	4.89E-07	0.001	0.03	
Total		**34.5**				**0.22**	**0.006**

TABLE 4
RESULTS OF BASEFLOW ANALYSES
The Rookery Phase 1
ECS Project No. 35:31217-E

Pond No.	Average Modeled Pond Dimension [L x W, ft]	Pond Design Normal Water Elevation(1) [ft]	Measured Horizontal Hydraulic Conductivities (k_h)				Estimated Seasonal High Groundwater Elevation(3) [ft]	Groundwater Baseflow (gpm)
			Test Number	Test Depth(2) [ft]	[cm/s]	[ft/day]		
SWMF 1	730 X 285	29.00	B71 LAB	1	8.26E-03	23.402	29.50	-12.8(6)
			B71 A	13.5-15	4.84E-07	0.001		
			B71 B	28.5-30	6.48E-07	0.002		
			Weighted Average Surficial Aquifer(4)			1.302	33.50	
SWMF 2	412 X 93	29.00	BB9 LAB	1	2.96E-03	8.378	29.00	-2.62(6)
			BB9 A	6.5 - 8	1.21E-06	0.003		
			BB9 B	13.5 - 15	9.37E-07	0.003		
			Weighted Average Surficial Aquifer(4)			1.096	32.50	
SWMF 3	264 X 127	29.00	B71 LAB	1	8.26E-03	23.402	31.50	-2.8(6)
			B71 A	13.5-15	4.84E-07	0.001		
			B71 B	28.5-30	6.48E-07	0.002		
			Weighted Average Surficial Aquifer(4)			1.302		

(1) Based on the Master Grading Plans provided by Dunn & Associates, Inc.
(2) Feet below existing grade.
(3) Estimated from the Master Grading Plans provided by Dunn & Associates, Inc.
(4) The Weighted Average of the Measured Horizontal Hydraulic Conductivities (k_h) was calculated in Table 2 and used for the surficial aquifer for each pond.
(5) The Weighted Average of the Horizontal Hydraulic Conductivity with a cut-off wall installed; calculated in Table 3.
(6) Negative values indicate baseflow into the stormwater pond. Positive values indicate baseflow leaving the stormwater pond.

TABLE 4
RESULTS OF BASEFLOW ANALYSES
The Rookery Phase 1
ECS Project No. 35:31217-E

Pond No.	Average Modeled Pond Dimension [L x W, ft]	Pond Design Normal Water Elevation(1) [ft]	Measured Horizontal Hydraulic Conductivities (k_h)				Estimated Seasonal High Groundwater Elevation(3) [ft]	Groundwater Baseflow (gpm)
			Test Number	Test Depth(2) [ft]	[cm/s]	[ft/day]		
SWMF 4	226 X 77	29.00	BB9 LAB	1	2.96E-03	8.378	34.00	-0.08(6)
			BB9 A	8.5 - 10	1.21E-06	0.003		
			BB9 B	18.5 - 20	9.37E-07	0.003		
			Weighted Average Surficial Aquifer(4)			1.096		
			Weighted Average with Cut of wall(5)			0.002		
SWMF 5	214 X 69	29.00	B41 LAB	1	1.70E-03	4.822	29.50	-0.24(6)
			B41 A	6.5 - 8	4.78E-06	0.014		
			B41 B	13.5 - 15	2.06E-06	0.006		
			Weighted Average Surficial Aquifer(4)			0.587		
SWMF 6	504 X 122	29.00	B41 LAB	1	1.70E-03	4.822	32.00	-1.13(6)
			B41 A	6.5 - 8	4.78E-06	0.014		
			B41 B	13.5 - 15	2.06E-06	0.006		
			Weighted Average Surficial Aquifer(4)			0.587		
			Weighted Average with Cut of wall(5)			0.003		

(1) Based on the Master Grading Plans provided by Dunn & Associates, Inc.
(2) Feet below existing grade.
(3) Estimated from the Master Grading Plans provided by Dunn & Associates, Inc.
(4) The Weighted Average of the Measured Horizontal Hydraulic Conductivities (k_h) was calculated in Table 2 and used for the surficial aquifer for each pond.
(5) The Weighted Average of the Horizontal Hydraulic Conductivity with a cut-off wall installed; calculated in Table 3.
(6) Negative values indicate baseflow into the stormwater pond. Positive values indicate baseflow leaving the stormwater pond.

TABLE 4
RESULTS OF BASEFLOW ANALYSES
The Rookery Phase 1
ECS Project No. 35:31217-E

Pond No.	Average Modeled Pond Dimension [L x W, ft]	Pond Design Normal Water Elevation[1] [ft]	Measured Horizontal Hydraulic Conductivities (k_h)				Estimated Seasonal High Groundwater Elevation[3] [ft]	Groundwater Baseflow (gpm)
			Test Number	Test Depth[2] [ft]	[cm/s]	[ft/day]		
SWMF 7	270 X 80	29.00	B43 LAB	1	3.16E-04	0.897	28.80	0.04[6]
			B43 A	7 - 8.5	1.68E-05	0.048		
			B43 B	13.5-15	1.38E-06	0.004		
			Weighted Average Surficial Aquifer[4]			0.095		
SWMF 8	400 X 83	29.00	B54 LAB	1	3.15E-03	8.920	25.13	-0.13[6]
			B54 A	6.5-8	3.34E-06	0.009		
			B54 B	13.5-15	1.22E-07	0.000		
			Weighted Average Surficial Aquifer[4]			1.033	31.50	
SWMF 9	505 X 117	29.00	B54 LAB	1	3.15E-03	8.920	28.14	0.04[6]
			B54 A	6.5-8	3.34E-06	0.009		
			B54 B	13.5-15	1.22E-07	0.000		
			Weighted Average Surficial Aquifer[4]			1.033		

(1) Based on the Master Grading Plans provided by Dunn & Associates, Inc.
(2) Feet below existing grade.
(3) Estimated from the Master Grading Plans provided by Dunn & Associates, Inc.
(4) The Weighted Average of the Measured Horizontal Hydraulic Conductivities (k_h) was calculated in Table 2 and used for the surficial aquifer for each pond.
(5) The Weighted Average of the Horizontal Hydraulic Conductivity with a cut-off wall installed; calculated in Table 3.
(6) Negative values indicate baseflow into the stormwater pond. Positive values indicate baseflow leaving the stormwater pond.

TABLE 4
RESULTS OF BASEFLOW ANALYSES
The Rookery Phase 1
ECS Project No. 35:31217-E

Pond No.	Average Modeled Pond Dimension [L x W, ft]	Pond Design Normal Water Elevation[1] [ft]	Measured Horizontal Hydraulic Conductivities (k_h)				Estimated Seasonal High Groundwater Elevation[3] [ft]	Groundwater Baseflow (gpm)
			Test Number	Test Depth[2] [ft]	[cm/s]	[ft/day]		
SWMF 10	302 X 85	29.00	B54 LAB	1	3.15E-03	8.920	30.00	-1.1[6]
			B54 A	6.5-8	3.34E-06	0.009		
			B54 B	13.5-15	1.22E-07	0.000		
			Weighted Average Surficial Aquifer[4]			1.033		
SWMF 11	631 X 83	29.00	B43 LAB	1	3.16E-04	0.897	30.00	-0.4[6]
			B43 A	7 - 8.5	1.68E-05	0.048		
			B43 B	13.5-15	1.38E-06	0.004		
			Weighted Average Surficial Aquifer[4]			0.095		
SWMF 12	624 X 159	29.00	BB13 LAB	1	1.84E-05	0.052	30.00	-0.2[6]
			BB13 A	6.5-8	3.72E-06	0.011		
			BB13 B	18.5-20	2.60E-06	0.007		
			Weighted Average Surficial Aquifer[4]			0.011		

(1) Based on the Master Grading Plans provided by Dunn & Associates, Inc.
(2) Feet below existing grade.
(3) Estimated from the Master Grading Plans provided by Dunn & Associates, Inc.
(4) The Weighted Average of the Measured Horizontal Hydraulic Conductivities (k_h) was calculated in Table 2 and used for the surficial aquifer for each pond.
(5) The Weighted Average of the Horizontal Hydraulic Conductivity with a cut-off wall installed; calculated in Table 3.
(6) Negative values indicate baseflow into the stormwater pond. Positive values indicate baseflow leaving the stormwater pond.

TABLE 4
RESULTS OF BASEFLOW ANALYSES
The Rookery Phase 1
ECS Project No. 35:31217-E

Pond No.	Average Modeled Pond Dimension [L x W, ft]	Pond Design Normal Water Elevation[1] [ft]	Measured Horizontal Hydraulic Conductivities (k_h)				Estimated Seasonal High Groundwater Elevation[3] [ft]	Groundwater Baseflow (gpm)
			Test Number	Test Depth[2] [ft]	[cm/s]	[ft/day]		
SWMF 13	463 X 72	29.00	BB16 LAB	1	5.04E-05	0.143	27.50	-0.05[6]
			BB16 A	4.5-6	1.16E-06	0.003		
			BB16 B	18.5-20	9.23E-06	0.026		
			Weighted Average Surficial Aquifer[4]			0.030	29.50	
SWMF 14	292 X 155	29.00	BB16 LAB	1	5.04E-05	0.143	32.00	-0.49[6]
			BB16 A	4.5-6	1.16E-06	0.003		
			BB16 B	18.5-20	9.23E-06	0.026		
			Weighted Average Surficial Aquifer[4]			0.030		
SWMF 15	314 X 118	24.00	B54 LAB	1	3.15E-03	8.920	27.30	-3.0[6]
			B54 A	6.5-8	3.34E-06	0.009		
			B54 B	13.5-15	1.22E-07	0.000		
			Weighted Average Surficial Aquifer[4]			1.033	29.00	

(1) Based on the Master Grading Plans provided by Dunn & Associates, Inc.
(2) Feet below existing grade.
(3) Estimated from the Master Grading Plans provided by Dunn & Associates, Inc.
(4) The Weighted Average of the Measured Horizontal Hydraulic Conductivities (k_h) was calculated in Table 2 and used for the surficial aquifer for each pond.
(5) The Weighted Average of the Horizontal Hydraulic Conductivity with a cut-off wall installed; calculated in Table 3.
(6) Negative values indicate baseflow into the stormwater pond. Positive values indicate baseflow leaving the stormwater pond.

TABLE 4
RESULTS OF BASEFLOW ANALYSES
The Rookery Phase 1
ECS Project No. 35:31217-E

Pond No.	Average Modeled Pond Dimension [L x W, ft]	Pond Design Normal Water Elevation[1] [ft]	Measured Horizontal Hydraulic Conductivities (k_h)				Estimated Seasonal High Groundwater Elevation[3] [ft]	Groundwater Baseflow (gpm)
			Test Number	Test Depth[2] [ft]	[cm/s]	[ft/day]		
SWMF 16	429 X 150	24.00	B103 LAB	1	1.71E-03	4.837	27.50	-2.6[6]
			B103 A	18.5 - 20	1.58E-06	0.004		
			B103 B	23.5 - 25	3.74E-07	0.001		
			Weighted Average Surficial Aquifer[4]			0.384		
SWMF 17	422 X 152	24.00	B103 LAB	1	1.71E-03	4.837	25.00	-2.3[6]
			B103 A	18.5 - 20	1.58E-06	0.004		
			B103 B	23.5 - 25	3.74E-07	0.001		
			Weighted Average Surficial Aquifer[4]			0.384	30.00	
SWMF 18	723 X 140	24.00	B103 LAB	1	1.71E-03	4.837	23.50	-4.1[6]
			B103 A	18.5 - 20	1.58E-06	0.004		
			B103 B	23.5 - 25	3.74E-07	0.001	27.50	
			Weighted Average Surficial Aquifer[4]			0.384	30.00	

(1) Based on the Master Grading Plans provided by Dunn & Associates, Inc.
(2) Feet below existing grade.
(3) Estimated from the Master Grading Plans provided by Dunn & Associates, Inc.
(4) The Weighted Average of the Measured Horizontal Hydraulic Conductivities (k_h) was calculated in Table 2 and used for the surficial aquifer for each pond.
(5) The Weighted Average of the Horizontal Hydraulic Conductivity with a cut-off wall installed; calculated in Table 3.
(6) Negative values indicate baseflow into the stormwater pond. Positive values indicate baseflow leaving the stormwater pond.

TABLE 4
RESULTS OF BASEFLOW ANALYSES
The Rookery Phase 1
ECS Project No. 35:31217-E

Pond No.	Average Modeled Pond Dimension [L x W, ft]	Pond Design Normal Water Elevation[1] [ft]	Measured Horizontal Hydraulic Conductivities (k_h)				Estimated Seasonal High Groundwater Elevation[3] [ft]	Groundwater Baseflow (gpm)
			Test Number	Test Depth[2] [ft]	[cm/s]	[ft/day]		
SWMF 19	424 X 97	24.00	B103 LAB	1	1.71E-03	4.837	26.50	-1.2[6]
			B103 A	18.5 - 20	1.58E-06	0.004		
			B103 B	23.5 - 25	3.74E-07	0.001		
			Weighted Average Surficial Aquifer[4]			0.384		
SWMF 20	275 X 62	24.00	PB1 LAB	1	4.91E-03	13.922	24.50	-0.4[6]
			PB1 A	4.5 - 6	2.60E-06	0.007		
			PB1 B	28.5 - 30	2.10E-06	0.006		
			Weighted Average Surficial Aquifer[4]			1.216		
SWMF 21	991 X 546	24.00	PB1 LAB	1	4.91E-03	13.922	24.25	-0.8[6]
			PB1 A	4.5 - 6	2.60E-06	0.007		
			PB1 B	28.5 - 30	2.10E-06	0.006		
			Weighted Average Surficial Aquifer[4]			1.216	26.25	

(1) Based on the Master Grading Plans provided by Dunn & Associates, Inc.
(2) Feet below existing grade.
(3) Estimated from the Master Grading Plans provided by Dunn & Associates, Inc.
(4) The Weighted Average of the Measured Horizontal Hydraulic Conductivities (k_h) was calculated in Table 2 and used for the surficial aquifer for each pond.
(5) The Weighted Average of the Horizontal Hydraulic Conductivity with a cut-off wall installed; calculated in Table 3.
(6) Negative values indicate baseflow into the stormwater pond. Positive values indicate baseflow leaving the stormwater pond.

TABLE 4
RESULTS OF BASEFLOW ANALYSES
The Rookery Phase 1
ECS Project No. 35:31217-E

Pond No.	Average Modeled Pond Dimension [L x W, ft]	Pond Design Normal Water Elevation[1] [ft]	Measured Horizontal Hydraulic Conductivities (k_h)				Estimated Seasonal High Groundwater Elevation[3] [ft]	Groundwater Baseflow (gpm)
			Test Number	Test Depth[2] [ft]	[cm/s]	[ft/day]		
SWMF 22	476 X 83	24.00	B103 LAB	1	1.71E-03	4.837	25.50	-0.9[6]
			B103 A	18.5 - 20	1.58E-06	0.004		
			B103 B	23.5 - 25	3.74E-07	0.001		
			Weighted Average Surficial Aquifer[4]			0.384		
SWMF 23	371 X 92	24.00	BB18 LAB	1	5.58E-04	1.582	25.70	-0.5[6]
			BB18 A	6.5 - 8	6.31E-06	0.018		
			BB18 B	13.5 - 15	1.70E-07	0.000		
			Weighted Average Surficial Aquifer[4]			0.167		
SWMF 24	486 X 202	21.00	PB1 LAB	1	4.91E-03	13.922	23.30	-4.3[6]
			PB1 A	4.5 - 6	2.60E-06	0.007		
			PB1 B	28.5 - 30	2.10E-06	0.006		
			Weighted Average Surficial Aquifer[4]			1.216		

(1) Based on the Master Grading Plans provided by Dunn & Associates, Inc.
(2) Feet below existing grade.
(3) Estimated from the Master Grading Plans provided by Dunn & Associates, Inc.
(4) The Weighted Average of the Measured Horizontal Hydraulic Conductivities (k_h) was calculated in Table 2 and used for the surficial aquifer for each pond.
(5) The Weighted Average of the Horizontal Hydraulic Conductivity with a cut-off wall installed; calculated in Table 3.
(6) Negative values indicate baseflow into the stormwater pond. Positive values indicate baseflow leaving the stormwater pond.

TABLE 4
RESULTS OF BASEFLOW ANALYSES
The Rookery Phase 1
ECS Project No. 35:31217-E

Pond No.	Average Modeled Pond Dimension [L x W, ft]	Pond Design Normal Water Elevation[1] [ft]	Measured Horizontal Hydraulic Conductivities (k_h)				Estimated Seasonal High Groundwater Elevation[3] [ft]	Groundwater Baseflow (gpm)
			Test Number	Test Depth[2] [ft]	[cm/s]	[ft/day]		
SWMF 25	286 X 61	24.00	BB18 LAB	1	5.58E-04	1.582	25.50	-0.4[6]
			BB18 A	6.5 - 8	6.31E-06	0.018		
			BB18 B	13.5 - 15	1.70E-07	0.000		
			Weighted Average Surficial Aquifer[4]			0.167		
SWMF 26	541 X 128	24.00	BB18 LAB	1	5.58E-04	1.582	26.50	-1.5[6]
			BB18 A	6.5 - 8	6.31E-06	0.018		
			BB18 B	13.5 - 15	1.70E-07	0.000		
			Weighted Average Surficial Aquifer[4]			0.167		
SWMF 27	744 X 115	24.00	BB18 LAB	1	5.58E-04	1.582	27.00	-1.8[6]
			BB18 A	6.5 - 8	6.31E-06	0.018		
			BB18 B	13.5 - 15	1.70E-07	0.000		
			Weighted Average Surficial Aquifer[4]			0.167		

(1) Based on the Master Grading Plans provided by Dunn & Associates, Inc.
(2) Feet below existing grade.
(3) Estimated from the Master Grading Plans provided by Dunn & Associates, Inc.
(4) The Weighted Average of the Measured Horizontal Hydraulic Conductivities (k_h) was calculated in Table 2 and used for the surficial aquifer for each pond.
(5) The Weighted Average of the Horizontal Hydraulic Conductivity with a cut-off wall installed; calculated in Table 3.
(6) Negative values indicate baseflow into the stormwater pond. Positive values indicate baseflow leaving the stormwater pond.

TABLE 4
RESULTS OF DRAWDOWN ANALYSES
The Rookery Phase 1
ECS Project No. 35:31217-E

Pond No.	Average Modeled Pond Dimension [L x W, ft]	Pond Design Normal Water Elevation[1] [ft]	Measured Horizontal Hydraulic Conductivities (k_h)				Estimated Seasonal High Groundwater Elevation[3] [ft]	Groundwater Baseflow (gpm)
			Test Number	Test Depth[2] [ft]	[cm/s]	[ft/day]		
SWMF 28	437 X 203	24.00	BB23 LAB	1	2.88E-03	8.178	26.80	-3.3[6]
			BB23 A	8.5-10	3.18E-06	0.009		
			BB23 B	13.5-15	4.12E-07	0.001		
			Weighted Average Surficial Aquifer[4]			0.685		
SWMF 29	436 X 52	24.00	BB23 LAB	1	2.88E-03	8.178	27.30	-1.6[6]
			BB23 A	8.5-10	3.18E-06	0.009		
			BB23 B	13.5-15	4.12E-07	0.001		
			Weighted Average Surficial Aquifer[4]			0.685		
SWMF 30	302 X 79	28.00	BB23 LAB	1	2.88E-03	8.178	27.00	0.03[6]
			BB23 A	8.5-10	3.18E-06	0.009		
			BB23 B	13.5-15	4.12E-07	0.001		
			Weighted Average Surficial Aquifer[4]			0.685		

(1) Based on the Master Grading Plans provided by Dunn & Associates, Inc.
(2) Feet below existing grade.
(3) Estimated from the Master Grading Plans provided by Dunn & Associates, Inc.
(4) The Weighted Average of the Measured Horizontal Hydraulic Conductivities (k_h) was calculated in Table 2 and used for the surficial aquifer for each pond.
(5) The Weighted Average of the Horizontal Hydraulic Conductivity with a cut-off wall installed; calculated in Table 3.
(6) Negative values indicate baseflow into the stormwater pond. Positive values indicate baseflow leaving the stormwater pond.

TABLE 4
RESULTS OF BASEFLOW ANALYSES
The Rookery Phase 1
ECS Project No. 35:31217-E

Pond No.	Average Modeled Pond Dimension [L x W, ft]	Pond Design Normal Water Elevation[1] [ft]	Measured Horizontal Hydraulic Conductivities (k_h)				Estimated Seasonal High Groundwater Elevation[3] [ft]	Groundwater Baseflow (gpm)
			Test Number	Test Depth[2] [ft]	[cm/s]	[ft/day]		
SWMF 31	363 X 110	33.00	BB12 LAB	1	4.09E-04	1.159	34.00	-0.8[6]
			BB12 A	6.5-8	4.48E-04	1.271		
			BB12 B	18.5-20	2.65E-06	0.008		
			Weighted Average Surficial Aquifer[4]			0.460		
			Weighted Average with Cut of wall[5]			0.005		
SWMF 32	456 X 119	33.00	BB14 LAB	1	2.29E-03	6.505	34.00	-0.2[6]
			BB14 A	8.5-10	7.36E-06	0.021		
			BB14 B	18.5-20	2.43E-06	0.007		
			Weighted Average Surficial Aquifer(4)			0.438	37.00	
			Weighted Average with Cut of wall[5]			0.006		
SWMF 33	353 X 136	33.00	B36 LAB	1	1.14E-03	3.235	32.00	0.02[6]
			B36 A	6.5-8	8.14E-06	0.023		
			B36 B	18.5-20	4.89E-07	0.001		
			Weighted Average Surficial Aquifer(4)			0.288		
			Weighted Average with Cut of wall			0.006		

(1) Based on the Master Grading Plans provided by Dunn & Associates, Inc.
(2) Feet below existing grade.
(3) Estimated from the Master Grading Plans provided by Dunn & Associates, Inc.
(4) The Weighted Average of the Measured Horizontal Hydraulic Conductivities (k_h) was calculated in Table 2 and used for the surficial aquifer for each pond.
(5) The Weighted Average of the Horizontal Hydraulic Conductivity with a cut-off wall installed; calculated in Table 3.
(6) Negative values indicate baseflow into the stormwater pond. Positive values indicate baseflow leaving the stormwater pond.

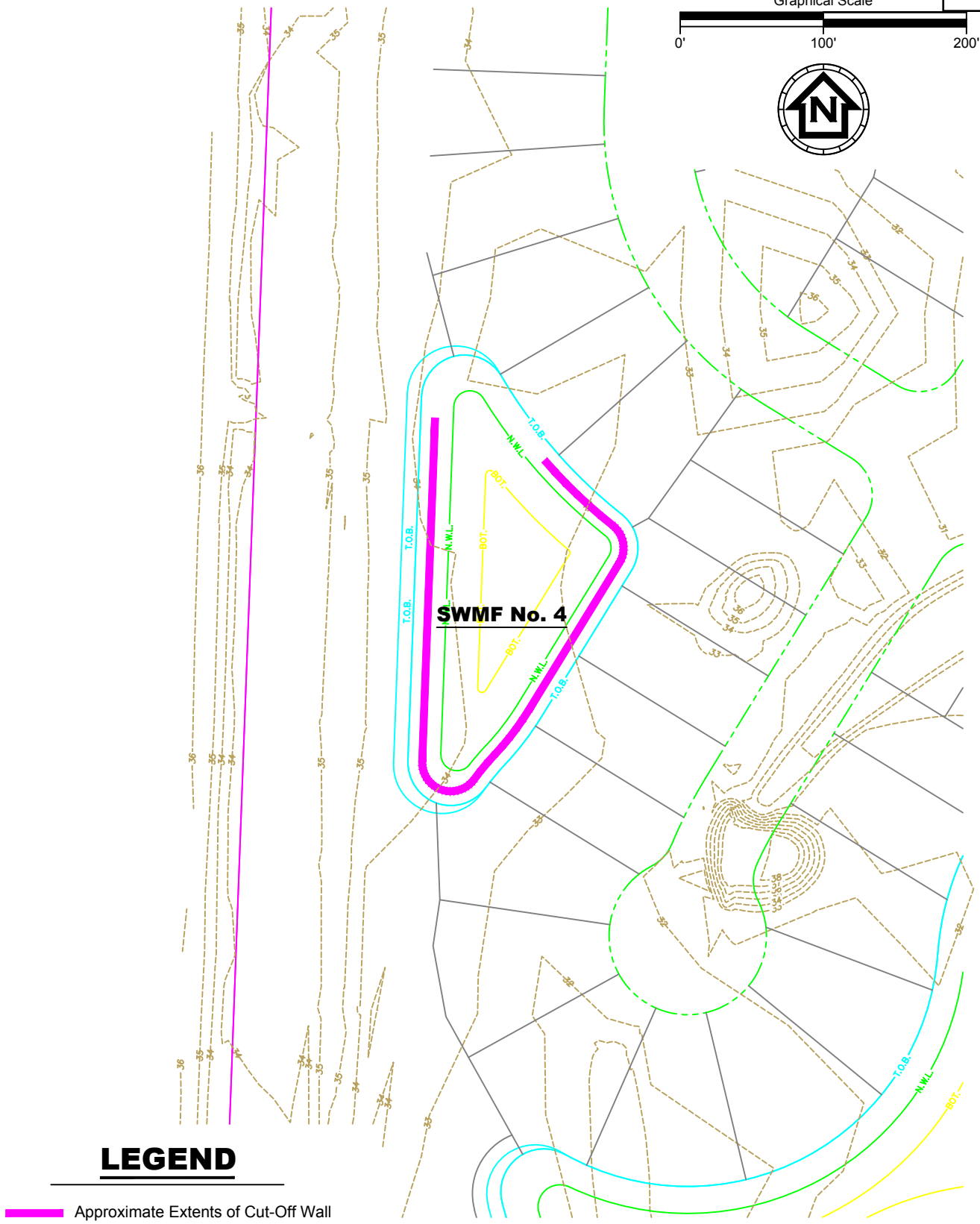
TABLE 4
RESULTS OF BASEFLOW ANALYSES
The Rookery Phase 1
ECS Project No. 35:31217-E

Pond No.	Average Modeled Pond Dimension [L x W, ft]	Pond Design Normal Water Elevation[1] [ft]	Measured Horizontal Hydraulic Conductivities (k_h)				Estimated Seasonal High Groundwater Elevation[3] [ft]	Groundwater Baseflow (gpm)
			Test Number	Test Depth[2] [ft]	[cm/s]	[ft/day]		
SWMF J1	997 X 997	29.00	BB4 LAB	1	5.57E-04	1.580	Varies[7]	-10.6[6]
			BB4 A	8.5-10	1.73E-07	0.000		
			BB4 B	23.5-25	9.74E-06	0.028		
			Weighted Average Surficial Aquifer[4]			N/A		
			Weighted Average with Cut of wall[5]			N/A		

(1) Based on the Master Grading Plans provided by Dunn & Associates, Inc.
(2) Feet below existing grade.
(3) Estimated from the Master Grading Plans provided by Dunn & Associates, Inc.
(4) The Weighted Average of the Measured Horizontal Hydraulic Conductivities (k_h) was calculated in Table 2 and used for the surficial aquifer for each pond.
(5) The Weighted Average of the Horizontal Hydraulic Conductivity with a cut-off wall installed; calculated in Table 3.
(6) Negative values indicate baseflow into the stormwater pond. Positive values indicate baseflow leaving the stormwater pond.
(7) ESHGW elevation varies due to 3-dimensional modeling. See attached groundwater elevation contours on Plates 7 and 8 for graphical representation.

PLATES

Plates 1-6 Cut-Off Wall Location Plans
Plate 7 Pre-Development Groundwater Contours for SWMF J1
Plate 8 Post-Development Groundwater Contours and Cut-Off Wall for SWMF J1
Plate 9 Cut-Off Wall Detail Section



ECS Florida, LLC
Geotechnical ■ Construction Materials ■ Environmental ■ Facilities
11554 Davis Creek Court, Jacksonville, FL 32256
T: (904) 880-0960 ● F: (904) 880-0970
www.ecslimited.com

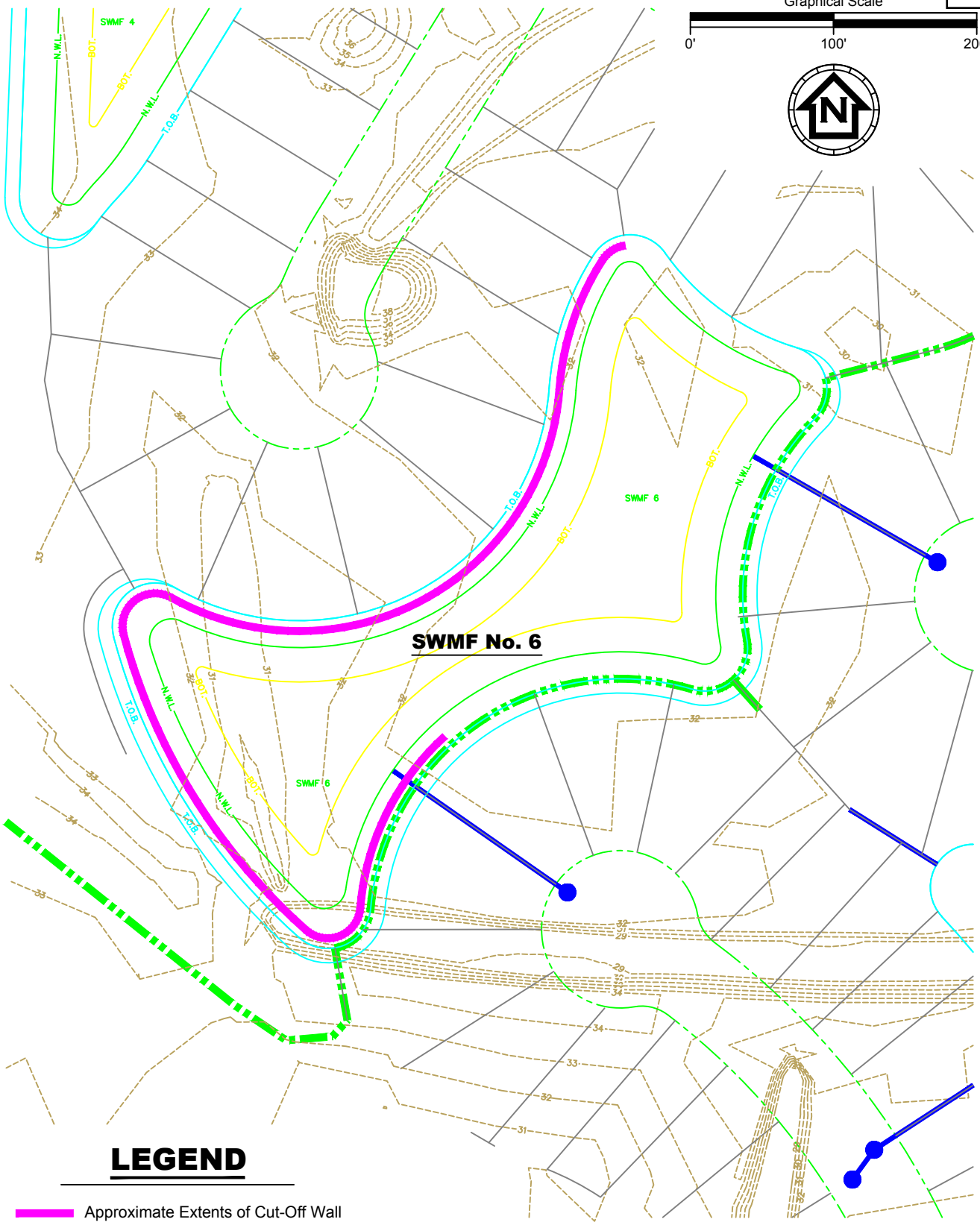
Cut-Off Wall Location Plan (SWMF-4)

The Rookery Phase 1

Clay County, Florida

Date: 03/29/23	Project No.: 35-31217-E	Plate 1

JAS - 35-31217-E



ECS Florida, LLC
Geotechnical ■ Construction Materials ■ Environmental ■ Facilities
11554 Davis Creek Court, Jacksonville, FL 32256
T: (904) 880-0960 ● F: (904) 880-0970
www.ecslimited.com

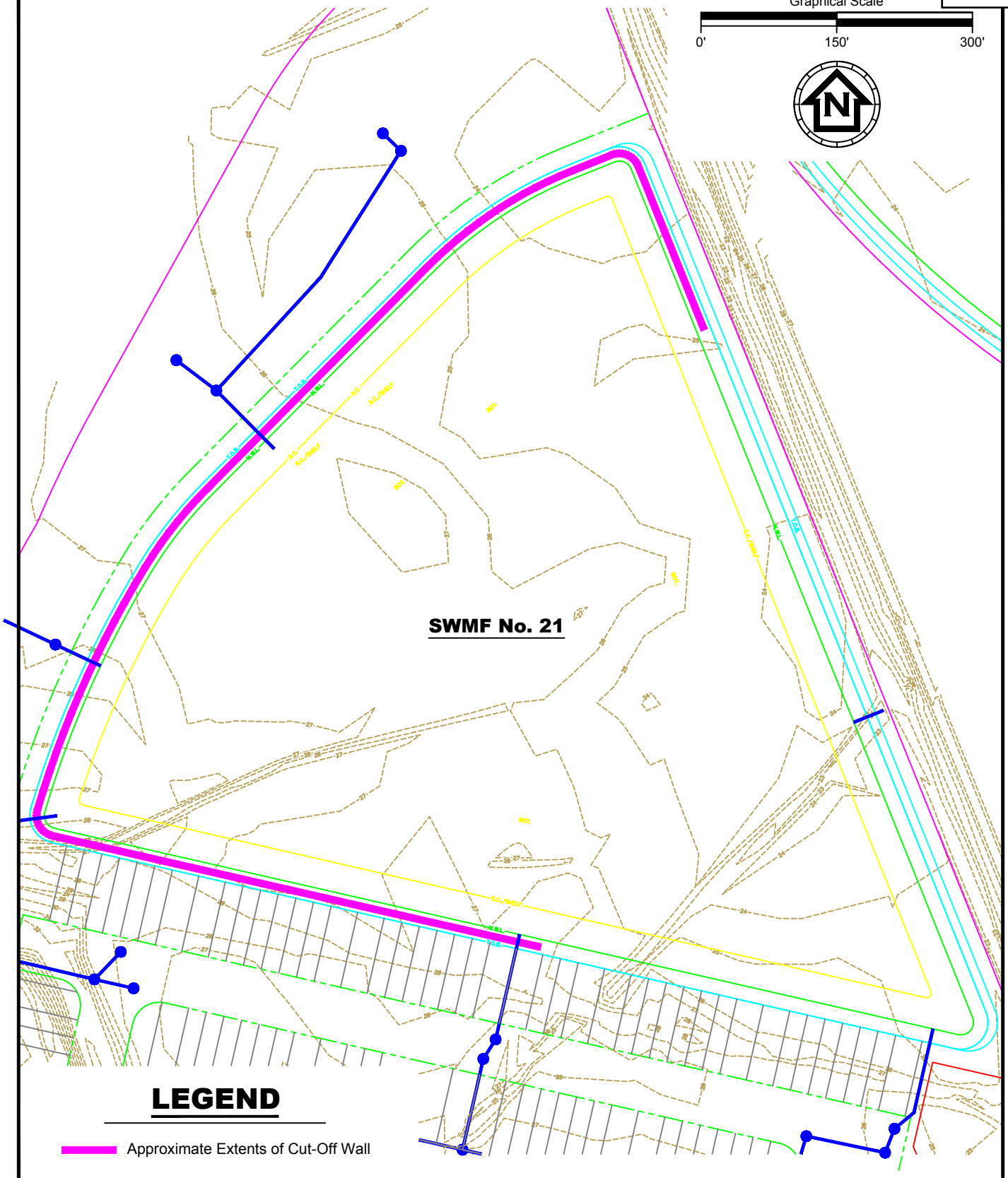
Cut-Off Wall Location Plan (SWMF-6)

The Rookery Phase 1

Clay County, Florida

Date: 03/29/23	Project No.: 35-31217-E	Plate 2

JAS - 35-31217-E



ECS Florida, LLC
Geotechnical ■ Construction Materials ■ Environmental ■ Facilities
11554 Davis Creek Court, Jacksonville, FL 32256
T: (904) 880-0960 ● F: (904) 880-0970
www.ecslimited.com

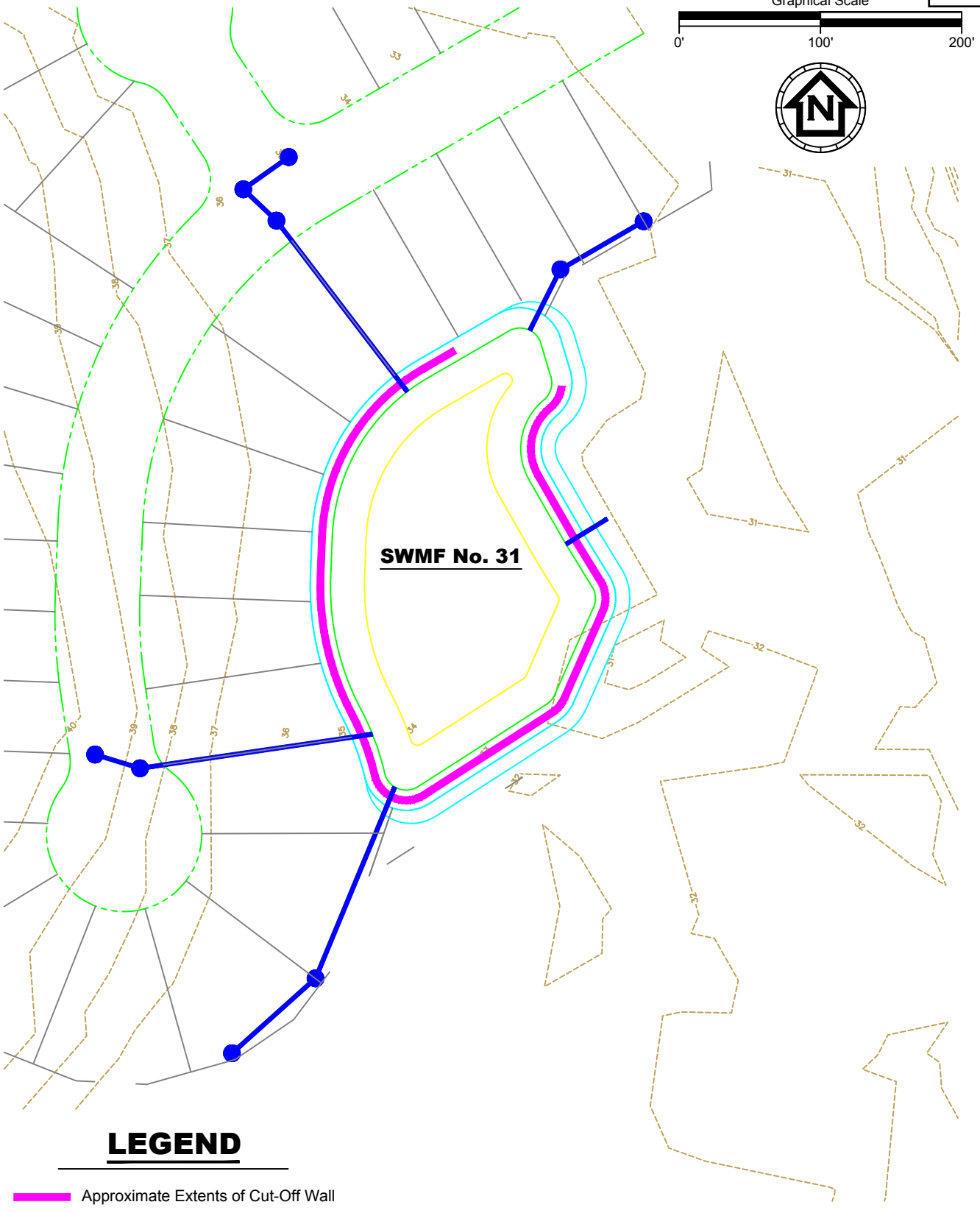
Cut-Off Wall Location Plan (SWMF-21)

The Rookery Phase 1

Clay County, Florida

Date: 03/29/23	Project No.: 35-31217-E	Plate 3

JAS - 35-31217-E



ECS Florida, LLC
Geotechnical ■ Construction Materials ■ Environmental ■ Facilities
11554 Davis Creek Court, Jacksonville, FL 32256
T: (904) 880-0960 ● F: (904) 880-0970
www.ecslimited.com

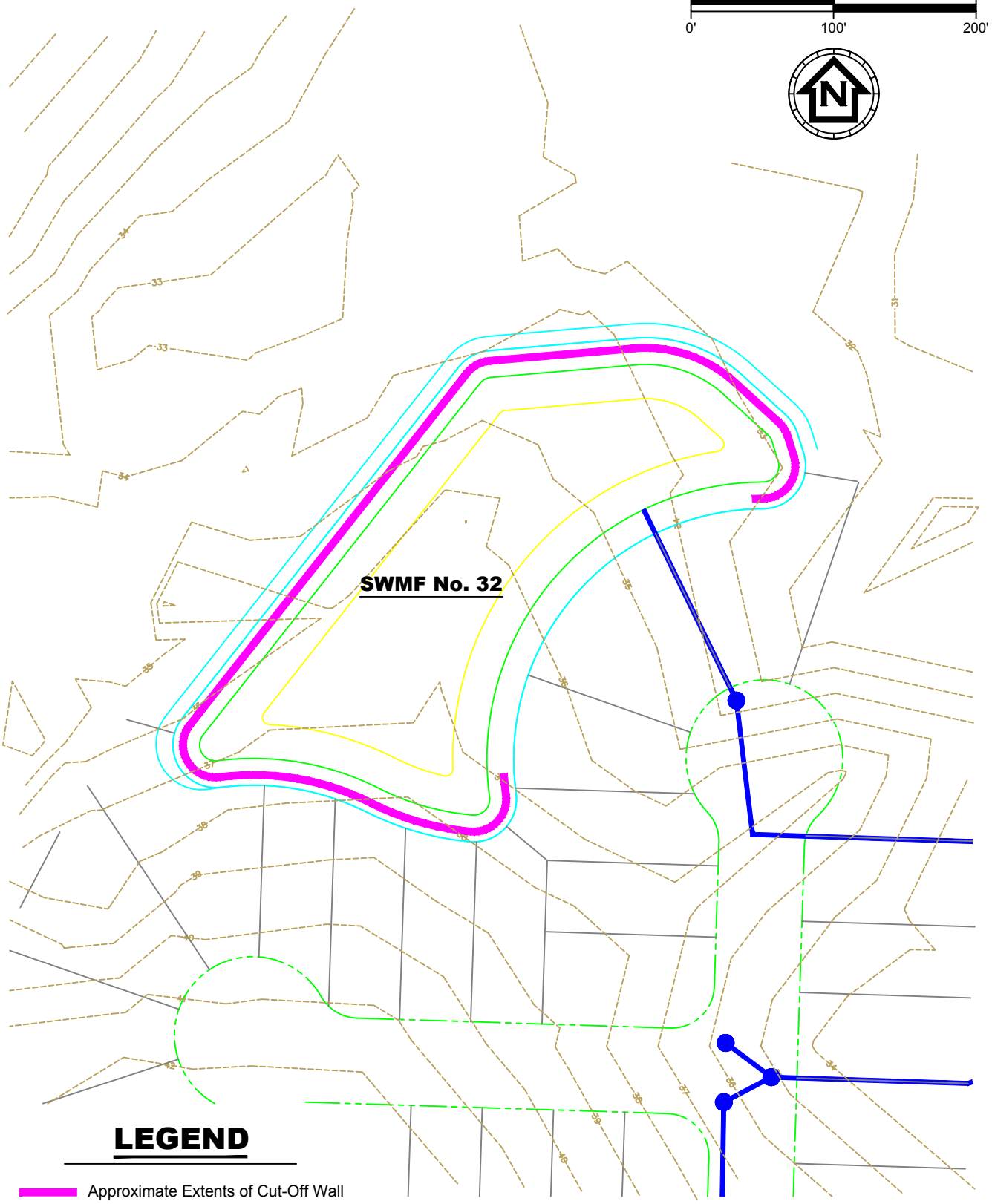
Cut-Off Wall Location Plan (SWMF-31)

The Rookery Phase 1

Clay County, Florida

Date: 03/29/23 | Project No.: 35-31217-E | Plate 4

JAS - 35-31217-E



ECS Florida, LLC
Geotechnical ■ Construction Materials ■ Environmental ■ Facilities
11554 Davis Creek Court, Jacksonville, FL 32256
T: (904) 880-0960 ● F: (904) 880-0970
www.ecslimited.com

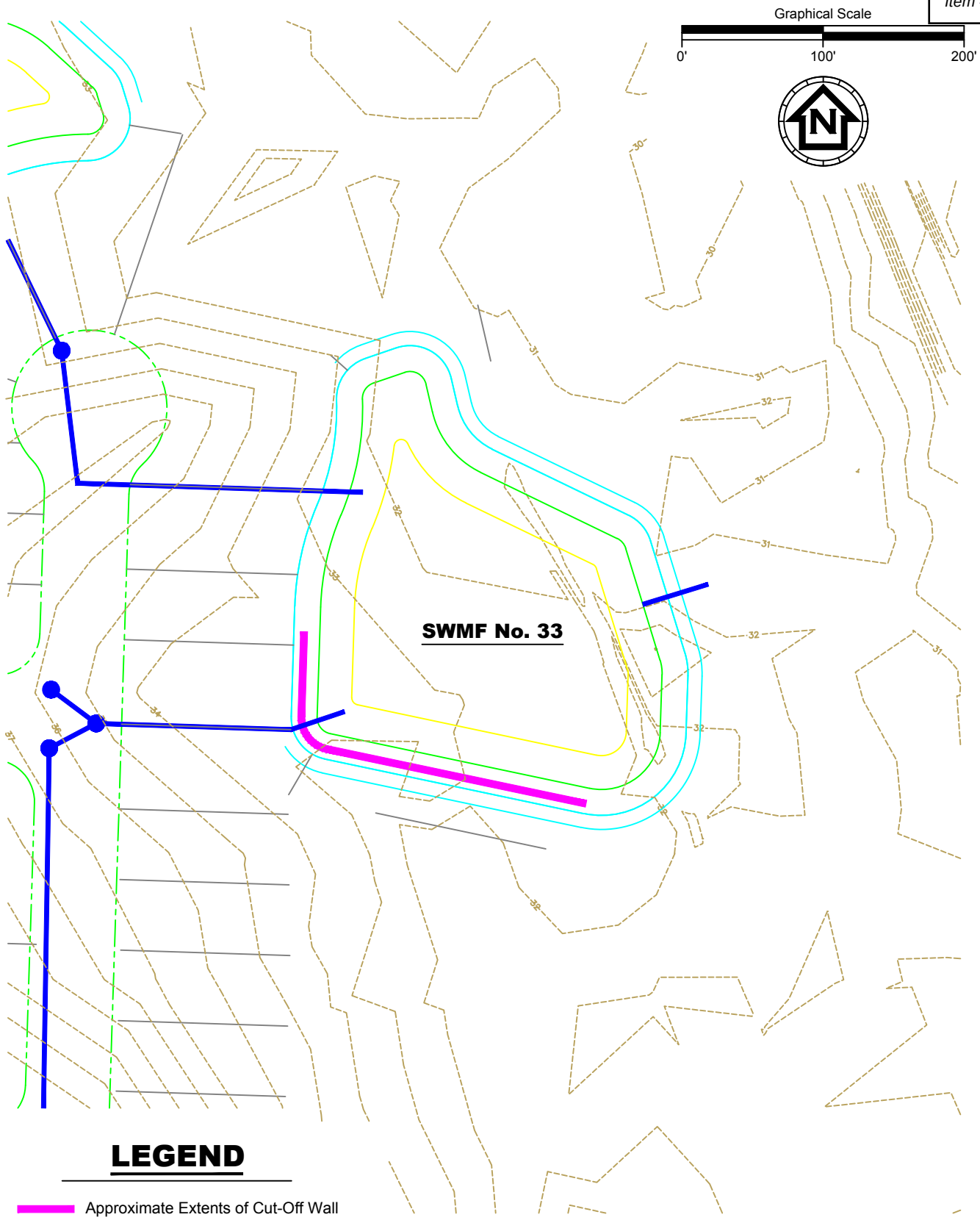
Cut-Off Wall Location Plan (SWMF-32)

The Rookery Phase 1

Clay County, Florida

Date: 03/29/23	Project No.: 35-31217-E	Plate 5

JAS - 35-31217-E



ECS Florida, LLC
Geotechnical ■ Construction Materials ■ Environmental ■ Facilities
11554 Davis Creek Court, Jacksonville, FL 32256
T: (904) 880-0960 ● F: (904) 880-0970
www.ecslimited.com

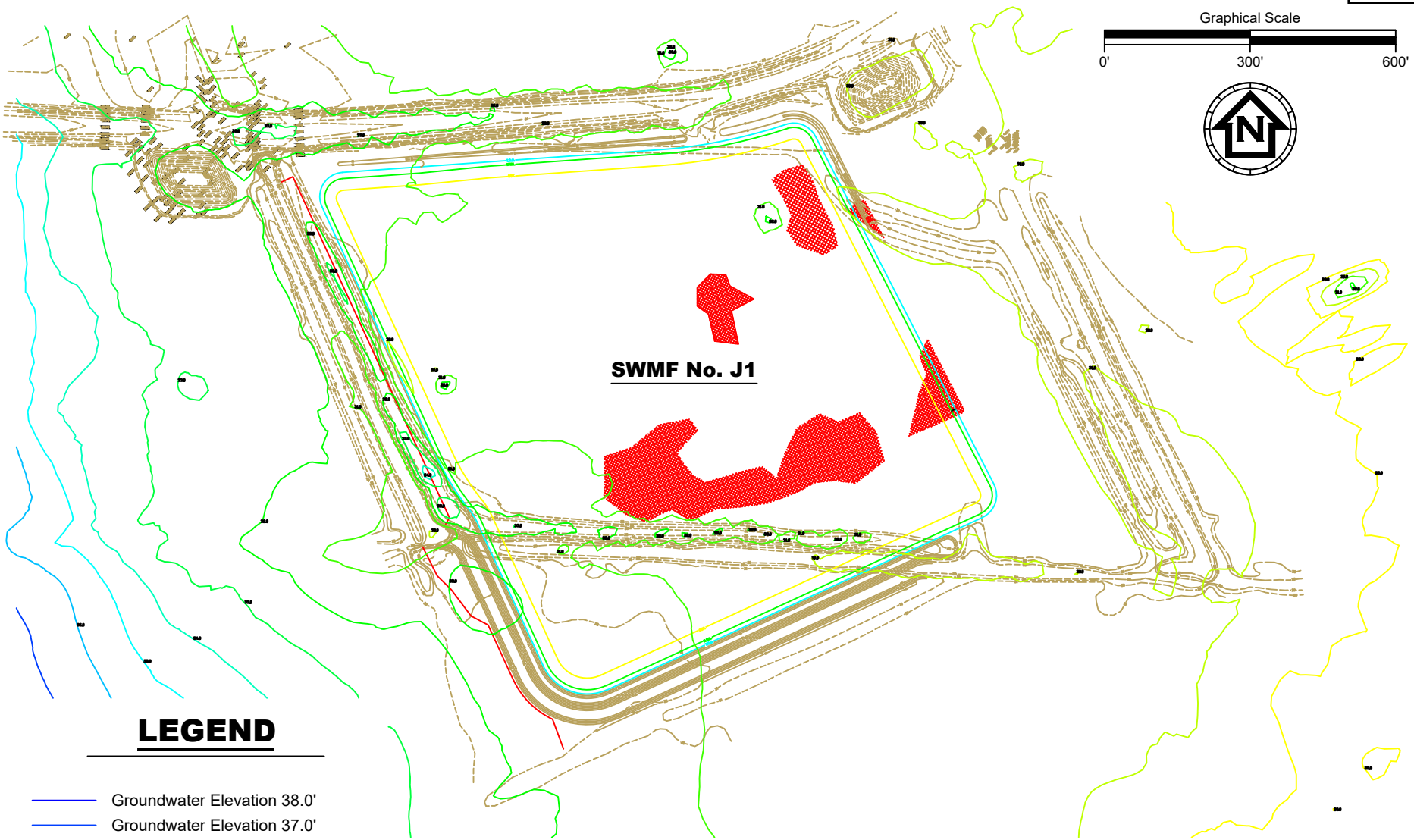
Cut-Off Wall and Pond Liner Location Plan (SWMF-33)

The Rookery Phase 1

Clay County, Florida

Date: 03/29/23	Project No.: 35-31217-E	Plate 6

JAS - 35-31217-E



LEGEND

- Groundwater Elevation 38.0'
- Groundwater Elevation 37.0'
- Groundwater Elevation 36.0'
- Groundwater Elevation 35.0'
- Groundwater Elevation 34.0'
- Groundwater Elevation 33.0'
- Groundwater Elevation 32.0'
- Groundwater Elevation 31.0'
- Groundwater Elevation 30.0'
- Groundwater Elevation 29.0'

ECS Florida, LLC
Geotechnical ■ Construction Materials ■ Environmental ■ Facilities
11554 Davis Creek Court, Jacksonville, FL 32256
T: (904) 880-0960 ● F: (904) 880-0970
www.ecslimited.com

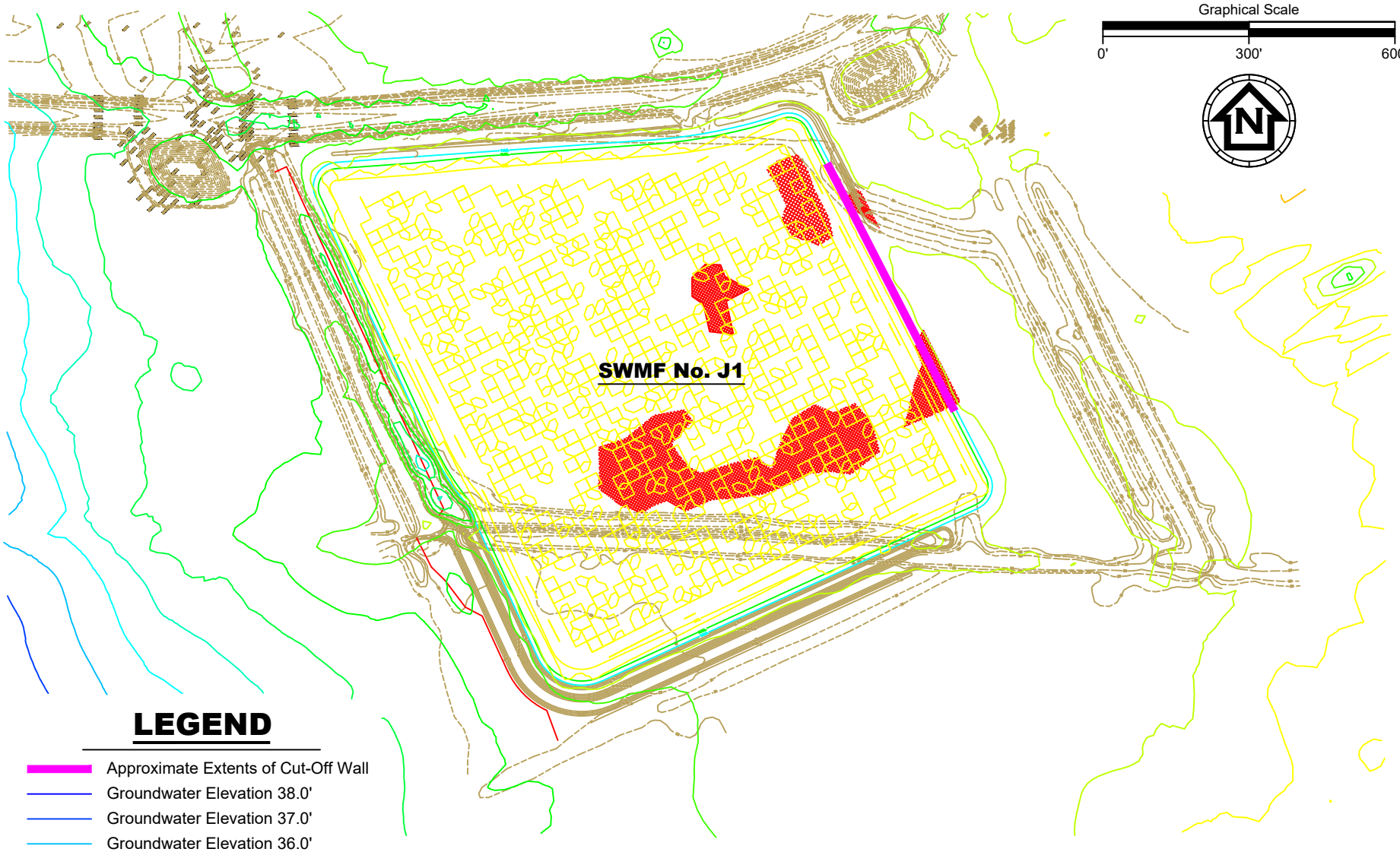
Pre-Development Groundwater Contours for (SWMF-J1)

The Rookery Phase 1

Jacksonville, Florida

Date: 04/04/23	Project No.: 35-31217-E	Plate 7

JAS - 35-31217-E



LEGEND

- Approximate Extents of Cut-Off Wall
- Groundwater Elevation 38.0'
- Groundwater Elevation 37.0'
- Groundwater Elevation 36.0'
- Groundwater Elevation 35.0'
- Groundwater Elevation 34.0'
- Groundwater Elevation 33.0'
- Groundwater Elevation 32.0'
- Groundwater Elevation 31.0'
- Groundwater Elevation 30.0'
- Groundwater Elevation 29.0'

ECS Florida, LLC
Geotechnical ■ Construction Materials ■ Environmental ■ Facilities
11554 Davis Creek Court, Jacksonville, FL 32256
T: (904) 880-0960 ● F: (904) 880-0970
www.ecslimited.com

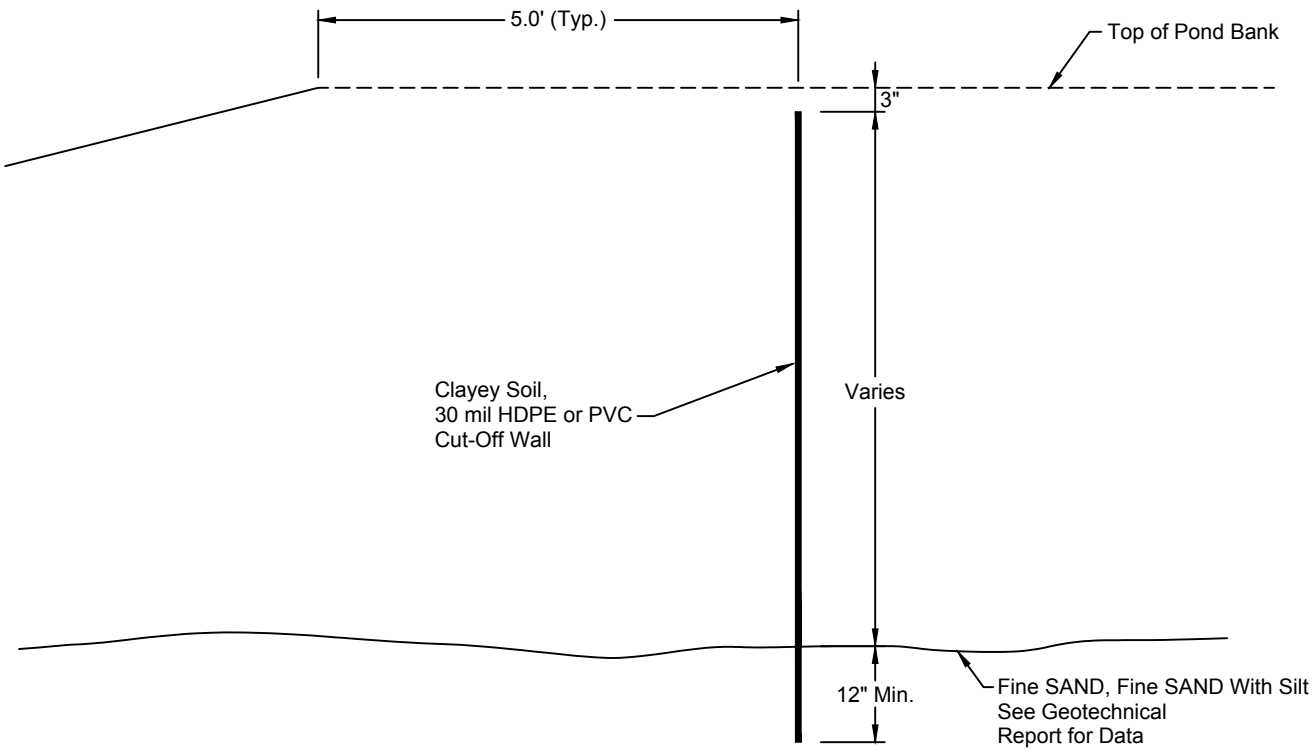
Post-Development Groundwater Contours and Cut-Off Wall for (SWMF-J1)

The Rookery Phase 1

Jacksonville, Florida

Date: 04/04/23	Project No.: 35-31217-E	Plate 8

JAS - 35-31217-E



* See Boring Profile and Report for Restrictive Layer Data

ECS Florida, LLC
Geotechnical ■ Construction Materials ■ Environmental ■ Facilities
11554 Davis Creek Court, Jacksonville, FL 32256
T: (904) 880-0960 ● F: (904) 880-0970
www.ecslimited.com

Cut Off Wall Detail Section

The Rookery Phase 1

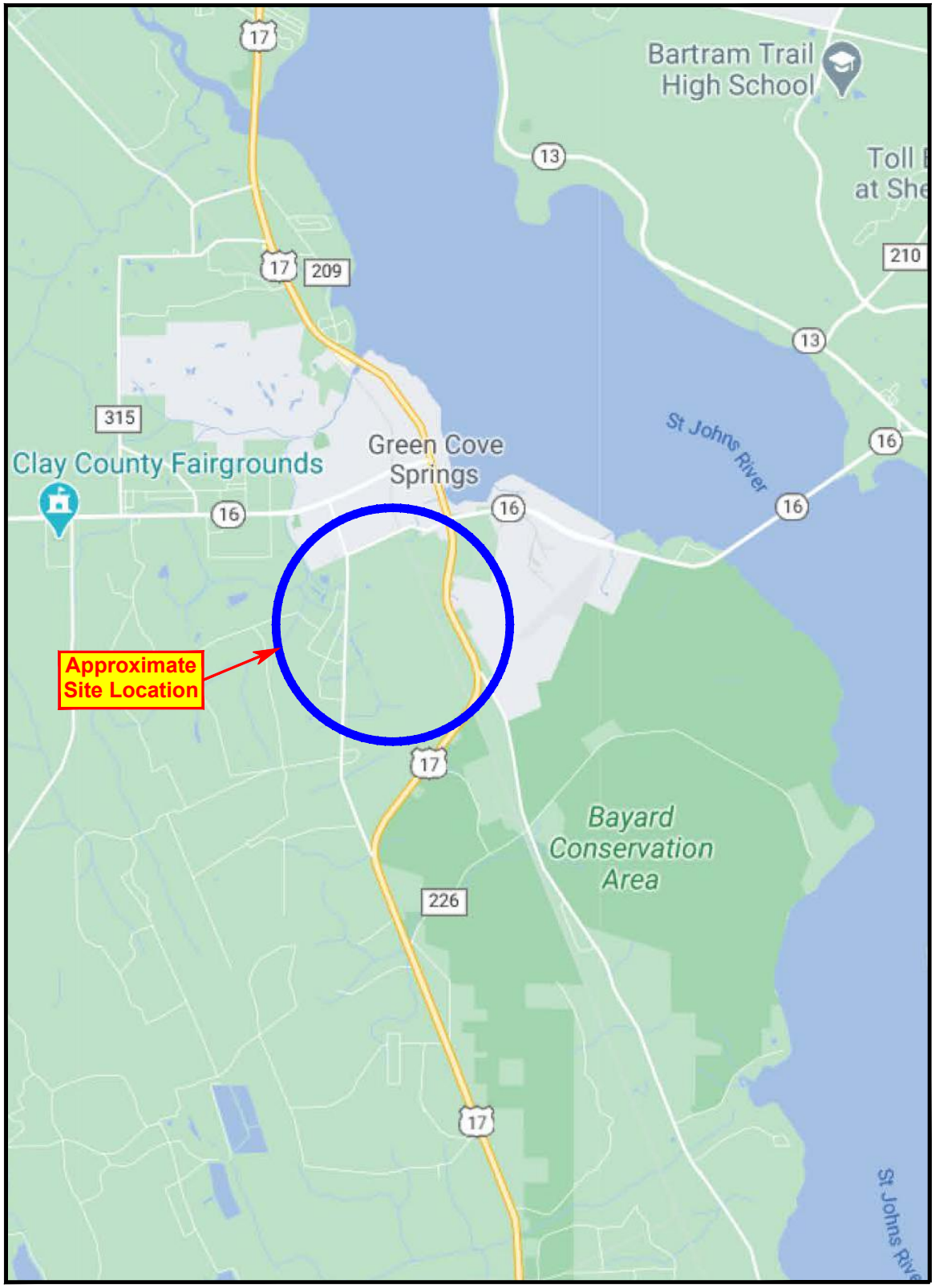
Clay County, Florida

Date: 03/29/23 | Project No.: 35-31217-E | Plate 9

JAS - 35-31217-E

APPENDIX A – Drawings & Reports

Figure 1 - Site Location Diagram
Figure 2 - Field Exploration Diagram
Figure 3 - Generalized Subsurface Profiles



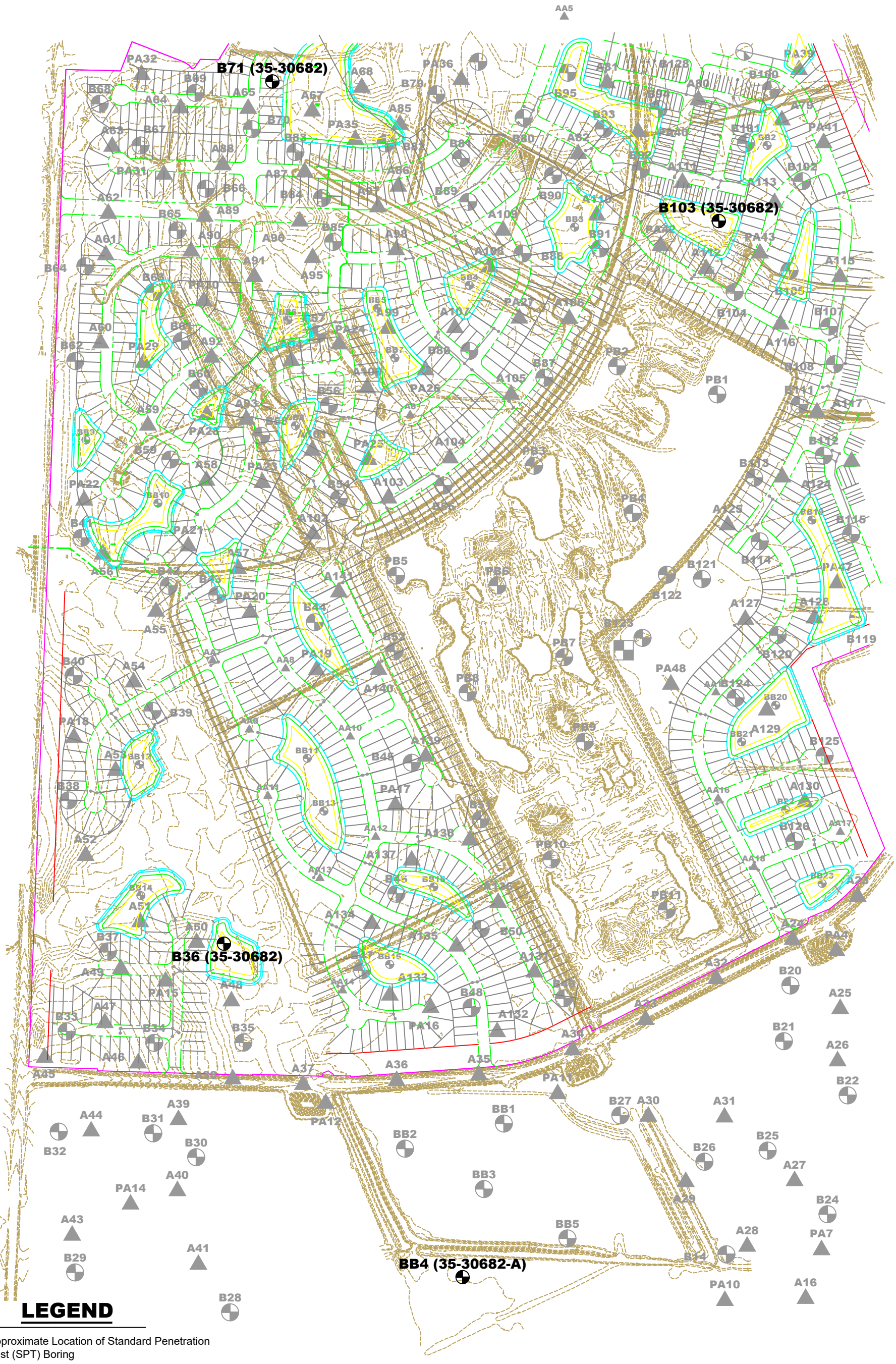
ECS Florida, LLC
Geotechnical ■ Construction Materials ■ Environmental ■ Facilities
11554 Davis Creek Court, Jacksonville, FL 32256
T: (904) 880-0960 ● F: (904) 880-0970
www.ecslimited.com

Site Location Diagram

The Rookery Phase 1

Green Cove Springs, Florida

Date: 04/04/23 | Project No.: 35-31217-E | Figure



ECS Florida, LLC
Geotechnical ■ Construction Materials ■ Environmental ■ Facilities
11554 Davis Creek Court, Jacksonville, FL 32256
T: (904) 880-0960 ● F: (904) 880-0970
www.ecslimited.com

Field Exploration Diagram

The Rookery Phase 1

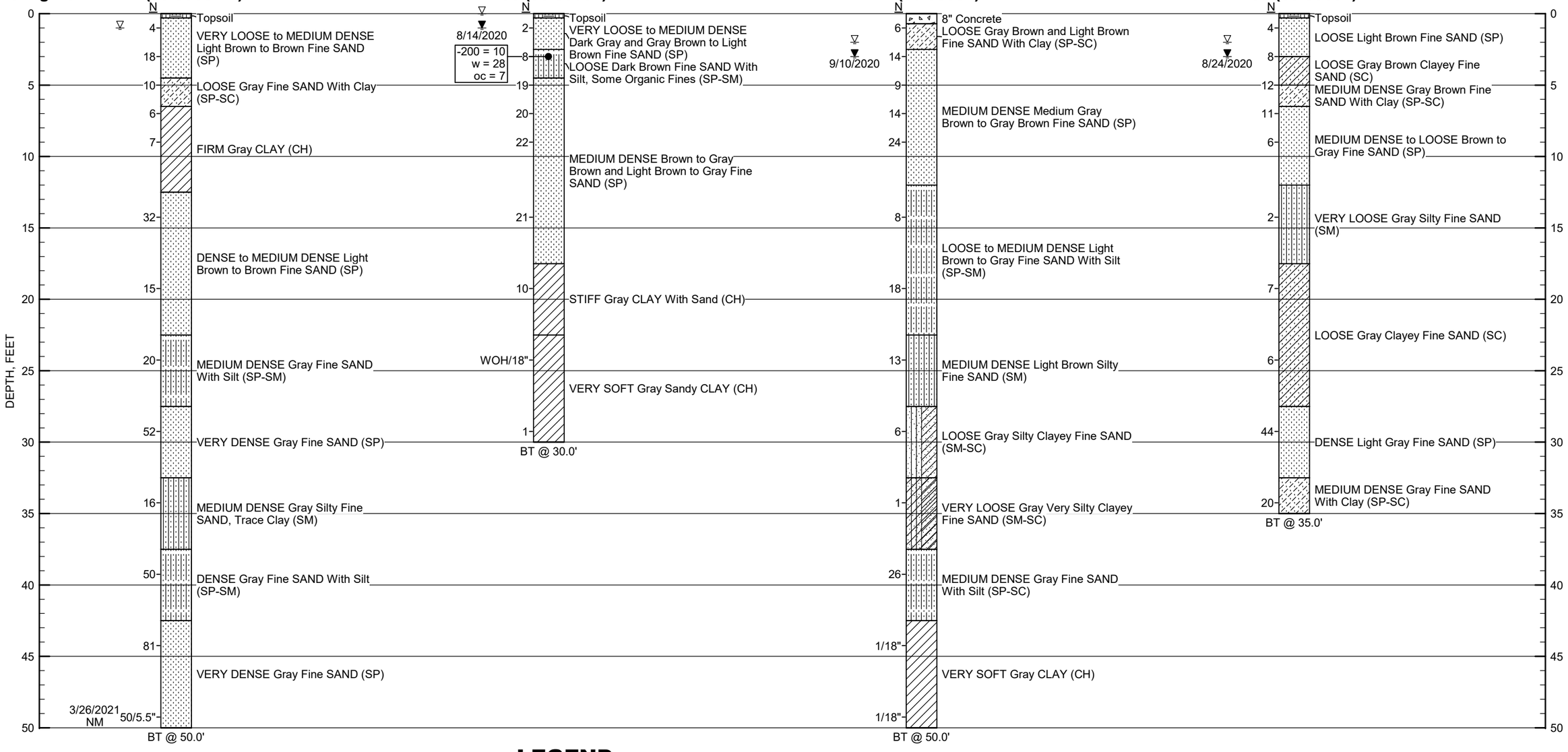
Green Cove Springs, Florida

Date: 04/04/23 | Project No.: 35-31217-E | Figure 2

Graphical Scale

0' 500' 1,000'

JAS - 35-31217-E



LEGEND

- Topsoil
- Fine SAND With Silt (SP-SM)
- Silty Fine SAND (SM)
- CLAY (CH)
- Concrete
- Fine SAND (SP)
- Fine SAND With Clay (SP-SC)
- Clayey Fine SAND (SC)
- Silty Fine SAND With Clay
- N — Standard Penetration Resistance, Blows/Foot
- SP — Unified Soil Classification System
- ▼ — Groundwater Level at Time of Drilling
- ▽ — Estimated Normal Seasonal High Groundwater Level
- 1/18" — One Blow to Drive Split Spoon Sample Eighteen Inches
- 50/5" — Number of Blows to Drive Split Spoon Sample in Inches
- NM — Groundwater Level Not Measured on Date Drilled
- BT — Boring Terminated at Depth Below Grade
- -200 — % Passing No. 200 U.S. Standard Sieve
- w — Natural Moisture Content (%)
- oc — Organic Content (%)
- WOH — Distance Split-Spoon Soil Sampler Dropped Under Weight of Drilling Tools and Hammer

Generalized Subsurface Profiles

The Rookery Phase 1

Green Cove Springs, Florida

ECS

DATE: 04/04/23 | PROJ. NO.: 35-31217-E | Fig

APPENDIX B – Field Operations

Reference Notes for Boring Logs
Subsurface Exploration Procedure: Standard Penetration Testing (SPT)
Boring Logs

REFERENCE NOTES FOR BORING LOGS

MATERIAL[1,2]

	ASPHALT
	CONCRETE
	GRAVEL
	TOPSOIL
	VOID
	BRICK
	AGGREGATE BASE COURSE
GW	WELL-GRADED GRAVEL gravel-sand mixtures, little or no fines
GP	POORLY-GRADED GRAVEL gravel-sand mixtures, little or no fines
GM	SILTY GRAVEL gravel-sand-silt mixtures
GC	CLAYEY GRAVEL gravel-sand-clay mixtures
SW	WELL-GRADED SAND gravelly sand, little or no fines
SP	POORLY-GRADED SAND gravelly sand, little or no fines
SM	SILTY SAND sand-silt mixtures
SC	CLAYEY SAND sand-clay mixtures
ML	SILT non-plastic to medium plasticity
MH	ELASTIC SILT high plasticity
CL	LEAN CLAY low to medium plasticity
CH	FAT CLAY high plasticity
OL	ORGANIC SILT or CLAY non-plastic to low plasticity
OH	ORGANIC SILT or CLAY high plasticity
PT	PEAT highly organic soils

DRILLING SAMPLING SYMBOLS & ABBREVIATIONS

SS	Split Spoon Sampler	PM	Pressuremeter Test
ST	Shelby Tube Sampler	RD	Rock Bit Drilling
WS	Wash Sample	RC	Rock Core, NX, BX, AX
BS	Bulk Sample of Cuttings	REC	Rock Sample Recovery %
PA	Power Auger (no sample)	RQD	Rock Quality Designation %
HSA	Hollow Stem Auger		

PARTICLE SIZE IDENTIFICATION

DESIGNATION		PARTICLE SIZES
Boulders		12 inches (300 mm) or larger
Cobbles		3 inches to 12 inches (75 mm to 300 mm)
Gravel:	Coarse	¾ inch to 3 inches (19 mm to 75 mm)
	Fine	4.75 mm to 19 mm (No. 4 sieve to ¾ inch)
Sand:	Coarse	2.00 mm to 4.75 mm (No. 10 to No. 4 sieve)
	Medium	0.425 mm to 2.00 mm (No. 40 to No. 10 sieve)
	Fine	0.074 mm to 0.425 mm (No. 200 to No. 40 sieve)
Silt & Clay ("Fines")		<0.074 mm (smaller than a No. 200 sieve)

COHESIVE SILTS & CLAYS

UNCONFINED COMPRESSIVE STRENGTH, Q_P[4]	SPT[5] (BPF)	CONSISTENCY[7] (COHESIVE)
<0.25	<2	Very Soft
0.25 - <0.50	2 - 4	Soft
0.50 - <1.00	5 - 8	Firm
1.00 - <2.00	9 - 15	Stiff
2.00 - <4.00	16 - 30	Very Stiff
4.00 - 8.00	31 - 50	Hard
>8.00	>50	Very Hard

GRAVELS, SANDS & NON-COHESIVE SILTS

SPT[5]	DENSITY
<5	Very Loose
5 - 10	Loose
11 - 30	Medium Dense
31 - 50	Dense
>50	Very Dense

RELATIVE AMOUNT[7]	COARSE GRAINED (%)[8]	FINE GRAINED (%)[8]
Trace	≤5	≤5
With	10 - 20	10 - 25
Adjective *(ex: "Silty")*	25 - 45	30 - 45

WATER LEVELS[6]

- WL (First Encountered)
- WL (Completion)
- WL (Seasonal High Water)
- WL (Stabilized)

FILL AND ROCK

FILL | POSSIBLE FILL | PROBABLE FILL | ROCK

[1]Classifications and symbols per ASTM D 2488-17 (Visual-Manual Procedure) unless noted otherwise.

[2]To be consistent with general practice, "POORLY GRADED" has been removed from GP, GP-GM, GP-GC, SP, SP-SM, SP-SC soil types on the boring logs.

[3]Non-ASTM designations are included in soil descriptions and symbols along with ASTM symbol [Ex: (SM-FILL)].

[4]Typically estimated via pocket penetrometer or Torvane shear test and expressed in tons per square foot (tsf).

[5]Standard Penetration Test (SPT) refers to the number of hammer blows (blow count) of a 140 lb. hammer falling 30 inches on a 2 inch OD split spoon sampler required to drive the sampler 12 inches (ASTM D 1586). "N-value" is another term for "blow count" and is expressed in blows per foot (bpf). SPT correlations per 7.4.2 Method B and need to be corrected if using an auto hammer.

[6]The water levels are those levels actually measured in the borehole at the times indicated by the symbol. The measurements are relatively reliable when augering, without adding fluids, in granular soils. In clay and cohesive silts, the determination of water levels may require several days for the water level to stabilize. In such cases, additional methods of measurement are generally employed.

[7]Minor deviation from ASTM D 2488-17 Note 14.

[8]Percentages are estimated to the nearest 5% per ASTM D 2488-17.

© 2021 ECS Corporate Services, LLC. All Right

SUBSURFACE EXPLORATION PROCEDURE: STANDARD PENETRATION TESTING (SPT) ASTM D 1586 Split-Barrel Sampling

Standard Penetration Testing, or **SPT**, is the most frequently used subsurface exploration test performed worldwide. This test provides samples for identification purposes, as well as a measure of penetration resistance, or N-value. The N-Value, or blow counts, when corrected and correlated, can approximate engineering properties of soils used for geotechnical design and engineering purposes.

SPT Procedure:

- Involves driving a hollow tube (split-spoon) into the ground by dropping a 140-lb hammer a height of 30-inches at desired depth
- Recording the number of hammer blows required to drive split-spoon a distance of 18-24 inches (in 3 or 4 Increments of 6 inches each)

- Auger is advanced* and an additional SPT is performed
- One SPT typically performed for every two to five feet. An approximate 1.5 inch diameter soil sample is recovered.

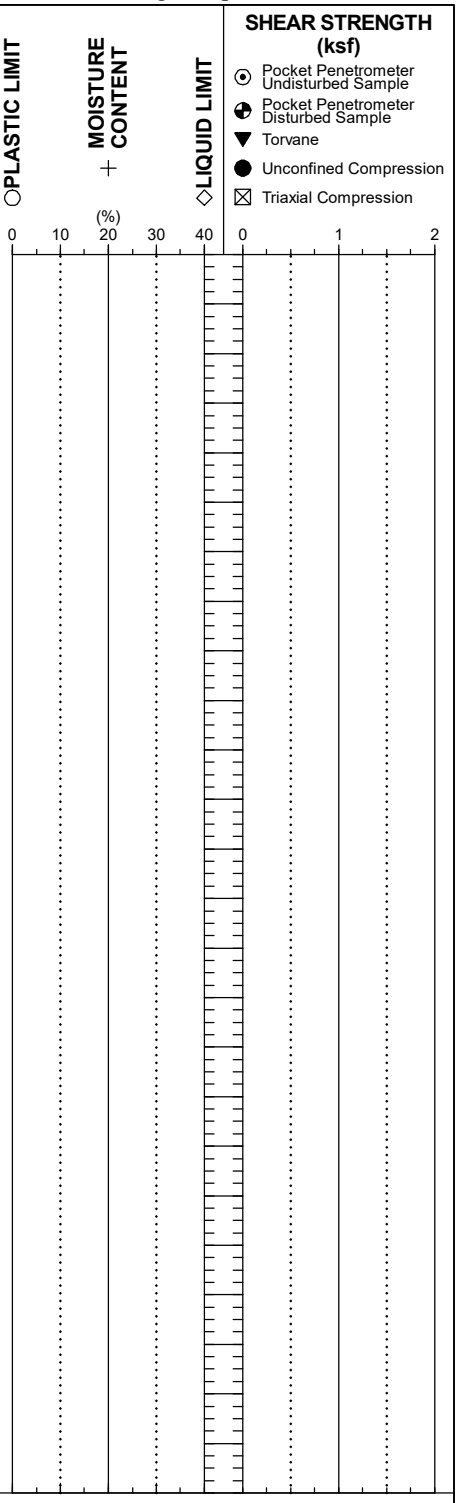
**Drilling Methods May Vary*— The predominant drilling methods used for SPT are open hole fluid rotary drilling and hollow-stem auger drilling.

Project No.: 35-31217-E
Boring No.: BB4 (35-30682-A)
Sheet 1 of 2

LOG OF BORING

Project: The Rookery Phase 1
Client: DR Horton
Drill Rig: 101A
Driller: M. Foster
Boring Location: See Field Exploration Plan
Drill Rod: AWJ
Drill Mud: Super Gel-X
Casing Size:
Length of Casing:
Groundwater Depth: NM Time: Drilling Date: 3/26/21
Boring Begun: 3/26/21
Boring Completed: 3/20/23

SAMPLE NO.	DEPTH, FEET	SAMPLE TYPE	DESCRIPTION	BLOWS PER 6 IN.	N Value	PERCENT ORGANIC MATERIAL	PERCENT PASSING NO. 200 SIEVE
	0		Topsoil	1			
1			VERY LOOSE Light Brown Fine SAND (SP)	1 3 4	4		
				7			
2			MEDIUM DENSE Brown Fine SAND (SP)	8 10 13	18		
				9			
3	5		LOOSE Gray Fine SAND With Clay (SP-SC)	5 5	10		
				4 3			
4			FIRM Gray CLAY (CH)	3 3 12	6		
				3			
5				3 4	7		
	10			4			
			DENSE Light Brown Fine SAND (SP)				
6				15 16			
	15			16	32		
			MEDIUM DENSE Brown Fine SAND (SP)				
				4			
7				7 8	15		
	20						
			MEDIUM DENSE Gray Fine SAND With Silt (SP-SM)				
				7			
8				8 12	20		
	25						



Remarks NM = Groundwater Level Not Measured at Time of Drilling.

Project No.: 35-31217-E
Boring No.: BB4 (35-30682-A)
Sheet 2 of 2

LOG OF BORING

Project: The Rookery Phase 1 | Client: DR Horton
Drill Rig: 101A | Driller: M. Foster
Boring Location: See Field Exploration Plan | Drill Rod: AWJ | Drill Mud: Super Gel-X
Casing Size: | Length of Casing:
Groundwater Depth: NM Time: Drilling Date: 3/26/21 | Boring Begun: 3/26/21 | Boring Completed: 3/20/23

SAMPLE NO.	DEPTH, FEET	SAMPLE TYPE	DESCRIPTION	BLOWS PER 6 IN.	N Value	PERCENT ORGANIC MATERIAL	PERCENT PASSING NO. 200 SIEVE
	25		MEDIUM DENSE Gray Fine SAND With Silt (SP-SM) *(Continued)*				
			VERY DENSE Gray Fine SAND (SP)				
9	30			12 22 30	52		
			MEDIUM DENSE Gray Silty Fine SAND, Trace Clay (SM)				
10	35			6 6 10	16		
			DENSE Gray Fine SAND With Silt (SP-SM)				
11	40			23 24 26	50		
			VERY DENSE Gray Fine SAND (SP)				
12	45			18 31 50	81		
13	50			30 50/5.5"	50/5.5"		

PLASTIC LIMIT ○ | MOISTURE CONTENT + (%) 0 10 20 30 40 | LIQUID LIMIT ◇

SHEAR STRENGTH (ksf)
- ⊙ Pocket Penetrometer Undisturbed Sample
- ◕ Pocket Penetrometer Disturbed Sample
- ▼ Torvane
- ● Unconfined Compression
- ⊠ Triaxial Compression

0 1 2

Boring Terminated @ 50 ft.

Remarks

Project No.: 35-31217-E
Boring No.: B36 (35-30682)
Sheet 1 of 2

LOG OF BORING

Project: The Rookery Phase 1
Client: DR Horton
Drill Rig: 101A
Driller: M. Foster
Boring Location: See Field Exploration Plan
Drill Rod: AWJ
Drill Mud: Super Gel-X
Casing Size:
Length of Casing:
Groundwater Depth: 1 ft Time: Drilling Date: 8/14/20
Boring Begun: 8/14/20
Boring Completed: 3/17/23

SAMPLE NO.	DEPTH, FEET	SAMPLE TYPE	DESCRIPTION	BLOWS PER 6 IN.	N Value	PERCENT ORGANIC MATERIAL	PERCENT PASSING NO. 200 SIEVE	PLASTIC LIMIT ○ / MOISTURE CONTENT + / LIQUID LIMIT ◇ (%)	SHEAR STRENGTH (ksf)
	0		Topsoil	1					
1			VERY LOOSE Dark Gray Fine SAND (SP) ▼	1 1 1	2				
				1 2					
2			LOOSE Dark Brown Fine SAND With Silt, Some Organic Fines (SP-SM)	3 5 6	8	7	10	+	
				6					
3	5		MEDIUM DENSE Brown to Gray Brown Fine SAND (SP)	8 11 11	19				
				8					
4			MEDIUM DENSE Light Brown Fine SAND (SP)	9 11 12	20				
				8					
5				11 11 23	22				
	10								
			MEDIUM DENSE Gray Fine SAND (SP)						
				10					
6				10 11	21				
	15								
			STIFF Gray CLAY With Sand (CH)						
				4					
7				3 7	10				
	20								
			VERY SOFT Gray Sandy CLAY (CH)						
				WOH/18"					
8				WOH/18"					
	25								

SHEAR STRENGTH (ksf)
- Pocket Penetrometer Undisturbed Sample
- Pocket Penetrometer Disturbed Sample
- Torvane
- Unconfined Compression
- Triaxial Compression

Remarks

Project No.: 35-31217-E
Boring No.: B36 (35-30682)
Sheet 2 of 2

LOG OF BORING

Project: The Rookery Phase 1
Client: DR Horton
Drill Rig: 101A
Driller: M. Foster
Boring Location: See Field Exploration Plan
Drill Rod: AWJ
Drill Mud: Super Gel-X
Casing Size:
Length of Casing:
Groundwater Depth: 1 ft Time: Drilling Date: 8/14/20
Boring Begun: 8/14/20
Boring Completed: 3/17/23

SAMPLE NO.	DEPTH, FEET	SAMPLE TYPE	DESCRIPTION	BLOWS PER 6 IN.	N Value	PERCENT ORGANIC MATERIAL	PERCENT PASSING NO. 200 SIEVE	PLASTIC LIMIT ○ / MOISTURE CONTENT + / LIQUID LIMIT ◇ (%)	SHEAR STRENGTH (ksf)
	25		VERY SOFT Gray Sandy CLAY (CH) *(Continued)*						
9	30			WOH/12" 1	1				
			Boring Terminated @ 30 ft.						
	35								
	40								
	45								
	50								

0 10 20 30 40

Pocket Penetrometer Undisturbed Sample
Pocket Penetrometer Disturbed Sample
Torvane
Unconfined Compression
Triaxial Compression

0 1 2

Remarks

Project No.: 35-31217-E
Boring No.: B71 (35-30682)
Sheet 1 of 2

LOG OF BORING

Project: The Rookery Phase 1 | Client: DR Horton
Drill Rig: 101A | Driller: M. Foster
Boring Location: See Field Exploration Plan | Drill Rod: AWJ | Drill Mud: Super Gel-X
Casing Size: | Length of Casing:
Groundwater Depth: 3 ft Time: Drilling Date: 9/10/20 | Boring Begun: 9/10/20 | Boring Completed: 3/10/23

SAMPLE NO.	DEPTH, FEET	SAMPLE TYPE	DESCRIPTION	BLOWS PER 6 IN.	N Value	PERCENT ORGANIC MATERIAL	PERCENT PASSING NO. 200 SIEVE	PLASTIC LIMIT ○ / MOISTURE CONTENT + / LIQUID LIMIT ◇ (%)	SHEAR STRENGTH (ksf)
	0		8" Concrete						
1			LOOSE Gray Brown and Light Brown Fine SAND With Clay (SP-SC)	2 4 5 5	6				
2			MEDIUM DENSE Medium Gray Brown Fine SAND (SP) ▼	7 7 5 4	14				
3	5			4 5 5 5	9				
4				6 8 8 8	14				
5			MEDIUM DENSE Gray Brown Fine SAND (SP)	12 12 14	24				
	10								
			LOOSE Light Brown Fine SAND With Silt (SP-SM)						
6				3 3 5	8				
	15								
			MEDIUM DENSE Gray Fine SAND With Silt (SP-SM)						
7				5 9 9	18				
	20								
			MEDIUM DENSE Light Brown Silty Fine SAND (SM)						
8				6 7 6	13				
	25								

SHEAR STRENGTH (ksf)
Pocket Penetrometer Undisturbed Sample
Pocket Penetrometer Disturbed Sample
Torvane
Unconfined Compression
Triaxial Compression

Remarks

Project No.: 35-31217-E
Boring No.: B71 (35-30682)
Sheet 2 of 2

LOG OF BORING

Project: The Rookery Phase 1
Client: DR Horton
Drill Rig: 101A
Driller: M. Foster
Boring Location: See Field Exploration Plan
Drill Rod: AWJ
Drill Mud: Super Gel-X
Casing Size:
Length of Casing:
Groundwater Depth: 3 ft Time: Drilling Date: 9/10/20
Boring Begun: 9/10/20
Boring Completed: 3/10/23

SAMPLE NO.	DEPTH, FEET	SAMPLE TYPE	DESCRIPTION	BLOWS PER 6 IN.	N Value	PERCENT ORGANIC MATERIAL	PERCENT PASSING NO. 200 SIEVE	PLASTIC LIMIT ○ / MOISTURE CONTENT + / LIQUID LIMIT ◇ (%)	SHEAR STRENGTH (ksf)
	25		MEDIUM DENSE Light Brown Silty Fine SAND (SM) *(Continued)*						
			LOOSE Gray Silty Clayey Fine SAND (SM-SC)						
9	30			3 4 2	6				
			VERY LOOSE Gray Very Silty Clayey Fine SAND (SM-SC)						
10	35			1/12" 1	1				
			MEDIUM DENSE Gray Fine SAND With Silt (SP-SC)						
11	40			7 12 14	26				
			VERY SOFT Gray CLAY (CH)						
12	45			1/18"	1/18"				
13	50			1/18"	1/18"				

Boring Terminated @ 50 ft.

Remarks

Project No.: 35-31217-E
Boring No.: B103 (35-30682)
Sheet 1 of 2

LOG OF BORING

Project: The Rookery Phase 1
Client: DR Horton
Drill Rig: 101A
Driller: M. Foster
Boring Location: See Field Exploration Plan
Drill Rod: AWJ
Drill Mud: Super Gel-X
Casing Size:
Length of Casing:
Groundwater Depth: 3 ft Time: Drilling Date: 8/24/20
Boring Begun: 8/24/20
Boring Completed: 3/14/23

SAMPLE NO.	DEPTH, FEET	SAMPLE TYPE	DESCRIPTION	BLOWS PER 6 IN.	N Value	PERCENT ORGANIC MATERIAL	PERCENT PASSING NO. 200 SIEVE	PLASTIC LIMIT ○ / MOISTURE CONTENT + / LIQUID LIMIT ◇ (%)	SHEAR STRENGTH (ksf)
	0		Topsoil	1					
1			LOOSE Light Brown Fine SAND (SP)	2 2 3	4				
				1 5					
2			LOOSE Gray Brown Clayey Fine SAND (SC)	3 5	8				
				5 6					
3	5		MEDIUM DENSE Gray Brown Fine SAND With Clay (SP-SC)	6 5 6	12				
			MEDIUM DENSE Brown Fine SAND (SP)	6 5					
4				5 3	11				
				3 3					
5			LOOSE Gray Fine SAND (SP)	3 3	6				
	10								
			VERY LOOSE Gray Silty Fine SAND (SM)						
				1					
6				1 1	2				
	15								
			LOOSE Gray Clayey Fine SAND (SC)						
				2					
7				3 4	7				
	20								
				2					
8				3 3	6				
	25								

SHEAR STRENGTH (ksf)
- Pocket Penetrometer Undisturbed Sample
- Pocket Penetrometer Disturbed Sample
- Torvane
- Unconfined Compression
- Triaxial Compression

Remarks

Project No.: 35-31217-E
Boring No.: B103 (35-30682)
Sheet 2 of 2

LOG OF BORING

Project: The Rookery Phase 1 | Client: DR Horton
Drill Rig: 101A | Driller: M. Foster
Boring Location: See Field Exploration Plan | Drill Rod: AWJ | Drill Mud: Super Gel-X
Casing Size: | Length of Casing:
Groundwater Depth: 3 ft Time: Drilling Date: 8/24/20 | Boring Begun: 8/24/20 | Boring Completed: 3/14/23

SAMPLE NO.	DEPTH, FEET	SAMPLE TYPE	DESCRIPTION	BLOWS PER 6 IN.	N Value	PERCENT ORGANIC MATERIAL	PERCENT PASSING NO. 200 SIEVE	PLASTIC LIMIT ○ / MOISTURE CONTENT + / LIQUID LIMIT ◇ (%)	SHEAR STRENGTH (ksf)
	25		LOOSE Gray Clayey Fine SAND (SC) *(Continued)*						
			DENSE Light Gray Fine SAND (SP)						
9	30			15 20 24	44				
			MEDIUM DENSE Gray Fine SAND With Clay (SP-SC)						
10	35			5 10 10	20				
			Boring Terminated @ 35 ft.						
	40								
	45								
	50								

SHEAR STRENGTH (ksf)
- Pocket Penetrometer Undisturbed Sample
- Pocket Penetrometer Disturbed Sample
- Torvane
- Unconfined Compression
- Triaxial Compression

MOISTURE CONTENT (%): 0 10 20 30 40
SHEAR STRENGTH (ksf): 0 1 2

Remarks

APPENDIX C – PONDS Output

Drawdown and Baseflow Analyses
Underdrain Baseflow Analyses

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No.1, Southwest Baseflow
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-31-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	-22.00
Water Table Elevation, [WT] (ft datum):	29.50
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	1.30
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	730.0
Equivalent Pond Width, [W] (ft):	285.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
-17.00	3484.8
29.00	208216.8

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	29
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	28.5
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

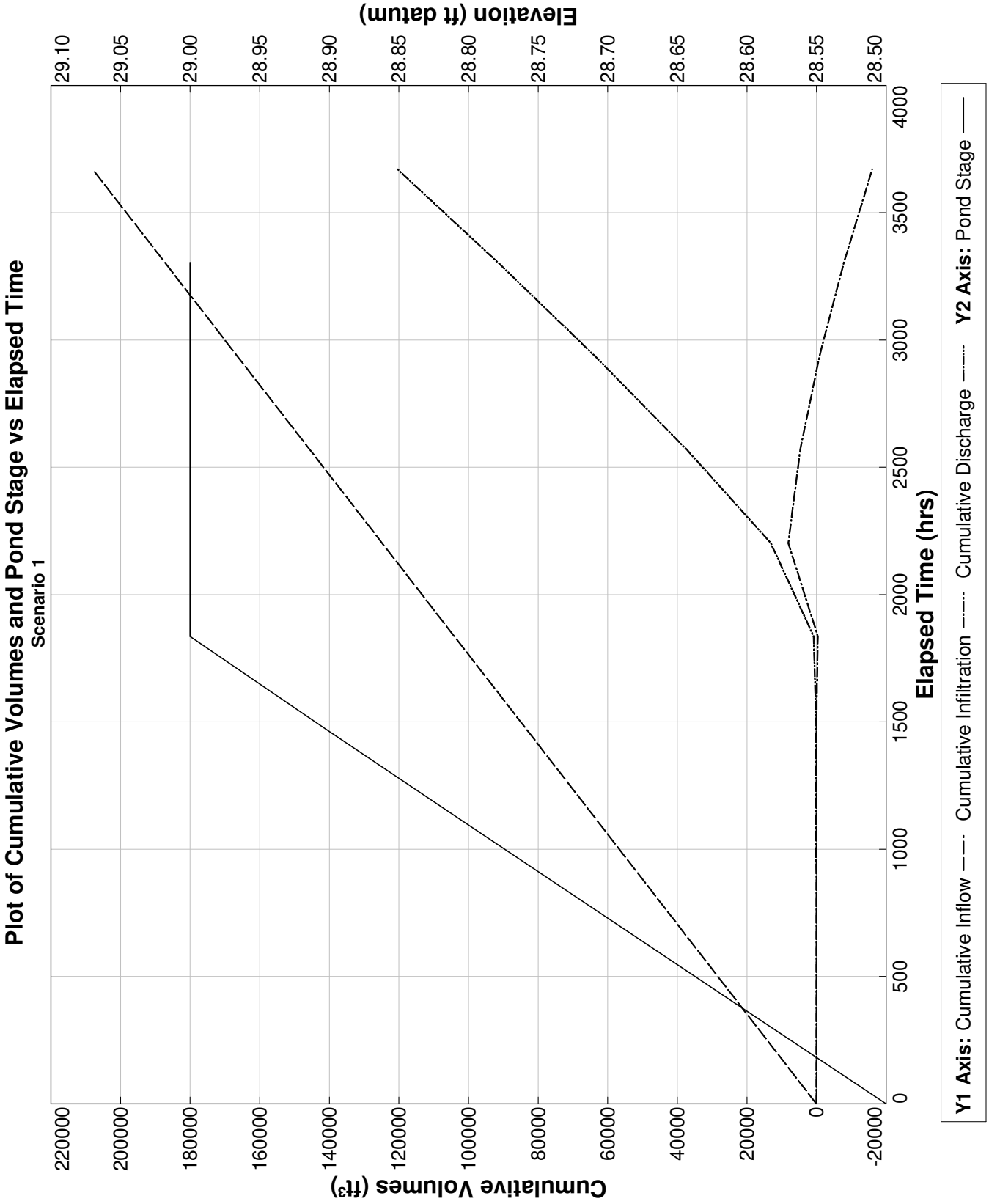
Begin Scenario 1 3/31/2023 7:42:32
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 28.5 ft.
End Scenario 1 3/31/2023 7:42:33

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

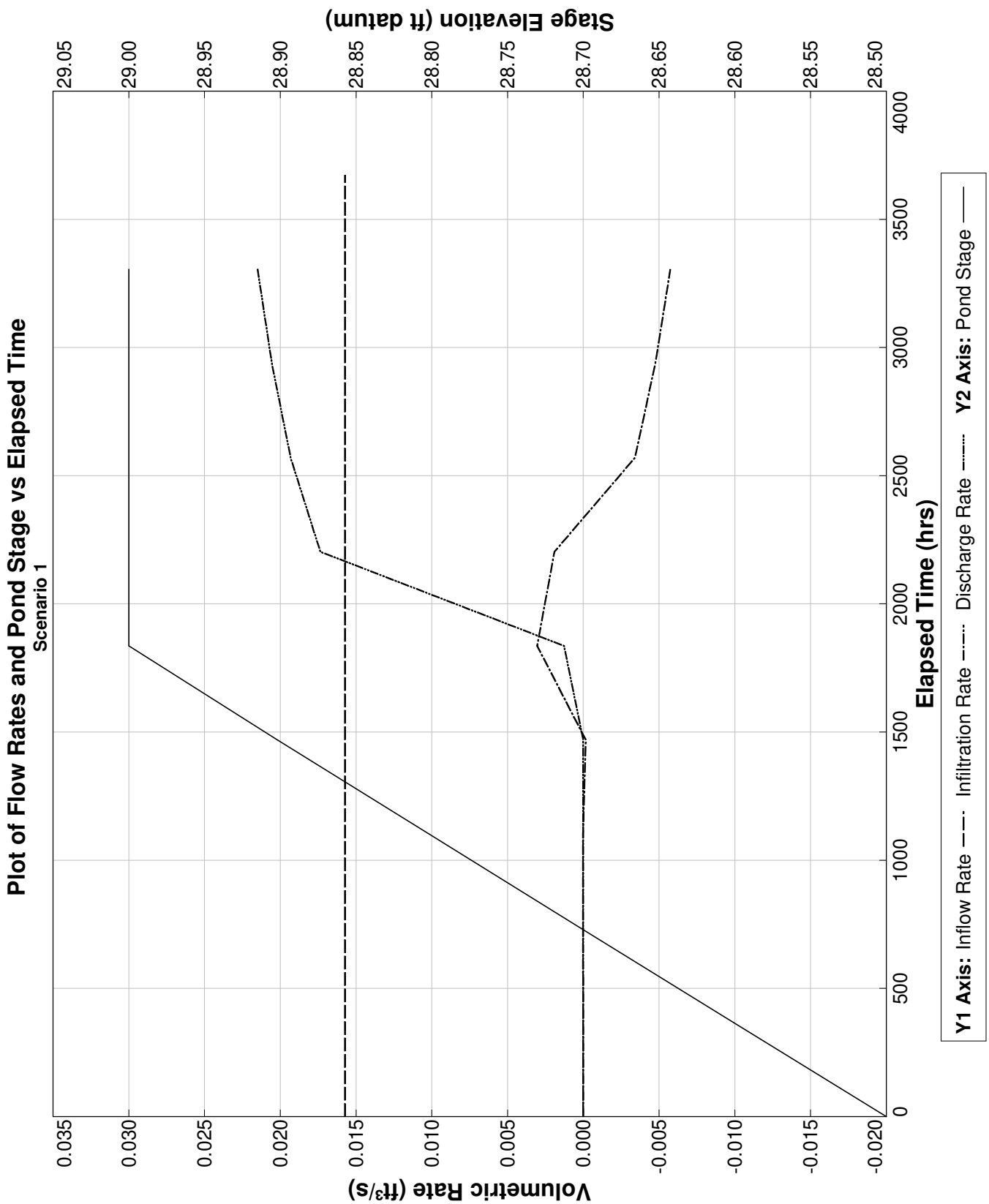
Detailed Results *:: Scenario 1 ::*

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0157	0.00163	28.50000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0157	0.00163	28.60082	0.00001	0	20805.000	14.4	0	S
734.400	0.0157	0.00163	28.70139	0.00002	0	41610.000	34.9	0	S
1101.600	0.0157	0.00163	28.80173	0.00002	0	62415.000	57.8	0	S
1468.800	0.0157	0.00163	28.90188	-0.00016	0	83220.000	76.6	0	S
1836.000	0.0157	0.00163	29.00000	0.00305	1.268357E-03	104025.000	-365.4	838.3335	S
2203.200	0.0157	0.00163	29.00000	0.00191	1.735639E-02	124830.000	8129.4	13148.55	S
2570.400	0.0157	0.00163	29.00000	-0.00340	1.932079E-02	145635.000	4692.2	37390.7	S
2937.600	0.0157	0.00163	29.00000	-0.00475	2.055878E-02	166440.000	-861.6	63749.49	S
3304.800	0.0157	0.00163	29.00000	-0.00573	2.150456E-02	187245.000	-7858.8	91551.67	S
3672.000	0.0157	0.00163	29.00000	----	----	208050.000	-16021.3	120519.2	N.A.

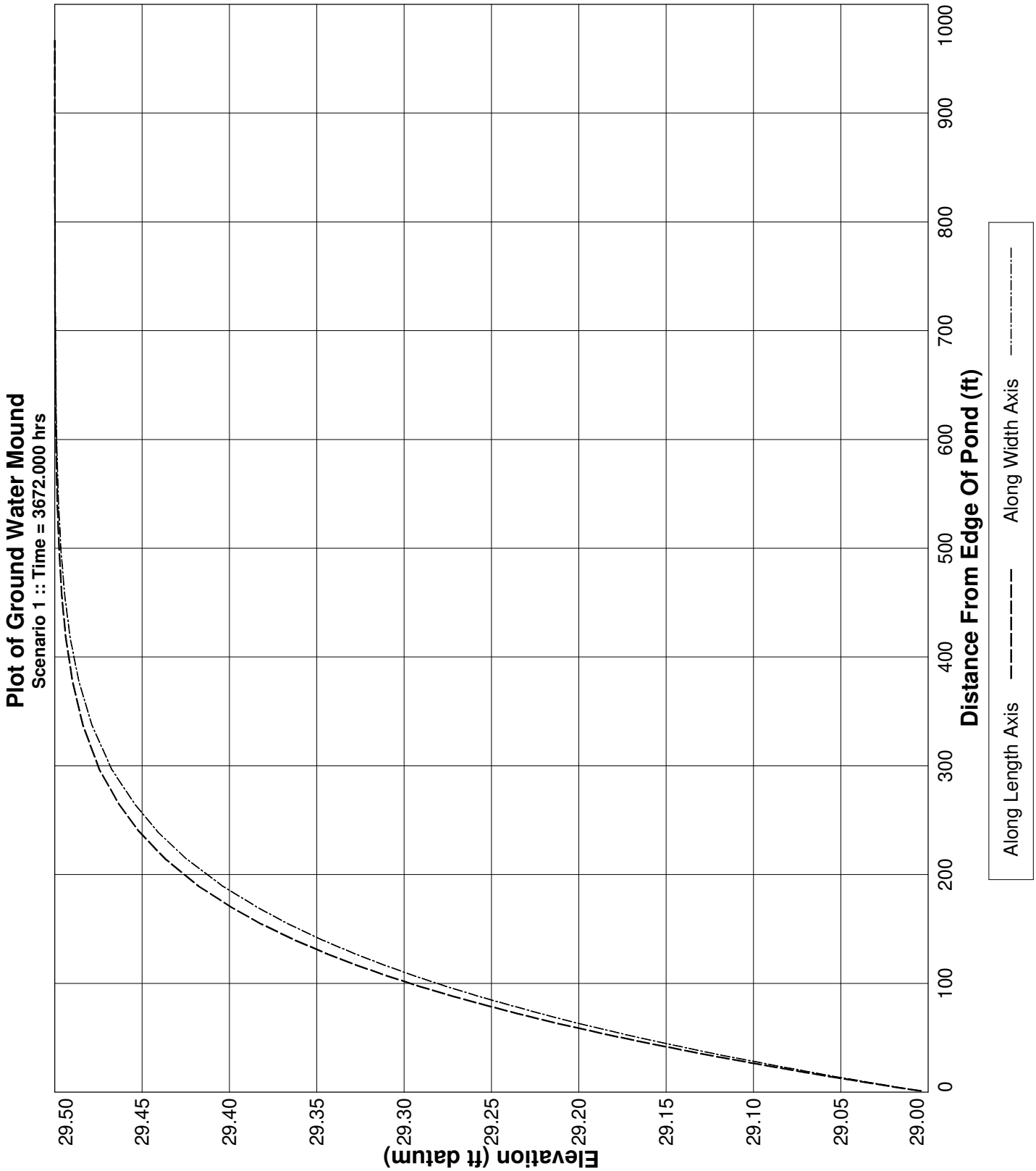
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No.1, East Baseflow
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-31-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	-22.00
Water Table Elevation, [WT] (ft datum):	33.50
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	1.30
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	730.0
Equivalent Pond Width, [W] (ft):	285.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
-17.00	3484.8
29.00	208216.8

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	29
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	32.5
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

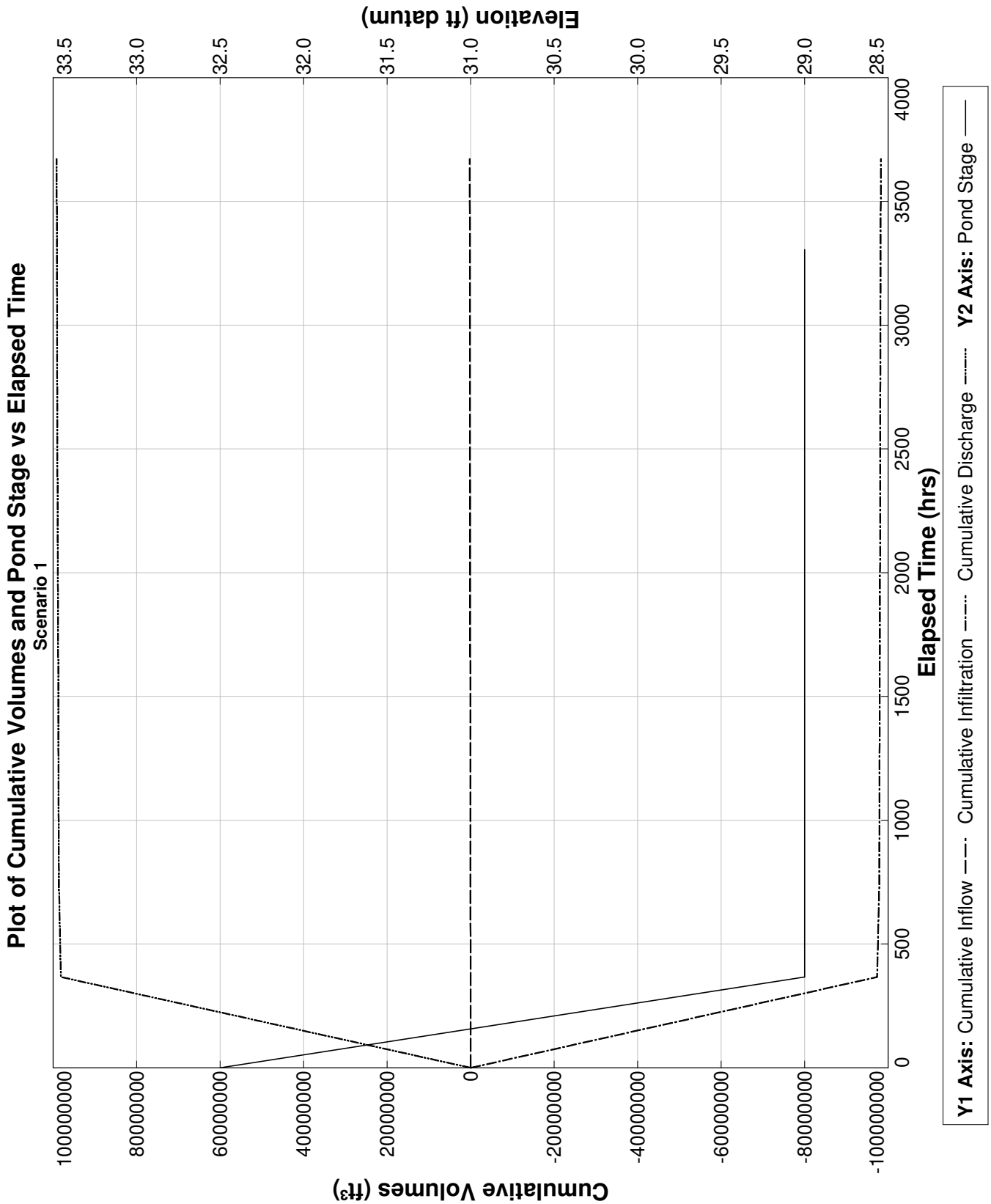
Begin Scenario 1 3/31/2023 7:46:40
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 32.5 ft.
End Scenario 1 3/31/2023 7:46:40

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

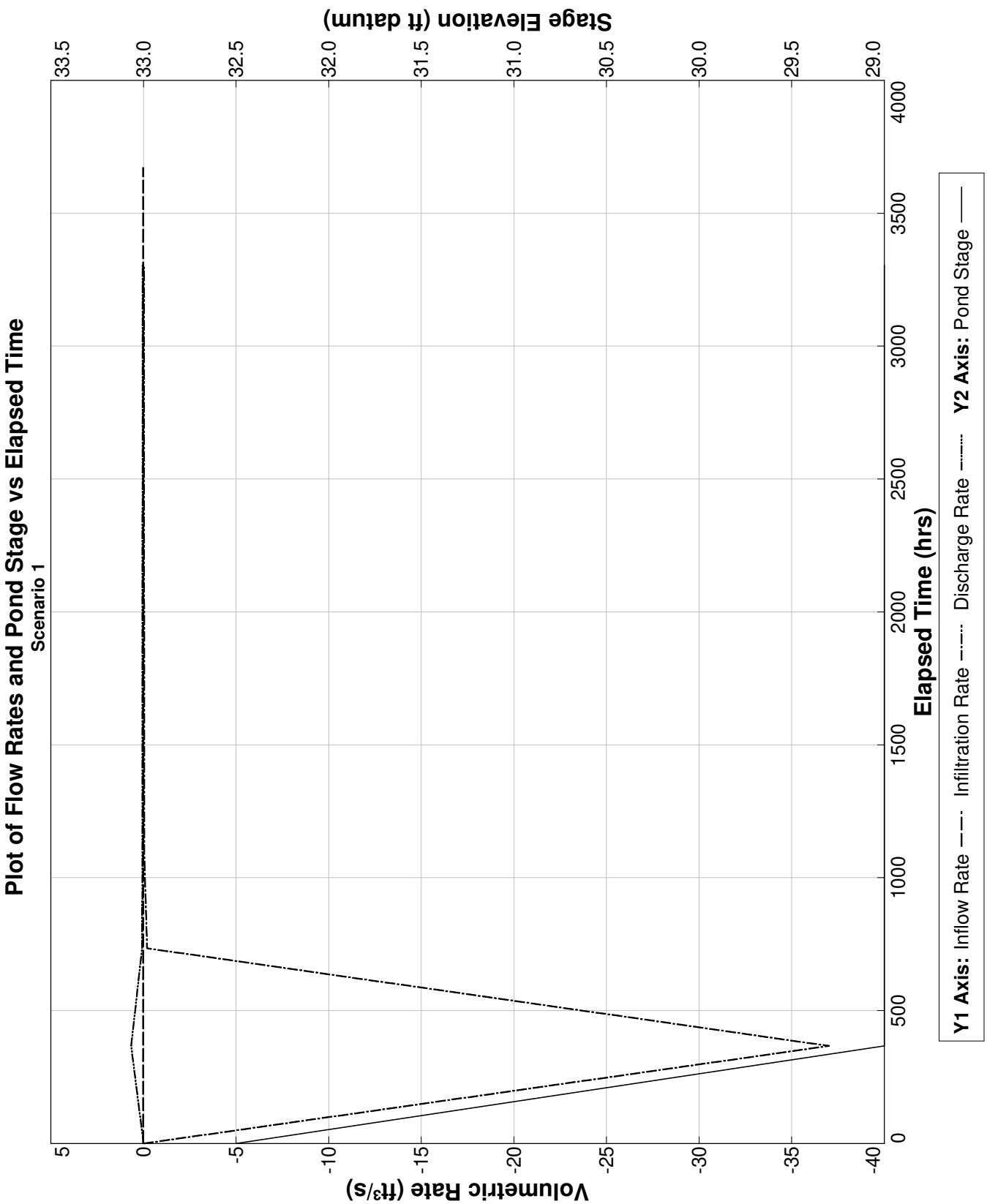
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0157	0.00163	32.50000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0157	0.00163	29.00007	-37.00671	.6632745	20805.000	-97375740.0	9.812529E+07	S
734.400	0.0157	0.00163	29.00000	-0.20043	7.035156E-02	41610.000	-97839820.0	9.861018E+07	S
1101.600	0.0157	0.00163	29.00000	-0.04628	6.072132E-02	62415.000	-97905650.0	9.869682E+07	S
1468.800	0.0157	0.00163	29.00000	-0.04100	5.628958E-02	83220.000	-97962180.0	9.877416E+07	S
1836.000	0.0157	0.00163	29.00000	-0.03820	5.367051E-02	104025.000	-98014060.0	9.884684E+07	S
2203.200	0.0157	0.00163	29.00000	-0.03652	5.213393E-02	124830.000	-98063180.0	9.891678E+07	S
2570.400	0.0157	0.00163	29.00000	-0.03543	5.108463E-02	145635.000	-98110600.0	9.898499E+07	S
2937.600	0.0157	0.00163	29.00000	-0.03465	5.035281E-02	166440.000	-98156840.0	9.905204E+07	S
3304.800	0.0157	0.00163	29.00000	-0.03409	.0497818	187245.000	-98202220.0	9.911822E+07	S
3672.000	0.0157	0.00163	29.00000	----	----	208050.000	-98246960.0	9.918377E+07	N.A.

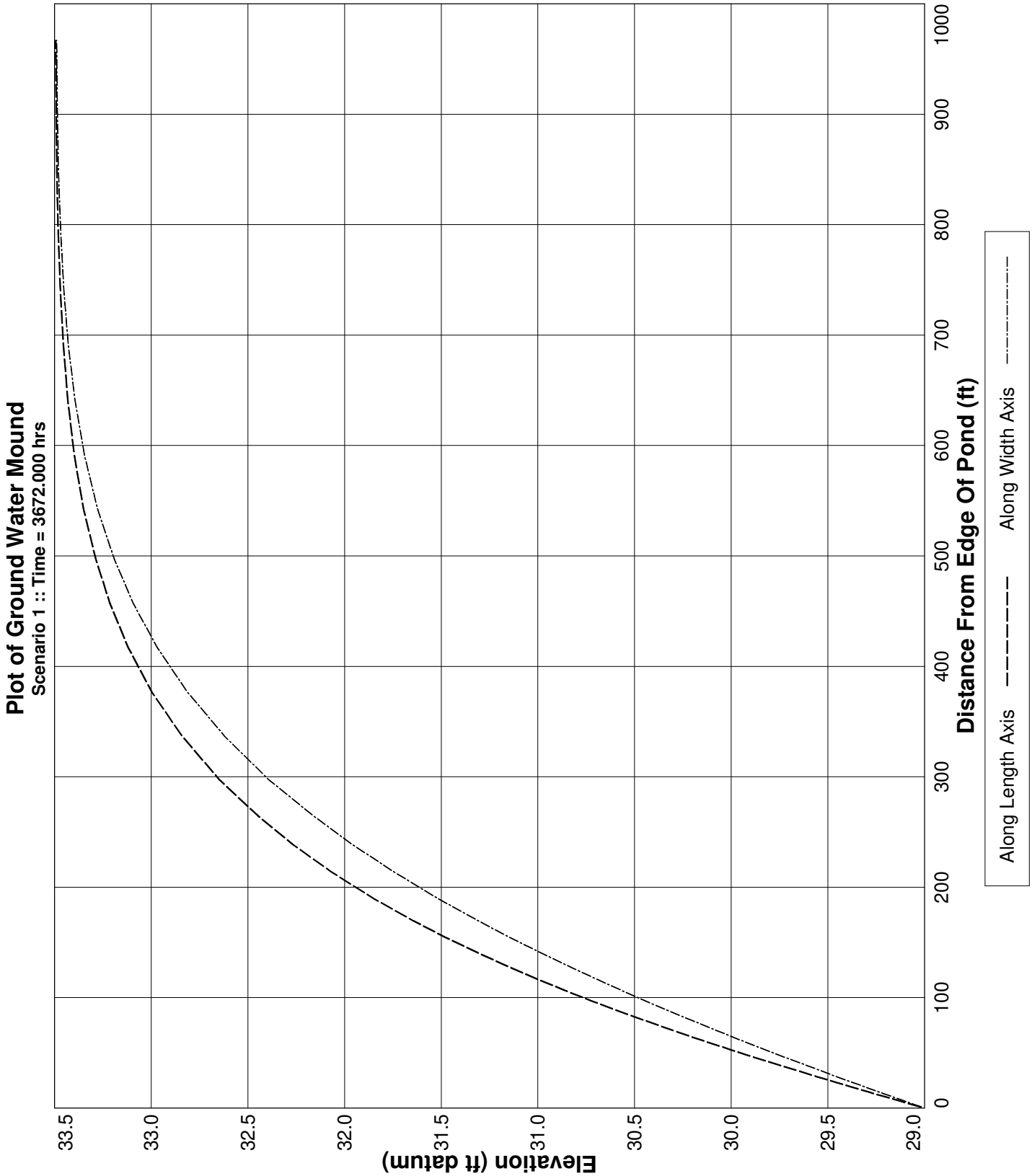
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No.2, Southeast, Baseflow
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-31-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	6.00
Water Table Elevation, [WT] (ft datum):	29.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	1.10
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	412.0
Equivalent Pond Width, [W] (ft):	93.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
11.00	435.6
29.00	38332.8

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	29
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	28.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

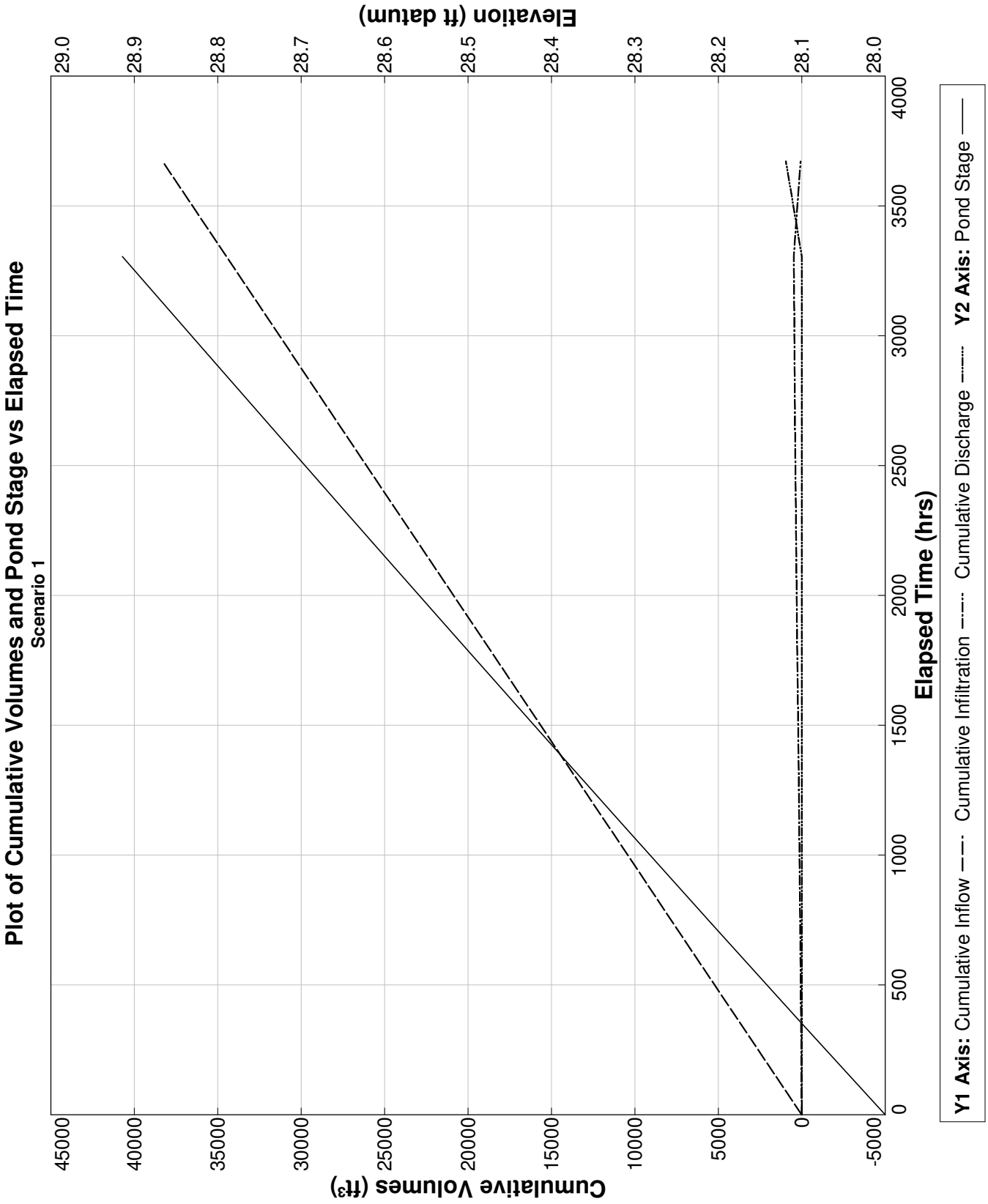
Begin Scenario 1 3/31/2023 10:28:30
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 28.0 ft.
End Scenario 1 3/31/2023 10:28:30

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

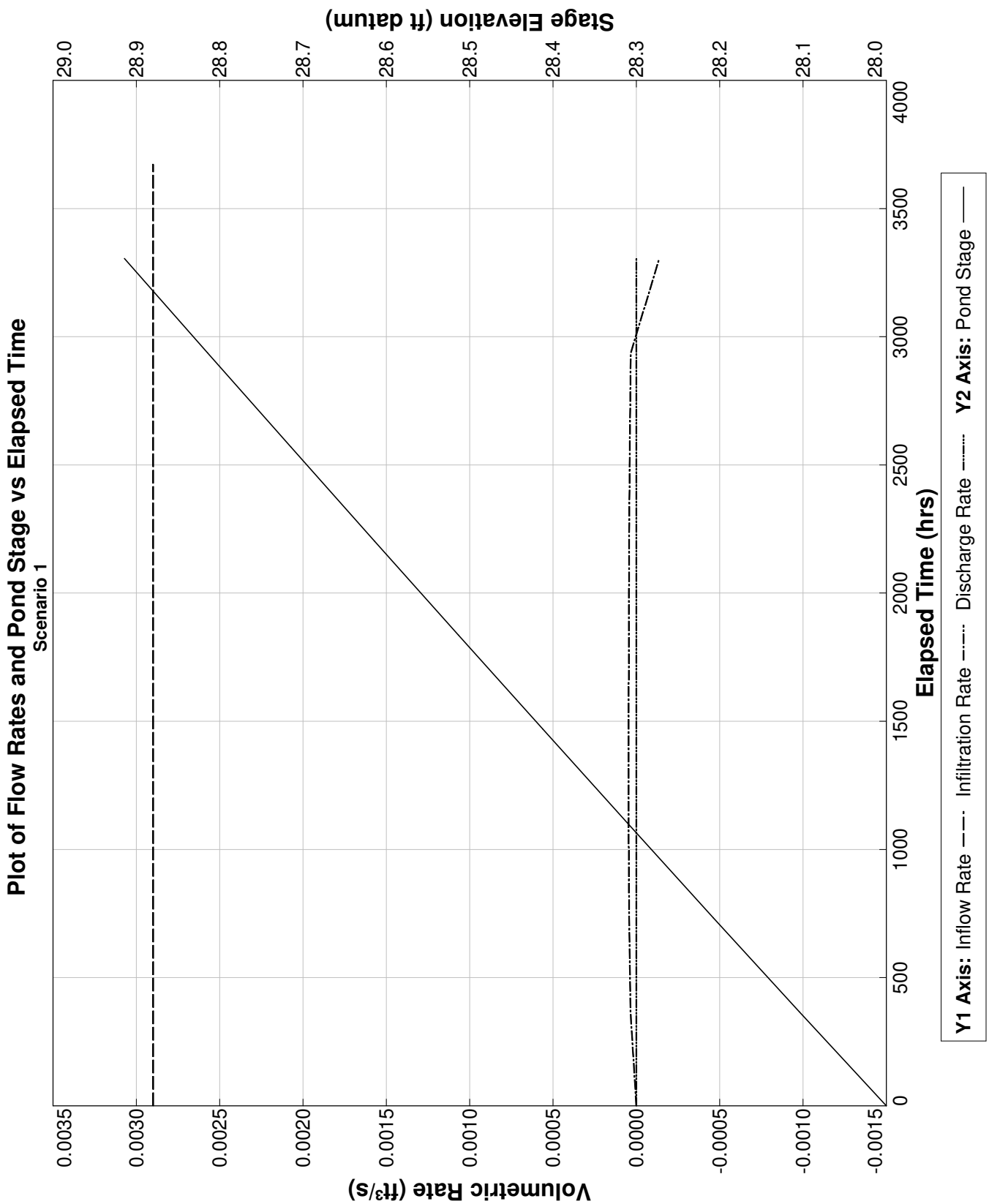
Detailed Results *:: Scenario 1 ::*

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0029	0.00163	28.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0029	0.00163	28.10439	0.00003	0	3831.600	38.5	0	S
734.400	0.0029	0.00163	28.20773	0.00004	0	7663.200	92.4	0	S
1101.600	0.0029	0.00163	28.31029	0.00005	0	11494.800	152.6	0	S
1468.800	0.0029	0.00163	28.41220	0.00005	0	15326.400	214.7	0	S
1836.000	0.0029	0.00163	28.51354	0.00005	0	19158.000	276.2	0	S
2203.200	0.0029	0.00163	28.61437	0.00004	0	22989.600	335.2	0	S
2570.400	0.0029	0.00163	28.71474	0.00004	0	26821.200	390.3	0	S
2937.600	0.0029	0.00163	28.81471	0.00003	0	30652.800	439.3	0	S
3304.800	0.0029	0.00163	28.91437	-0.00014	0	34484.400	478.9	0	S
3672.000	0.0029	0.00163	29.00000	----	----	38316.000	76.8	959.0929	N.A.

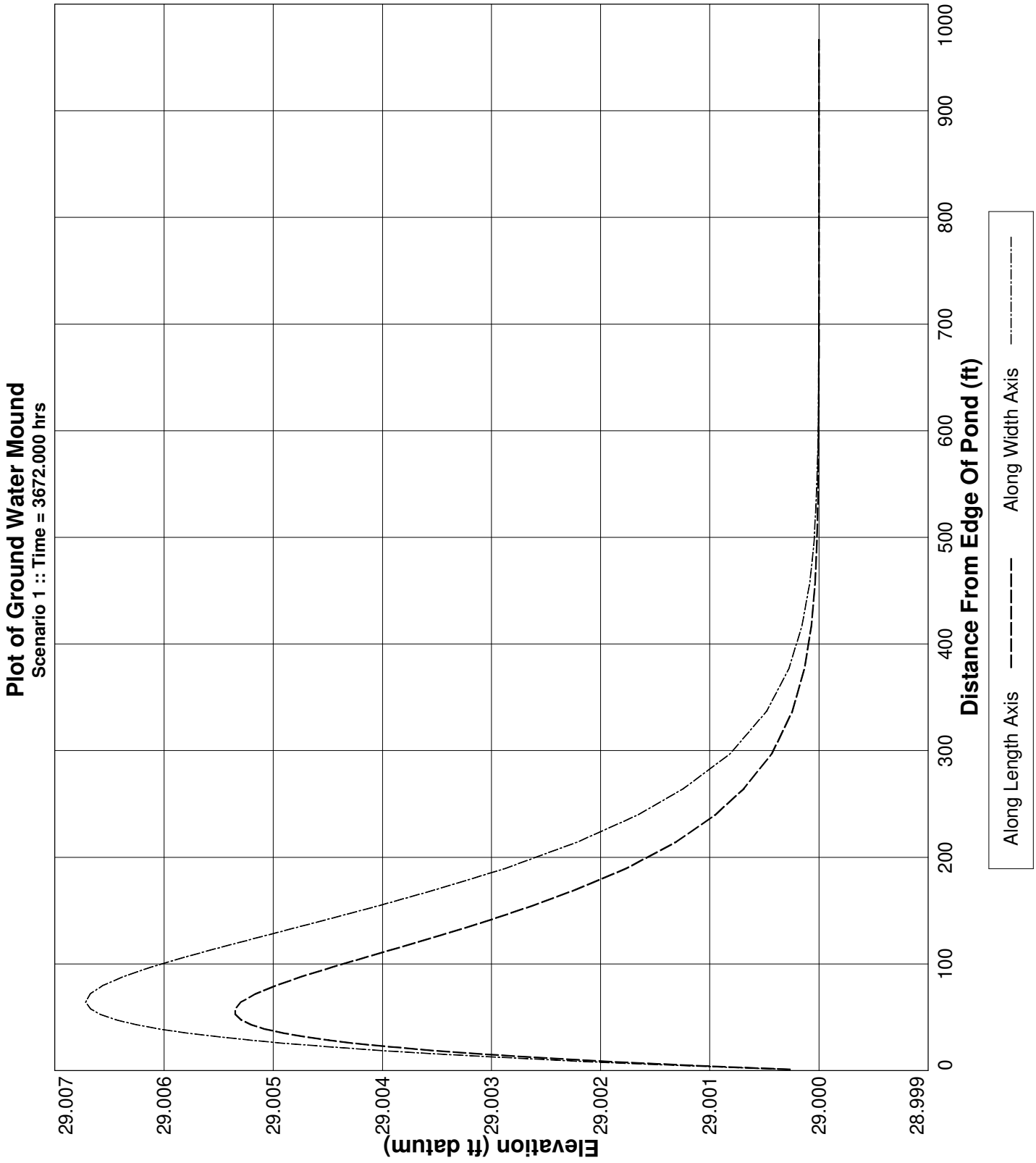
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No.2, North, Baseflow
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-31-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	6.00
Water Table Elevation, [WT] (ft datum):	32.50
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	1.10
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	412.0
Equivalent Pond Width, [W] (ft):	93.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
11.00	435.6
29.00	38332.8

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	29
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	31.5
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

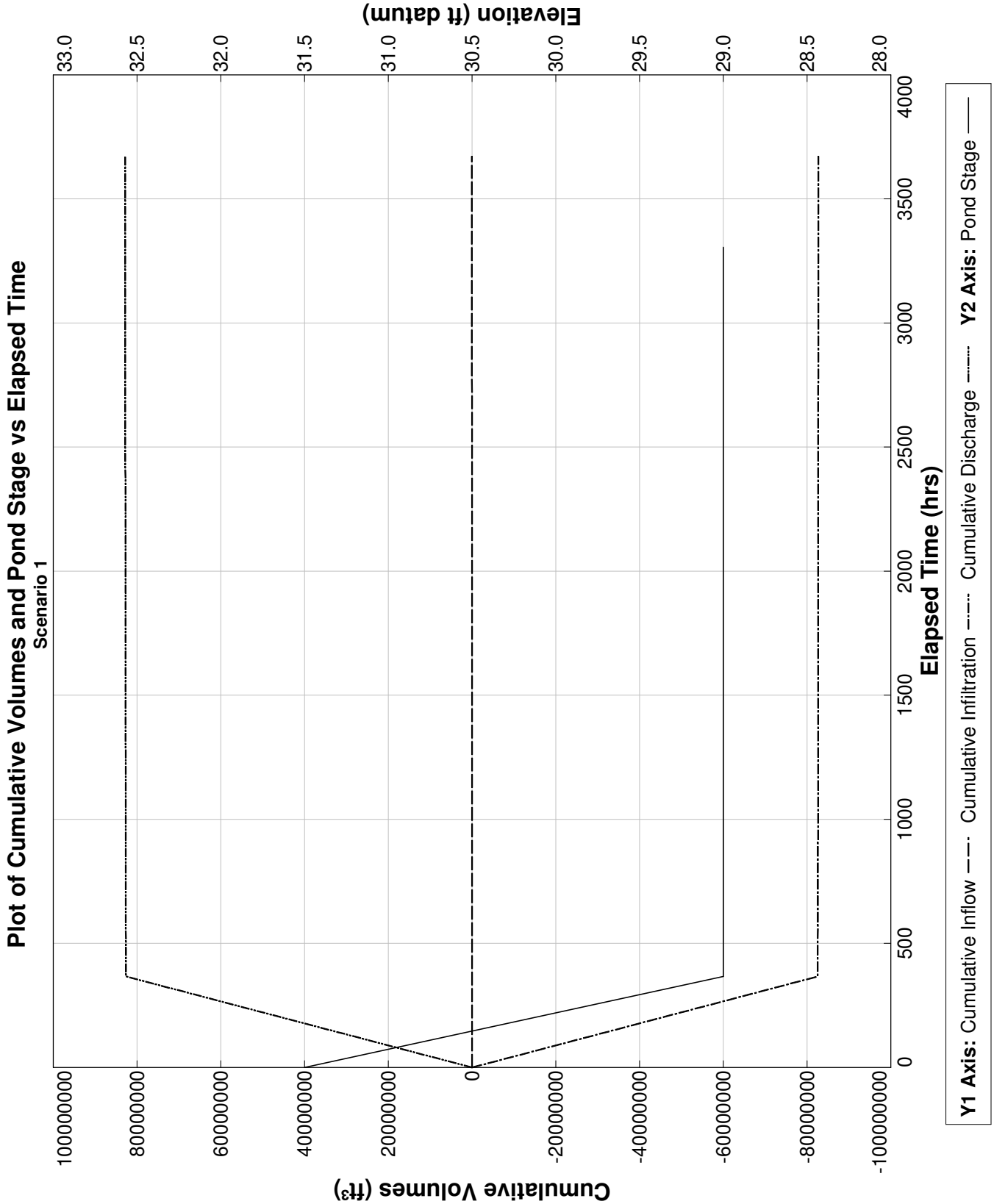
Begin Scenario 1 3/31/2023 10:29:51
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 31.5 ft.
End Scenario 1 3/31/2023 10:29:51

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

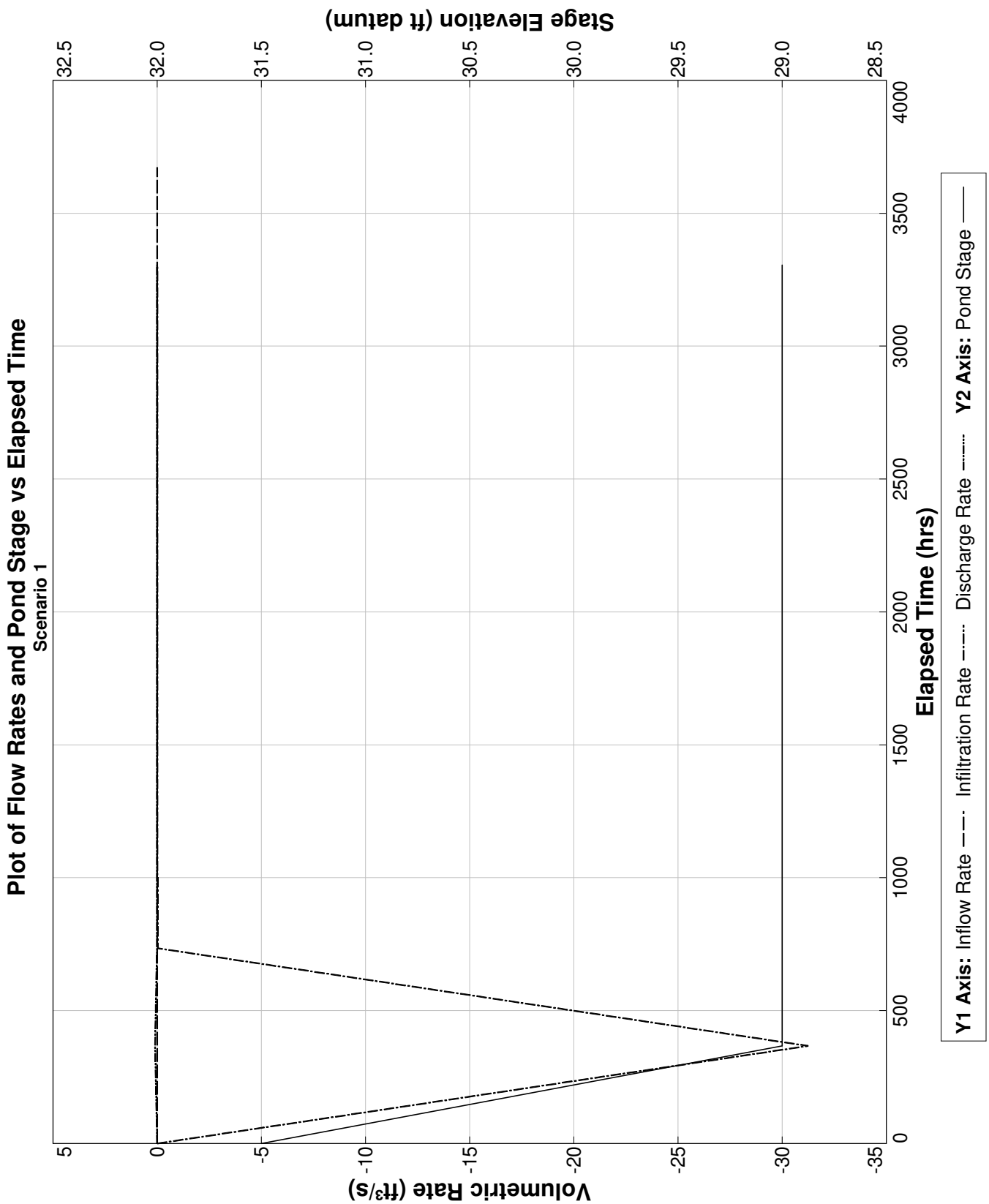
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0029	0.00163	31.50000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0029	0.00163	29.00000	-31.24147	9.807647E-02	3831.600	-82525660.0	8.262532E+07	S
734.400	0.0029	0.00163	29.00000	-0.03330	1.632565E-02	7663.200	-82597440.0	8.270094E+07	S
1101.600	0.0029	0.00163	29.00000	-0.01149	.0140684	11494.800	-82613700.0	8.272102E+07	S
1468.800	0.0029	0.00163	29.00000	-0.01030	.0130916	15326.400	-82627820.0	8.273898E+07	S
1836.000	0.0029	0.00163	29.00000	-0.00970	1.255807E-02	19158.000	-82640940.0	8.275593E+07	S
2203.200	0.0029	0.00163	29.00000	-0.00931	1.217844E-02	22989.600	-82653460.0	8.277228E+07	S
2570.400	0.0029	0.00163	29.00000	-0.00906	1.193775E-02	26821.200	-82665560.0	8.278822E+07	S
2937.600	0.0029	0.00163	29.00000	-0.00891	1.179313E-02	30652.800	-82677420.0	8.28039E+07	S
3304.800	0.0029	0.00163	29.00000	-0.00884	1.172578E-02	34484.400	-82689130.0	8.281945E+07	S
3672.000	0.0029	0.00163	29.00000	----	----	38316.000	-82700780.0	8.283493E+07	N.A.

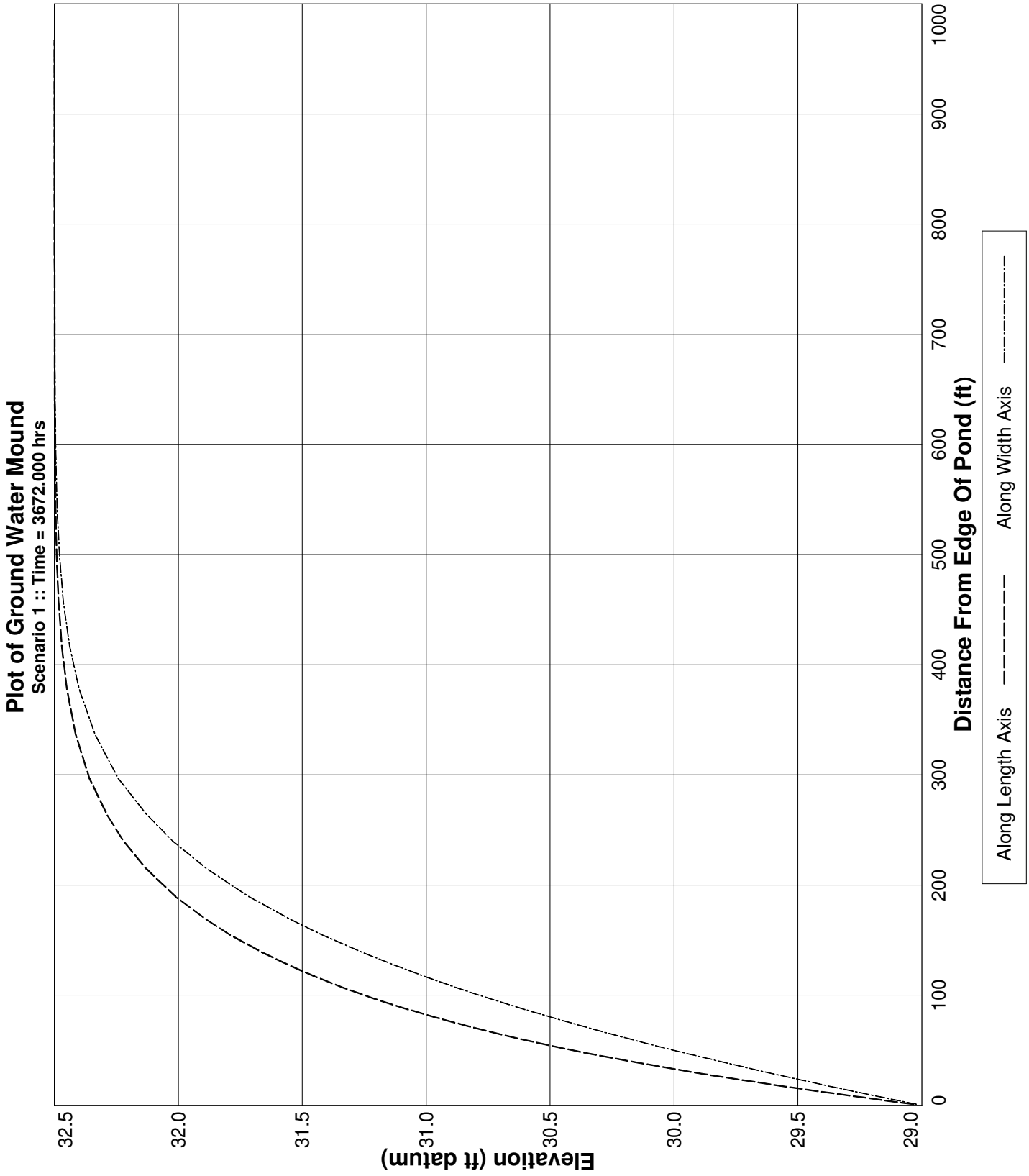
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No.3, Baseflow
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-31-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	-3.00
Water Table Elevation, [WT] (ft datum):	31.50
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	1.30
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	264.0
Equivalent Pond Width, [W] (ft):	127.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
7.00	435.6
29.00	33541.2

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	29
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	30.5
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

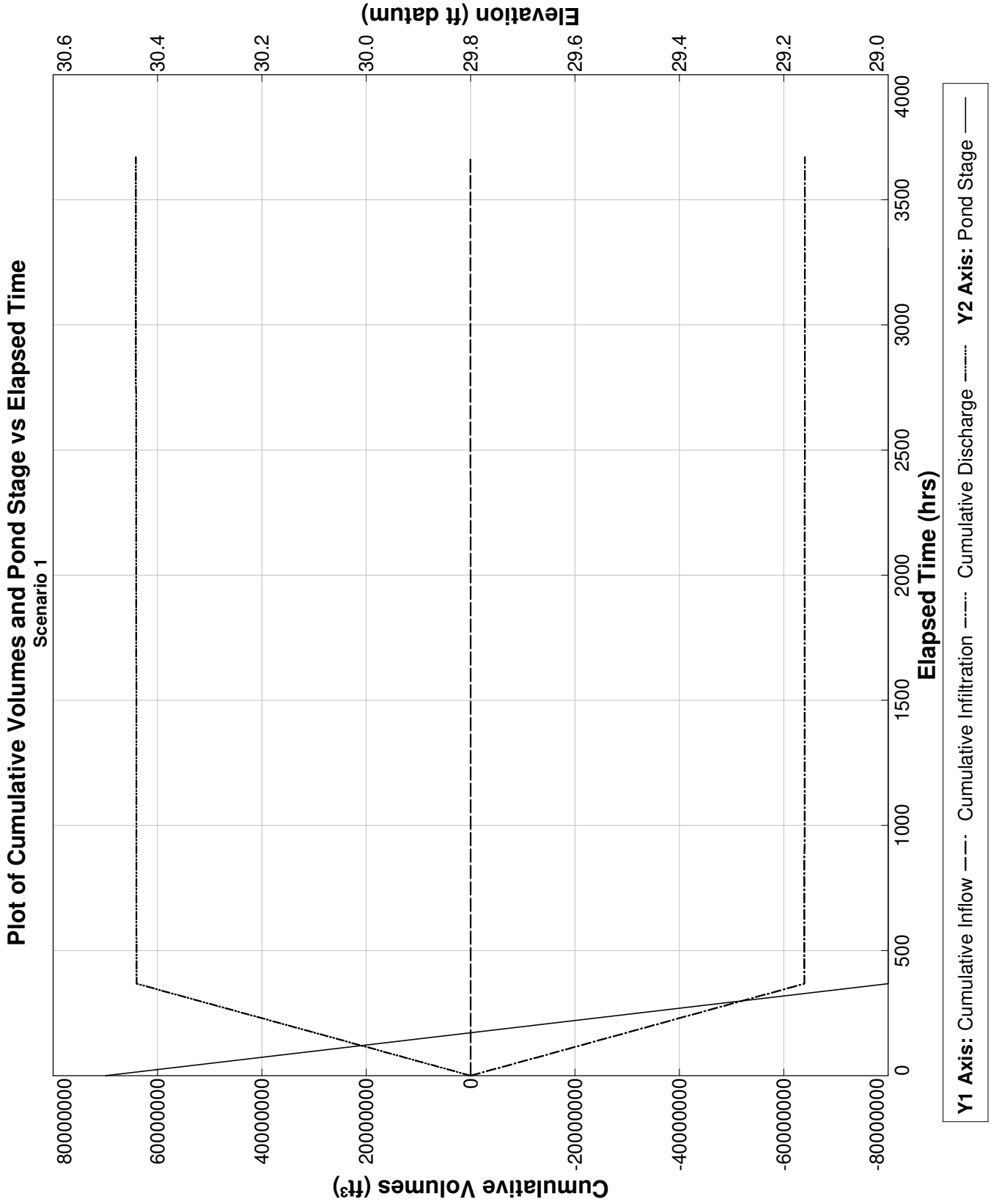
Begin Scenario 1 3/31/2023 10:50:1
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 30.5 ft.
End Scenario 1 3/31/2023 10:50:1

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

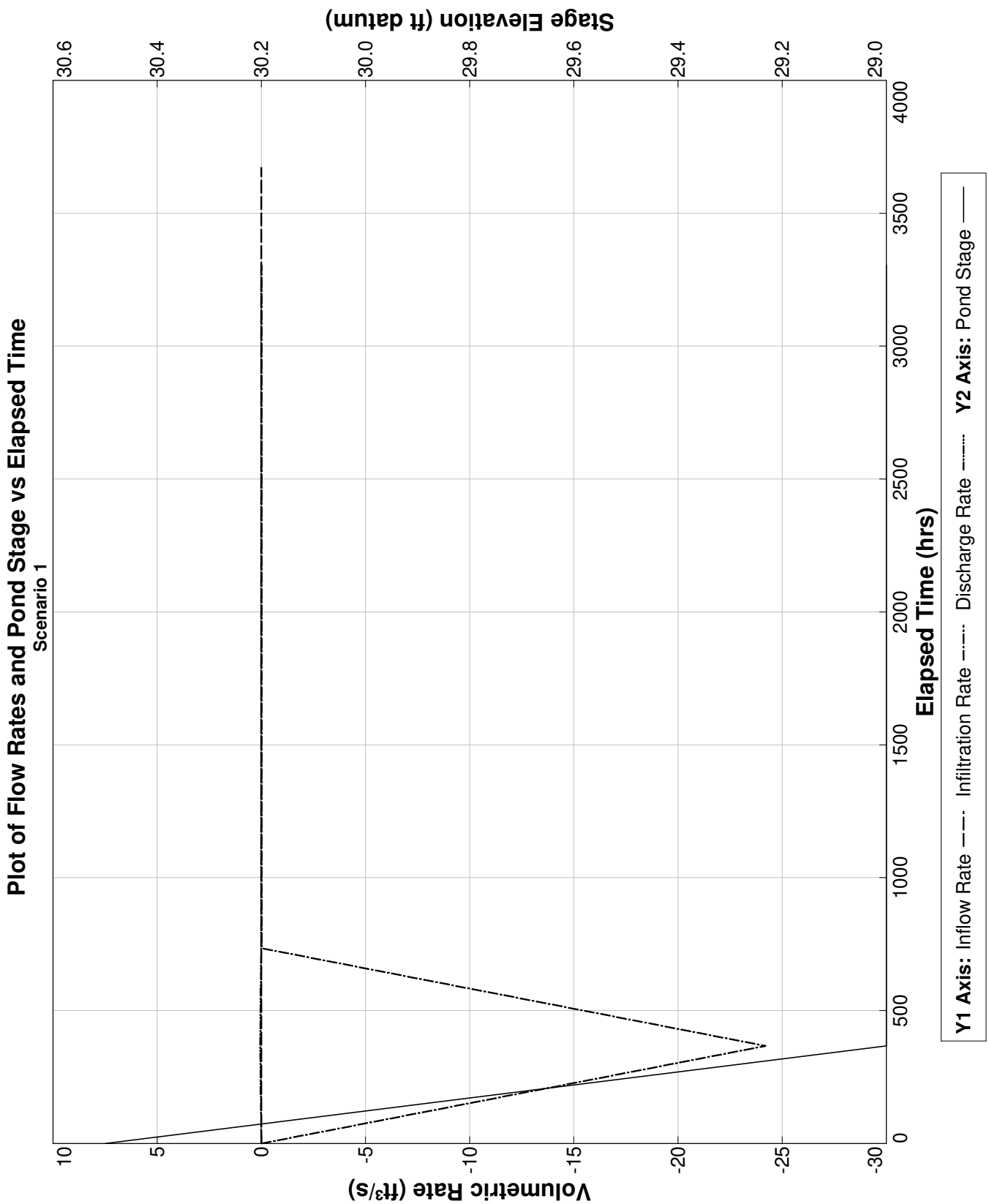
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0025	0.00163	30.50000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0025	0.00163	29.00000	-24.19798	5.561293E-02	3352.800	-63934180.0	6.398784E+07	S
734.400	0.0025	0.00163	29.00000	-0.02012	1.213441E-02	6705.600	-63975600.0	6.403262E+07	S
1101.600	0.0025	0.00163	29.00000	-0.00843	1.073705E-02	10058.400	-63987360.0	6.404774E+07	S
1468.800	0.0025	0.00163	29.00000	-0.00778	1.026227E-02	13411.200	-63997890.0	6.406162E+07	S
1836.000	0.0025	0.00163	29.00000	-0.00749	9.989082E-03	16764.000	-64007920.0	6.4075E+07	S
2203.200	0.0025	0.00163	29.00000	-0.00736	9.873464E-03	20116.800	-64017700.0	6.408813E+07	S
2570.400	0.0025	0.00163	29.00000	-0.00733	9.854909E-03	23469.600	-64027390.0	6.410117E+07	S
2937.600	0.0025	0.00163	29.00000	-0.00737	9.898793E-03	26822.400	-64037090.0	6.411422E+07	S
3304.800	0.0025	0.00163	29.00000	-0.00745	9.98312E-03	30175.200	-64046880.0	6.412737E+07	S
3672.000	0.0025	0.00163	29.00000	----	----	33528.000	-64056800.0	6.414064E+07	N.A.

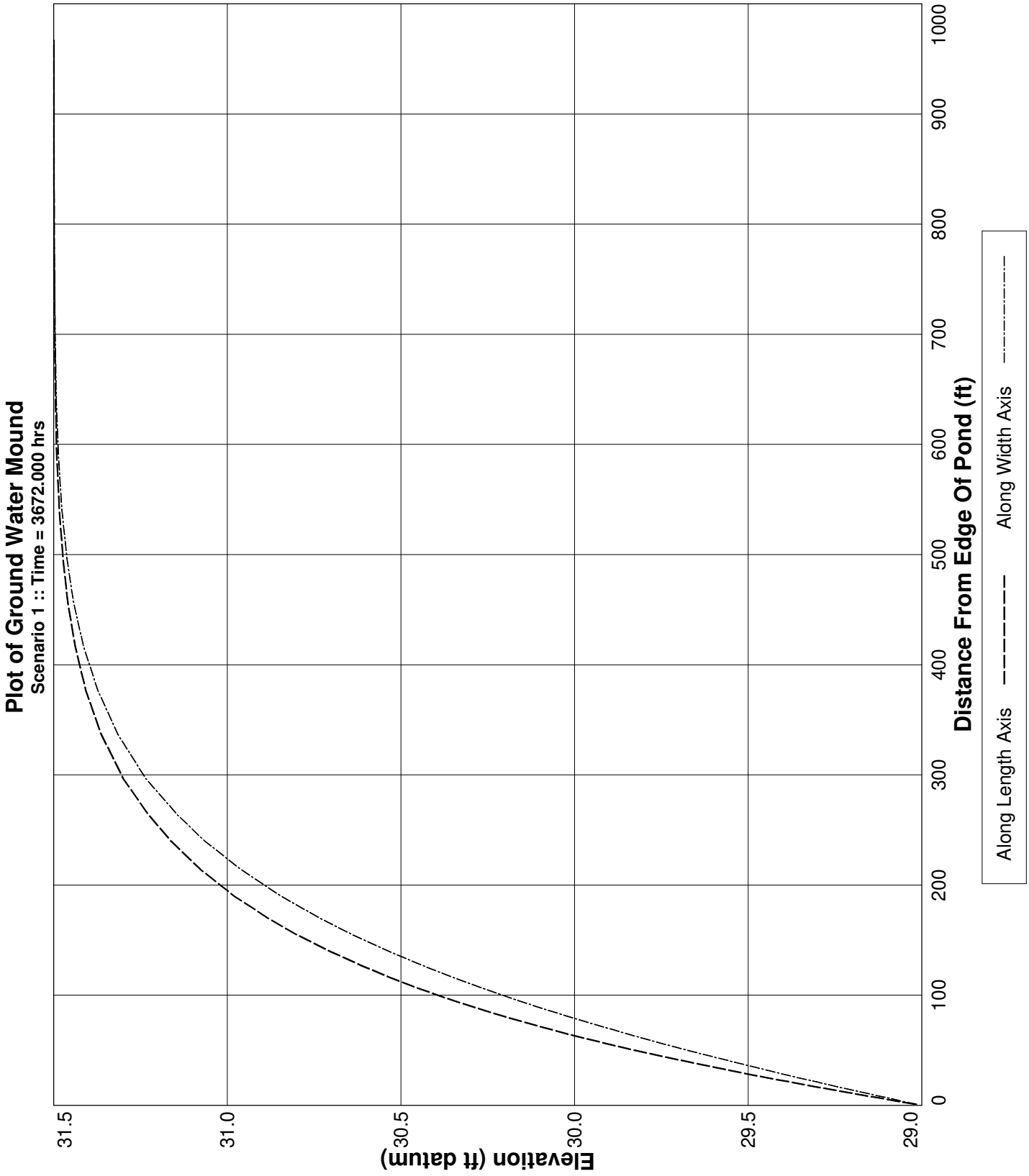
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No.4, Southeast Wetland, without wall
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-23-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	10.00
Water Table Elevation, [WT] (ft datum):	33.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	1.10
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	226.0
Equivalent Pond Width, [W] (ft):	77.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
15.00	435.6
29.00	17424.0

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	29
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	32.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

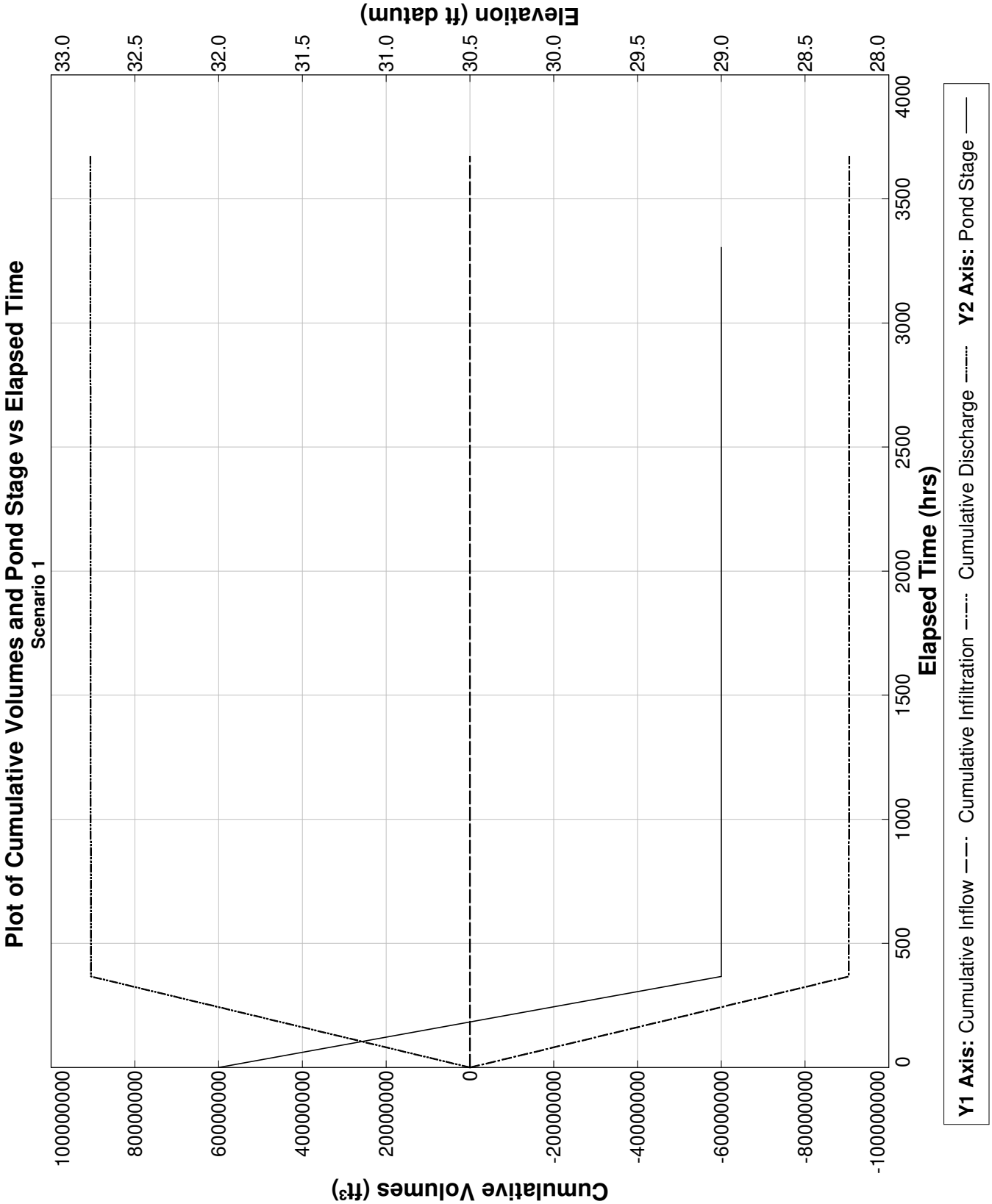
Begin Scenario 1 3/23/2023 15:4:57
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 32.0 ft.
End Scenario 1 3/23/2023 15:4:57

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

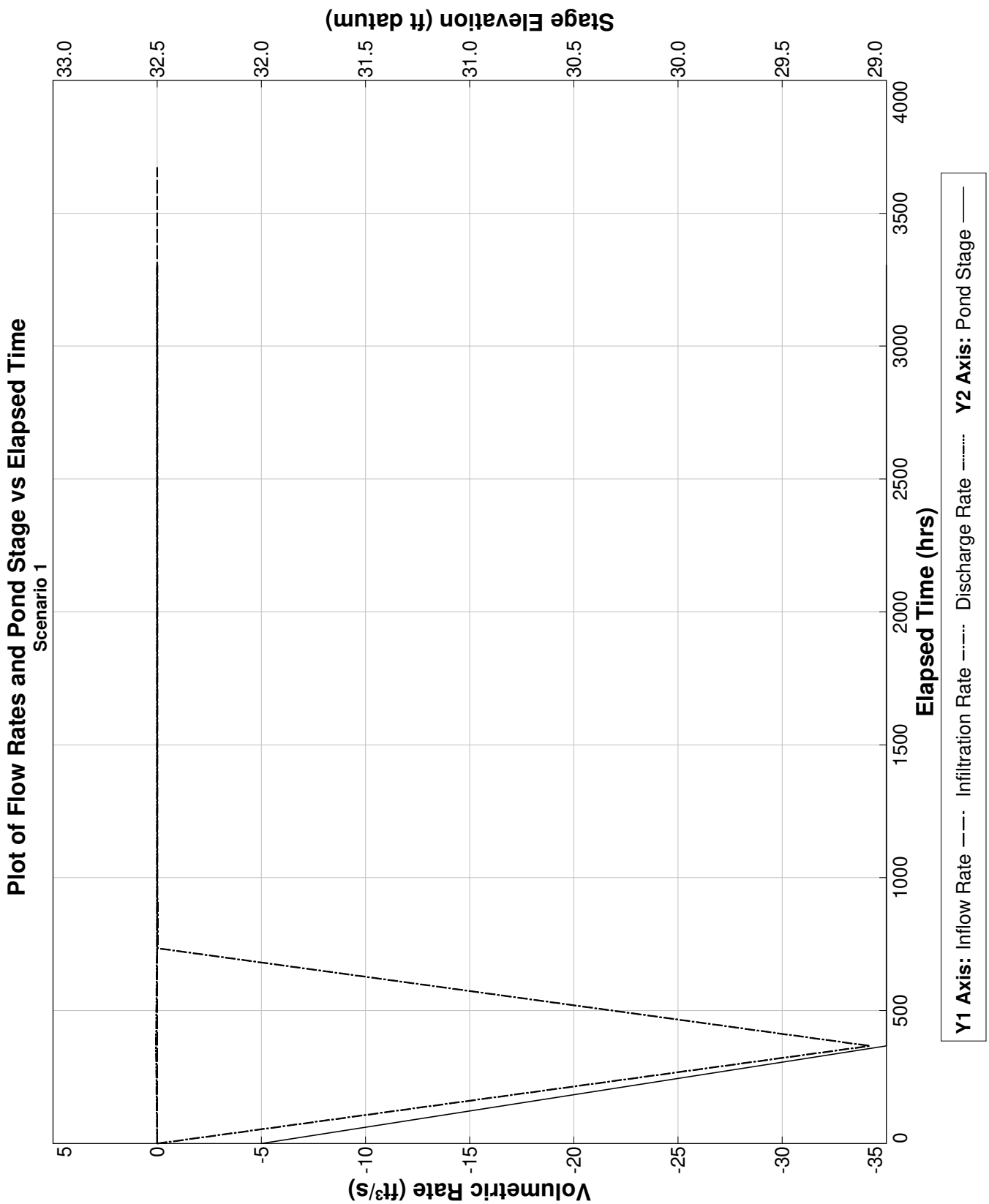
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0013	0.00163	32.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0013	0.00163	29.00000	-34.21801	5.668654E-02	1740.200	-90423940.0	9.047795E+07	S
734.400	0.0013	0.00163	29.00000	-0.02068	1.099973E-02	3480.400	-90466940.0	9.05227E+07	S
1101.600	0.0013	0.00163	29.00000	-0.00825	9.29005E-03	5220.600	-90478610.0	9.05361E+07	S
1468.800	0.0013	0.00163	29.00000	-0.00740	8.672373E-03	6960.800	-90488740.0	9.054798E+07	S
1836.000	0.0013	0.00163	29.00000	-0.00696	8.229739E-03	8701.000	-90498180.0	9.055915E+07	S
2203.200	0.0013	0.00163	29.00000	-0.00666	7.954339E-03	10441.200	-90507130.0	9.056985E+07	S
2570.400	0.0013	0.00163	29.00000	-0.00648	7.776973E-03	12181.400	-90515790.0	9.058024E+07	S
2937.600	0.0013	0.00163	29.00000	-0.00637	7.673342E-03	13921.600	-90524260.0	9.059046E+07	S
3304.800	0.0013	0.00163	29.00000	-0.00631	7.61438E-03	15661.800	-90532620.0	9.060056E+07	S
3672.000	0.0013	0.00163	29.00000	----	----	17402.000	-90540940.0	9.061062E+07	N.A.

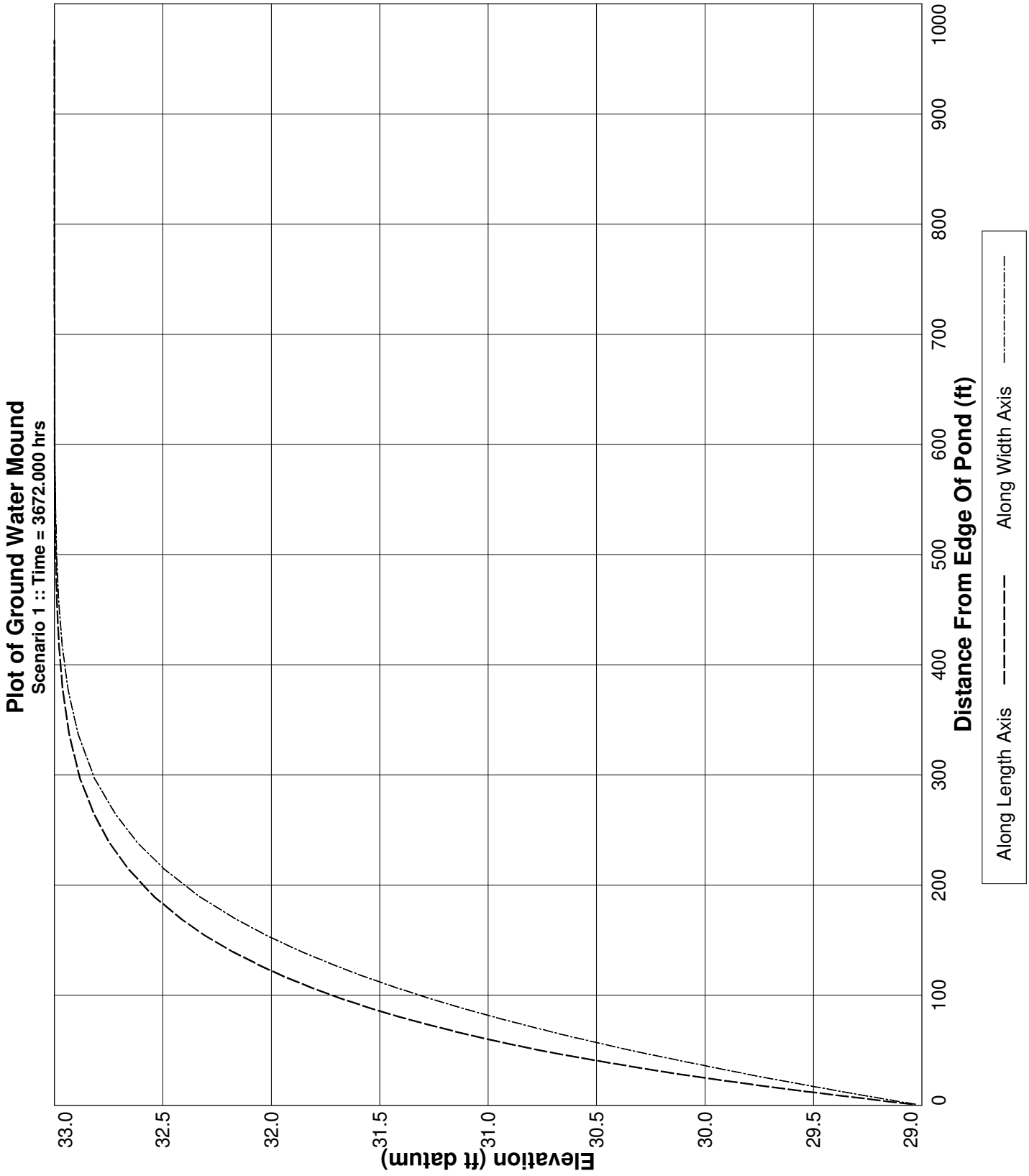
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No.4, Southeast Wetland, with wall
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-23-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	10.00
Water Table Elevation, [WT] (ft datum):	33.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.00
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	226.0
Equivalent Pond Width, [W] (ft):	77.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
15.00	435.6
29.00	17424.0

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	29
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	32.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

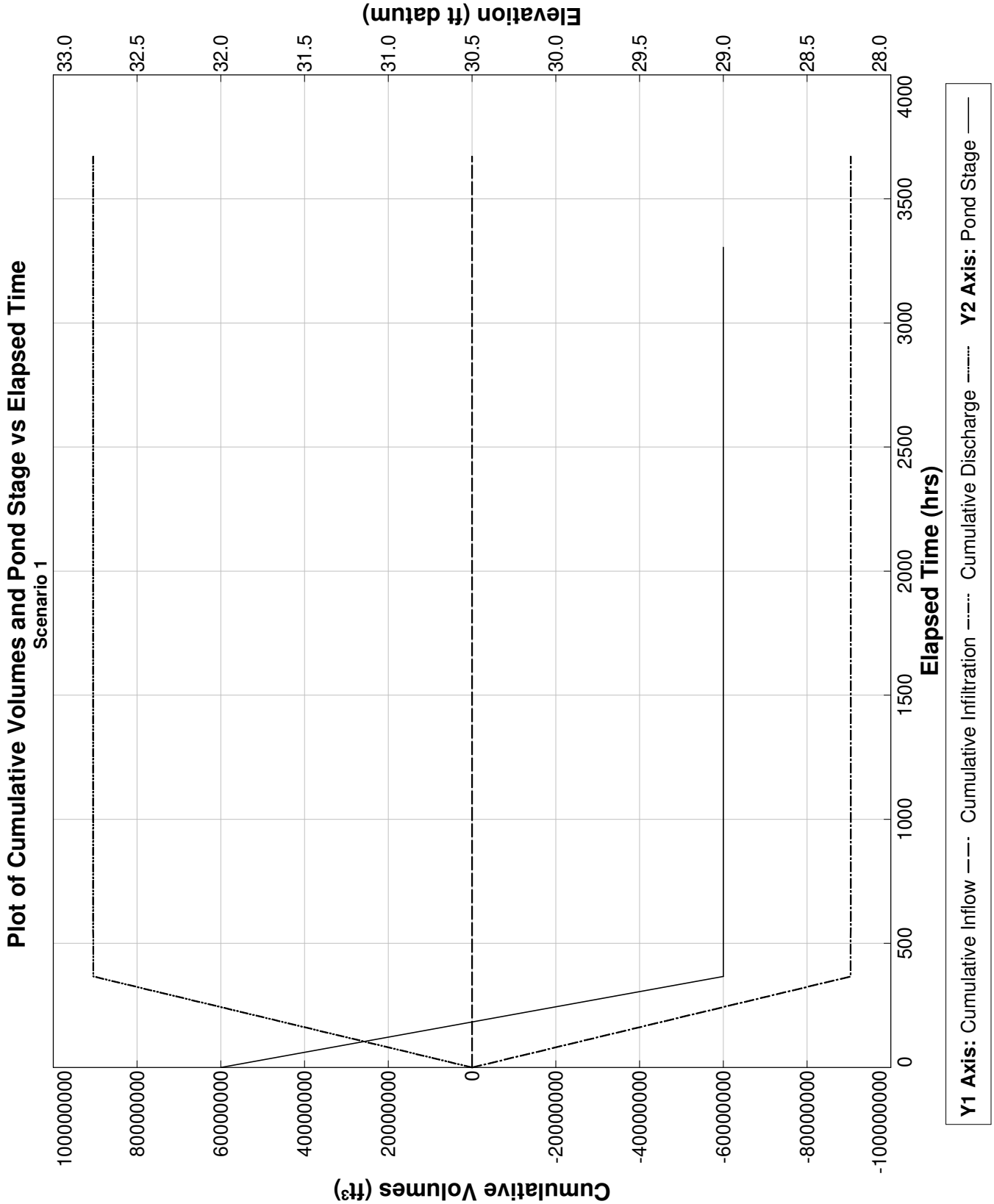
Begin Scenario 1 3/23/2023 15:12:29
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 32.0 ft.
#WARNING: The calculated water budget error exceeded the target water budget error for 6 of 10 saturated stress periods.
Maximum calculated water budget error is -4.16086925368649 percent, for saturated stress period 1.
If convergence is not a problem, it is recommended to reduce the Modflow convergence tolerences
to attempt to decrease the water budget error to within the target level.
End Scenario 1 3/23/2023 15:12:29

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

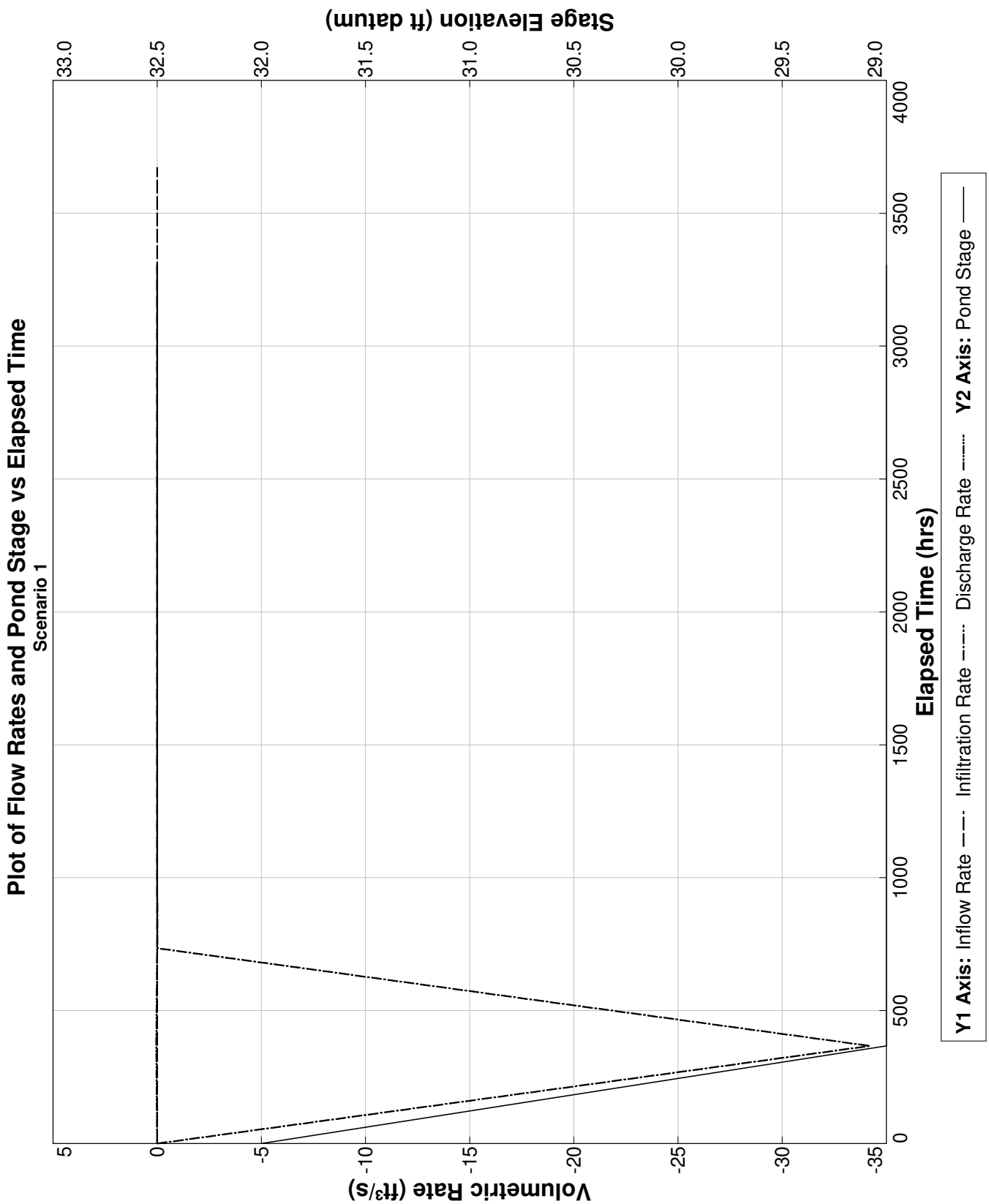
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0013	0.00163	32.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0013	0.00163	29.00000	-34.21093	.0467738	1740.200	-90417390.0	9.04714E+07	S
734.400	0.0013	0.00163	29.00000	-0.01205	2.509776E-03	3480.400	-90448220.0	9.050398E+07	S
1101.600	0.0013	0.00163	29.00000	-0.00053	1.666598E-03	5220.600	-90449250.0	9.050674E+07	S
1468.800	0.0013	0.00163	29.00000	-0.00026	1.551878E-03	6960.800	-90449630.0	9.050886E+07	S
1836.000	0.0013	0.00163	29.00000	-0.00021	1.520965E-03	8701.000	-90449920.0	9.05109E+07	S
2203.200	0.0013	0.00163	29.00000	-0.00019	1.506866E-03	10441.200	-90450180.0	9.05129E+07	S
2570.400	0.0013	0.00163	29.00000	-0.00018	1.498458E-03	12181.400	-90450430.0	9.051489E+07	S
2937.600	0.0013	0.00163	29.00000	-0.00018	1.492881E-03	13921.600	-90450660.0	9.051686E+07	S
3304.800	0.0013	0.00163	29.00000	-0.00017	1.489038E-03	15661.800	-90450900.0	9.051883E+07	S
3672.000	0.0013	0.00163	29.00000	----	----	17402.000	-90451130.0	9.05208E+07	N.A.

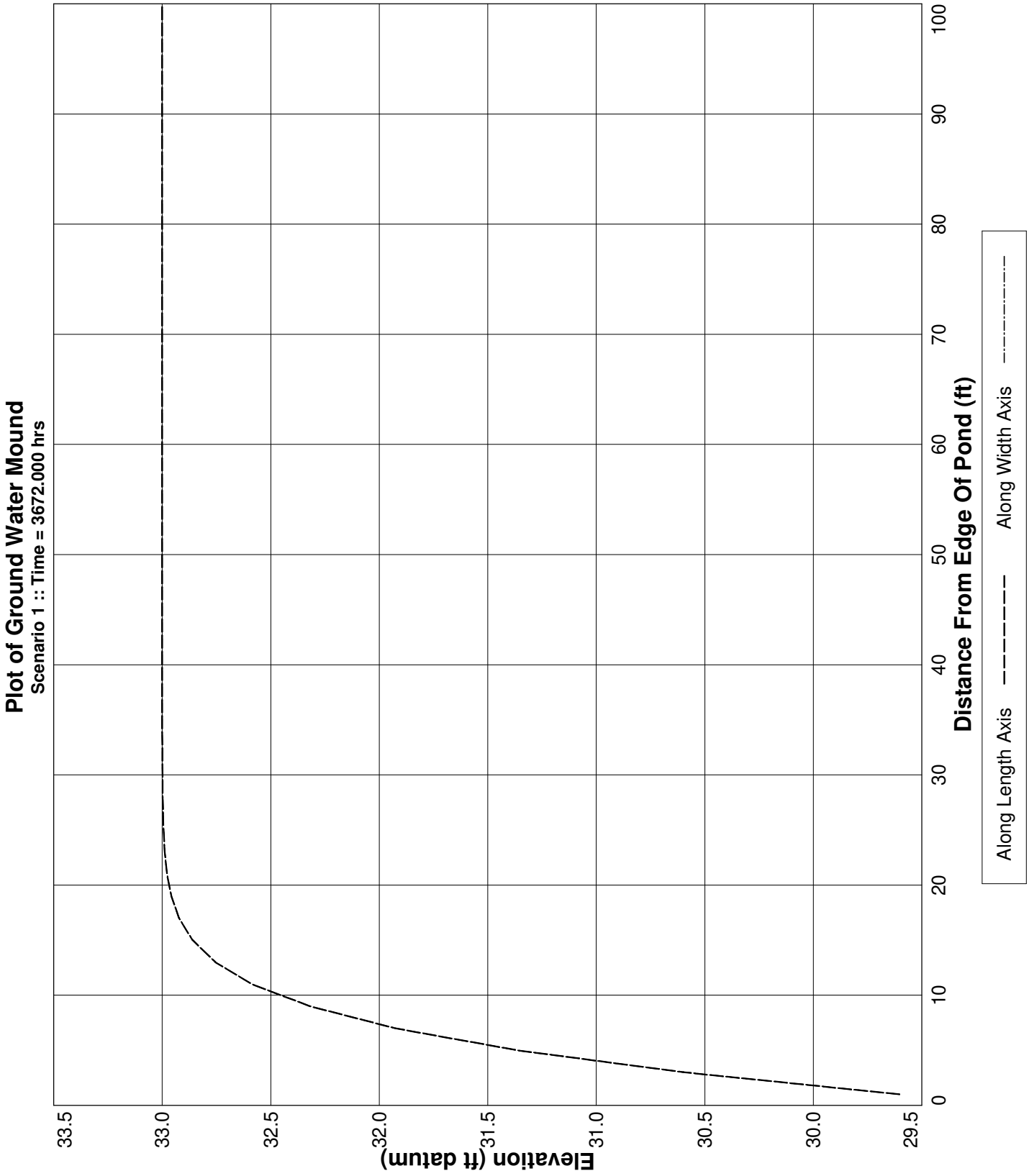
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No.4, South Wetland, without wall
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-23-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	10.00
Water Table Elevation, [WT] (ft datum):	34.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	1.10
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	226.0
Equivalent Pond Width, [W] (ft):	77.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
15.00	435.6
29.00	17424.0

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	29
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	33.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

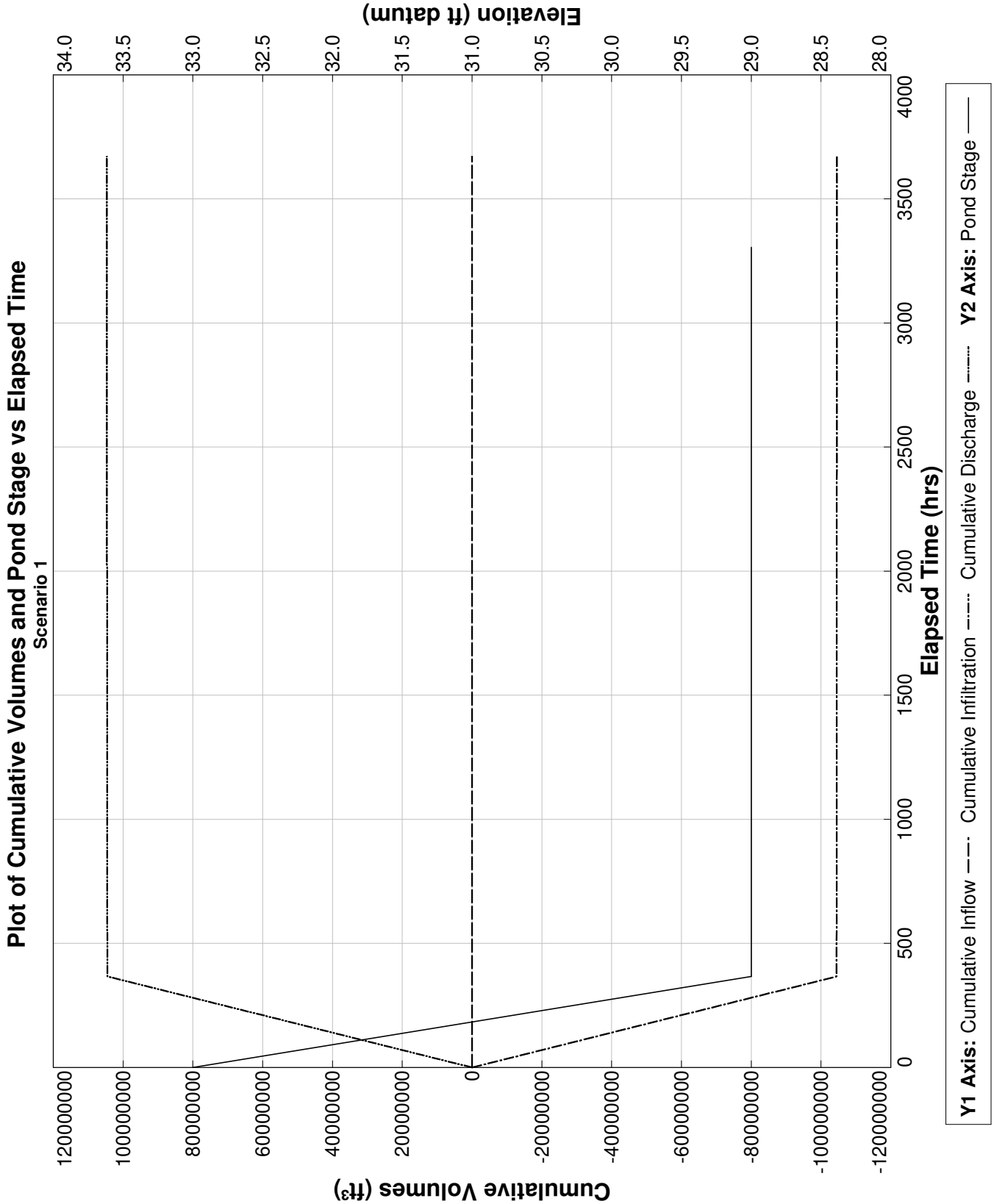
Begin Scenario 1 3/23/2023 15:16:37
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 33.0 ft.
End Scenario 1 3/23/2023 15:16:37

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

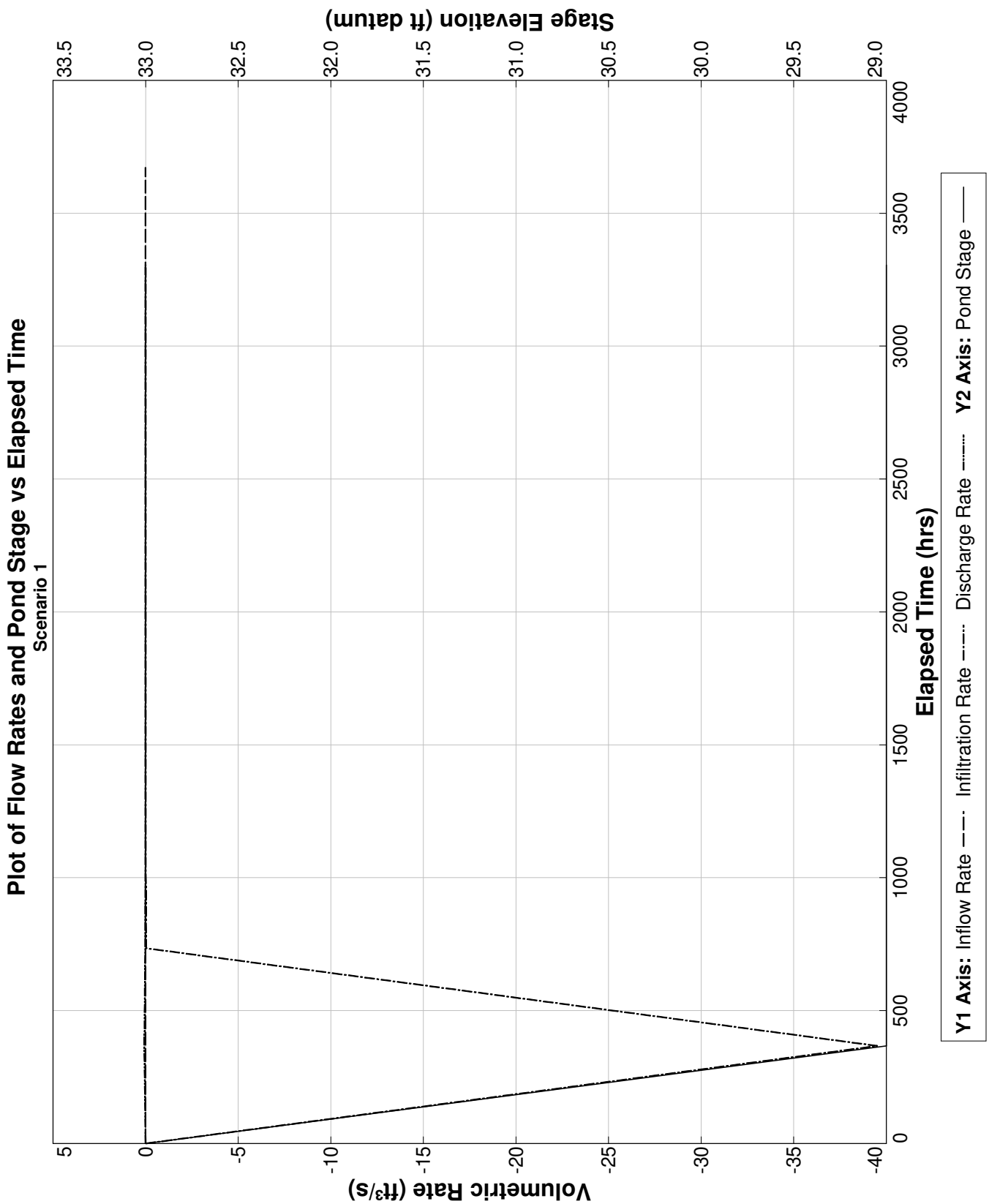
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0013	0.00163	33.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0013	0.00163	29.00000	-39.51318	7.480992E-02	1740.200	-104409700.0	1.044811E+08	S
734.400	0.0013	0.00163	29.00000	-0.02718	1.380068E-02	3480.400	-104466500.0	1.045397E+08	S
1101.600	0.0013	0.00163	29.00000	-0.01058	1.156677E-02	5220.600	-104481500.0	1.045565E+08	S
1468.800	0.0013	0.00163	29.00000	-0.00945	1.066991E-02	6960.800	-104494500.0	1.045712E+08	S
1836.000	0.0013	0.00163	29.00000	-0.00888	1.016275E-02	8701.000	-104506500.0	1.045849E+08	S
2203.200	0.0013	0.00163	29.00000	-0.00849	9.776313E-03	10441.200	-104518000.0	1.045981E+08	S
2570.400	0.0013	0.00163	29.00000	-0.00821	9.505099E-03	12181.400	-104529000.0	1.046108E+08	S
2937.600	0.0013	0.00163	29.00000	-0.00802	9.324382E-03	13921.600	-104539700.0	1.046233E+08	S
3304.800	0.0013	0.00163	29.00000	-0.00790	9.204417E-03	15661.800	-104550200.0	1.046355E+08	S
3672.000	0.0013	0.00163	29.00000	----	----	17402.000	-104560600.0	1.046477E+08	N.A.

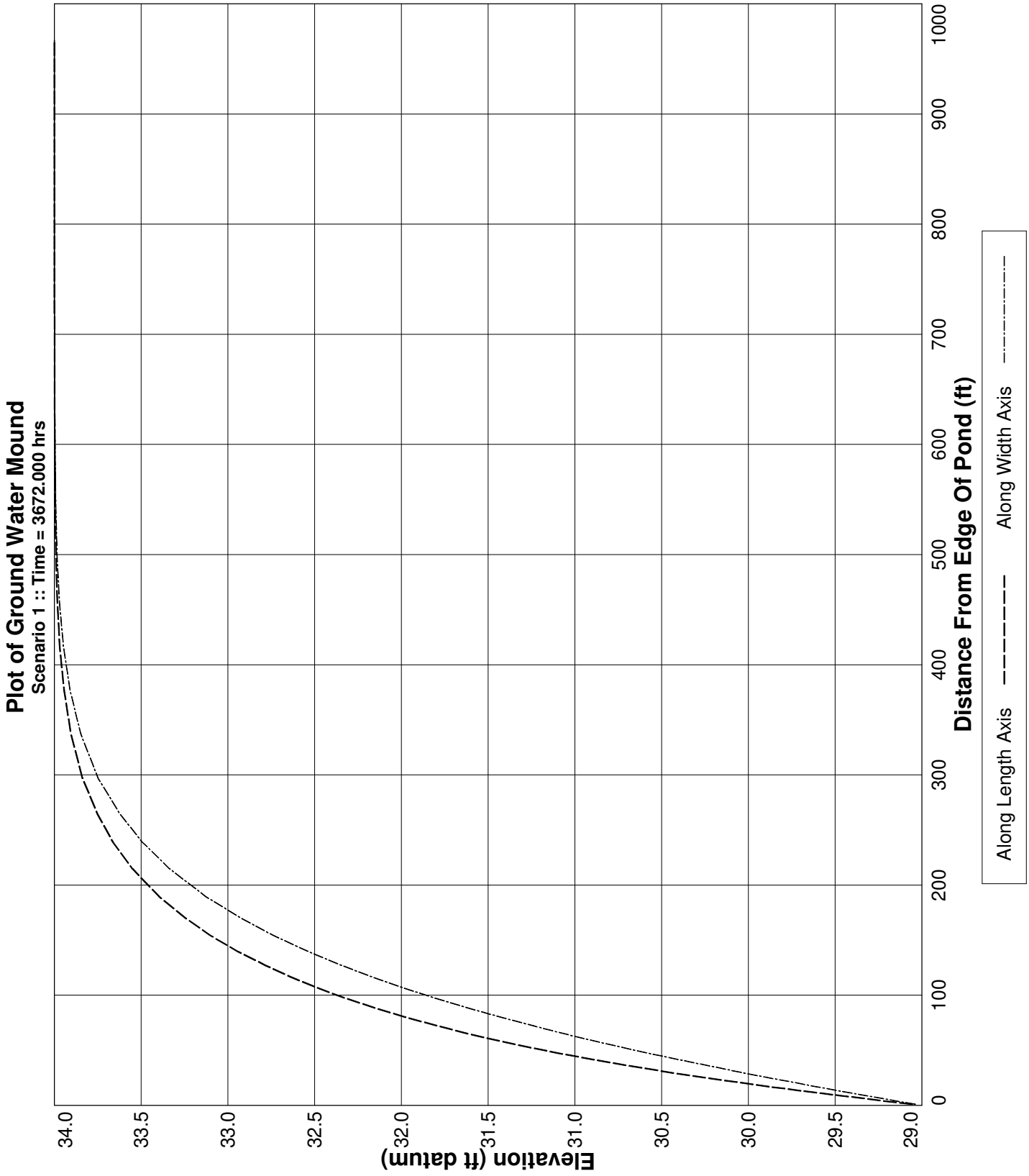
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No.4, South Wetland, with wall
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-23-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	10.00
Water Table Elevation, [WT] (ft datum):	34.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.00
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	226.0
Equivalent Pond Width, [W] (ft):	77.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft²)
15.00	435.6
29.00	17424.0

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	29
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	33.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

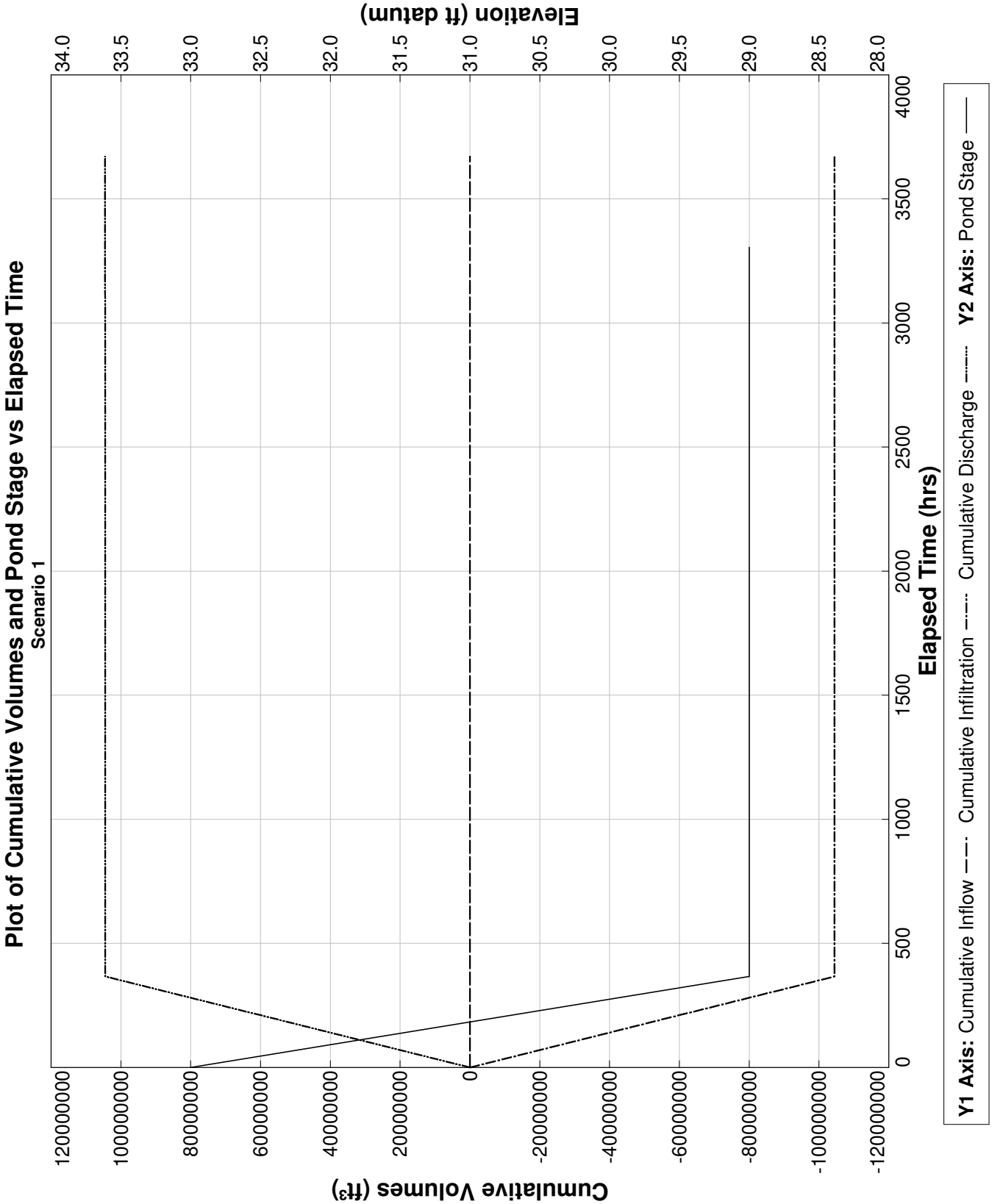
Begin Scenario 1 3/23/2023 15:20:9
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 33.0 ft.
#WARNING: The calculated water budget error exceeded the target water budget error for 7 of 10 saturated stress periods.
Maximum calculated water budget error is -4.89137656320380 percent, for saturated stress period 1.
If convergence is not a problem, it is recommended to reduce the Modflow convergence tolerences
to attempt to decrease the water budget error to within the target level.
End Scenario 1 3/23/2023 15:20:9

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

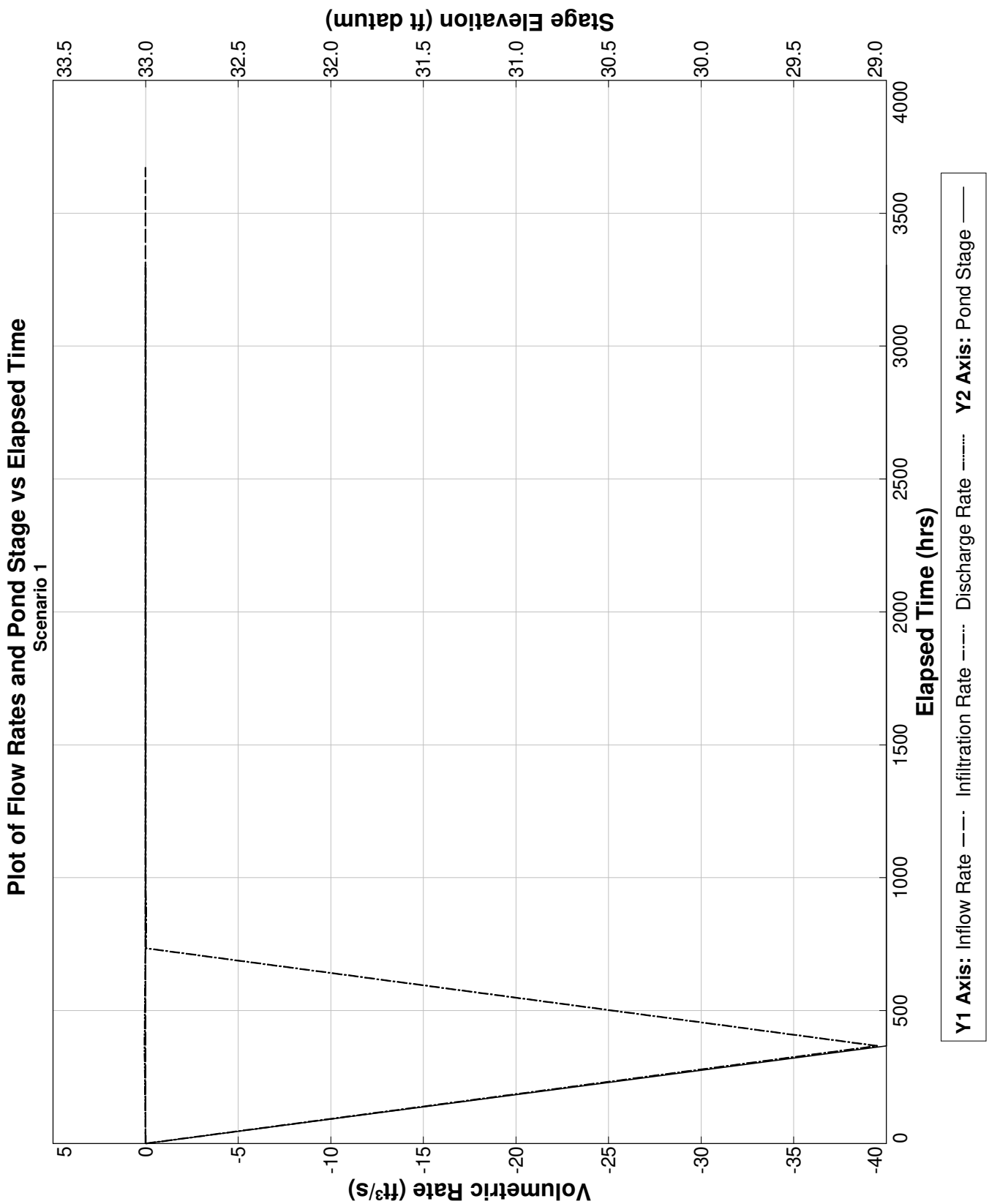
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0013	0.00163	33.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0013	0.00163	29.00000	-39.50375	6.176743E-02	1740.200	-104401100.0	1.044725E+08	S
734.400	0.0013	0.00163	29.00000	-0.01564	2.172346E-03	3480.400	-104441600.0	1.045148E+08	S
1101.600	0.0013	0.00163	29.00000	-0.00048	1.704339E-03	5220.600	-104442400.0	1.045173E+08	S
1468.800	0.0013	0.00163	29.00000	-0.00031	1.610873E-03	6960.800	-104442900.0	1.045195E+08	S
1836.000	0.0013	0.00163	29.00000	-0.00026	1.575546E-03	8701.000	-104443200.0	1.045216E+08	S
2203.200	0.0013	0.00163	29.00000	-0.00024	1.556129E-03	10441.200	-104443600.0	1.045237E+08	S
2570.400	0.0013	0.00163	29.00000	-0.00023	1.543547E-03	12181.400	-104443900.0	1.045257E+08	S
2937.600	0.0013	0.00163	29.00000	-0.00022	1.534749E-03	13921.600	-104444200.0	1.045278E+08	S
3304.800	0.0013	0.00163	29.00000	-0.00021	1.528332E-03	15661.800	-104444400.0	1.045298E+08	S
3672.000	0.0013	0.00163	29.00000	----	----	17402.000	-104444700.0	1.045318E+08	N.A.

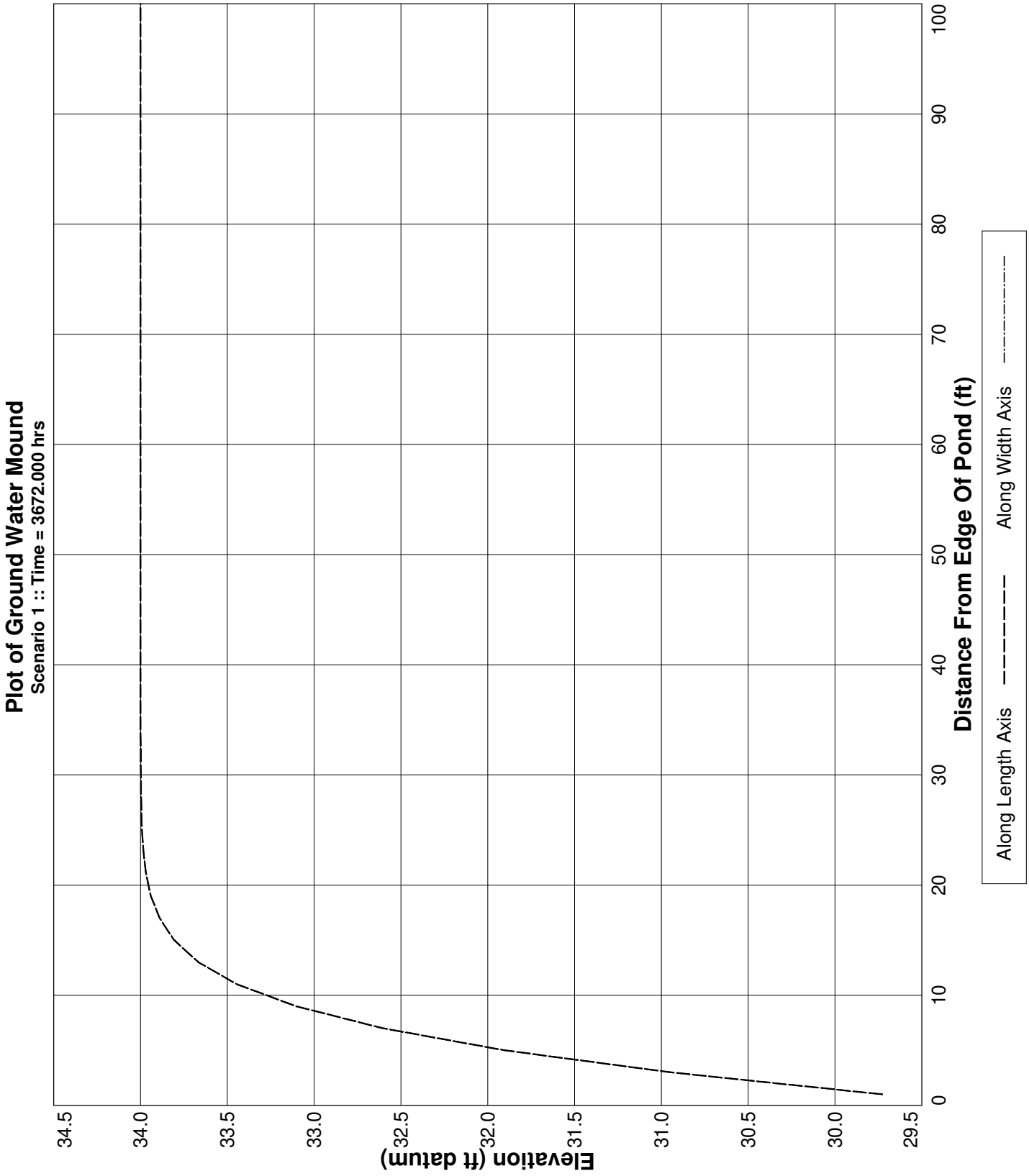
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No.4, East Wetland, without wall
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-29-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	10.00
Water Table Elevation, [WT] (ft datum):	32.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	1.10
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	226.0
Equivalent Pond Width, [W] (ft):	77.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
15.00	435.6
29.00	17424.0

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	29
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	31.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
  Perimeter boundary condition: constant head
  Maximum iterations of outer loop: 150
  Maximum iterations of inner loop: 60
  Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
  Instantanerous storage coefficient: Volumetric balance
  Default head closure tolerance: .01
  Default residual closure tolerance: .5
  Target water budget error: 1
  On failure to converge: Rerun limiting inner loop to one iteration
    > Maximum number of iterations of outer loop: 500
  Running Average Porosity is active
    > Starting on pass: 2
    > When outer iteration reaches: 50
    > Number of data points: 4
  Running Average Pond Stage (for discharge structures with tailwater) is active
    > Starting on pass: 2
    > When outer iteration reaches: 50
    > Number of data points: 4
  Grid size: 1000 ft (from pond centerline)
  Mound Output: all stress periods

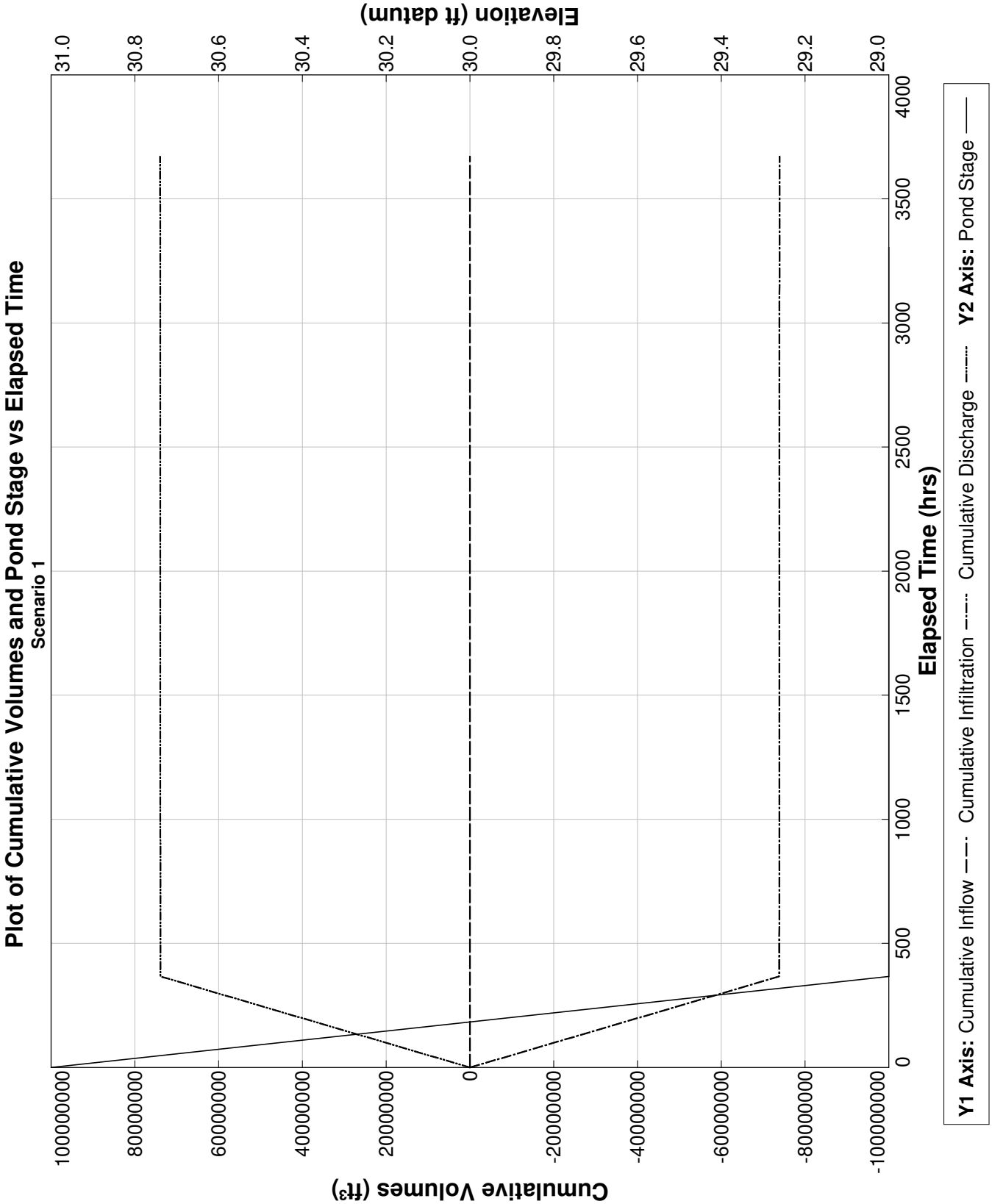
Begin Scenario 1 3/29/2023 10:55:59
  Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
  Baseflow hydrograph: Initial GWT (seasonal low) is 31.0 ft.
End Scenario 1 3/29/2023 10:55:59

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

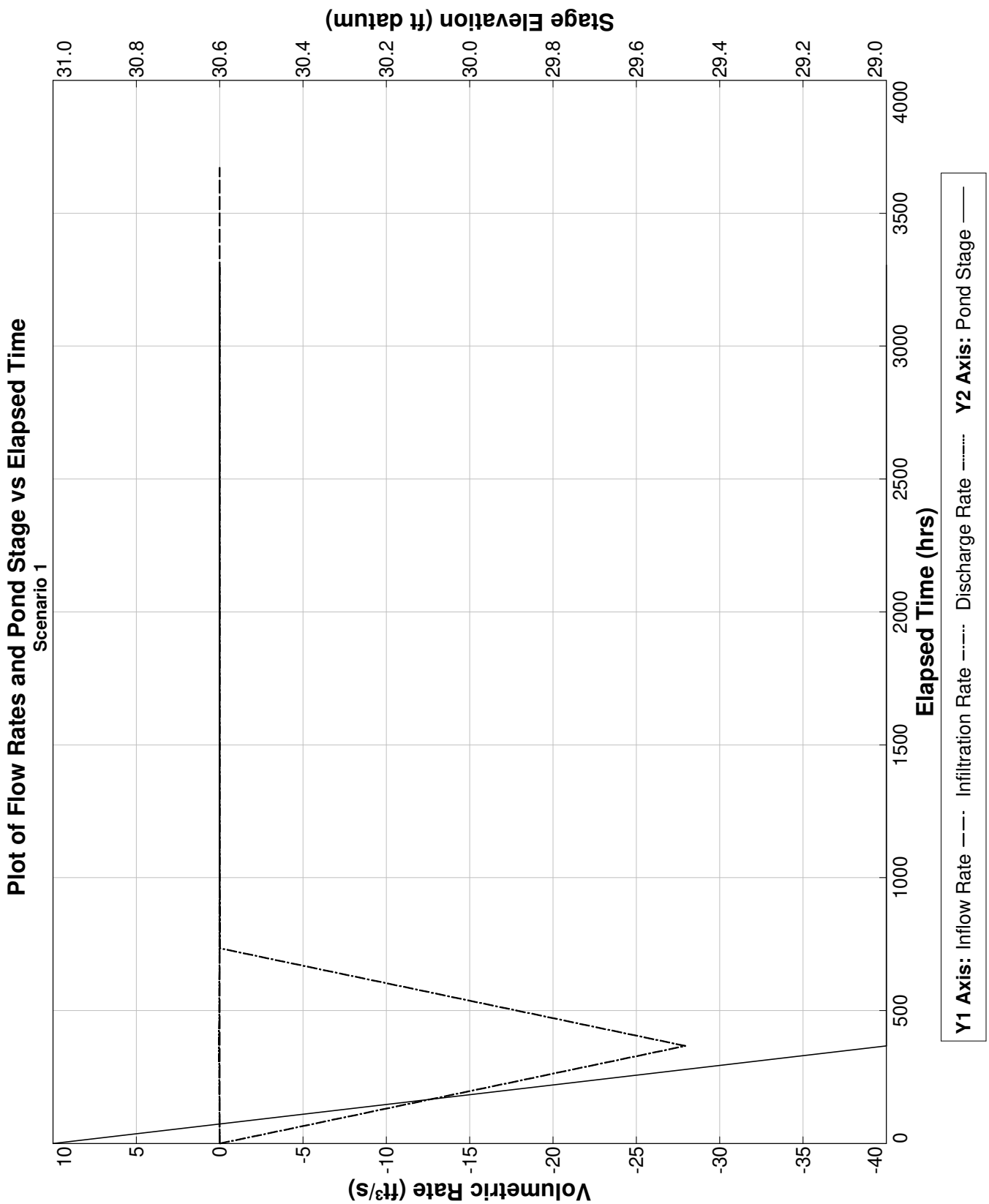
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0013	0.00163	31.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0013	0.00163	29.00000	-27.93756	3.869143E-02	1740.200	-73833340.0	7.386992E+07	S
734.400	0.0013	0.00163	29.00000	-0.01410	7.985432E-03	3480.400	-73862450.0	7.390078E+07	S
1101.600	0.0013	0.00163	29.00000	-0.00582	6.991711E-03	5220.600	-73870610.0	7.391067E+07	S
1468.800	0.0013	0.00163	29.00000	-0.00529	6.55897E-03	6960.800	-73877820.0	7.391963E+07	S
1836.000	0.0013	0.00163	29.00000	-0.00501	6.296993E-03	8701.000	-73884580.0	7.392813E+07	S
2203.200	0.0013	0.00163	29.00000	-0.00485	6.150014E-03	10441.200	-73891060.0	7.393635E+07	S
2570.400	0.0013	0.00163	29.00000	-0.00478	6.081242E-03	12181.400	-73897410.0	7.394444E+07	S
2937.600	0.0013	0.00163	29.00000	-0.00475	6.059277E-03	13921.600	-73903700.0	7.395246E+07	S
3304.800	0.0013	0.00163	29.00000	-0.00476	6.070987E-03	15661.800	-73909970.0	7.396048E+07	S
3672.000	0.0013	0.00163	29.00000	----	----	17402.000	-73916280.0	7.396853E+07	N.A.

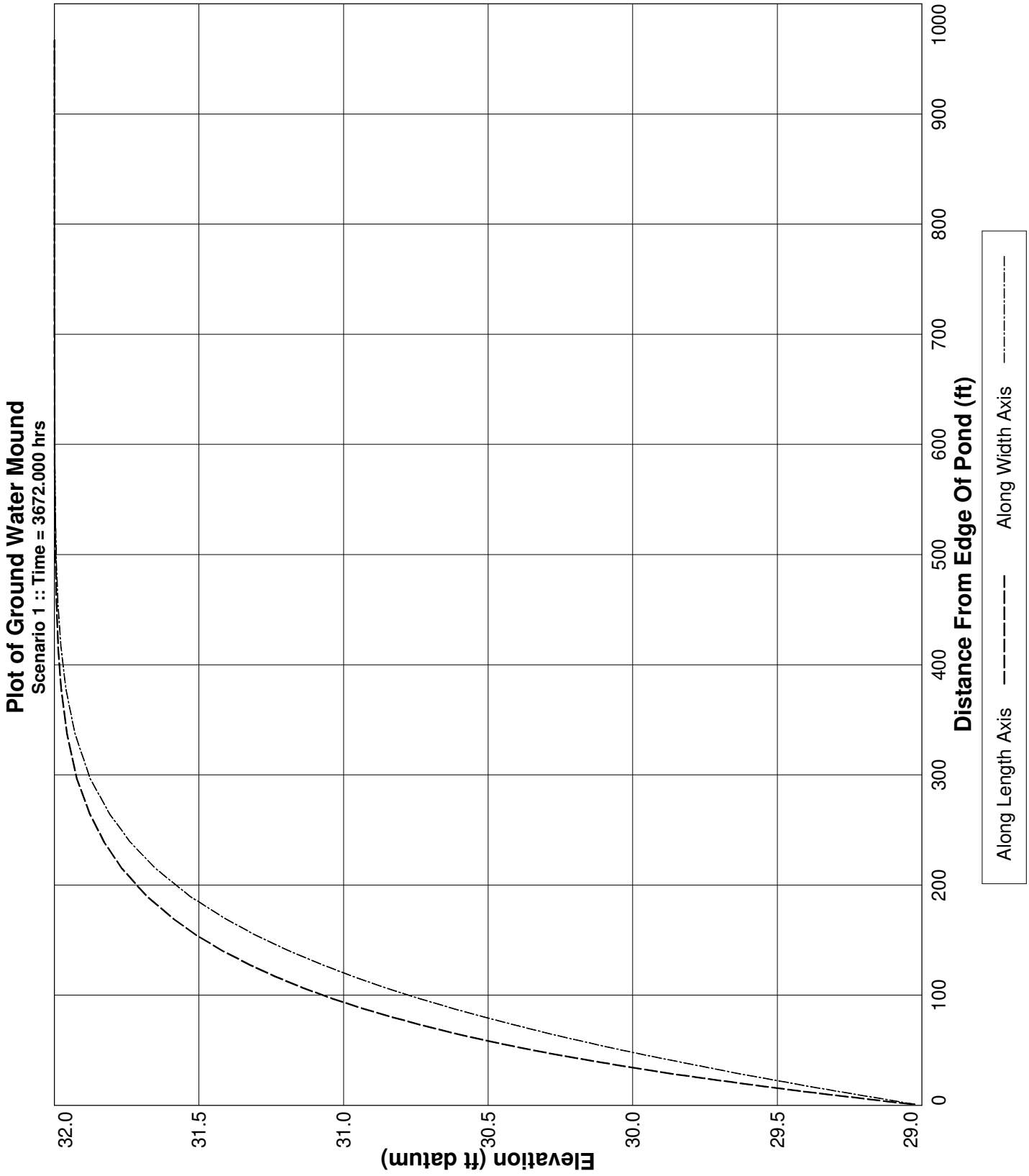
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No.4, East Wetland, with wall
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-29-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	10.00
Water Table Elevation, [WT] (ft datum):	32.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.00
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	226.0
Equivalent Pond Width, [W] (ft):	77.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
15.00	435.6
29.00	17424.0

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	29
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	31.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

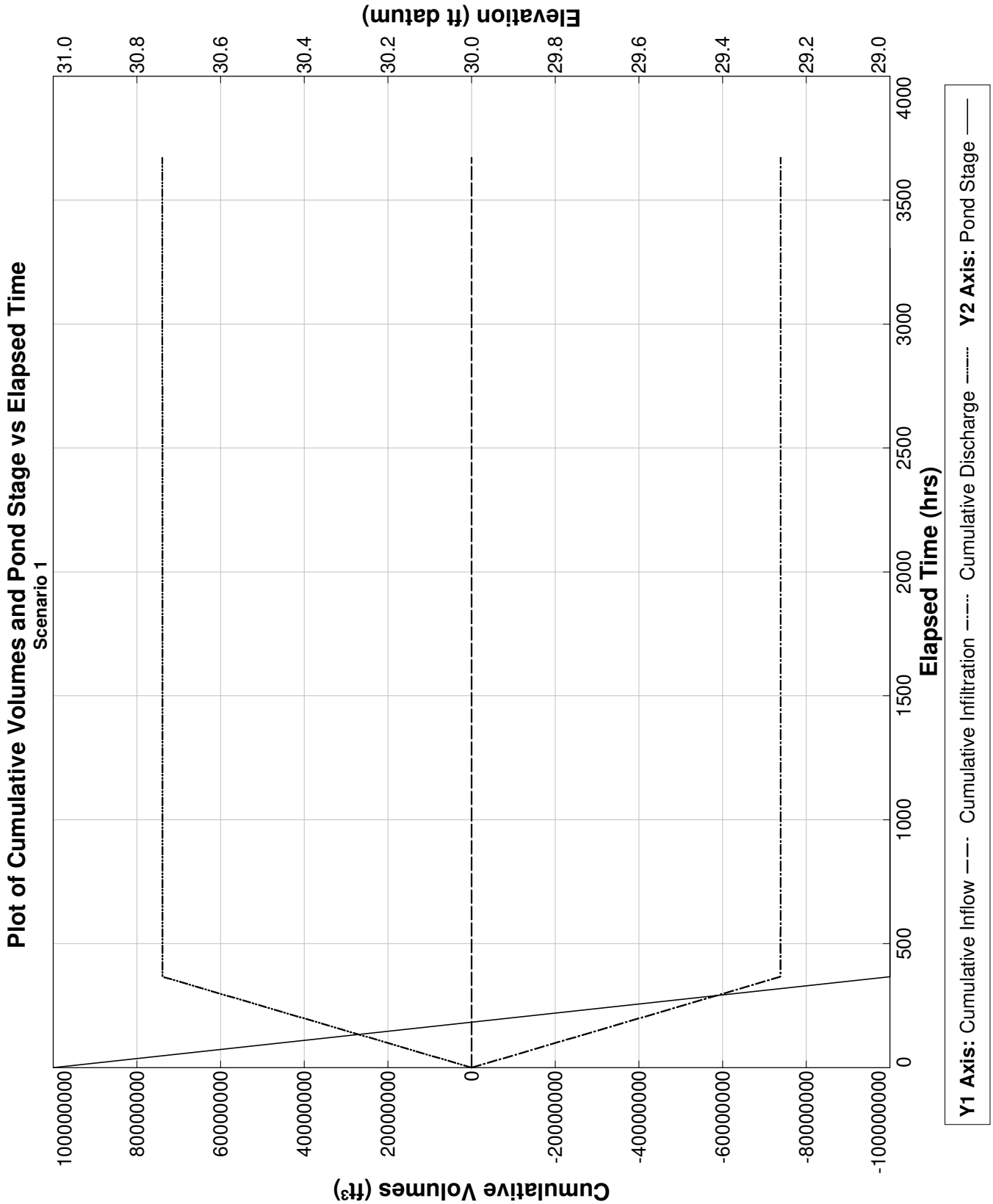
Begin Scenario 1 3/29/2023 11:3:38
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 31.0 ft.
#WARNING: The calculated water budget error exceeded the target water budget error for 9 of 10 saturated stress periods.
Maximum calculated water budget error is -6.81537894075264 percent, for saturated stress period 1.
If convergence is not a problem, it is recommended to reduce the Modflow convergence tolerences
to attempt to decrease the water budget error to within the target level.
End Scenario 1 3/29/2023 11:3:38

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

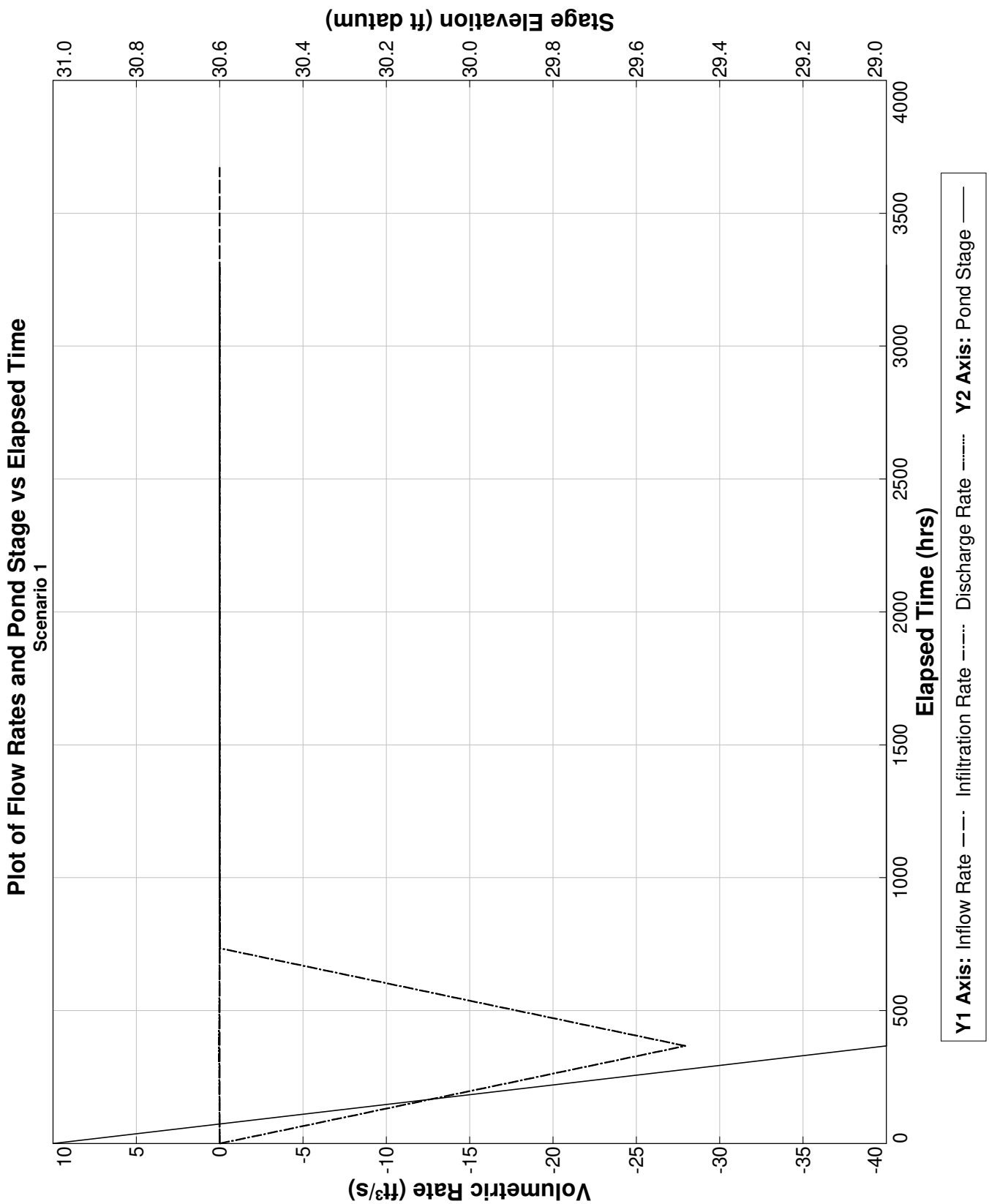
Detailed Results *:: Scenario 1 ::*

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0013	0.00163	31.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0013	0.00163	29.00000	-27.93484	3.608018E-02	1740.200	-73831610.0	7.38682E+07	S
734.400	0.0013	0.00163	29.00000	-0.00925	2.295132E-03	3480.400	-73855230.0	7.389356E+07	S
1101.600	0.0013	0.00163	29.00000	-0.00042	1.580494E-03	5220.600	-73856060.0	7.389612E+07	S
1468.800	0.0013	0.00163	29.00000	-0.00019	1.487857E-03	6960.800	-73856340.0	7.389815E+07	S
1836.000	0.0013	0.00163	29.00000	-0.00015	1.466433E-03	8701.000	-73856550.0	7.39001E+07	S
2203.200	0.0013	0.00163	29.00000	-0.00014	1.458238E-03	10441.200	-73856740.0	7.390204E+07	S
2570.400	0.0013	0.00163	29.00000	-0.00014	1.454018E-03	12181.400	-73856940.0	7.390396E+07	S
2937.600	0.0013	0.00163	29.00000	-0.00014	1.451641E-03	13921.600	-73857110.0	7.390588E+07	S
3304.800	0.0013	0.00163	29.00000	-0.00013	1.450335E-03	15661.800	-73857290.0	7.39078E+07	S
3672.000	0.0013	0.00163	29.00000	----	----	17402.000	-73857460.0	7.390972E+07	N.A.

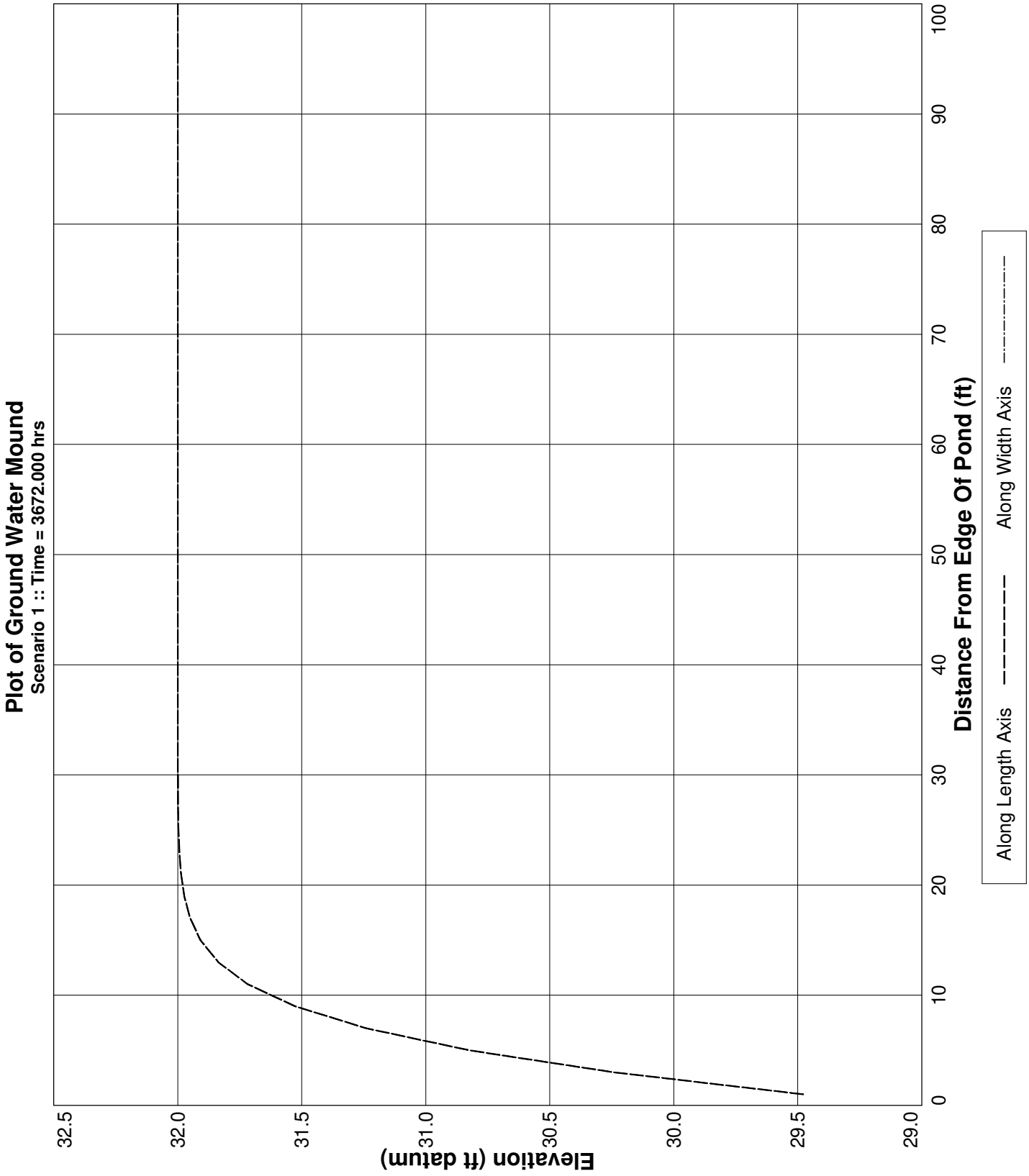
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No.5, Baseflow
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-31-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	10.00
Water Table Elevation, [WT] (ft datum):	29.50
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.59
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	214.0
Equivalent Pond Width, [W] (ft):	69.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
15.00	435.6
29.00	14810.4

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	29
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	28.5
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

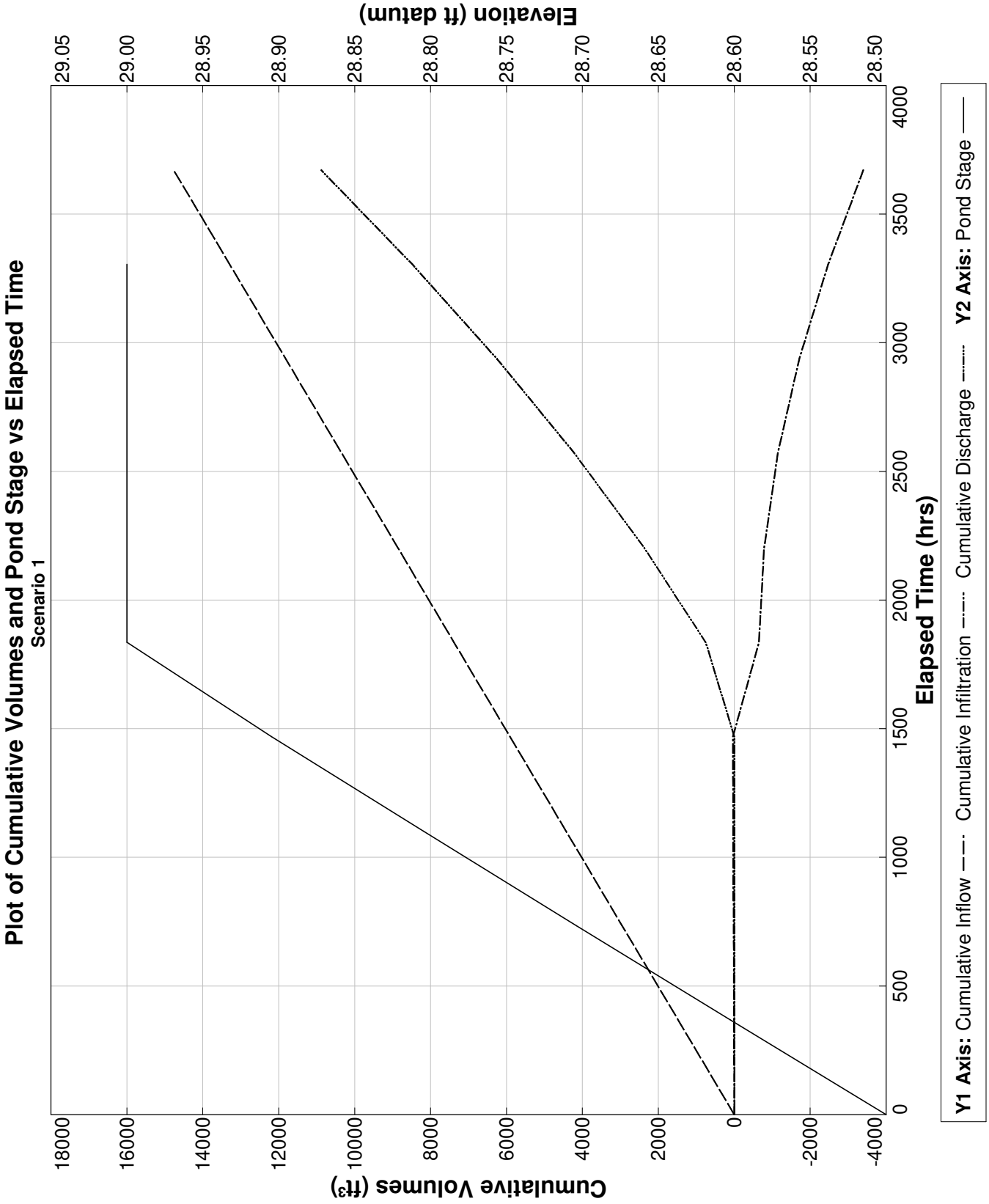
Begin Scenario 1 3/31/2023 11:15:54
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 28.5 ft.
End Scenario 1 3/31/2023 11:15:54

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

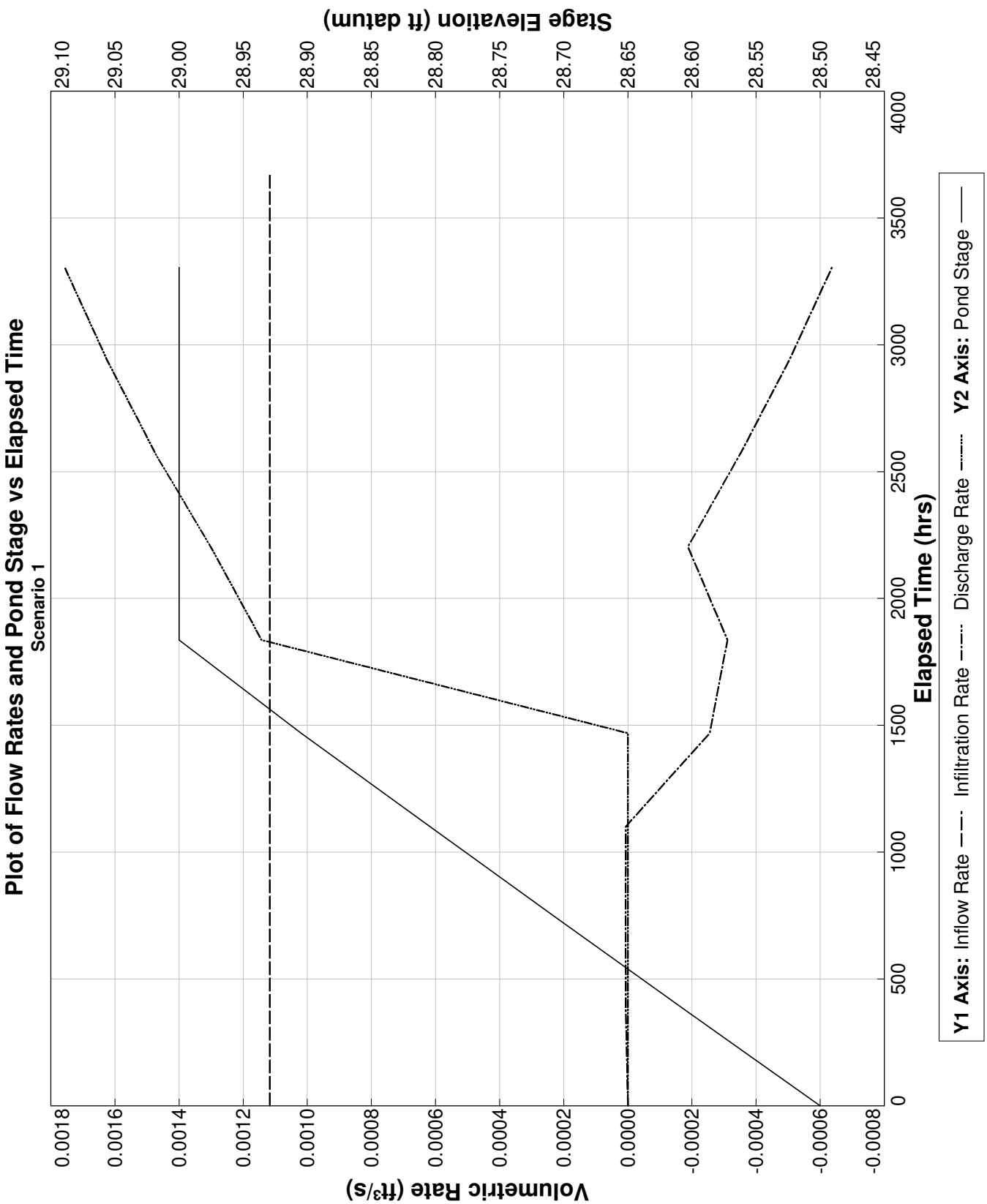
Detailed Results *:: Scenario 1 ::*

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0011	0.00163	28.50000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0011	0.00163	28.60239	0.00001	0	1476.600	7.3	0	S
734.400	0.0011	0.00163	28.70389	0.00001	0	2953.200	16.9	0	S
1101.600	0.0011	0.00163	28.80467	0.00001	0	4429.800	26.3	0	S
1468.800	0.0011	0.00163	28.90483	-0.00026	0	5906.400	34.4	0	S
1836.000	0.0011	0.00163	29.00000	-0.00031	1.142538E-03	7383.000	-649.0	755.1716	S
2203.200	0.0011	0.00163	29.00000	-0.00019	1.301027E-03	8859.600	-787.5	2370.27	S
2570.400	0.0011	0.00163	29.00000	-0.00035	1.473406E-03	10336.200	-1144.7	4204.06	S
2937.600	0.0011	0.00163	29.00000	-0.00050	1.62381E-03	11812.800	-1715.2	6251.195	S
3304.800	0.0011	0.00163	29.00000	-0.00064	1.757139E-03	13289.400	-2473.3	8485.867	S
3672.000	0.0011	0.00163	29.00000	----	----	14766.000	-3398.8	10887.9	N.A.

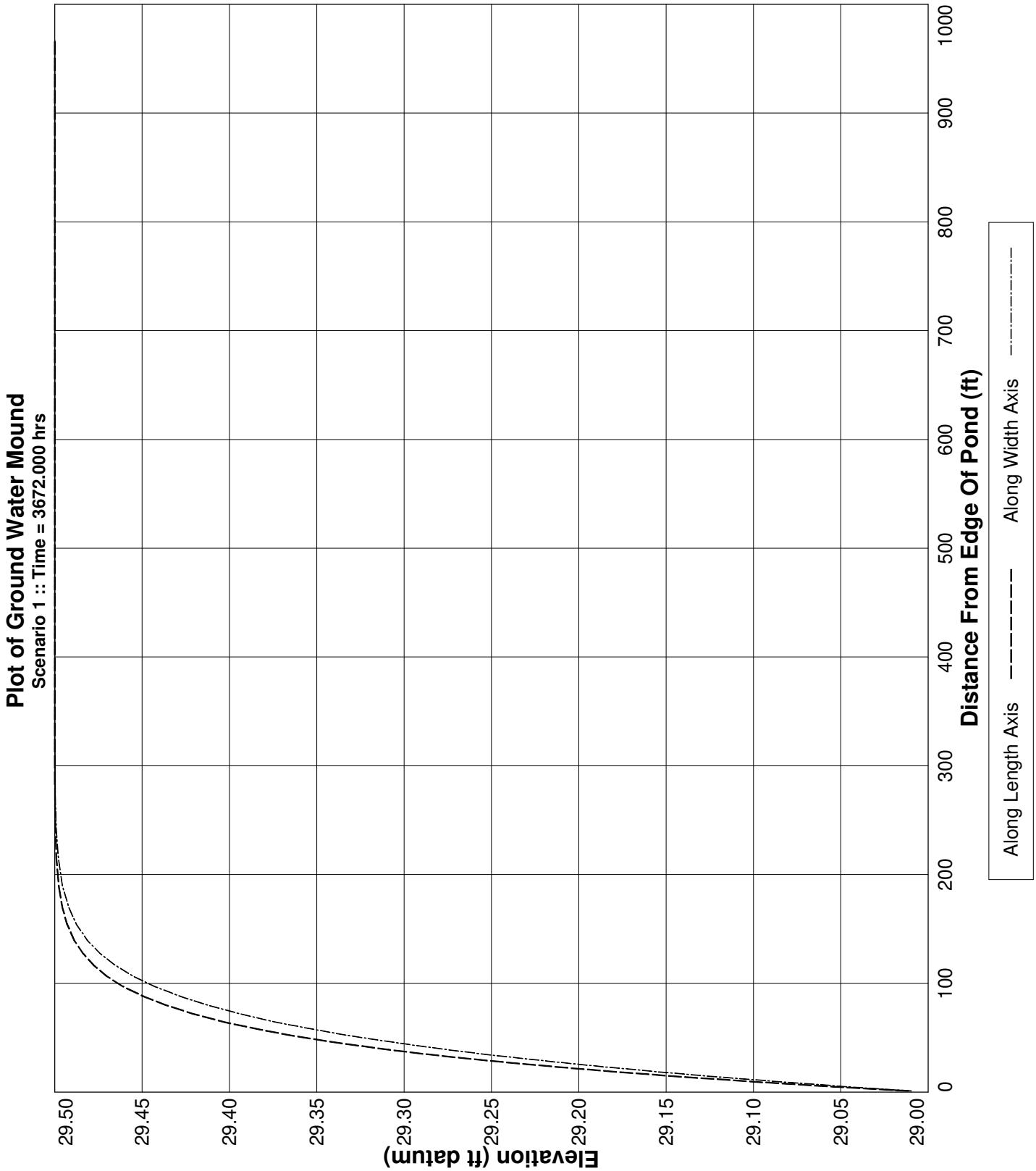
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No. 6, North Wetland, without wall
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-29-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	7.00
Water Table Elevation, [WT] (ft datum):	32.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.59
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	504.0
Equivalent Pond Width, [W] (ft):	122.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
12.00	1306.8
29.00	61419.6

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	29
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	31.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

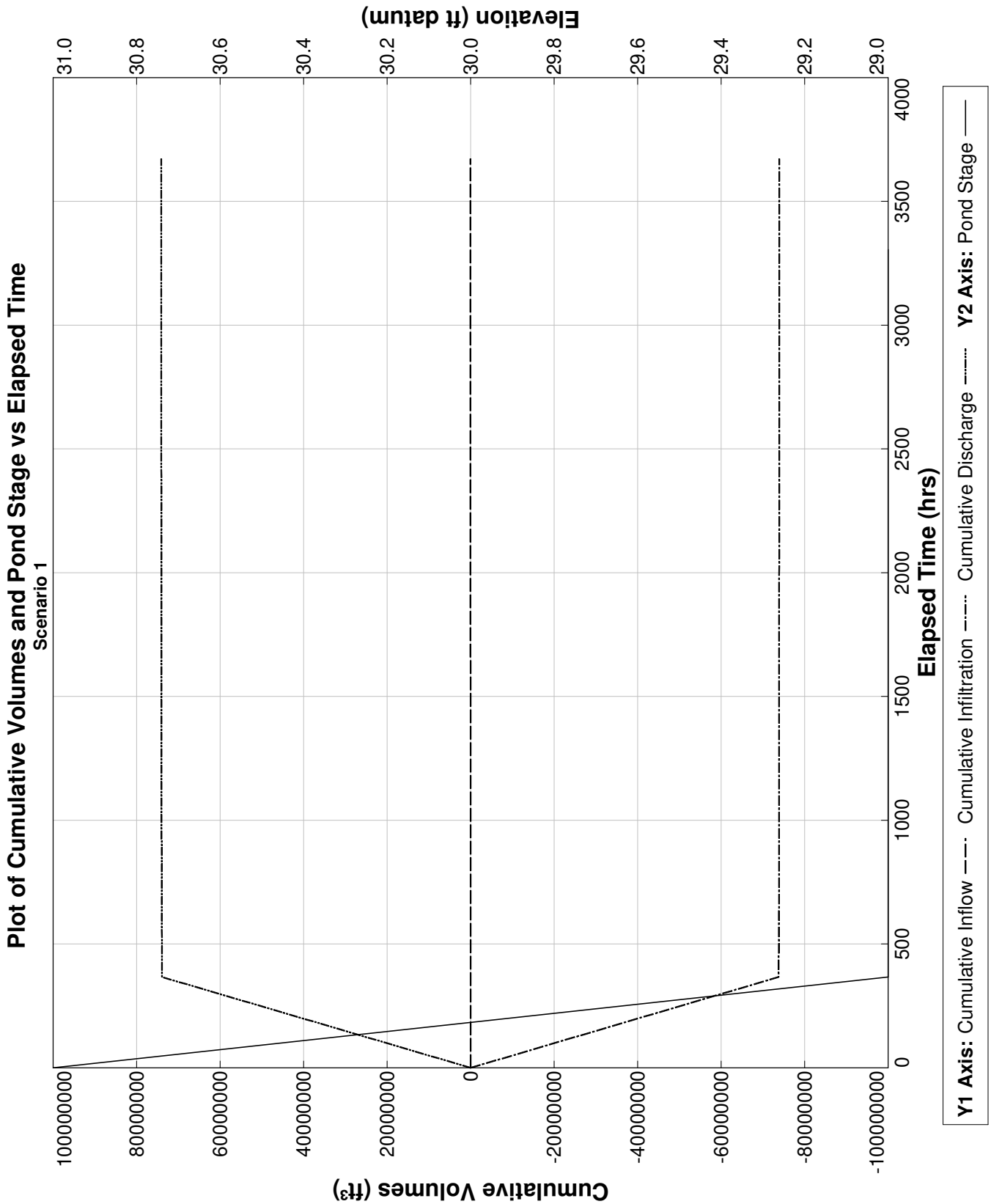
Begin Scenario 1 3/29/2023 11:32:41
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 31.0 ft.
End Scenario 1 3/29/2023 11:32:41

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

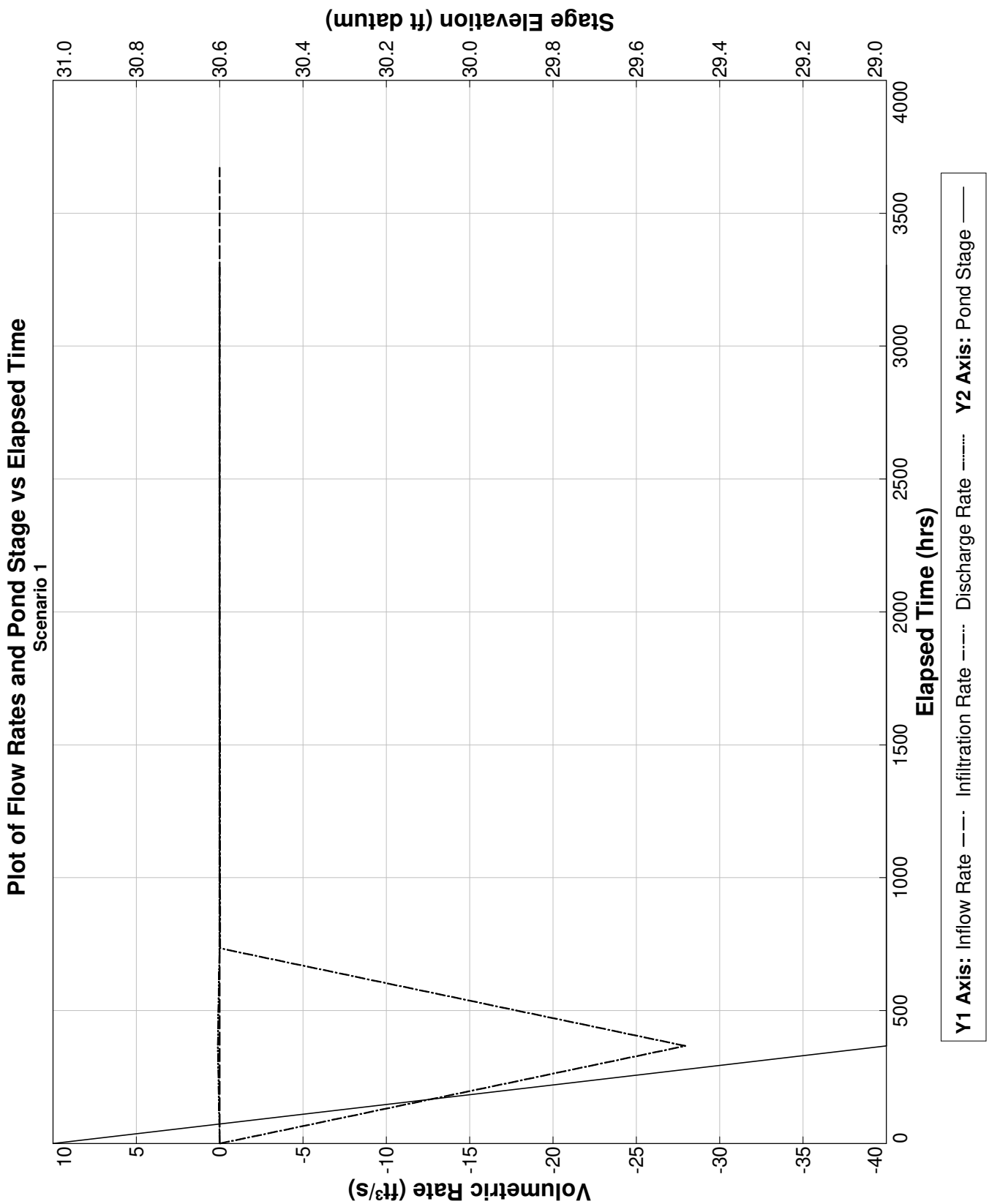
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0047	0.00163	31.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0047	0.00163	29.00000	-27.93980	.1133875	6148.800	-73790300.0	7.39193E+07	S
734.400	0.0047	0.00163	29.00000	-0.03376	1.400146E-02	12297.600	-73868350.0	7.40035E+07	S
1101.600	0.0047	0.00163	29.00000	-0.00788	.0122392	18446.400	-73879550.0	7.402084E+07	S
1468.800	0.0047	0.00163	29.00000	-0.00703	1.163748E-02	24595.200	-73889180.0	7.403662E+07	S
1836.000	0.0047	0.00163	29.00000	-0.00661	1.122375E-02	30744.000	-73898140.0	7.405173E+07	S
2203.200	0.0047	0.00163	29.00000	-0.00634	1.095871E-02	36892.800	-73906660.0	7.406639E+07	S
2570.400	0.0047	0.00163	29.00000	-0.00617	1.080731E-02	43041.600	-73914900.0	7.408078E+07	S
2937.600	0.0047	0.00163	29.00000	-0.00608	1.072181E-02	49190.400	-73922980.0	7.409501E+07	S
3304.800	0.0047	0.00163	29.00000	-0.00605	1.069088E-02	55339.200	-73930980.0	7.410916E+07	S
3672.000	0.0047	0.00163	29.00000	----	----	61488.000	-73938970.0	7.412329E+07	N.A.

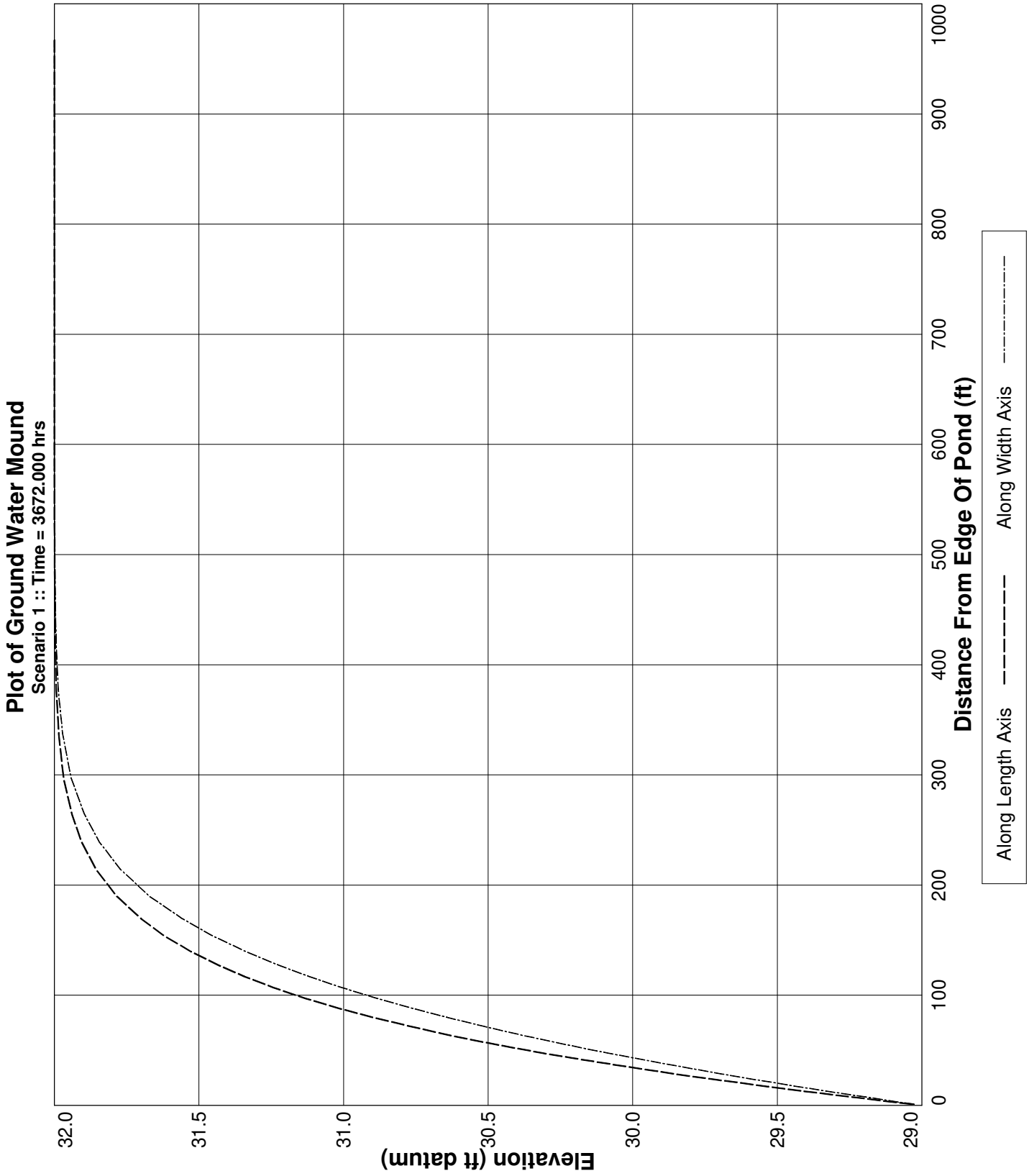
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No. 6, North Wetland, with wall
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-29-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	7.00
Water Table Elevation, [WT] (ft datum):	32.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.00
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	504.0
Equivalent Pond Width, [W] (ft):	122.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
12.00	1306.8
29.00	61419.6

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	29
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	31.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

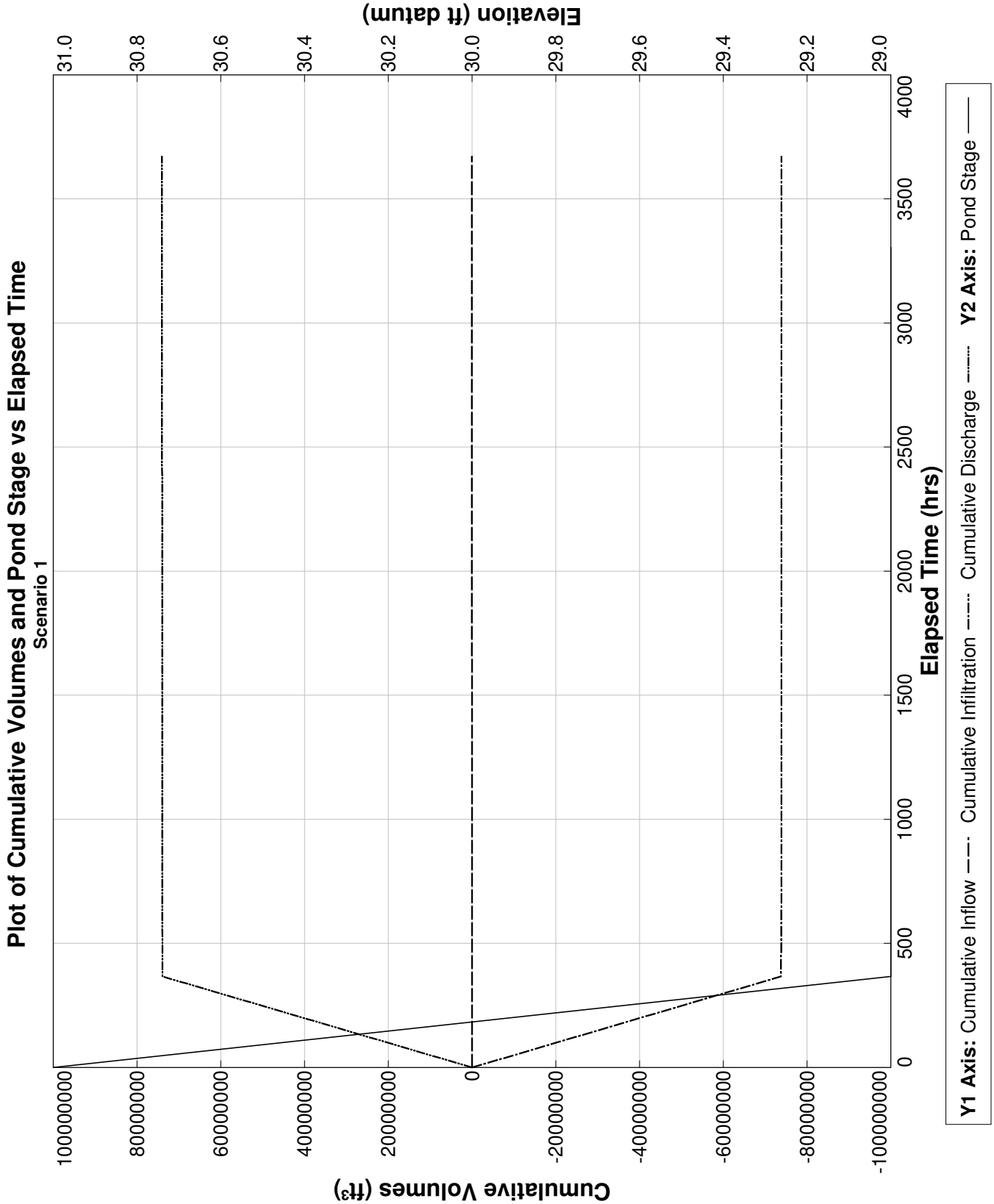
Begin Scenario 1 3/29/2023 11:33:26
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 31.0 ft.
#WARNING: The calculated water budget error exceeded the target water budget error for 6 of 10 saturated stress periods.
Maximum calculated water budget error is -2.70636823601526 percent, for saturated stress period 1.
If convergence is not a problem, it is recommended to reduce the Modflow convergence tolerences
to attempt to decrease the water budget error to within the target level.
End Scenario 1 3/29/2023 11:33:26

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

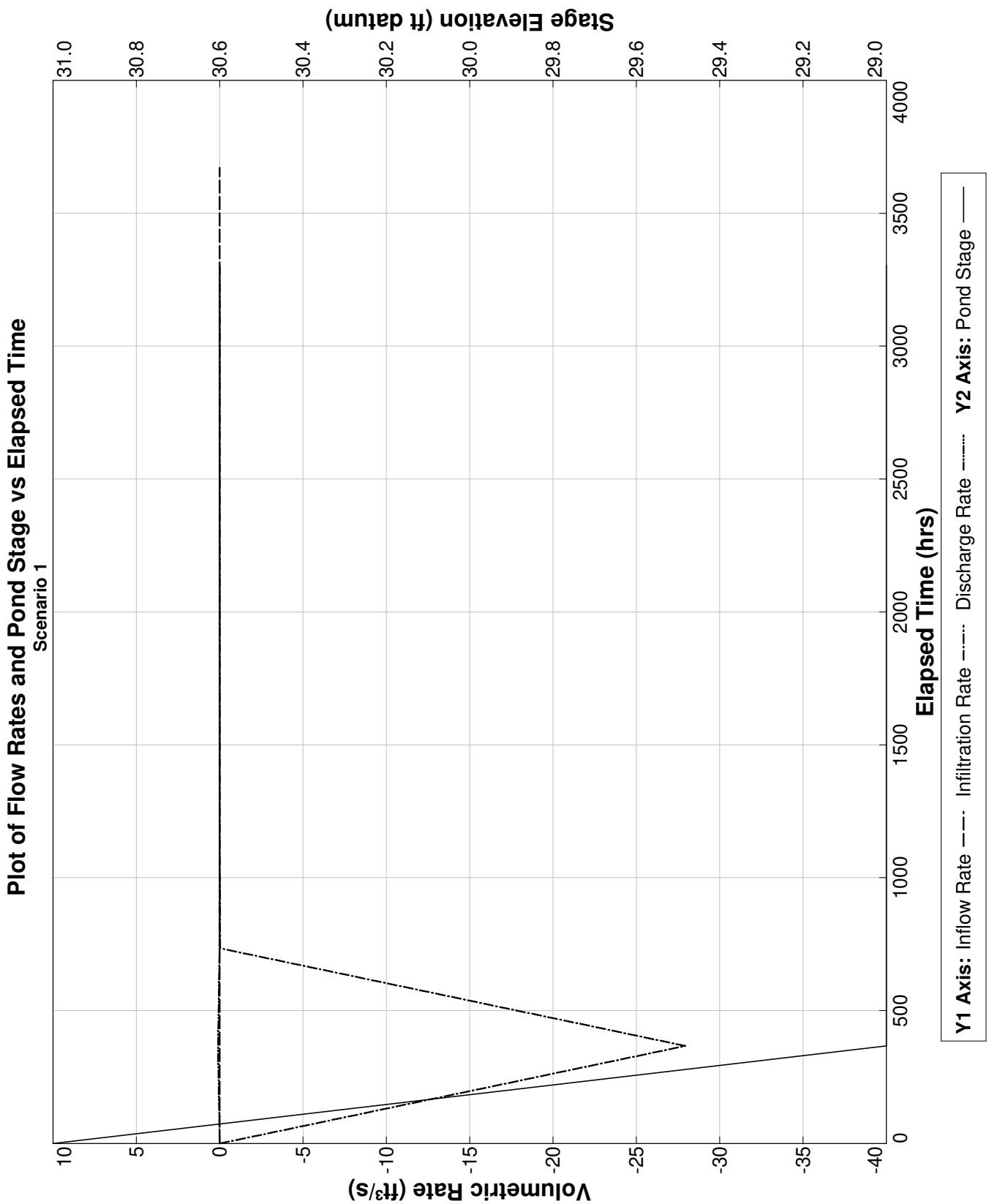
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0047	0.00163	31.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0047	0.00163	29.00000	-27.93346	.1039053	6148.800	-73784040.0	7.391302E+07	S
734.400	0.0047	0.00163	29.00000	-0.02649	7.620911E-03	12297.600	-73851600.0	7.398674E+07	S
1101.600	0.0047	0.00163	29.00000	-0.00124	5.412865E-03	18446.400	-73854070.0	7.399535E+07	S
1468.800	0.0047	0.00163	29.00000	-0.00053	5.119665E-03	24595.200	-73854880.0	7.400232E+07	S
1836.000	0.0047	0.00163	29.00000	-0.00041	5.055074E-03	30744.000	-73855460.0	7.400904E+07	S
2203.200	0.0047	0.00163	29.00000	-0.00038	5.032456E-03	36892.800	-73855980.0	7.401571E+07	S
2570.400	0.0047	0.00163	29.00000	-0.00037	5.021273E-03	43041.600	-73856470.0	7.402235E+07	S
2937.600	0.0047	0.00163	29.00000	-0.00036	5.014987E-03	49190.400	-73856960.0	7.402899E+07	S
3304.800	0.0047	0.00163	29.00000	-0.00036	5.011509E-03	55339.200	-73857440.0	7.403562E+07	S
3672.000	0.0047	0.00163	29.00000	----	----	61488.000	-73857910.0	7.404224E+07	N.A.

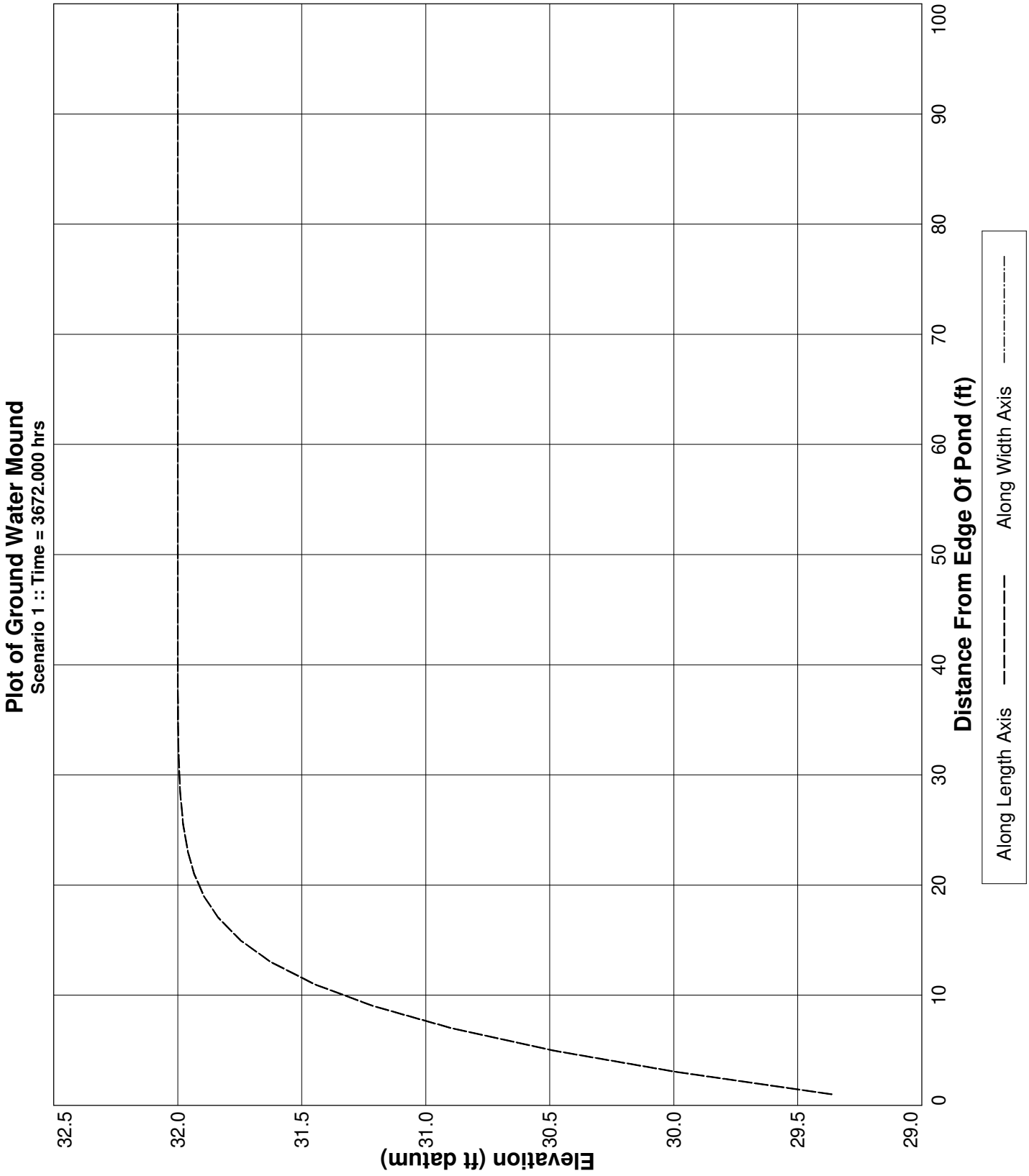
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No. 6, South Wetland, without wall
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-29-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	7.00
Water Table Elevation, [WT] (ft datum):	33.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.59
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	504.0
Equivalent Pond Width, [W] (ft):	122.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
12.00	1306.8
29.00	61419.6

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	29
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	32.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

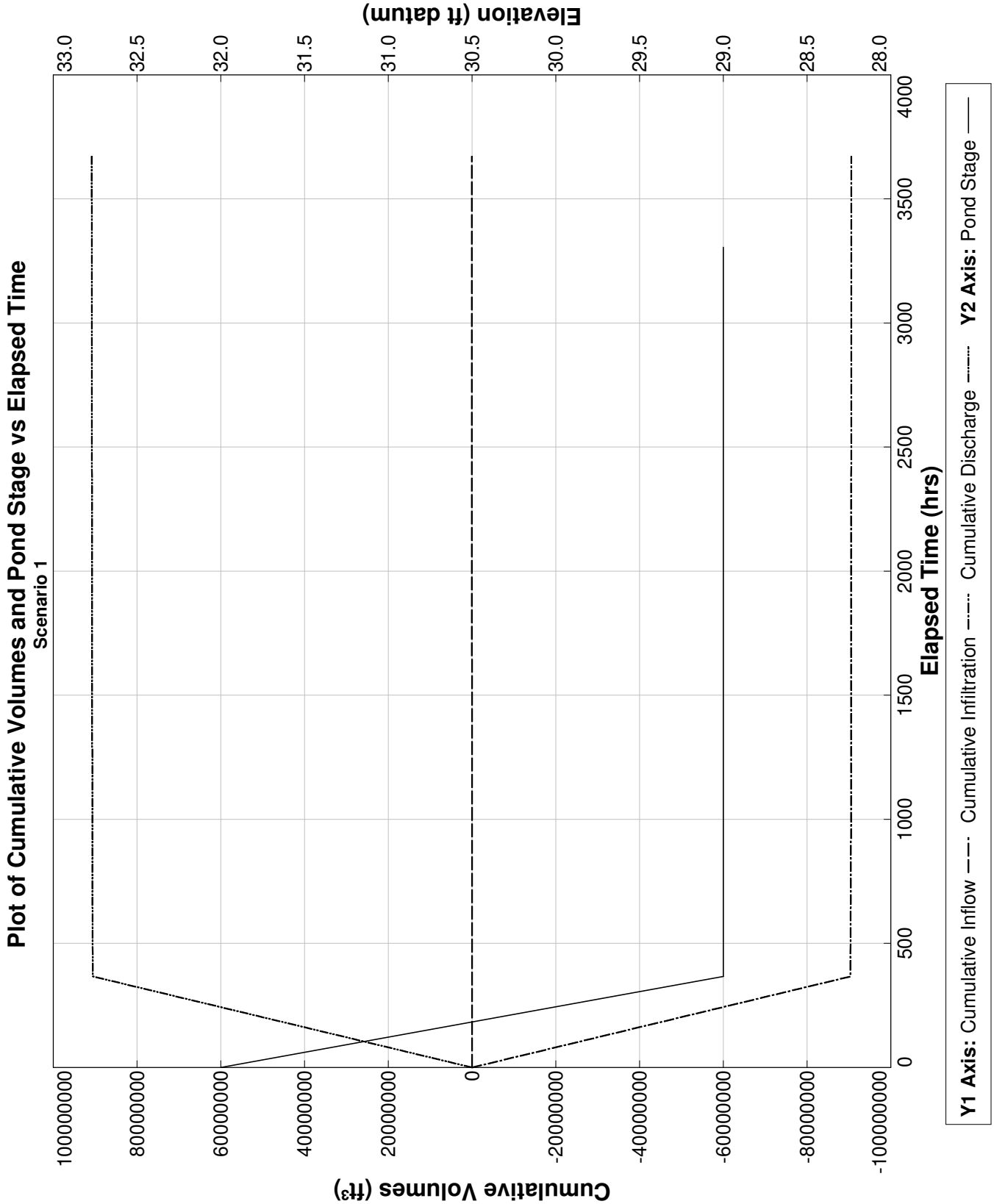
Begin Scenario 1 3/29/2023 11:34:29
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 32.0 ft.
End Scenario 1 3/29/2023 11:34:29

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

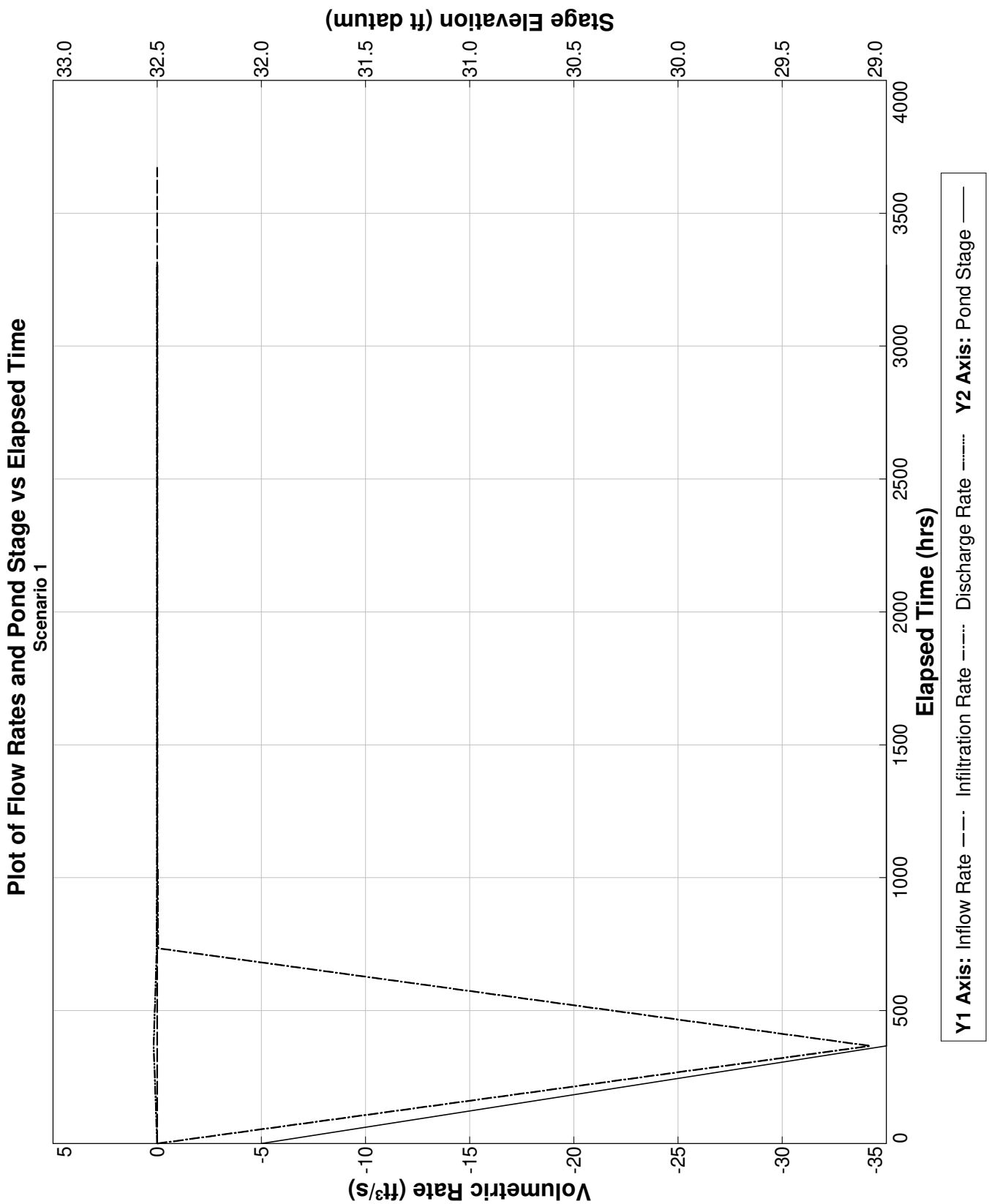
Detailed Results *:: Scenario 1 ::*

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0047	0.00163	32.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0047	0.00163	29.00001	-34.22164	.1670751	6148.800	-90360510.0	9.055092E+07	S
734.400	0.0047	0.00163	29.00000	-0.04985	1.778479E-02	12297.600	-90476540.0	9.06731E+07	S
1101.600	0.0047	0.00163	29.00000	-0.01104	1.537601E-02	18446.400	-90492310.0	9.069502E+07	S
1468.800	0.0047	0.00163	29.00000	-0.00972	1.423832E-02	24595.200	-90505740.0	9.071459E+07	S
1836.000	0.0047	0.00163	29.00000	-0.00903	1.364499E-02	30744.000	-90518020.0	9.073302E+07	S
2203.200	0.0047	0.00163	29.00000	-0.00859	1.320623E-02	36892.800	-90529620.0	9.075077E+07	S
2570.400	0.0047	0.00163	29.00000	-0.00827	1.289104E-02	43041.600	-90540720.0	9.076802E+07	S
2937.600	0.0047	0.00163	29.00000	-0.00805	.0126829	49190.400	-90551470.0	9.078493E+07	S
3304.800	0.0047	0.00163	29.00000	-0.00790	1.254019E-02	55339.200	-90562000.0	9.080159E+07	S
3672.000	0.0047	0.00163	29.00000	----	----	61488.000	-90572370.0	9.081812E+07	N.A.

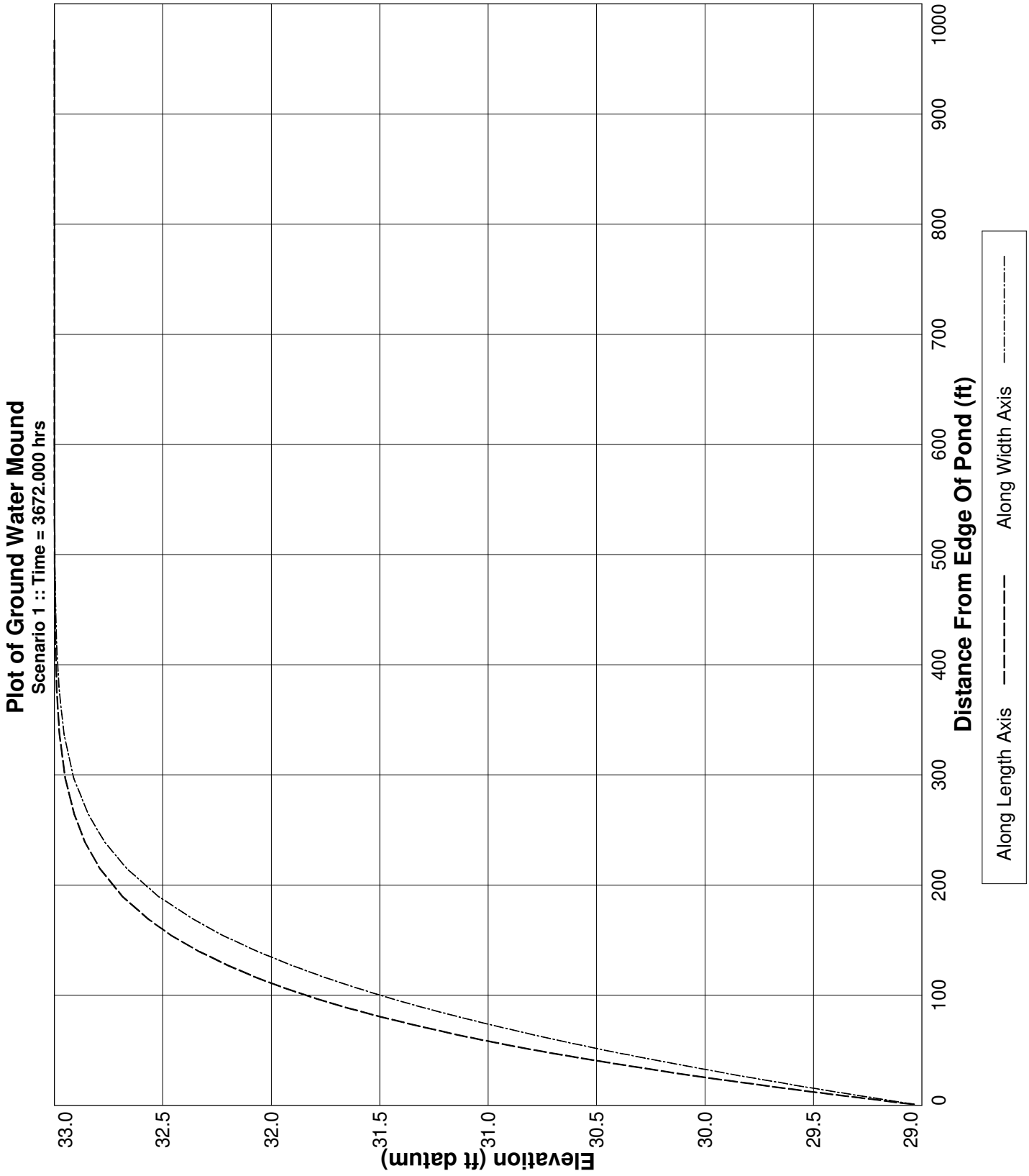
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No. 6, South Wetland, with wall
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-29-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	7.00
Water Table Elevation, [WT] (ft datum):	33.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.00
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	504.0
Equivalent Pond Width, [W] (ft):	122.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
12.00	1306.8
29.00	61419.6

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	29
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	32.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

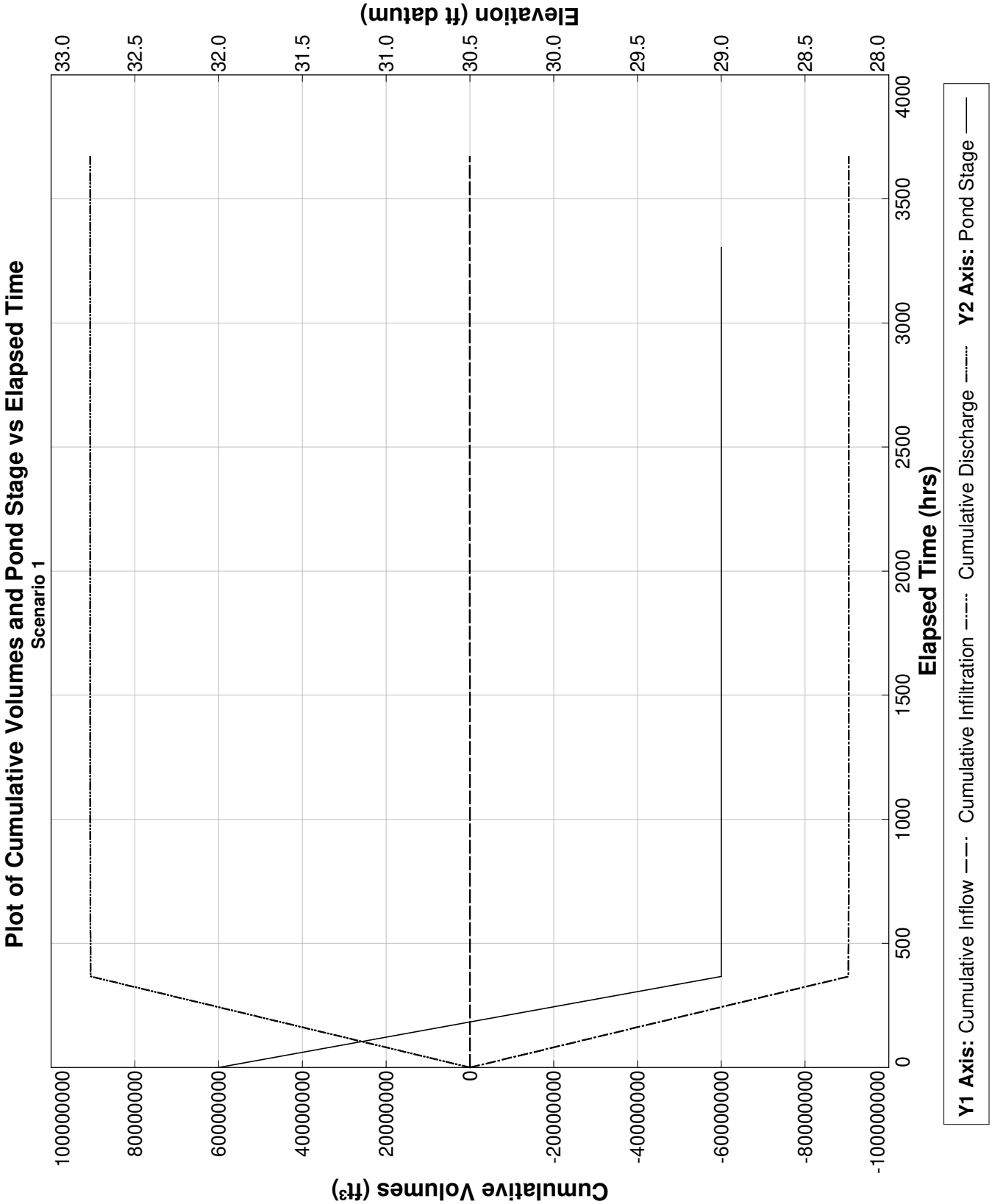
Begin Scenario 1 3/29/2023 11:36:55
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 32.0 ft.
#WARNING: The calculated water budget error exceeded the target water budget error for 5 of 10 saturated stress periods.
Maximum calculated water budget error is -1.90090188547680 percent, for saturated stress period 2.
If convergence is not a problem, it is recommended to reduce the Modflow convergence tolerences
to attempt to decrease the water budget error to within the target level.
End Scenario 1 3/29/2023 11:36:55

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

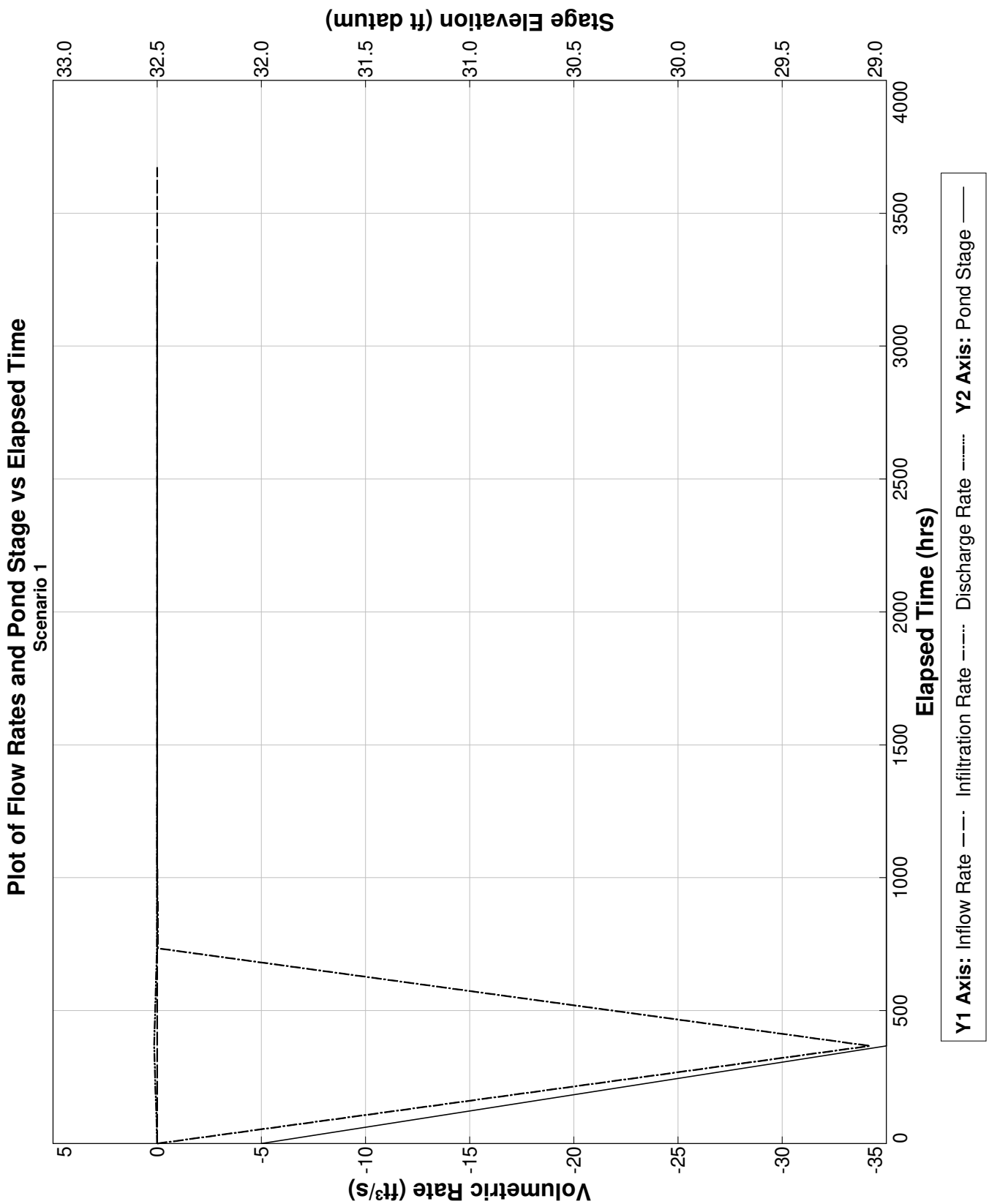
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0047	0.00163	32.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0047	0.00163	29.00000	-34.21038	.1492602	6148.800	-90348740.0	9.053914E+07	S
734.400	0.0047	0.00163	29.00000	-0.03825	8.345484E-03	12297.600	-90446760.0	9.064331E+07	S
1101.600	0.0047	0.00163	29.00000	-0.00159	5.660443E-03	18446.400	-90449860.0	9.065257E+07	S
1468.800	0.0047	0.00163	29.00000	-0.00071	5.291142E-03	24595.200	-90450950.0	9.065981E+07	S
1836.000	0.0047	0.00163	29.00000	-0.00056	5.199829E-03	30744.000	-90451740.0	9.066674E+07	S
2203.200	0.0047	0.00163	29.00000	-0.00051	5.16169E-03	36892.800	-90452440.0	9.067359E+07	S
2570.400	0.0047	0.00163	29.00000	-0.00049	5.139486E-03	43041.600	-90453100.0	9.06804E+07	S
2937.600	0.0047	0.00163	29.00000	-0.00047	5.124726E-03	49190.400	-90453740.0	9.068718E+07	S
3304.800	0.0047	0.00163	29.00000	-0.00046	5.114463E-03	55339.200	-90454350.0	9.069395E+07	S
3672.000	0.0047	0.00163	29.00000	----	----	61488.000	-90454960.0	9.070071E+07	N.A.

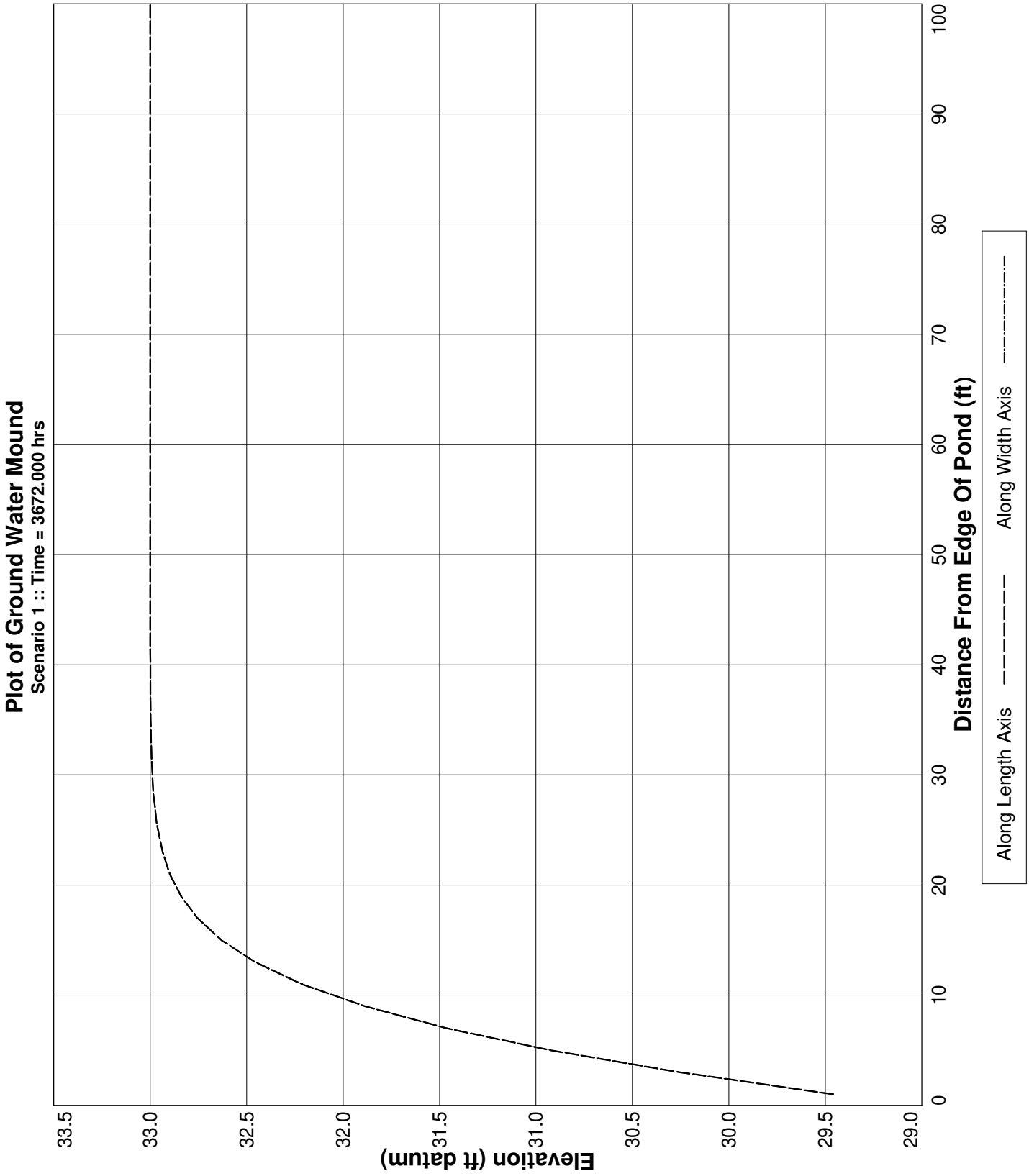
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No.7, West Wetland, without wall
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-27-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	8.00
Water Table Elevation, [WT] (ft datum):	31.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.10
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	270.0
Equivalent Pond Width, [W] (ft):	80.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
13.00	435.6
29.00	17424.0

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	29
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	30.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

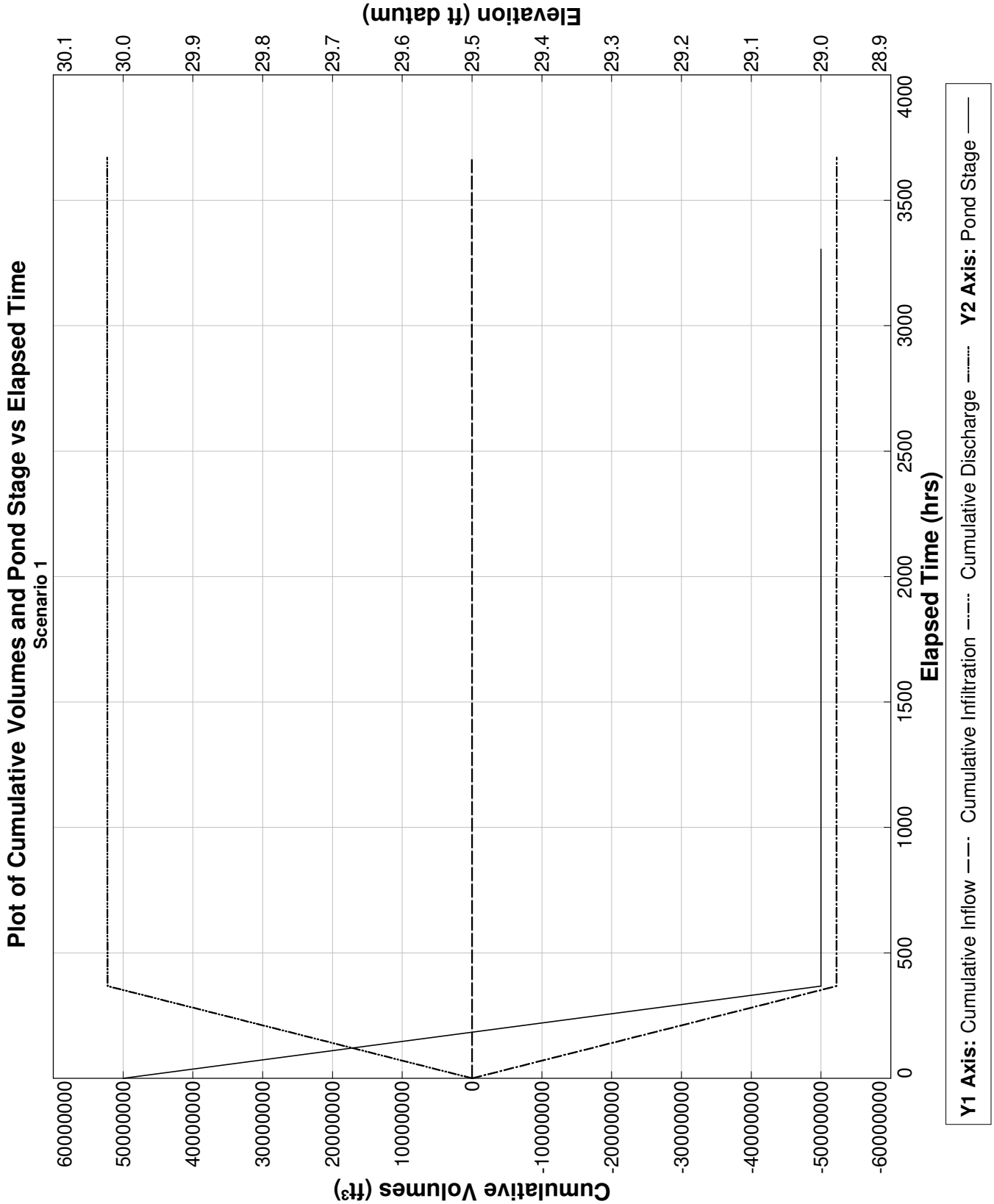
Begin Scenario 1 3/27/2023 8:39:53
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 30.0 ft.
#WARNING: The calculated water budget error exceeded the target water budget error for 6 of 10 saturated stress periods.
Maximum calculated water budget error is -4.76583215699552 percent, for saturated stress period 1.
If convergence is not a problem, it is recommended to reduce the Modflow convergence tolerences
to attempt to decrease the water budget error to within the target level.
End Scenario 1 3/27/2023 8:39:53

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

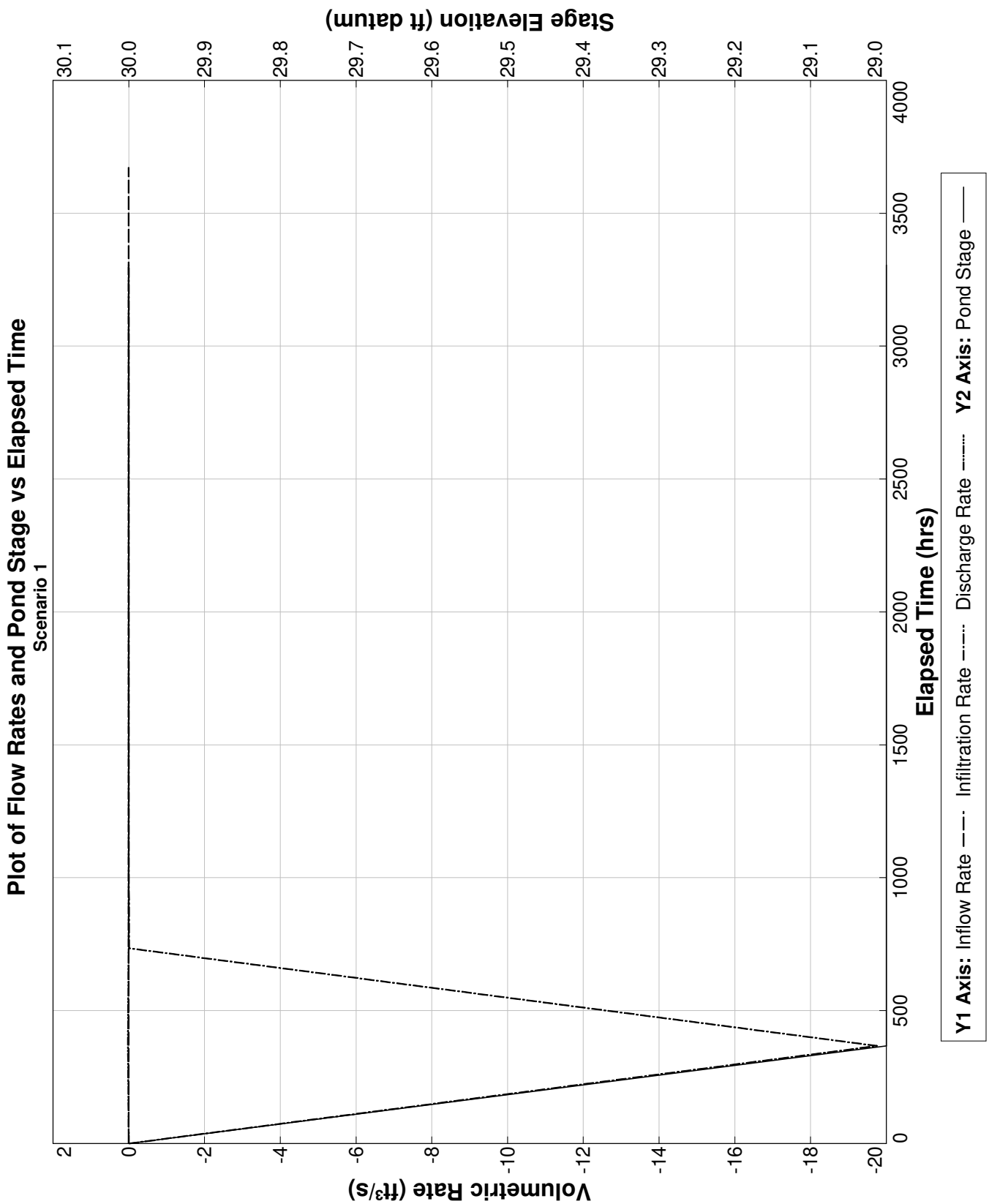
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0016	0.00163	30.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0016	0.00163	29.00000	-19.75345	2.158215E-02	2160.000	-52210520.0	5.22301E+07	S
734.400	0.0016	0.00163	29.00000	-0.00623	3.516015E-03	4320.000	-52224950.0	5.224669E+07	S
1101.600	0.0016	0.00163	29.00000	-0.00131	2.826862E-03	6480.000	-52226980.0	5.225089E+07	S
1468.800	0.0016	0.00163	29.00000	-0.00100	2.60152E-03	8640.000	-52228410.0	5.225448E+07	S
1836.000	0.0016	0.00163	29.00000	-0.00090	2.52343E-03	10800.000	-52229640.0	5.225786E+07	S
2203.200	0.0016	0.00163	29.00000	-0.00087	2.500037E-03	12960.000	-52230800.0	5.226118E+07	S
2570.400	0.0016	0.00163	29.00000	-0.00087	2.498853E-03	15120.000	-52231940.0	5.226448E+07	S
2937.600	0.0016	0.00163	29.00000	-0.00088	2.507743E-03	17280.000	-52233090.0	5.22678E+07	S
3304.800	0.0016	0.00163	29.00000	-0.00089	2.521733E-03	19440.000	-52234260.0	5.227112E+07	S
3672.000	0.0016	0.00163	29.00000	----	----	21600.000	-52235440.0	5.227446E+07	N.A.

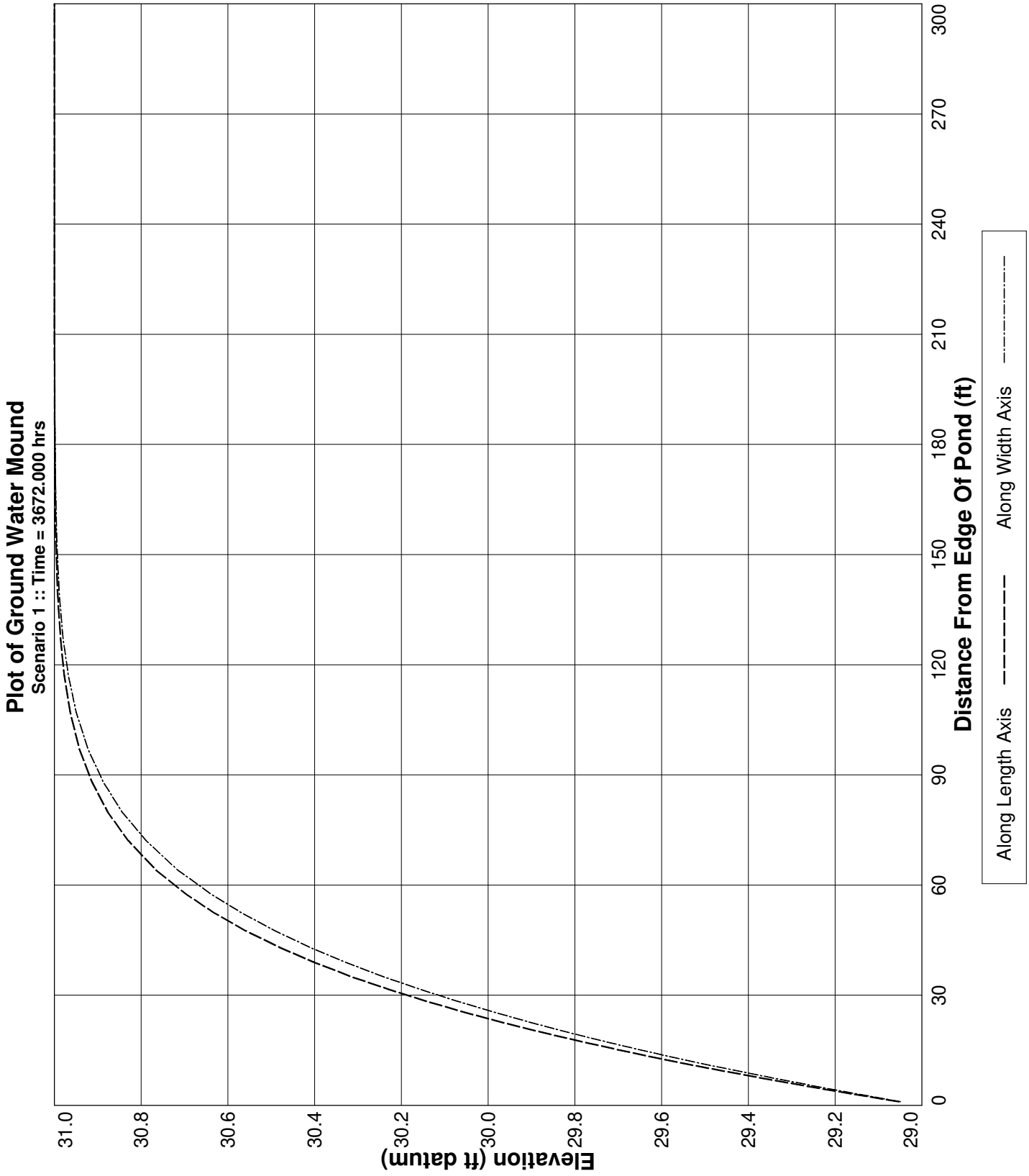
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No.7, Southwest Wetland, without wall
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-27-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	8.00
Water Table Elevation, [WT] (ft datum):	32.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.10
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	270.0
Equivalent Pond Width, [W] (ft):	80.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
13.00	435.6
29.00	17424.0

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	29
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	31.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

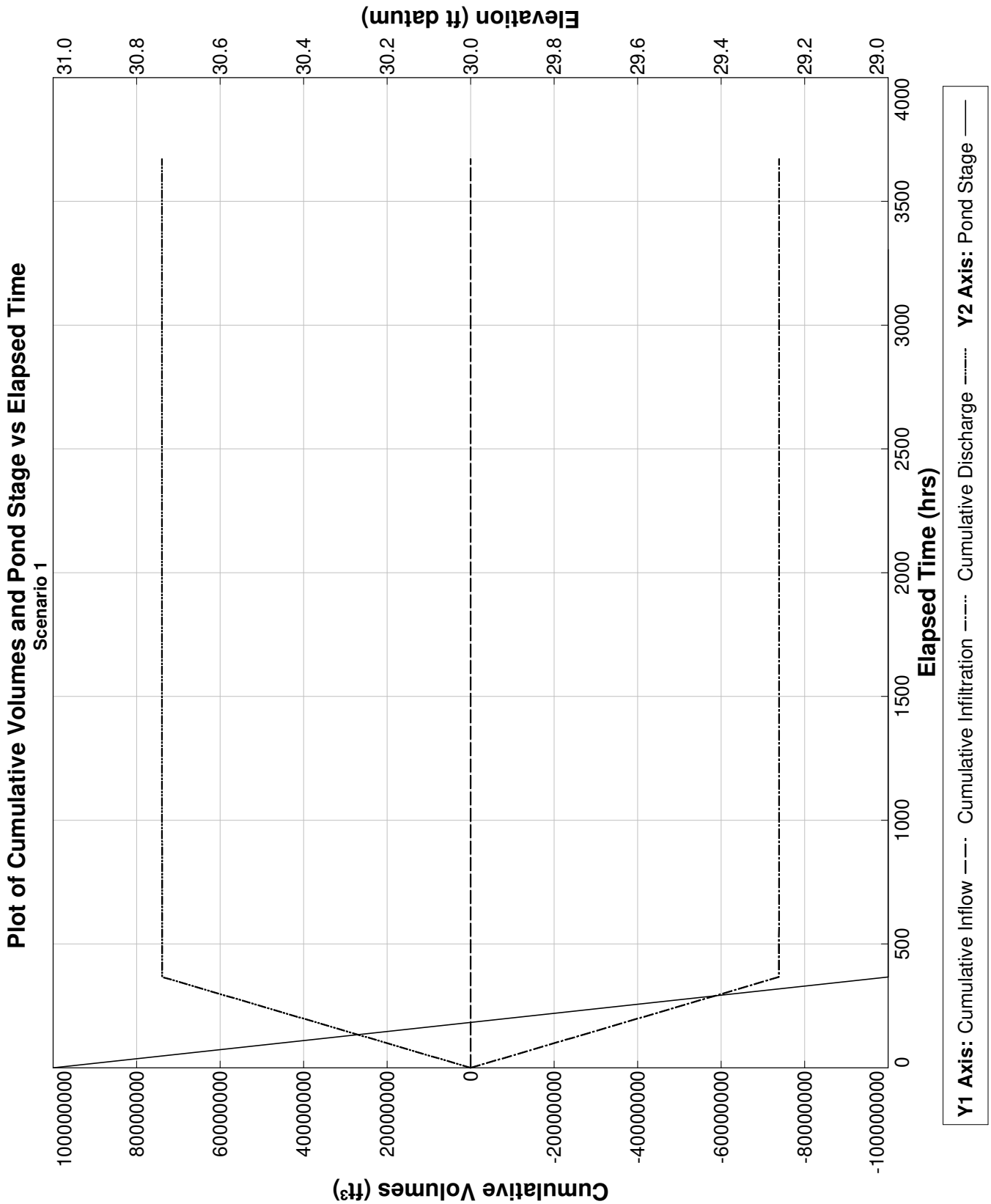
Begin Scenario 1 3/27/2023 8:42:56
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 31.0 ft.
#WARNING: The calculated water budget error exceeded the target water budget error for 10 of 10 saturated stress periods.
Maximum calculated water budget error is -7.41102954164981 percent, for saturated stress period 1.
If convergence is not a problem, it is recommended to reduce the Modflow convergence tolerences
to attempt to decrease the water budget error to within the target level.
End Scenario 1 3/27/2023 8:42:56

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

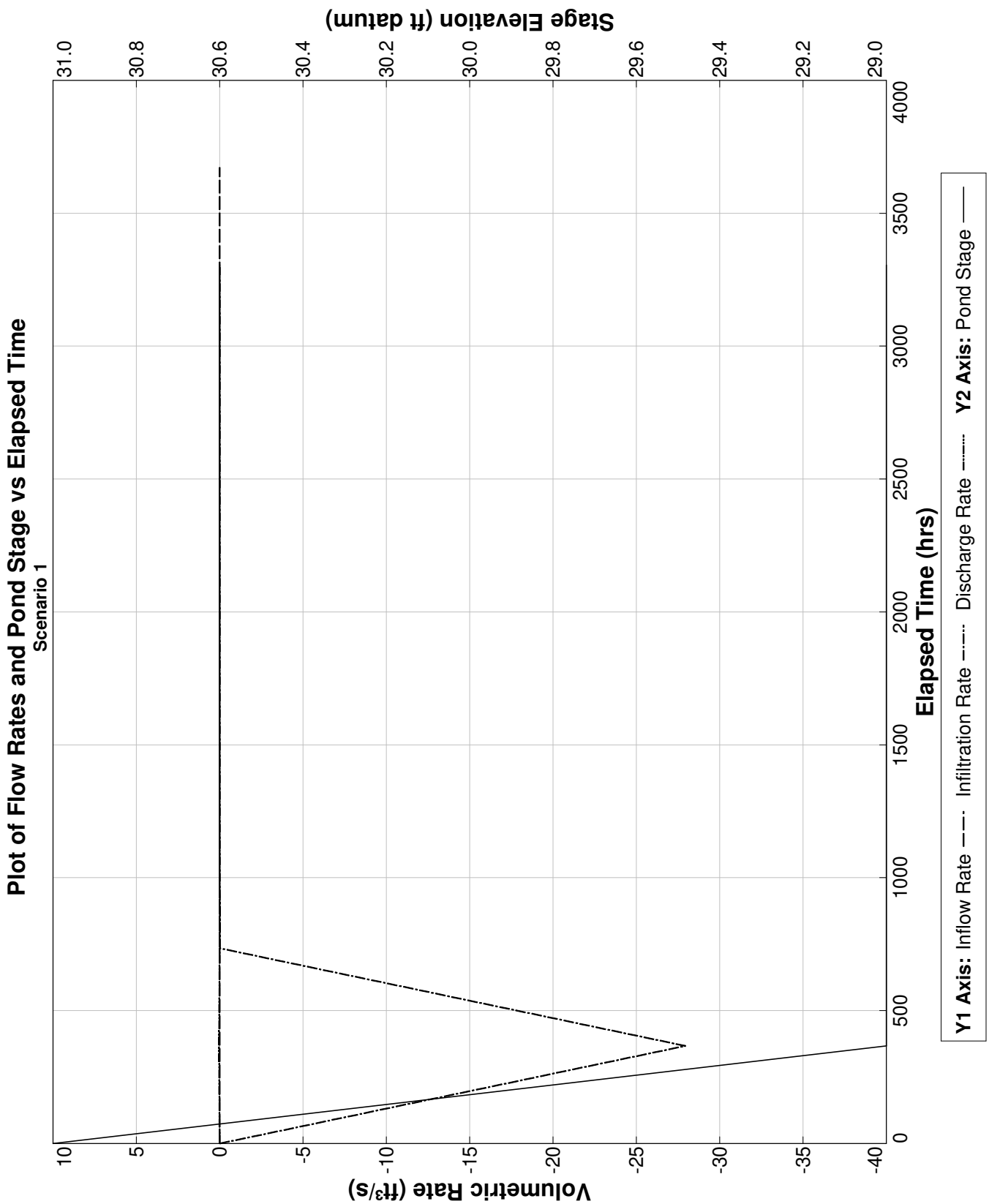
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0016	0.00163	31.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0016	0.00163	29.00000	-27.93717	4.037098E-02	2160.000	-73834020.0	7.387103E+07	S
734.400	0.0016	0.00163	29.00000	-0.01151	4.341021E-03	4320.000	-73861420.0	7.390058E+07	S
1101.600	0.0016	0.00163	29.00000	-0.00200	3.509925E-03	6480.000	-73864450.0	7.390578E+07	S
1468.800	0.0016	0.00163	29.00000	-0.00159	3.173725E-03	8640.000	-73866700.0	7.391019E+07	S
1836.000	0.0016	0.00163	29.00000	-0.00141	3.028797E-03	10800.000	-73868640.0	7.391429E+07	S
2203.200	0.0016	0.00163	29.00000	-0.00133	2.956884E-03	12960.000	-73870440.0	7.391825E+07	S
2570.400	0.0016	0.00163	29.00000	-0.00129	2.919653E-03	15120.000	-73872170.0	7.392214E+07	S
2937.600	0.0016	0.00163	29.00000	-0.00127	2.900876E-03	17280.000	-73873850.0	7.392598E+07	S
3304.800	0.0016	0.00163	29.00000	-0.00126	2.892913E-03	19440.000	-73875520.0	7.392981E+07	S
3672.000	0.0016	0.00163	29.00000	----	----	21600.000	-73877180.0	7.393363E+07	N.A.

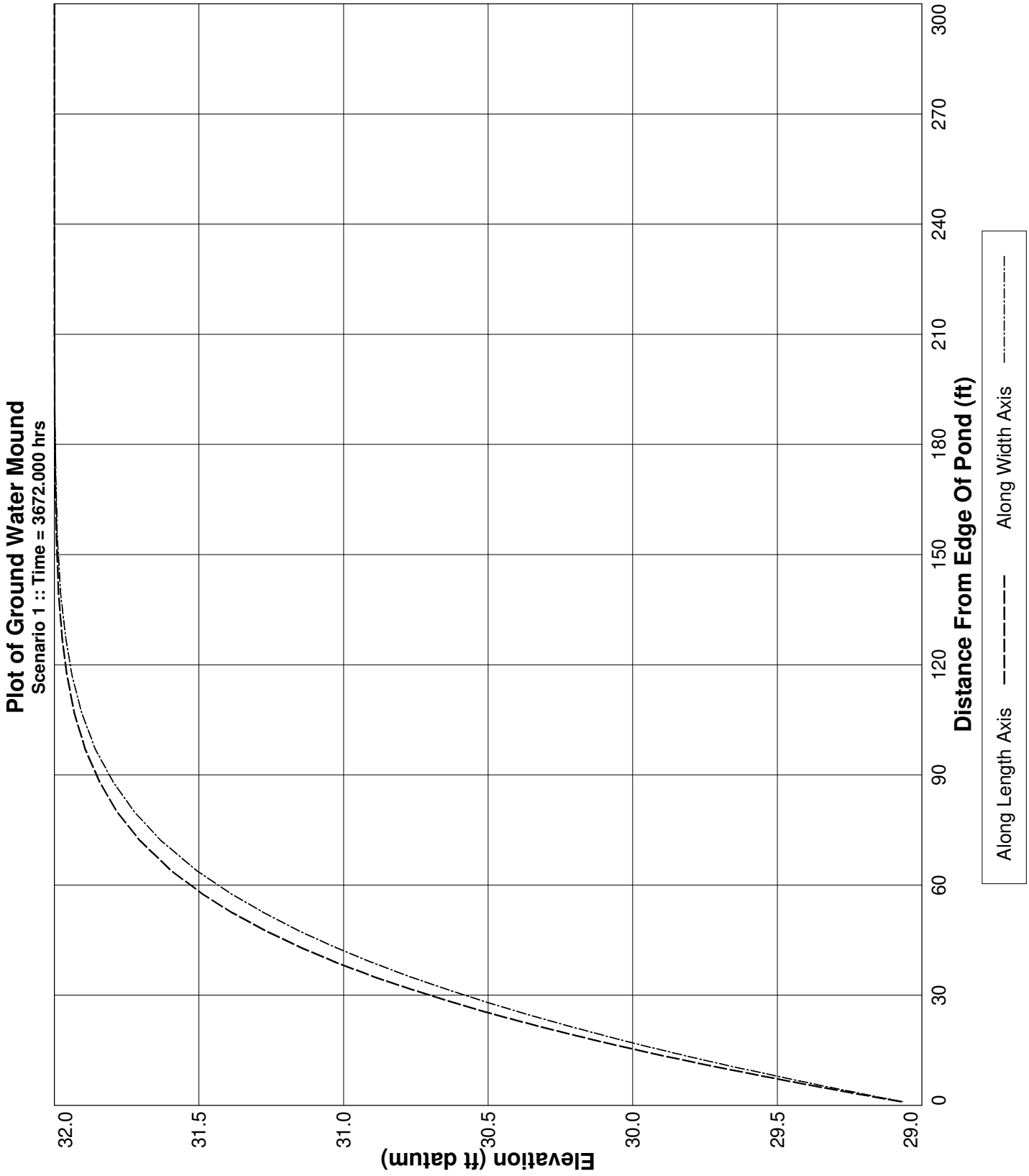
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No.7, Baseflow
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-29-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	8.00
Water Table Elevation, [WT] (ft datum):	28.80
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.10
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	270.0
Equivalent Pond Width, [W] (ft):	80.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
13.00	435.6
29.00	17424.0

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	29
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	27.8
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

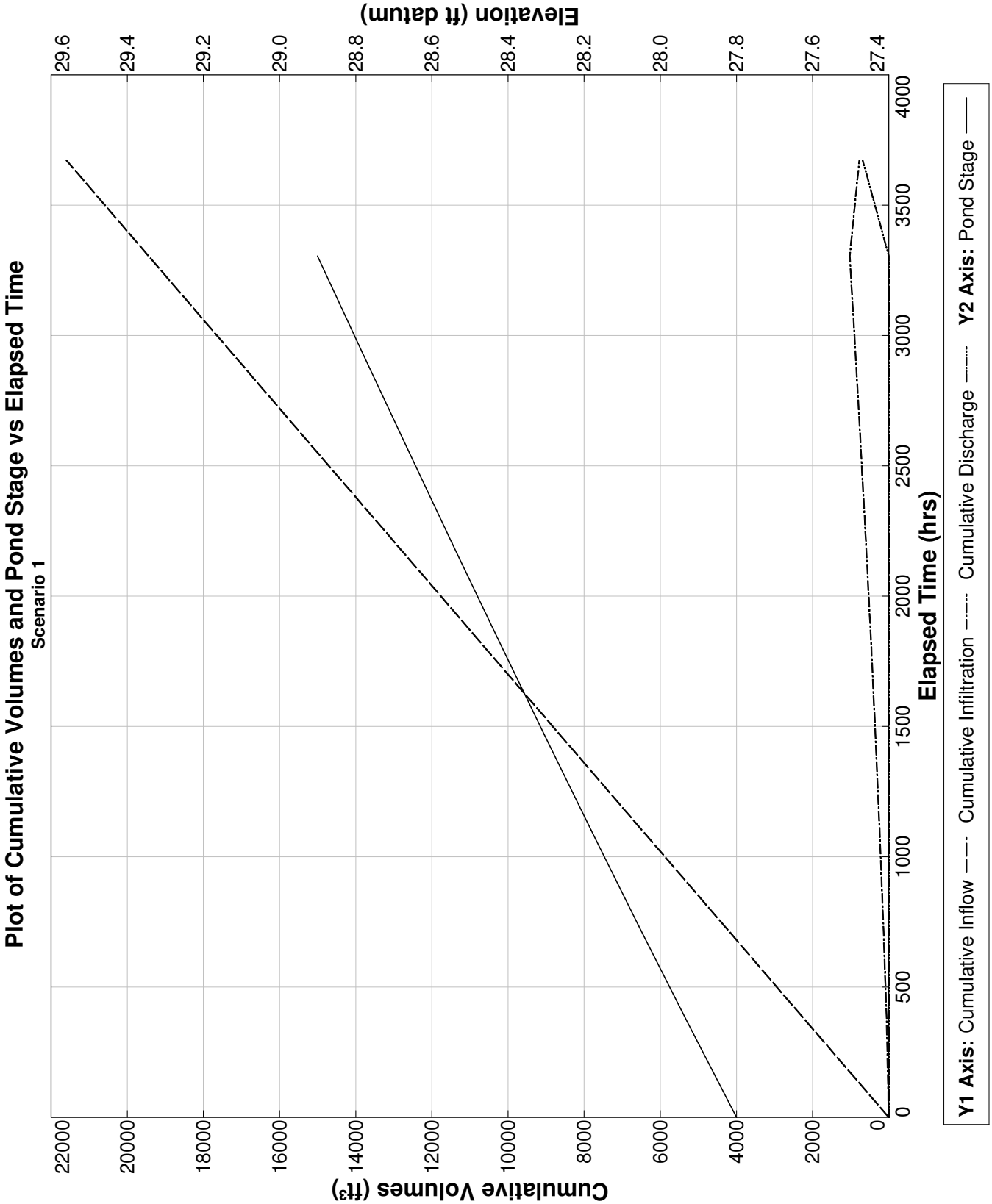
Begin Scenario 1 3/29/2023 16:1:18
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 27.8 ft.
End Scenario 1 3/29/2023 16:1:18

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

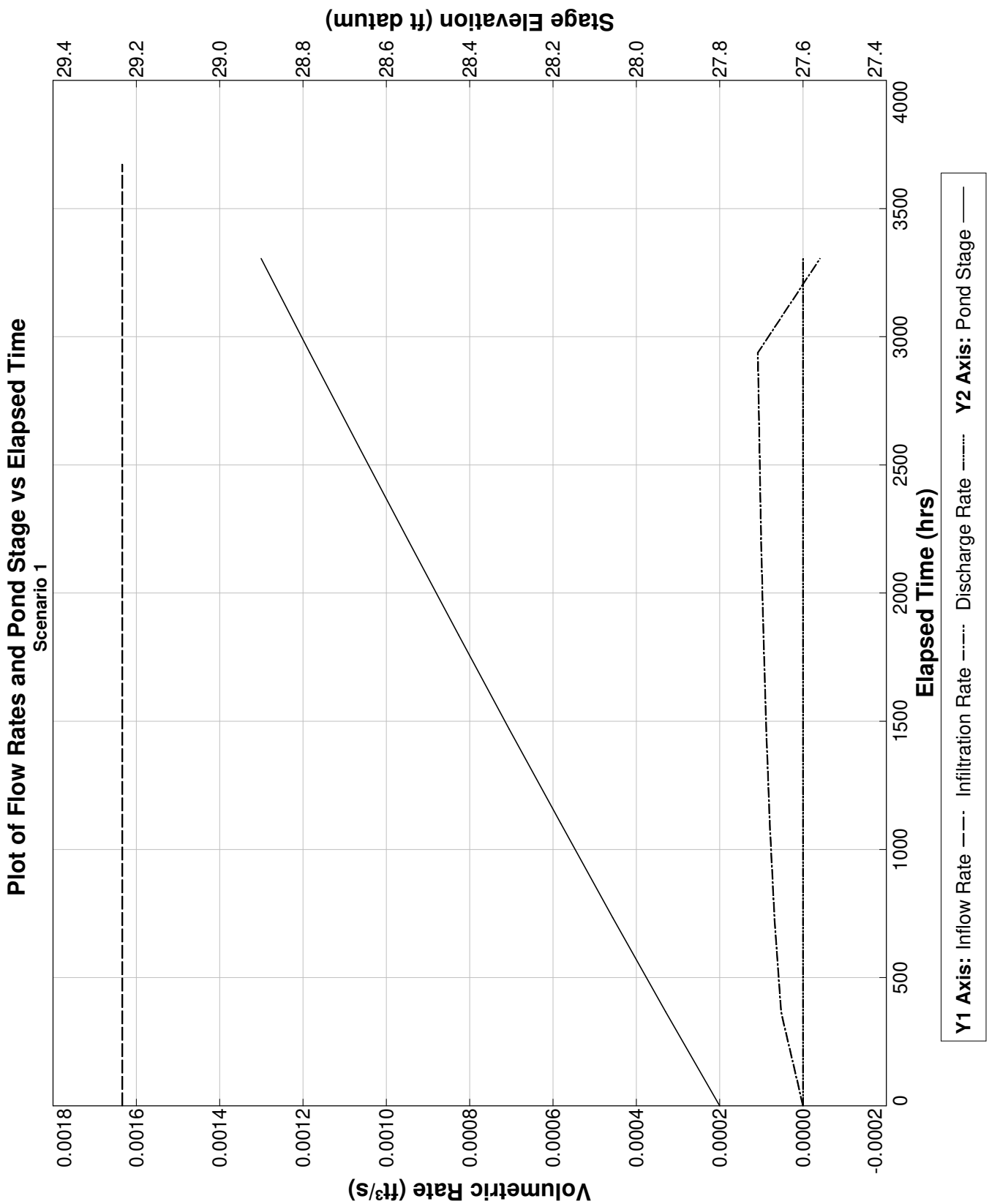
Detailed Results *:: Scenario 1 ::*

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0016	0.00163	27.80000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0016	0.00163	27.92964	0.00005	0	2160.000	57.4	0	S
734.400	0.0016	0.00163	28.05666	0.00007	0	4320.000	140.0	0	S
1101.600	0.0016	0.00163	28.18165	0.00008	0	6480.000	239.1	0	S
1468.800	0.0016	0.00163	28.30488	0.00009	0	8640.000	350.9	0	S
1836.000	0.0016	0.00163	28.42658	0.00009	0	10800.000	472.3	0	S
2203.200	0.0016	0.00163	28.54688	0.00010	0	12960.000	601.8	0	S
2570.400	0.0016	0.00163	28.66592	0.00010	0	15120.000	737.5	0	S
2937.600	0.0016	0.00163	28.78376	0.00011	0	17280.000	878.6	0	S
3304.800	0.0016	0.00163	28.90051	-0.00004	0	19440.000	1023.9	0	S
3672.000	0.0016	0.00163	29.00000	----	----	21600.000	770.4	685.2547	N.A.

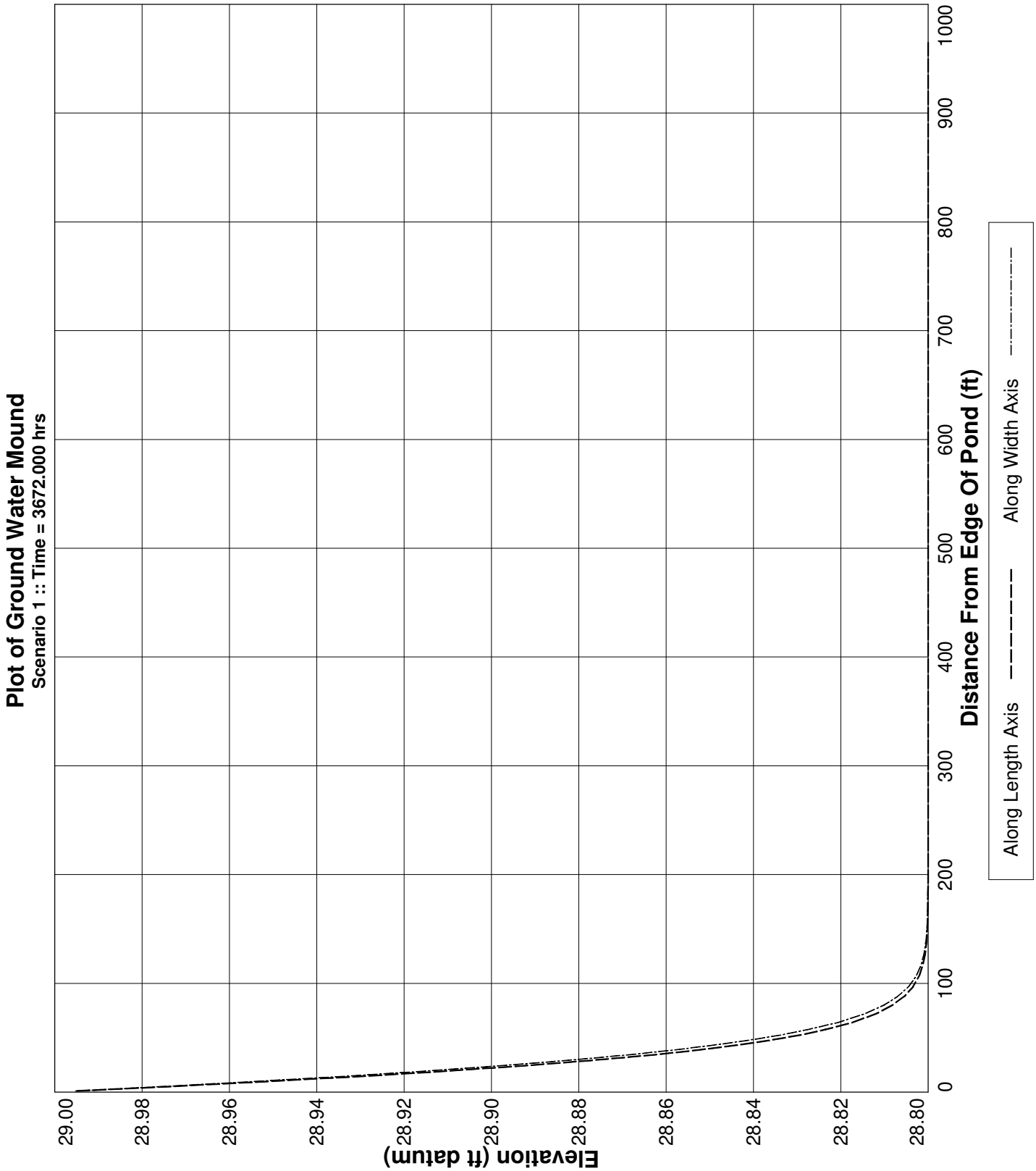
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No.8, Northeast, Baseflow
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-31-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	9.00
Water Table Elevation, [WT] (ft datum):	25.13
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	1.03
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	400.0
Equivalent Pond Width, [W] (ft):	83.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft²)
9.00	435.6
29.00	33105.6

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	29
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	24.13
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

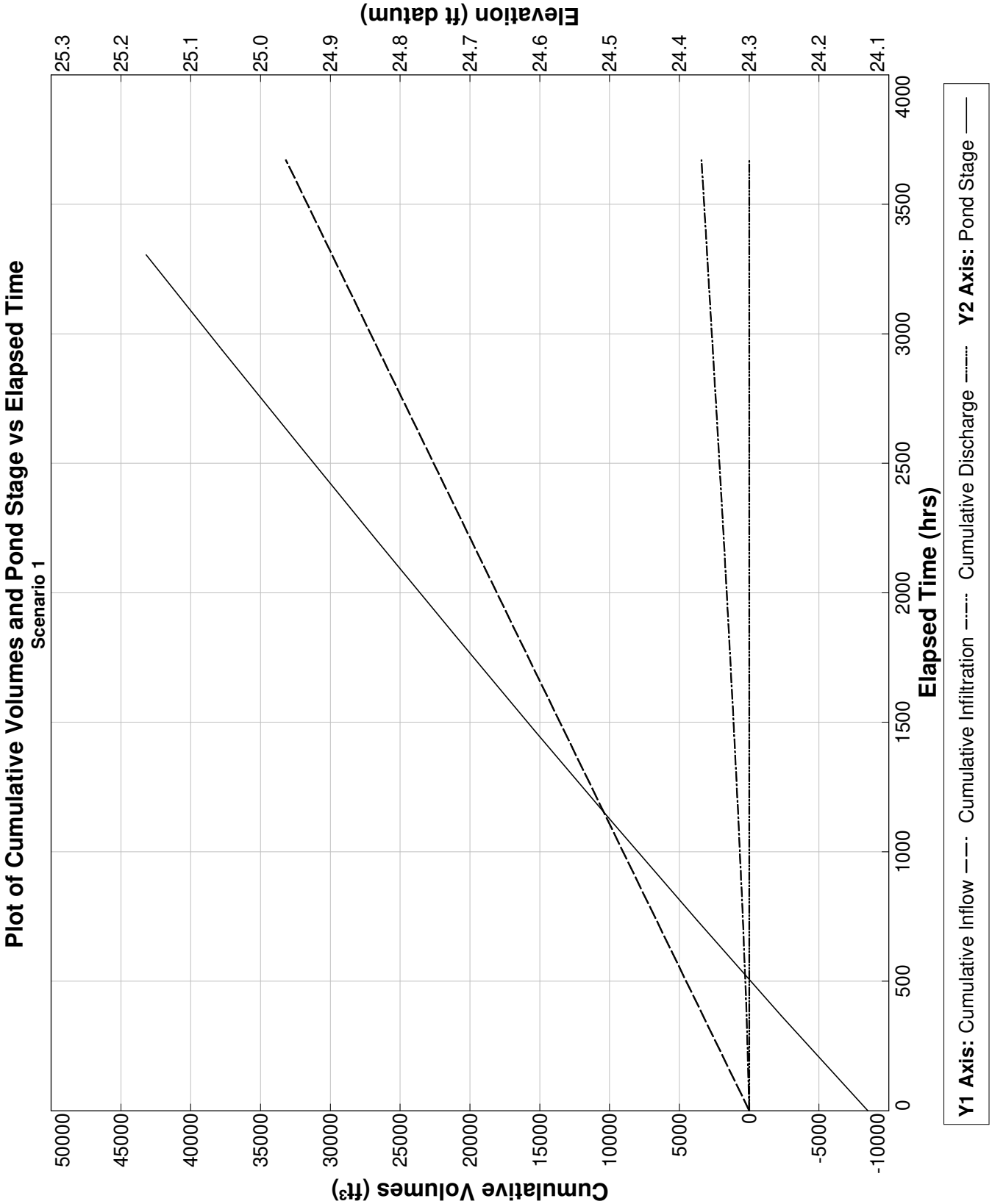
Begin Scenario 1 3/31/2023 11:37:56
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 24.13 ft.
End Scenario 1 3/31/2023 11:37:57

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

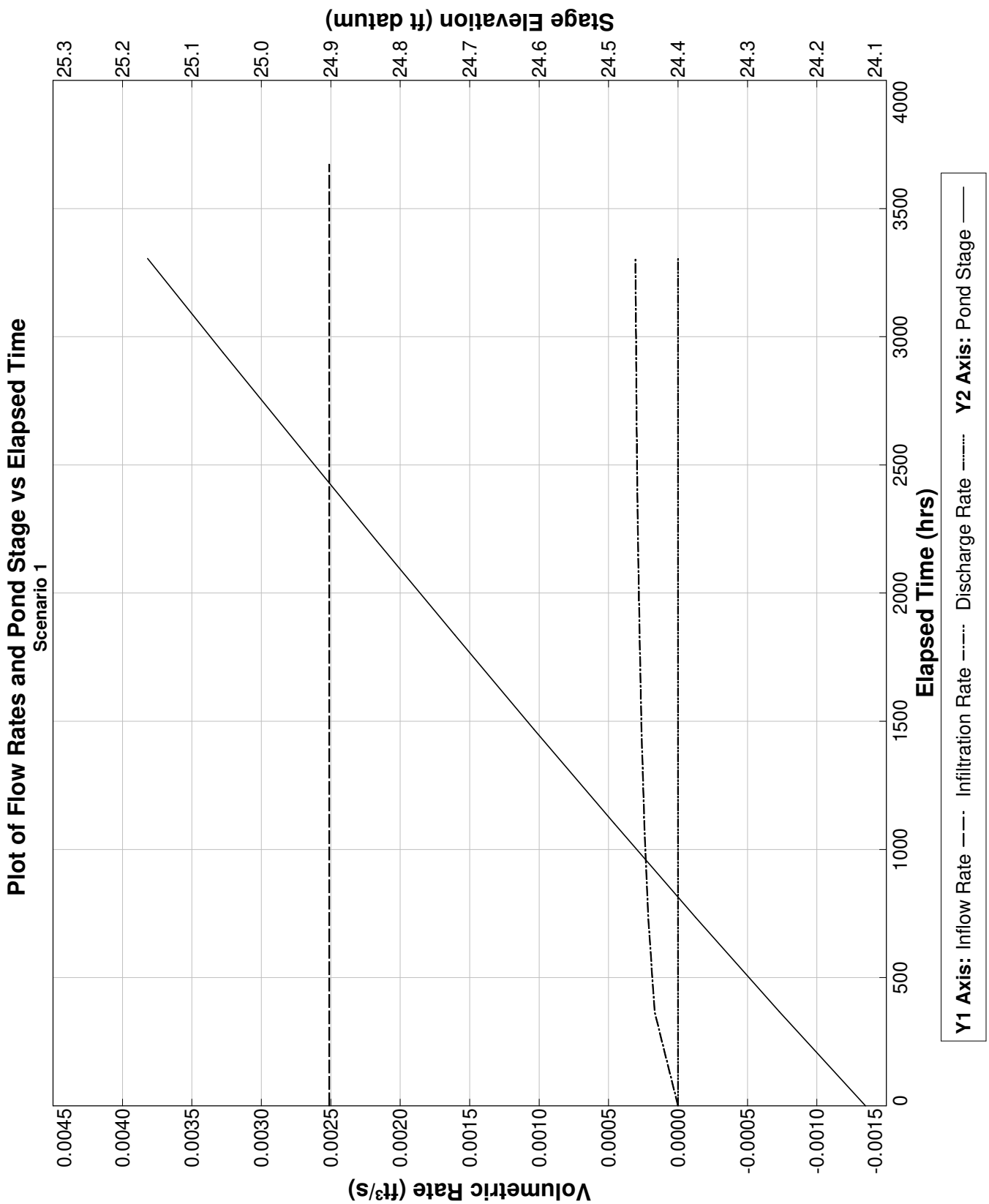
Detailed Results *:: Scenario 1 ::*

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0025	0.00163	24.13000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0025	0.00163	24.25416	0.00017	0	3320.000	184.8	0	S
734.400	0.0025	0.00163	24.37441	0.00021	0	6640.000	444.3	0	S
1101.600	0.0025	0.00163	24.49199	0.00024	0	9960.000	748.8	0	S
1468.800	0.0025	0.00163	24.60750	0.00026	0	13280.000	1084.5	0	S
1836.000	0.0025	0.00163	24.72131	0.00028	0	16600.000	1442.6	0	S
2203.200	0.0025	0.00163	24.83369	0.00029	0	19920.000	1817.4	0	S
2570.400	0.0025	0.00163	24.94482	0.00030	0	23240.000	2204.7	0	S
2937.600	0.0025	0.00163	25.05484	0.00030	0	26560.000	2601.1	0	S
3304.800	0.0025	0.00163	25.16389	0.00031	0	29880.000	3004.2	0	S
3672.000	0.0025	0.00163	25.27204	----	----	33200.000	3411.9	0	N.A.

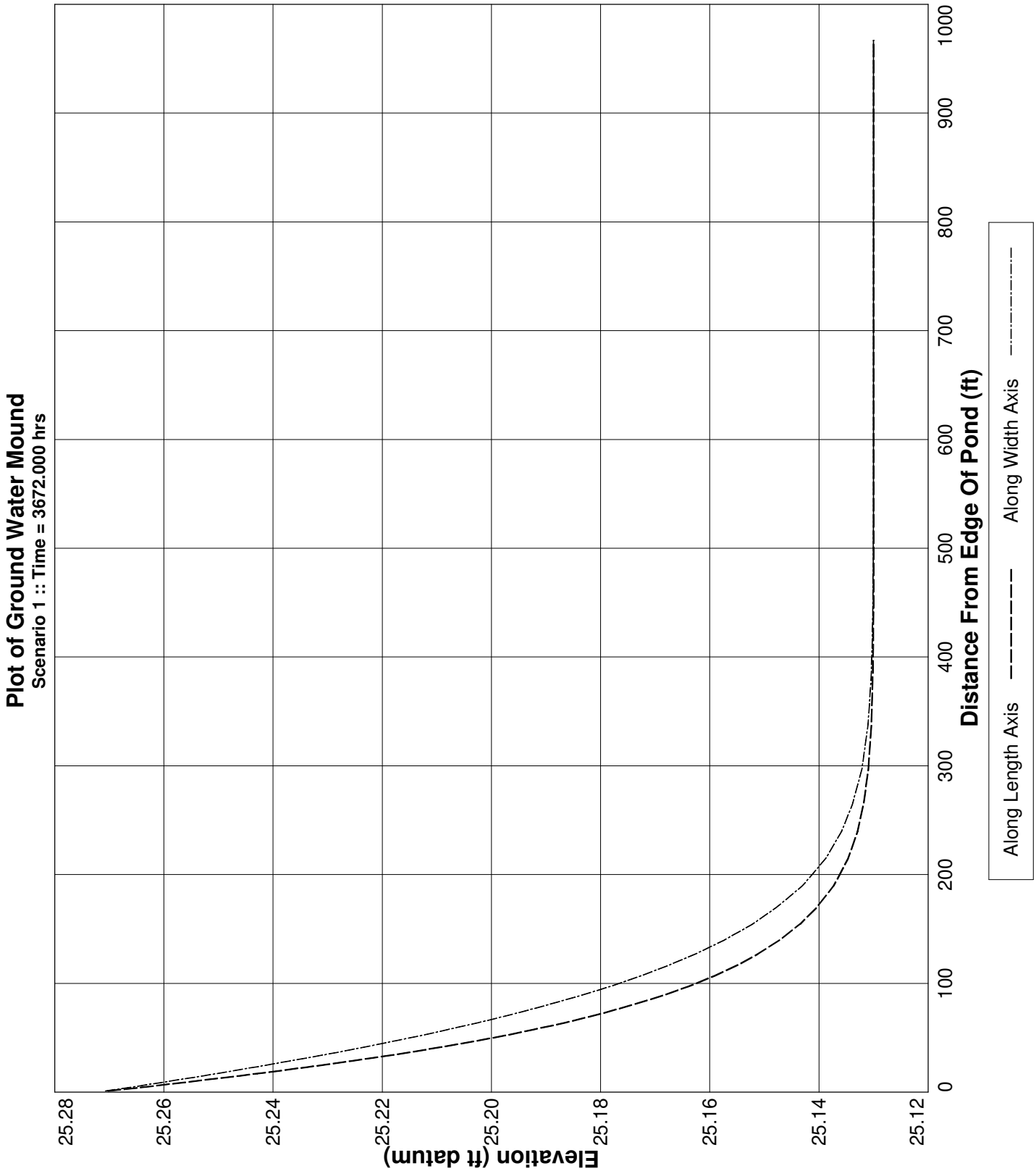
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No.8, South, Baseflow
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-31-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	9.00
Water Table Elevation, [WT] (ft datum):	31.50
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	1.03
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	400.0
Equivalent Pond Width, [W] (ft):	83.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
9.00	435.6
29.00	33105.6

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	29
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type: Baseflow
Modflow Routing: Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	30.5
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

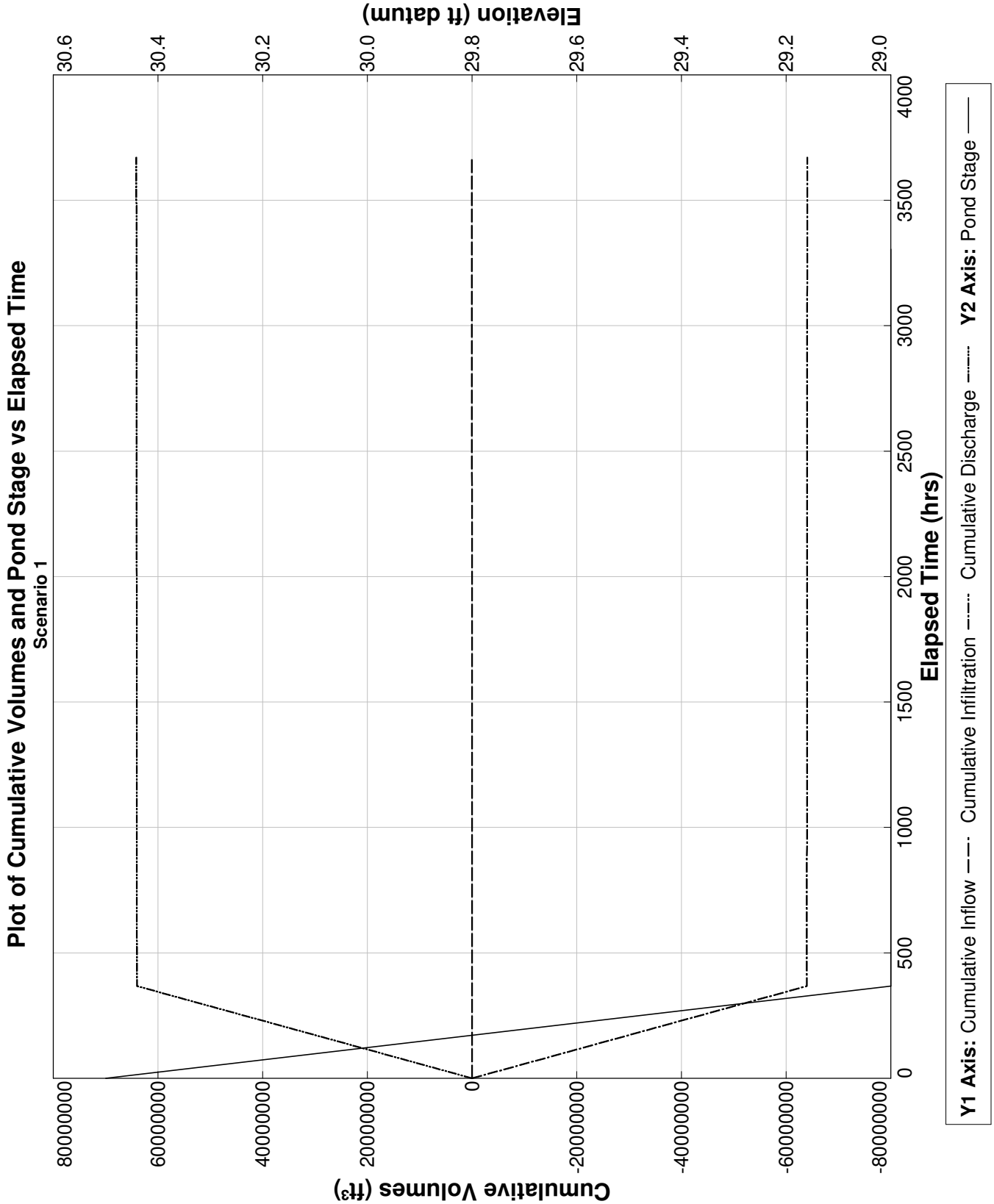
Begin Scenario 1 3/31/2023 11:40:14
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 30.5 ft.
End Scenario 1 3/31/2023 11:40:14

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

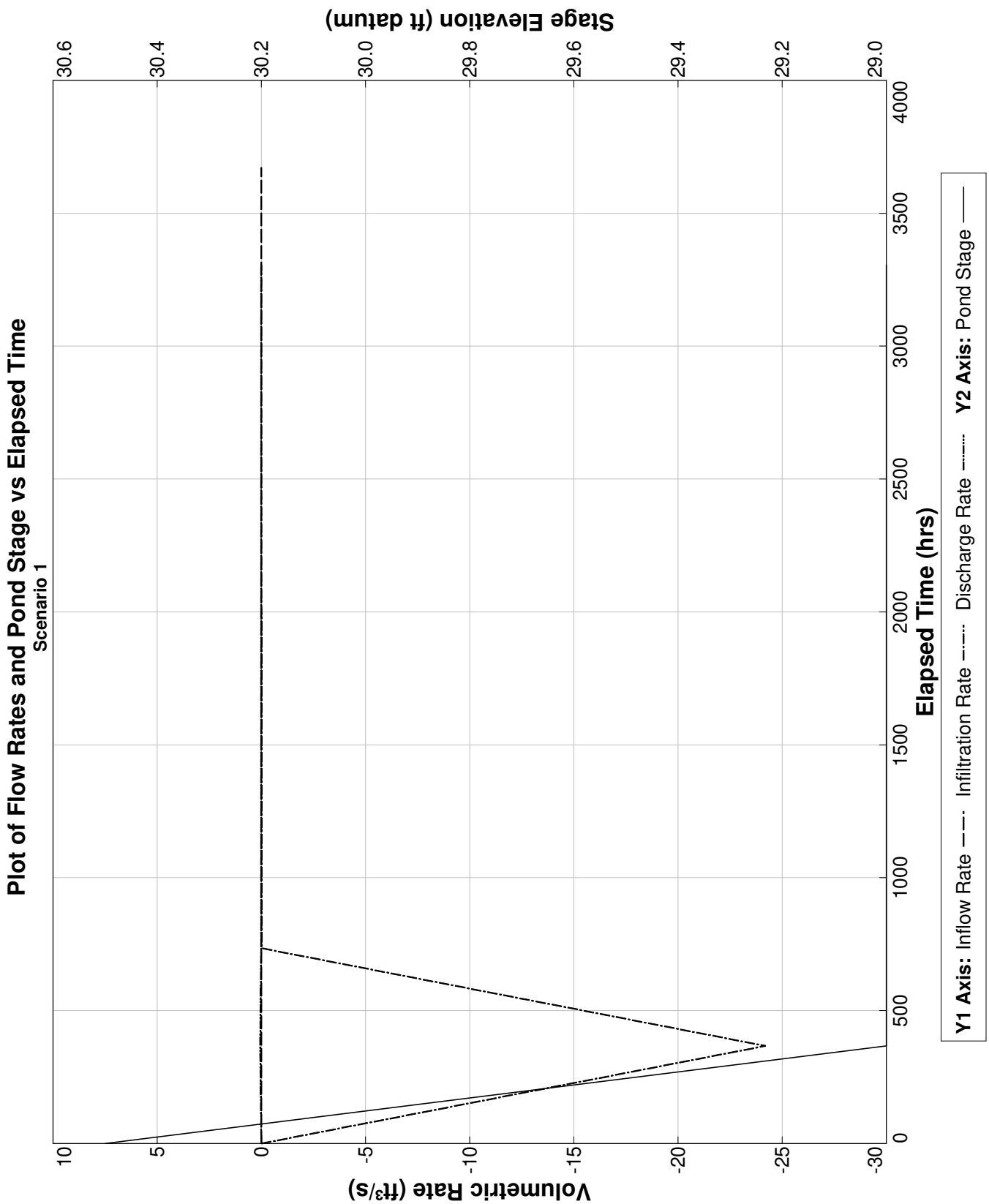
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0025	0.00163	30.50000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0025	0.00163	29.00000	-24.19611	5.231043E-02	3320.000	-63932680.0	6.398566E+07	S
734.400	0.0025	0.00163	29.00000	-0.01788	1.014582E-02	6640.000	-63970640.0	6.402694E+07	S
1101.600	0.0025	0.00163	29.00000	-0.00663	8.971822E-03	9960.000	-63979960.0	6.403958E+07	S
1468.800	0.0025	0.00163	29.00000	-0.00602	8.483474E-03	13280.000	-63988170.0	6.405111E+07	S
1836.000	0.0025	0.00163	29.00000	-0.00572	8.199172E-03	16600.000	-63995880.0	6.406214E+07	S
2203.200	0.0025	0.00163	29.00000	-0.00557	8.055432E-03	19920.000	-64003300.0	6.407288E+07	S
2570.400	0.0025	0.00163	29.00000	-0.00550	7.999144E-03	23240.000	-64010600.0	6.408349E+07	S
2937.600	0.0025	0.00163	29.00000	-0.00550	8.001815E-03	26560.000	-64017850.0	6.409407E+07	S
3304.800	0.0025	0.00163	29.00000	-0.00553	8.040222E-03	29880.000	-64025140.0	6.410467E+07	S
3672.000	0.0025	0.00163	29.00000	----	----	33200.000	-64032480.0	6.411534E+07	N.A.

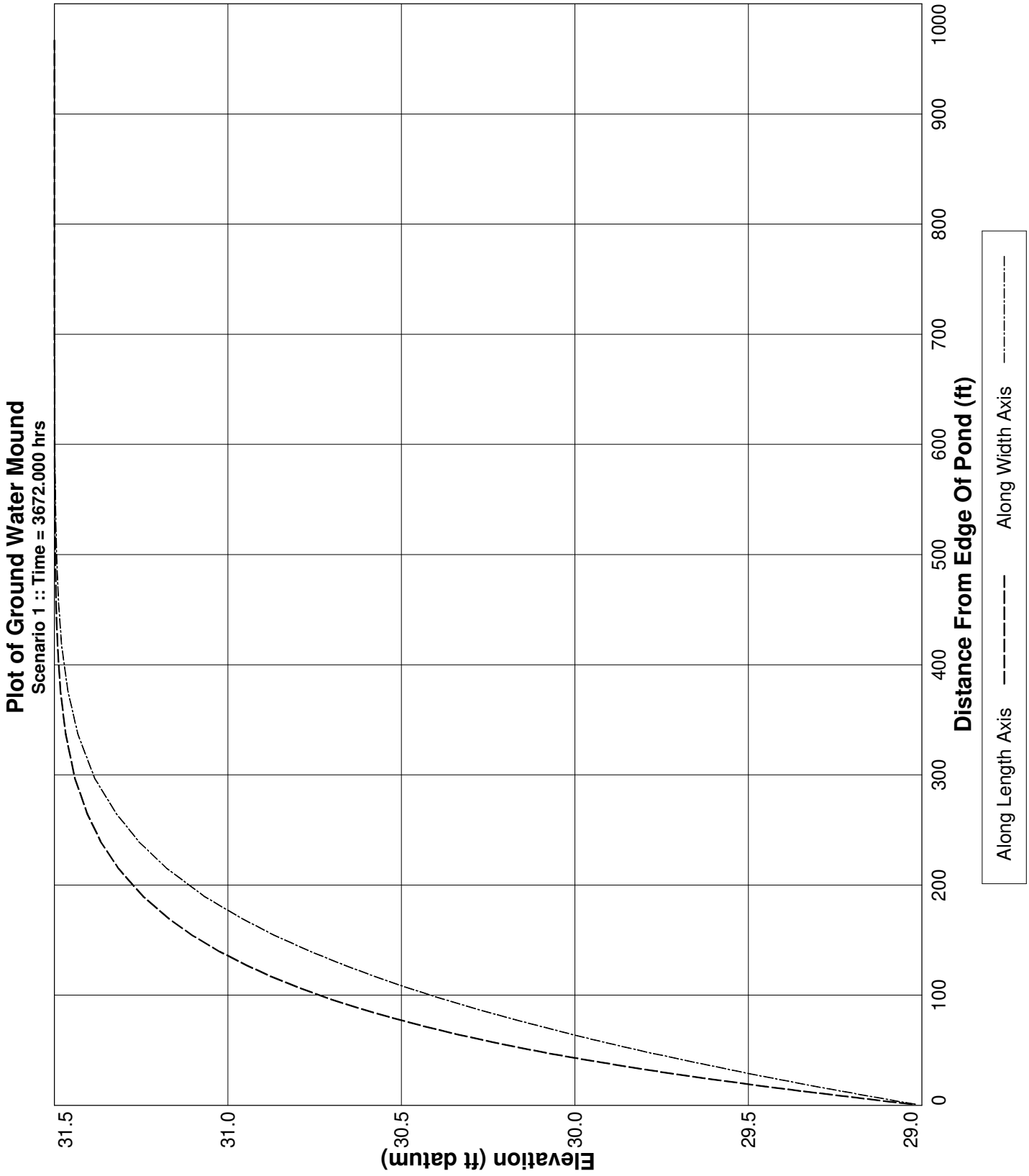
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No. 9, Baseflow
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-31-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	0.00
Water Table Elevation, [WT] (ft datum):	28.14
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	1.03
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	505.0
Equivalent Pond Width, [W] (ft):	117.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
5.00	435.6
29.00	59241.6

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	29
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	27.14
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

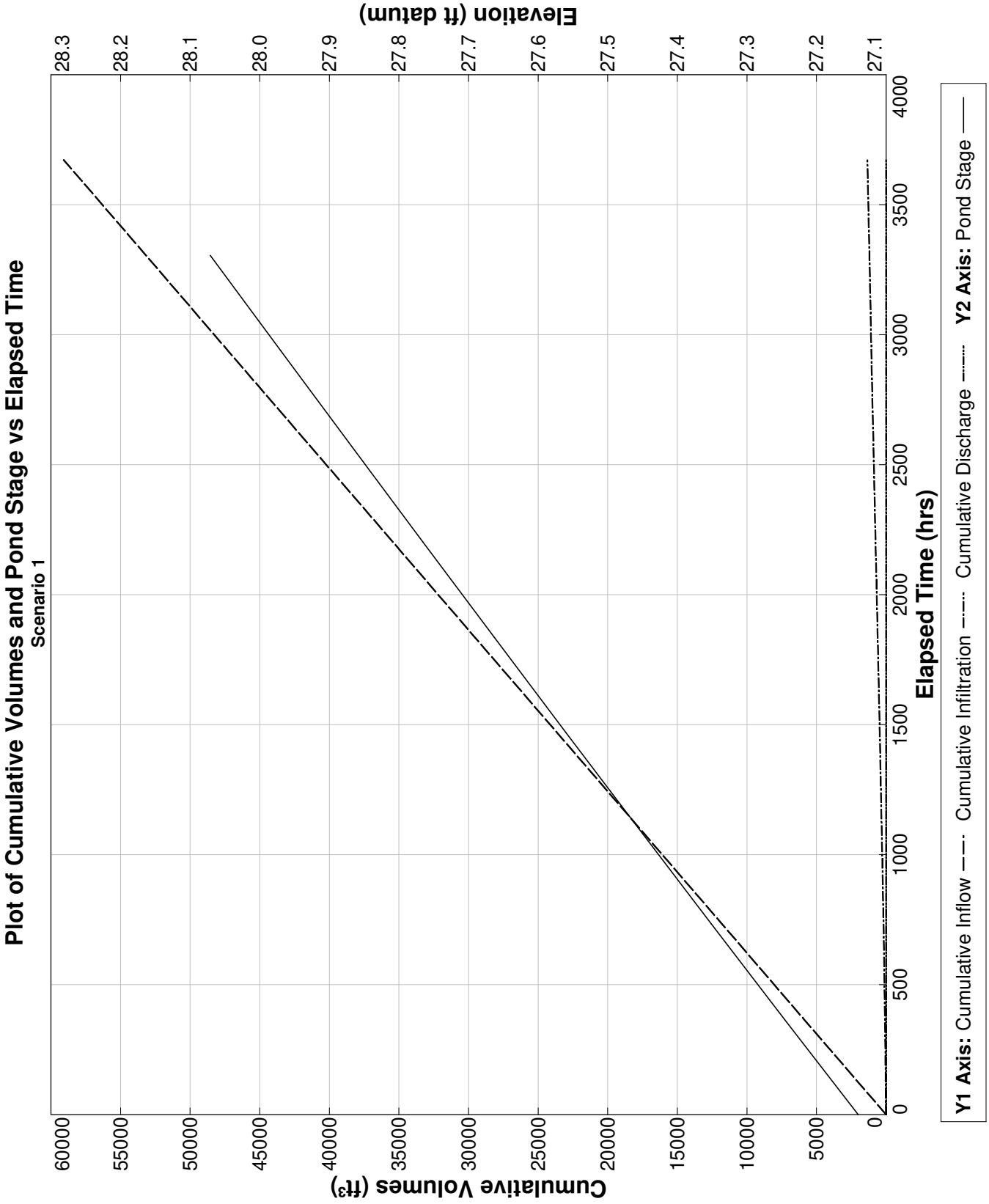
Begin Scenario 1 3/31/2023 11:55:57
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 27.14 ft.
End Scenario 1 3/31/2023 11:55:57

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

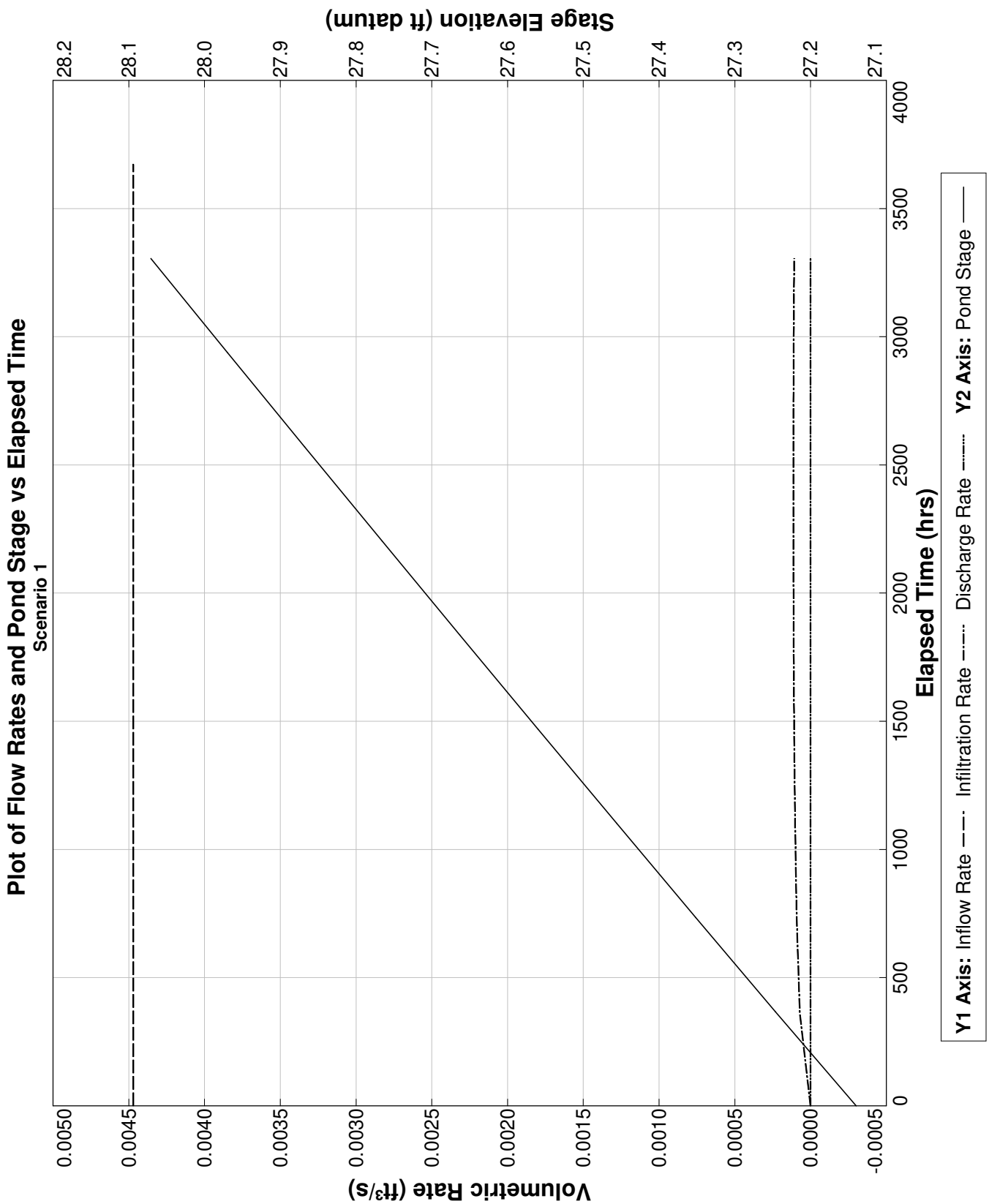
Detailed Results *:: Scenario 1 ::*

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0045	0.00163	27.14000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0045	0.00163	27.24636	0.00007	0	5908.500	78.2	0	S
734.400	0.0045	0.00163	27.35162	0.00009	0	11817.000	189.9	0	S
1101.600	0.0045	0.00163	27.45606	0.00010	0	17725.500	319.7	0	S
1468.800	0.0045	0.00163	27.55982	0.00011	0	23634.000	460.4	0	S
1836.000	0.0045	0.00163	27.66300	0.00011	0	29542.500	607.5	0	S
2203.200	0.0045	0.00163	27.76566	0.00011	0	35451.000	757.7	0	S
2570.400	0.0045	0.00163	27.86786	0.00011	0	41359.500	908.3	0	S
2937.600	0.0045	0.00163	27.96962	0.00011	0	47268.000	1057.7	0	S
3304.800	0.0045	0.00163	28.07099	0.00011	0	53176.500	1204.2	0	S
3672.000	0.0045	0.00163	28.17199	----	----	59085.000	1346.7	0	N.A.

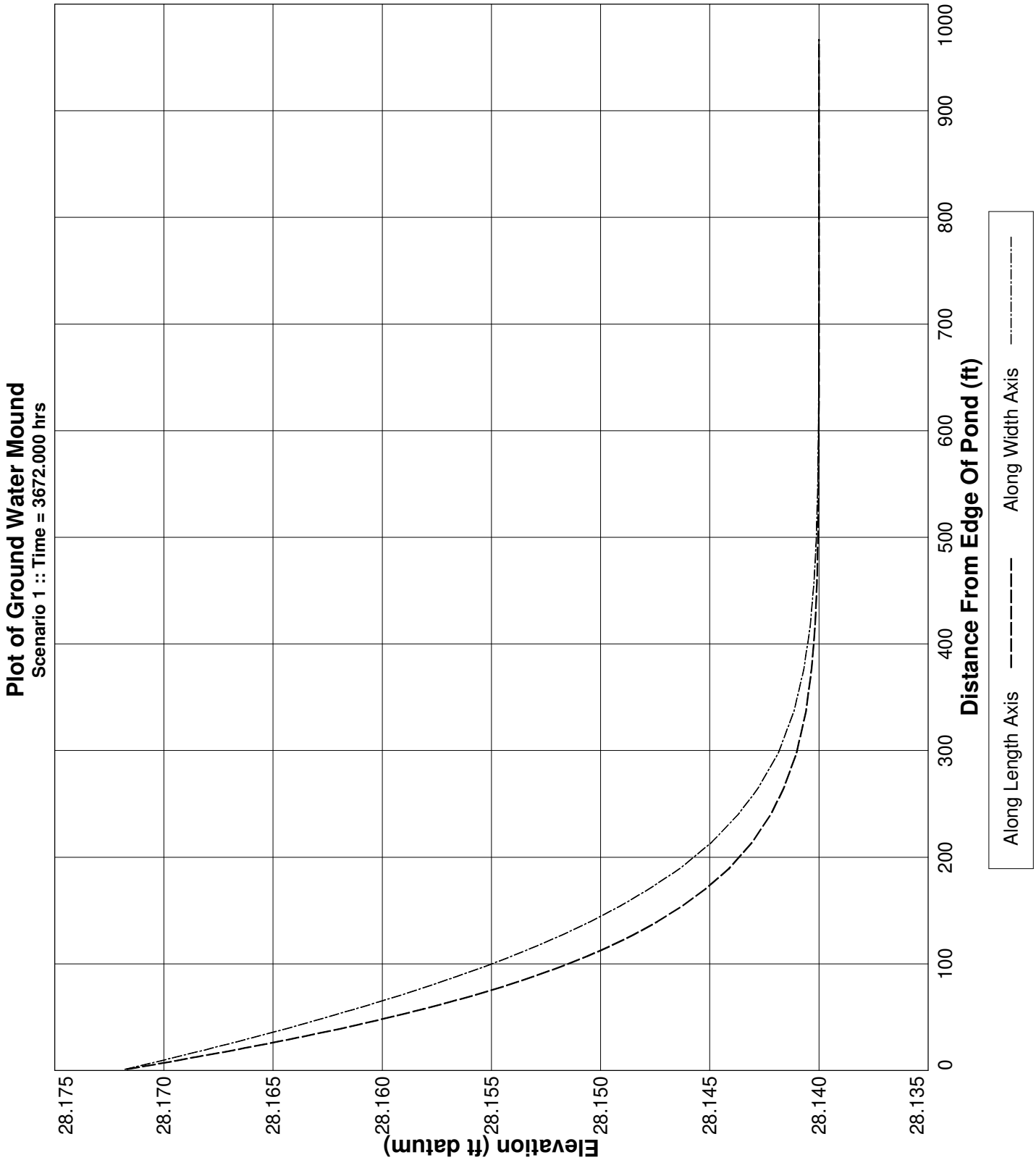
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No.10, Baseflow
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-27-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	5.00
Water Table Elevation, [WT] (ft datum):	30.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	1.03
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	302.0
Equivalent Pond Width, [W] (ft):	85.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
5.00	435.6
29.00	25700.4

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	29
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	29.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

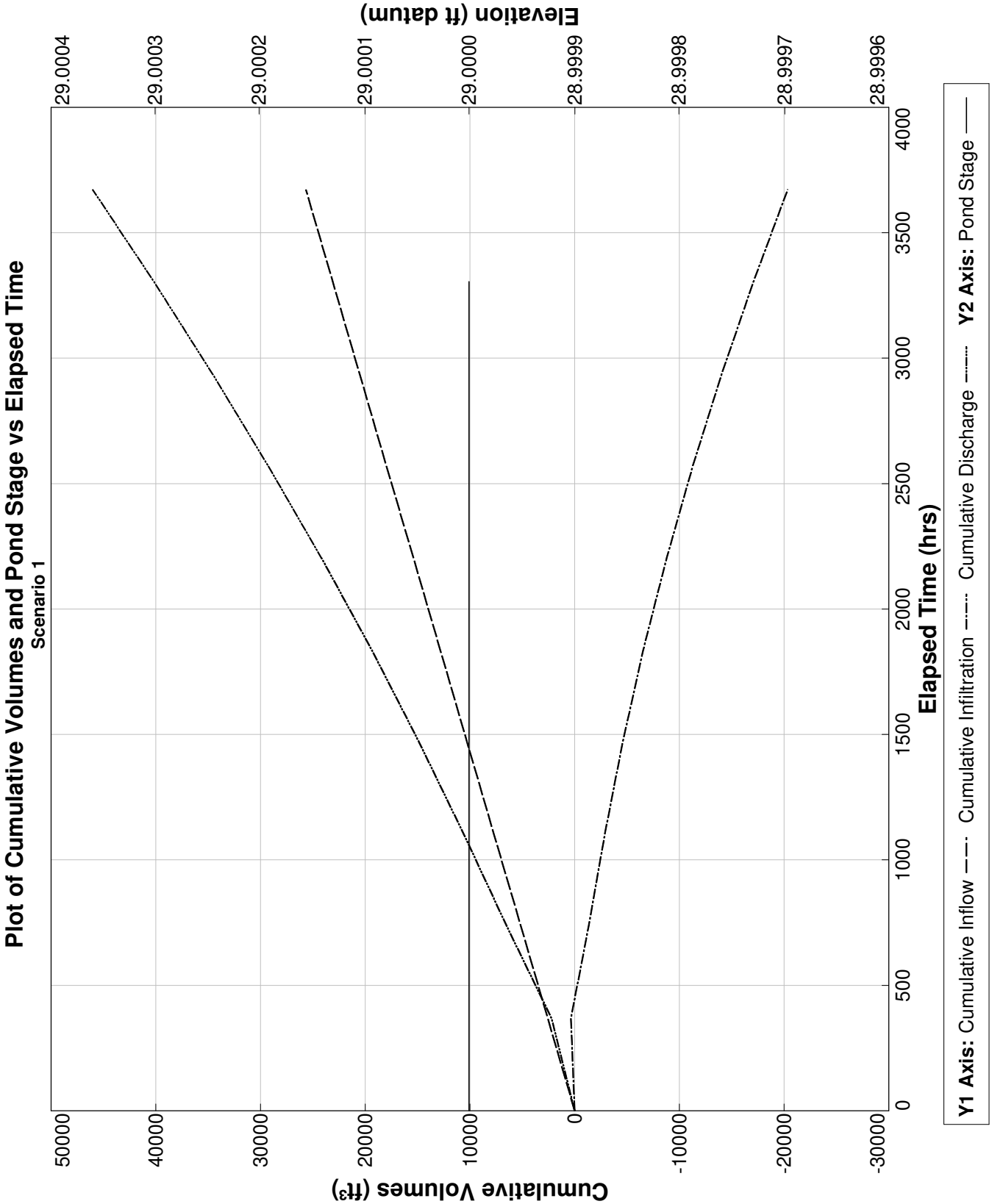
Begin Scenario 1 3/27/2023 12:41:17
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 29.0 ft.
End Scenario 1 3/27/2023 12:41:17

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

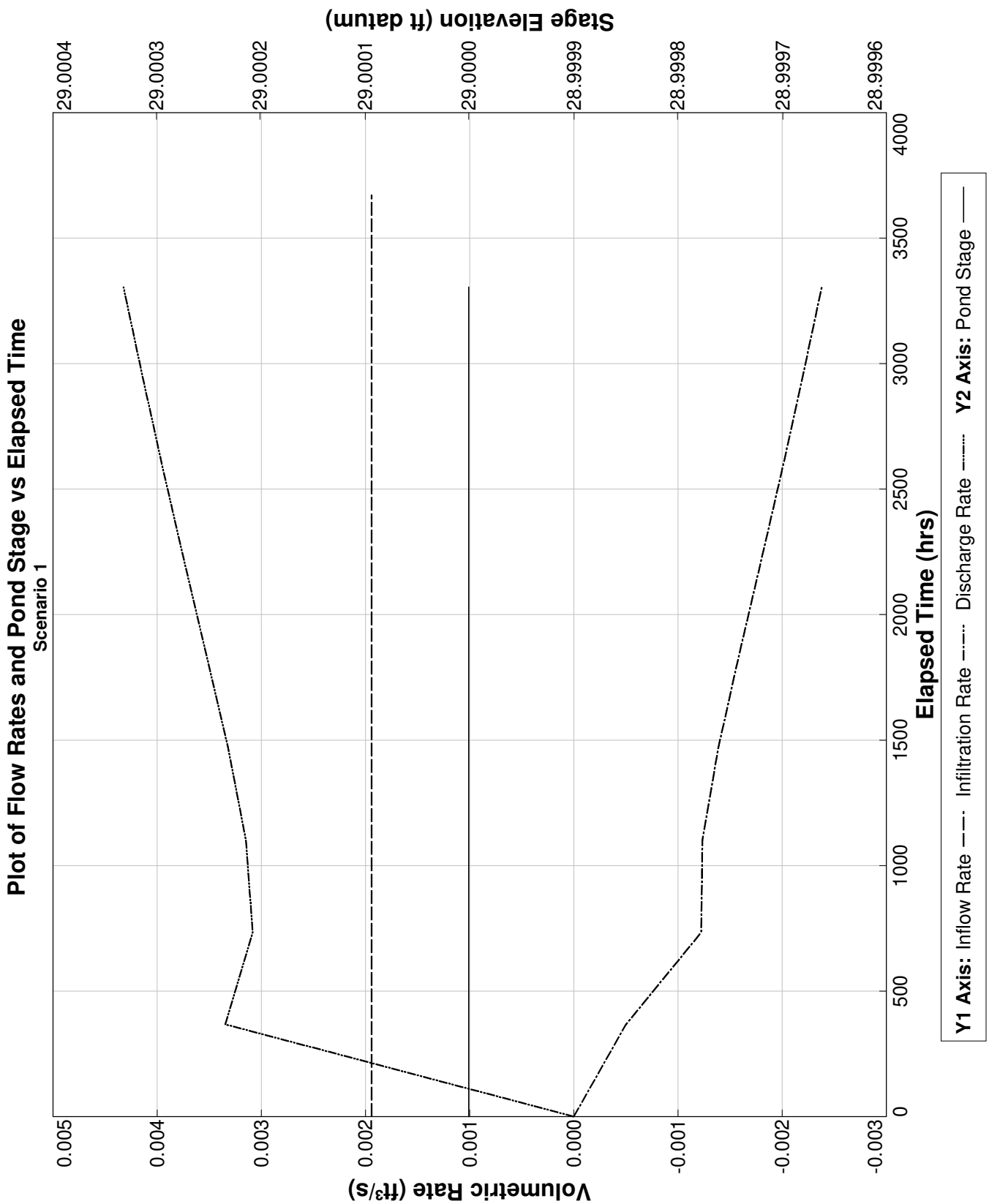
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0019	0.00163	29.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0019	0.00163	29.00000	-0.00050	3.345602E-03	2567.000	355.7	2211.309	S
734.400	0.0019	0.00163	29.00000	-0.00122	3.083899E-03	5134.000	-1327.0	6460.952	S
1101.600	0.0019	0.00163	29.00000	-0.00123	3.147738E-03	7701.000	-2878.8	10579.81	S
1468.800	0.0019	0.00163	29.00000	-0.00139	3.319449E-03	10268.000	-4586.4	14854.37	S
1836.000	0.0019	0.00163	29.00000	-0.00158	3.525825E-03	12835.000	-6543.8	19378.82	S
2203.200	0.0019	0.00163	29.00000	-0.00179	3.734258E-03	15402.000	-8775.4	24177.44	S
2570.400	0.0019	0.00163	29.00000	-0.00200	3.939554E-03	17969.000	-11280.5	29249.53	S
2937.600	0.0019	0.00163	29.00000	-0.00219	4.135125E-03	20536.000	-14050.6	34586.57	S
3304.800	0.0019	0.00163	29.00000	-0.00238	4.32465E-03	23103.000	-17075.1	40178.14	S
3672.000	0.0019	0.00163	29.00000	----	----	25670.000	-20342.3	46012.31	N.A.

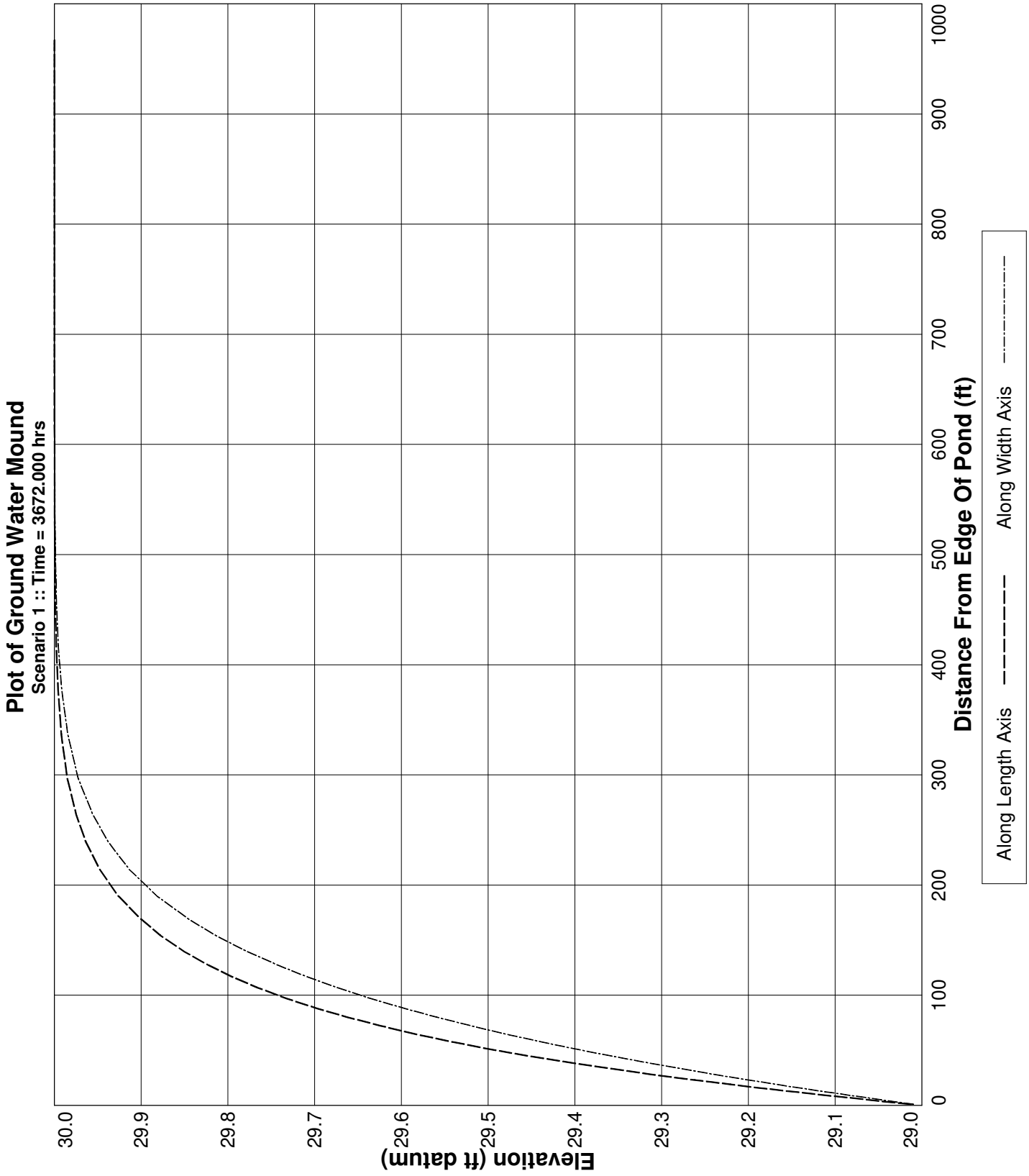
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No. 11, Baseflow
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-31-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	6.00
Water Table Elevation, [WT] (ft datum):	30.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.10
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	631.0
Equivalent Pond Width, [W] (ft):	83.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
11.00	435.6
29.00	52272.0

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	29
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	29.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

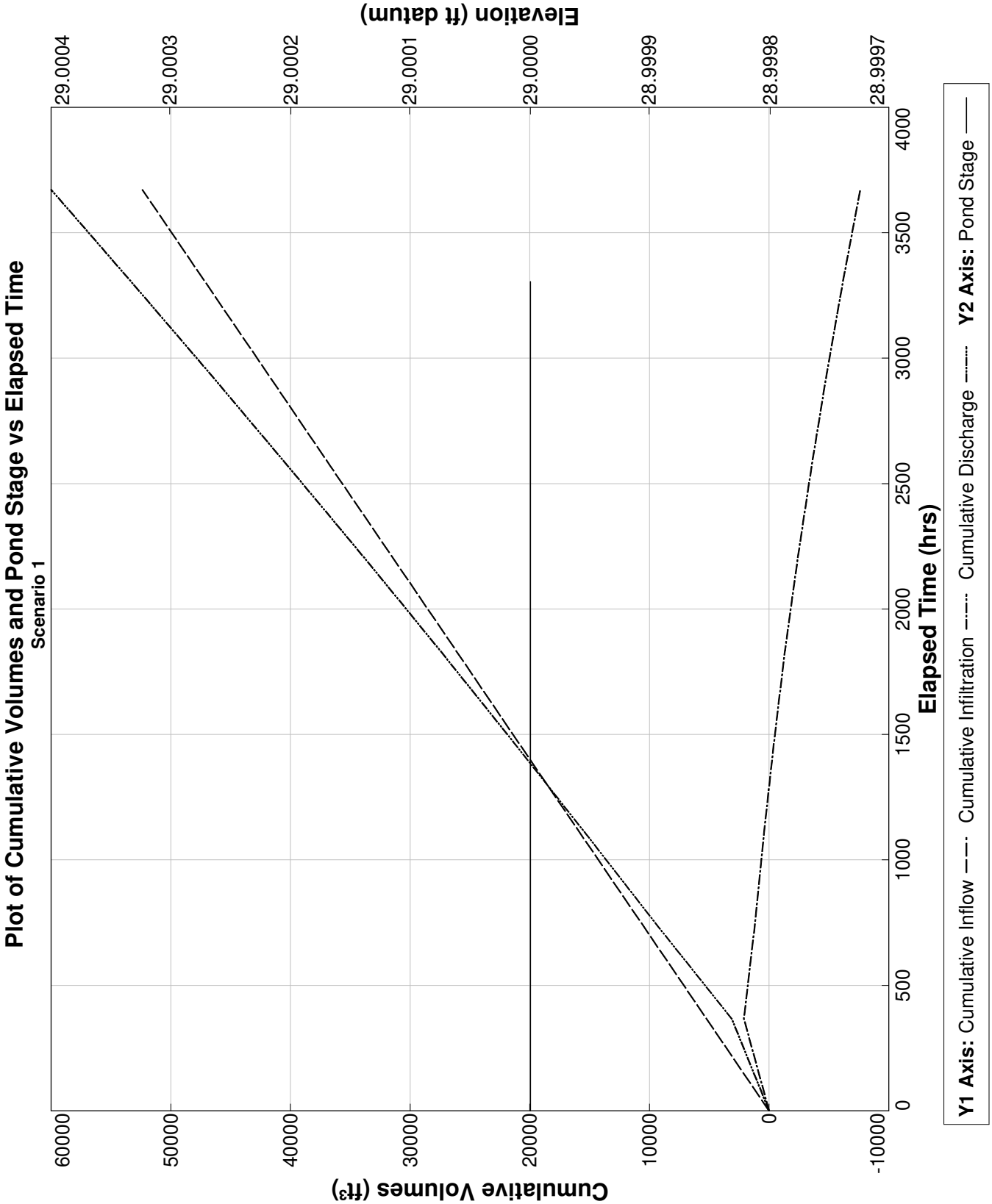
Begin Scenario 1 3/31/2023 12:15:45
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 29.0 ft.
End Scenario 1 3/31/2023 12:15:45

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

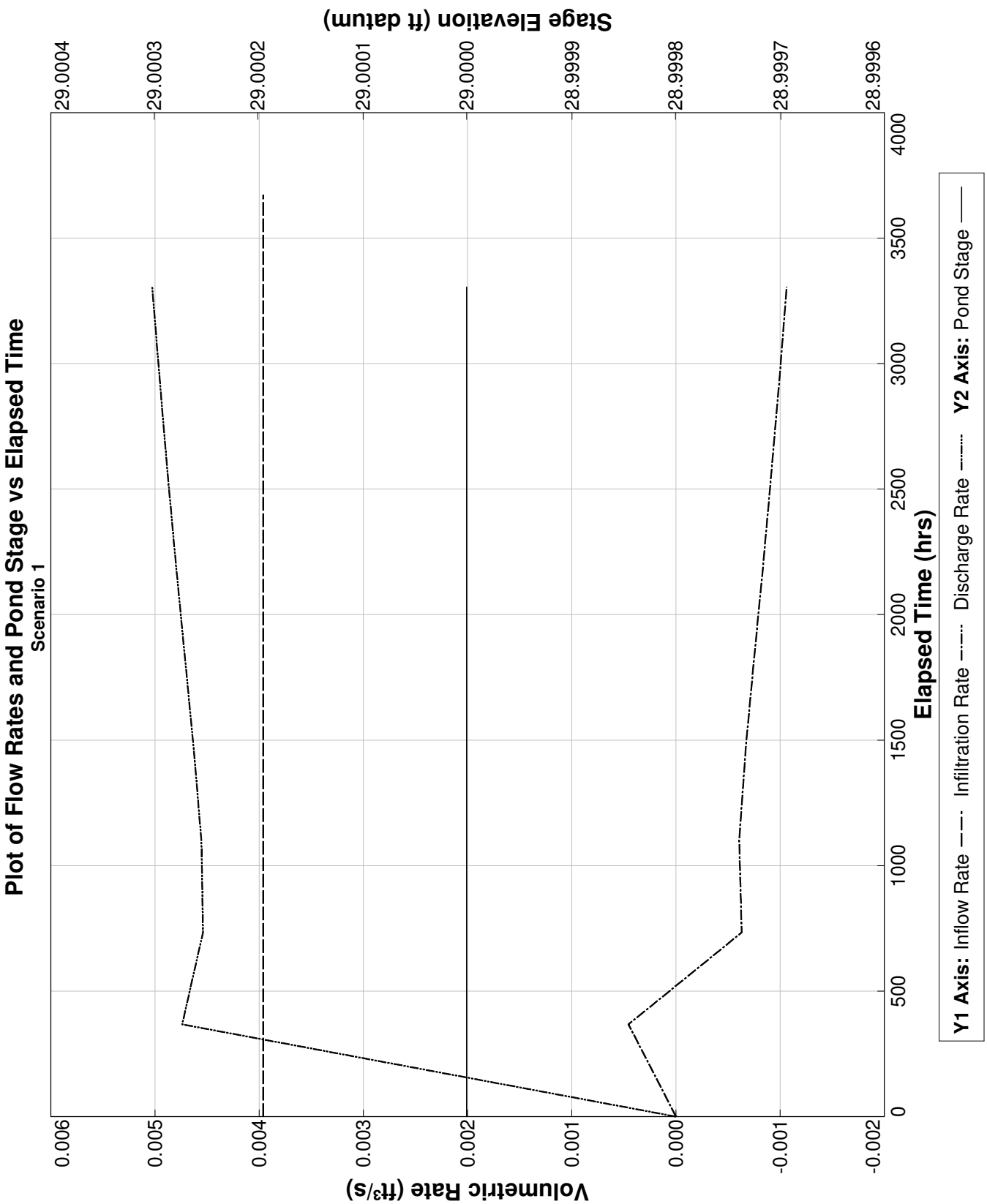
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0040	0.00163	29.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0040	0.00163	29.00000	0.00046	4.740395E-03	5237.300	2104.1	3133.211	S
734.400	0.0040	0.00163	29.00000	-0.00063	4.538212E-03	10474.600	1208.6	9266	S
1101.600	0.0040	0.00163	29.00000	-0.00061	4.55431E-03	15711.900	436.1	15275.79	S
1468.800	0.0040	0.00163	29.00000	-0.00067	4.628967E-03	20949.200	-396.4	21345.57	S
1836.000	0.0040	0.00163	29.00000	-0.00075	4.715512E-03	26186.500	-1335.4	27521.9	S
2203.200	0.0040	0.00163	29.00000	-0.00084	4.800458E-03	31423.800	-2387.8	33811.57	S
2570.400	0.0040	0.00163	29.00000	-0.00092	4.88062E-03	36661.100	-3549.3	40210.38	S
2937.600	0.0040	0.00163	29.00000	-0.00099	4.955844E-03	41898.400	-4813.5	46711.89	S
3304.800	0.0040	0.00163	29.00000	-0.00106	5.026721E-03	47135.700	-6174.3	53309.96	S
3672.000	0.0040	0.00163	29.00000	----	----	52373.000	-7626.3	59999.3	N.A.

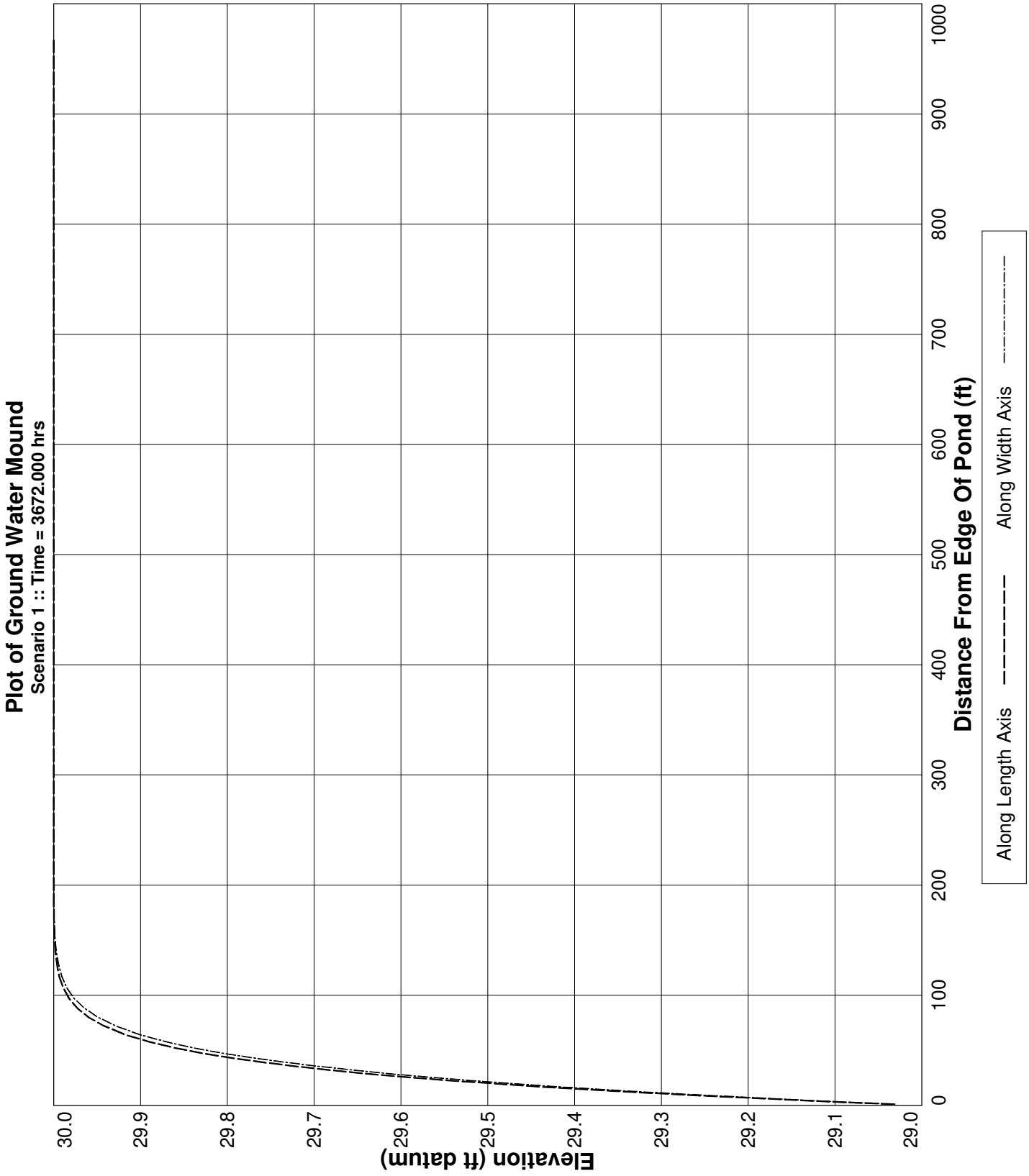
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No. 12, Northwest Wetland, without wall
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-28-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	-1.00
Water Table Elevation, [WT] (ft datum):	31.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.01
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	624.0
Equivalent Pond Width, [W] (ft):	159.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
4.00	435.6
29.00	99316.8

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	29
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	30.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

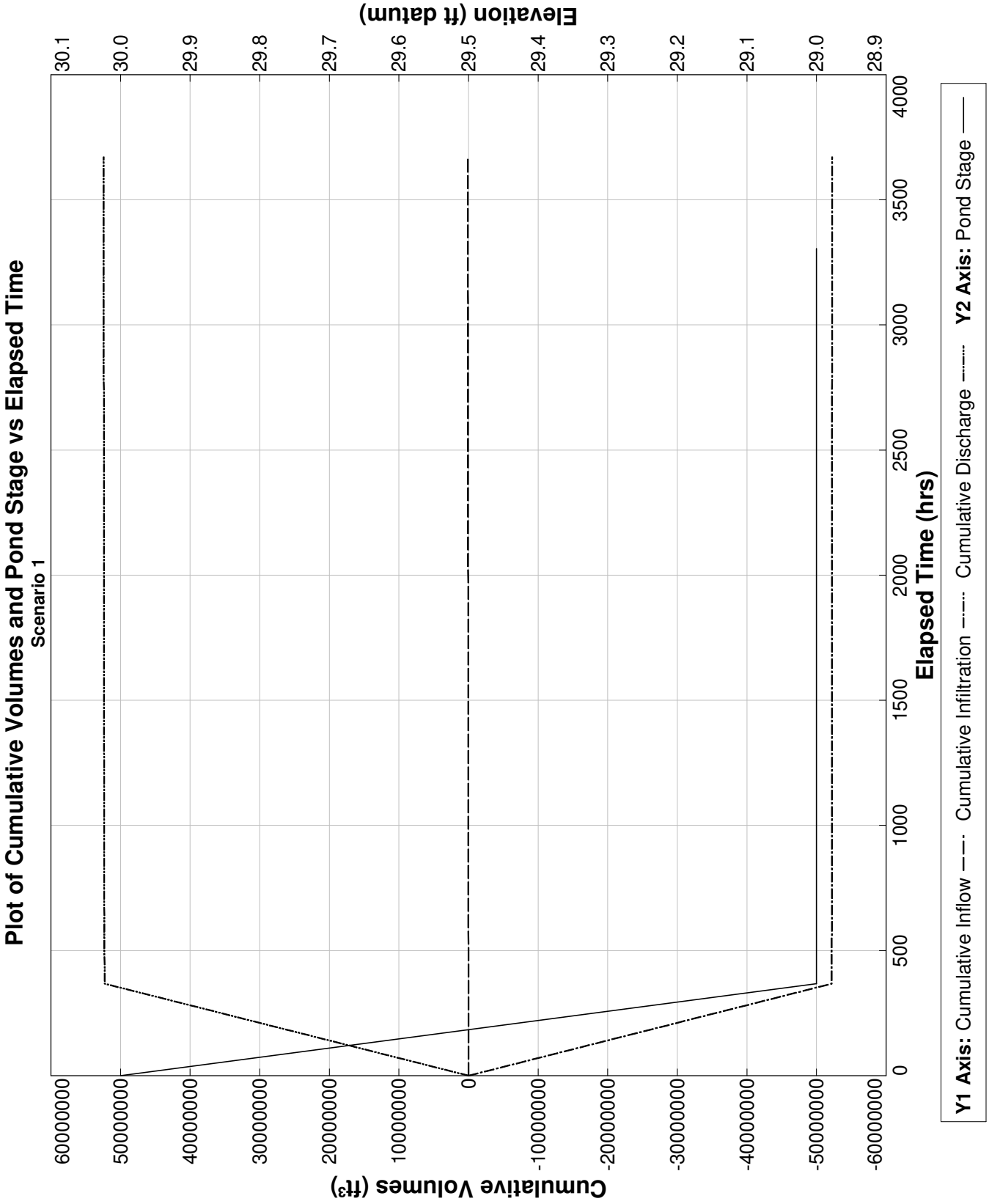
Begin Scenario 1 3/28/2023 16:40:7
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 30.0 ft.
#WARNING: The calculated water budget error exceeded the target water budget error for 7 of 10 saturated stress periods.
Maximum calculated water budget error is -2.61376306669389 percent, for saturated stress period 2.
If convergence is not a problem, it is recommended to reduce the Modflow convergence tolerences
to attempt to decrease the water budget error to within the target level.
End Scenario 1 3/28/2023 16:40:8

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

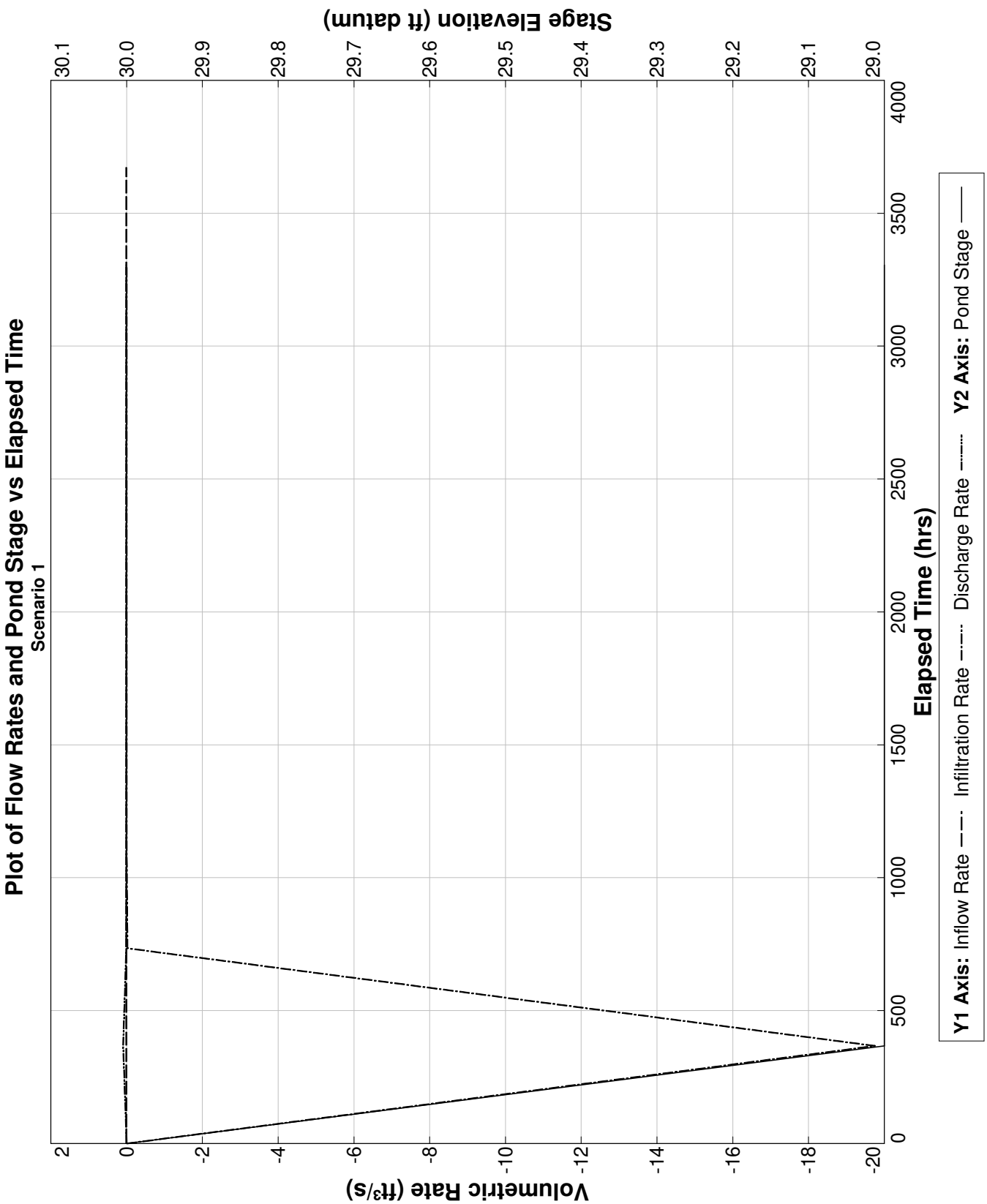
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0075	0.00163	30.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0075	0.00163	29.00000	-19.75219	8.858397E-02	9921.600	-52165150.0	5.227439E+07	S
734.400	0.0075	0.00163	29.00000	-0.02280	1.186784E-02	19843.200	-52221620.0	5.234078E+07	S
1101.600	0.0075	0.00163	29.00000	-0.00199	8.883448E-03	29764.800	-52225420.0	5.23545E+07	S
1468.800	0.0075	0.00163	29.00000	-0.00095	8.355952E-03	39686.400	-52226890.0	5.23659E+07	S
1836.000	0.0075	0.00163	29.00000	-0.00076	8.244227E-03	49608.000	-52227940.0	5.237687E+07	S
2203.200	0.0075	0.00163	29.00000	-0.00072	8.219917E-03	59529.600	-52228900.0	5.238775E+07	S
2570.400	0.0075	0.00163	29.00000	-0.00071	8.217948E-03	69451.200	-52229850.0	5.239862E+07	S
2937.600	0.0075	0.00163	29.00000	-0.00072	8.223579E-03	79372.800	-52230790.0	5.240948E+07	S
3304.800	0.0075	0.00163	29.00000	-0.00073	8.232679E-03	89294.400	-52231750.0	5.242036E+07	S
3672.000	0.0075	0.00163	29.00000	----	----	99216.000	-52232720.0	5.243125E+07	N.A.

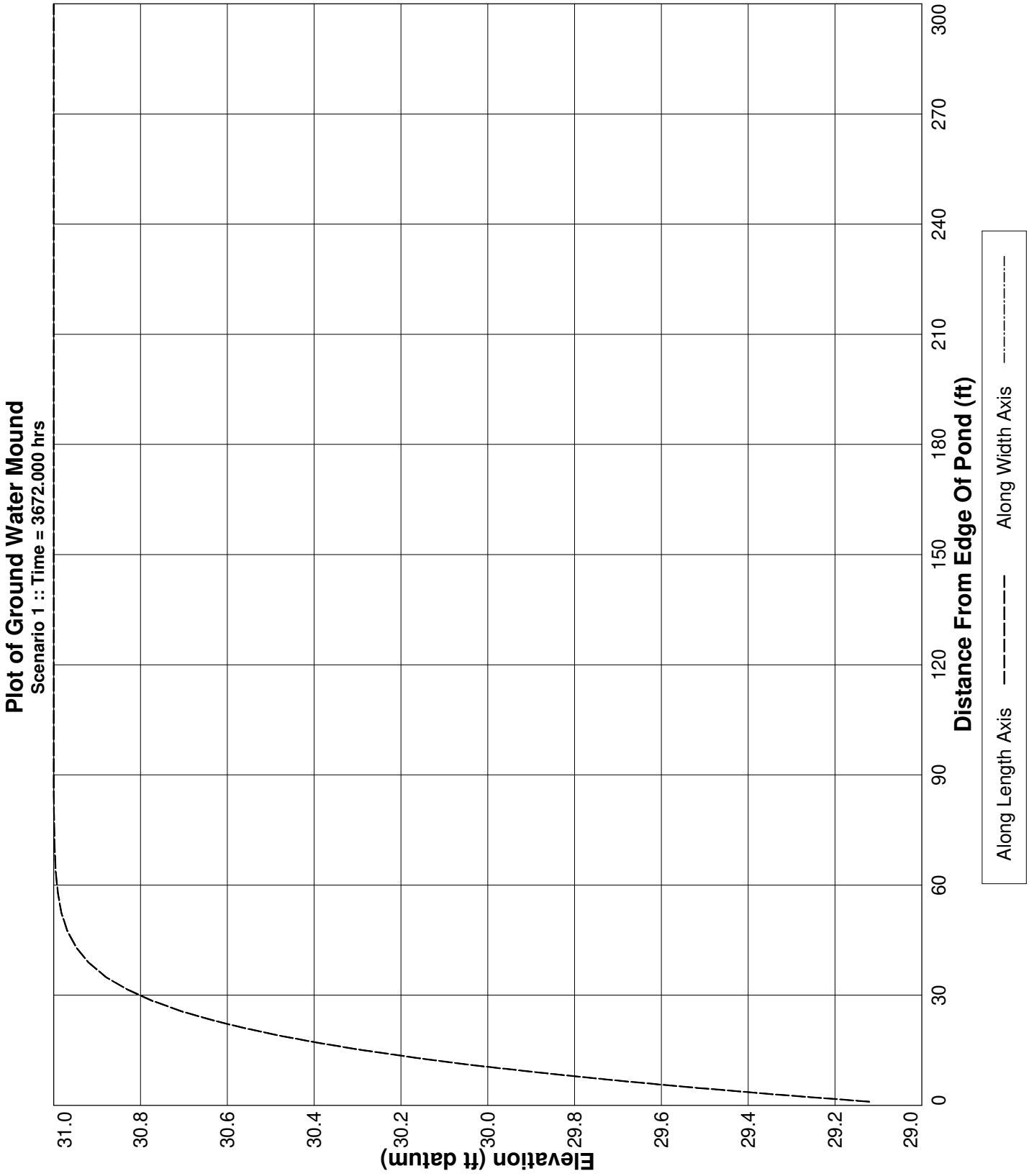
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No. 12, West Wetland, without wall
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-28-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	-1.00
Water Table Elevation, [WT] (ft datum):	32.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.01
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	624.0
Equivalent Pond Width, [W] (ft):	159.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft²)
4.00	435.6
29.00	99316.8

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	29
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	31.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

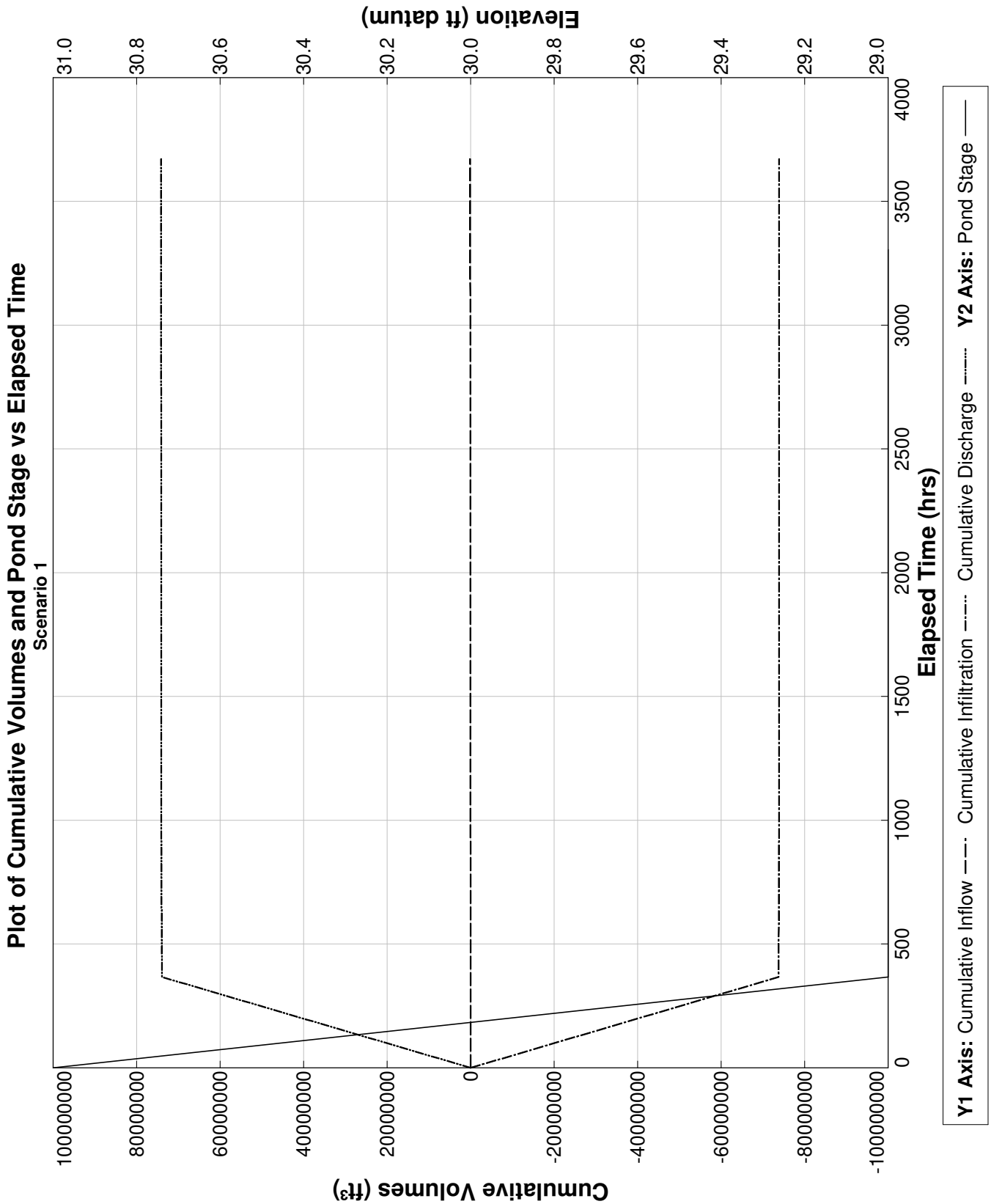
Begin Scenario 1 3/28/2023 16:42:51
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 31.0 ft.
End Scenario 1 3/28/2023 16:42:51

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

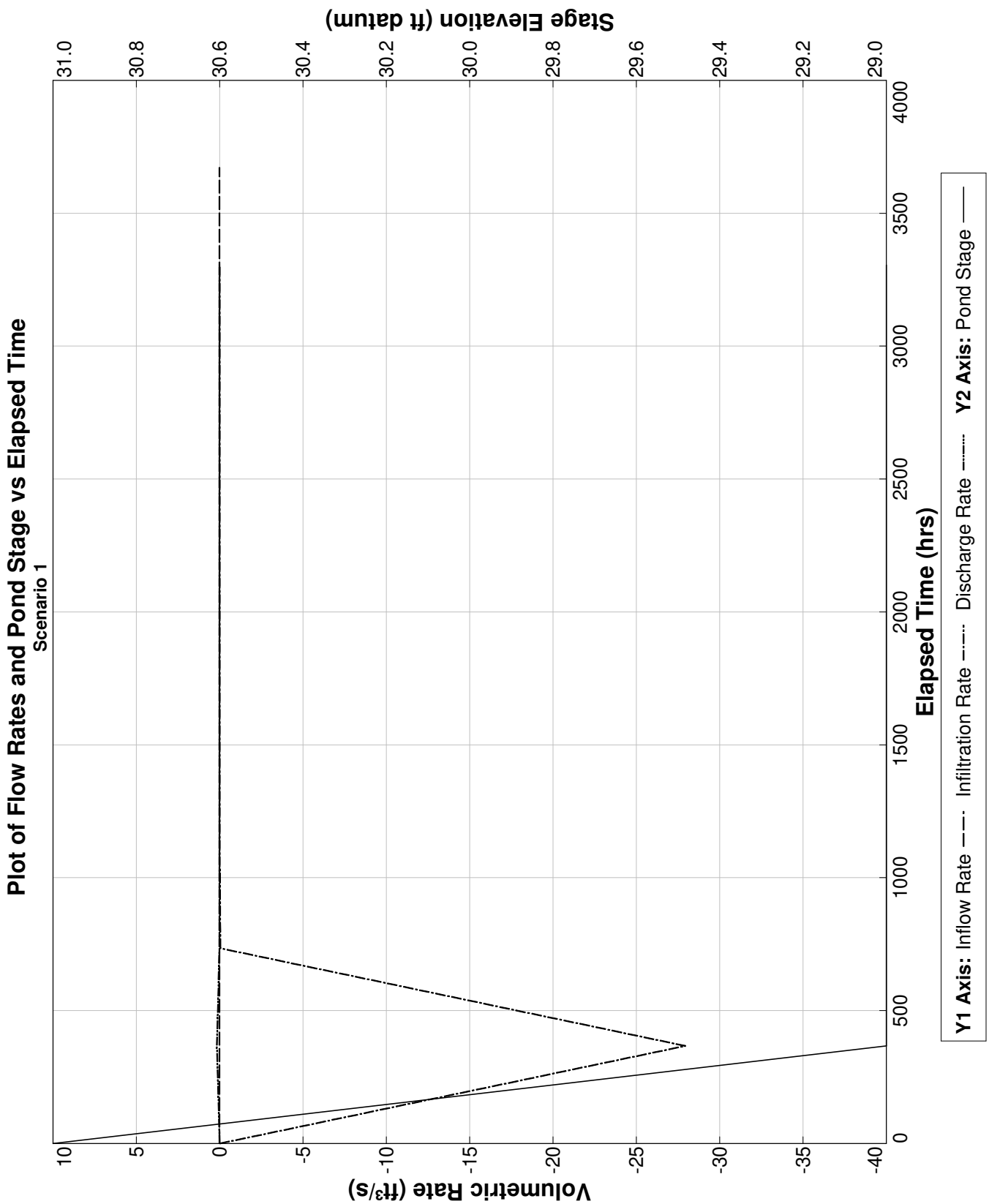
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0075	0.00163	31.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0075	0.00163	29.00001	-27.93187	.1625711	9921.600	-73743250.0	7.39518E+07	S
734.400	0.0075	0.00163	29.00000	-0.04039	9.99731E-03	19843.200	-73847380.0	7.406586E+07	S
1101.600	0.0075	0.00163	29.00000	-0.00168	9.008654E-03	29764.800	-73850020.0	7.407842E+07	S
1468.800	0.0075	0.00163	29.00000	-0.00127	8.733992E-03	39686.400	-73851830.0	7.409015E+07	S
1836.000	0.0075	0.00163	29.00000	-0.00113	8.626942E-03	49608.000	-73853380.0	7.410162E+07	S
2203.200	0.0075	0.00163	29.00000	-0.00107	8.573778E-03	59529.600	-73854830.0	7.4113E+07	S
2570.400	0.0075	0.00163	29.00000	-0.00104	8.543964E-03	69451.200	-73856220.0	7.412431E+07	S
2937.600	0.0075	0.00163	29.00000	-0.00102	8.526739E-03	79372.800	-73857580.0	7.413559E+07	S
3304.800	0.0075	0.00163	29.00000	-0.00101	8.517257E-03	89294.400	-73858930.0	7.414686E+07	S
3672.000	0.0075	0.00163	29.00000	----	----	99216.000	-73860260.0	7.415811E+07	N.A.

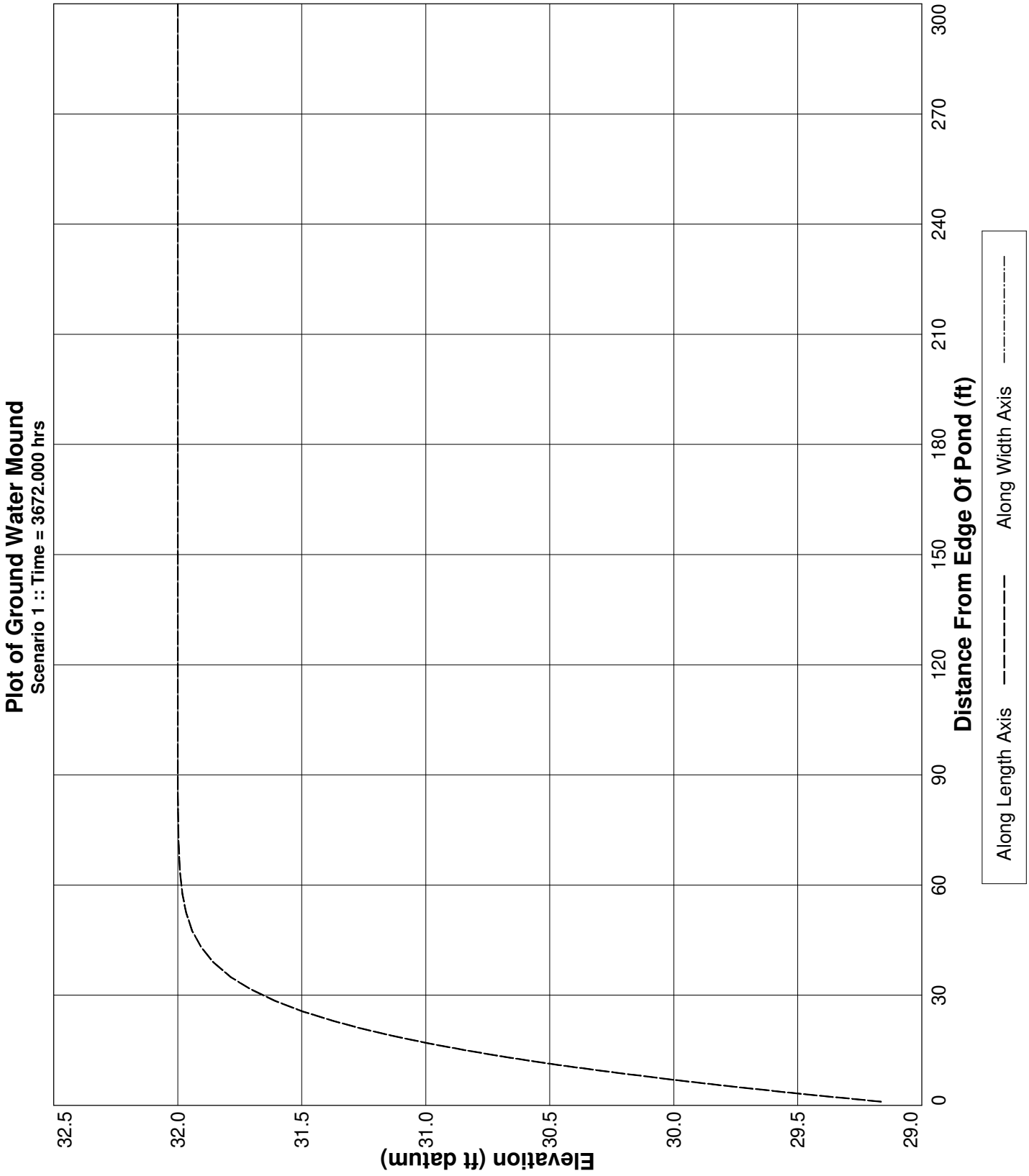
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No. 12, Southwest Wetland, without wall
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-28-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	-1.00
Water Table Elevation, [WT] (ft datum):	30.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.01
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	624.0
Equivalent Pond Width, [W] (ft):	159.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
4.00	435.6
29.00	99316.8

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	29
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	29.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

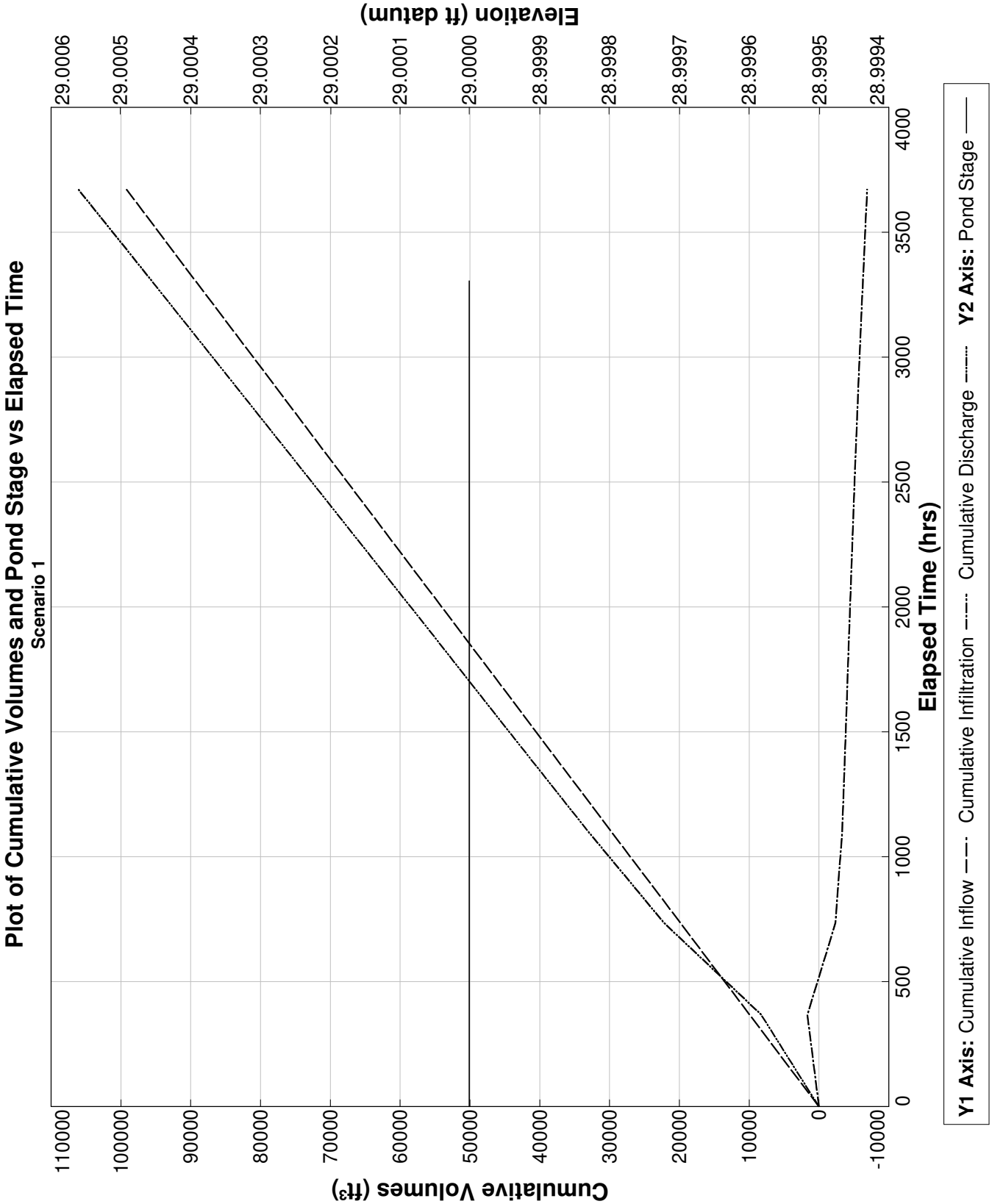
Begin Scenario 1 3/28/2023 16:45:36
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 29.0 ft.
#WARNING: The calculated water budget error exceeded the target water budget error for 5 of 10 saturated stress periods.
Maximum calculated water budget error is -4.25636049663616 percent, for saturated stress period 1.
If convergence is not a problem, it is recommended to reduce the Modflow convergence tolerences
to attempt to decrease the water budget error to within the target level.
End Scenario 1 3/28/2023 16:45:37

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

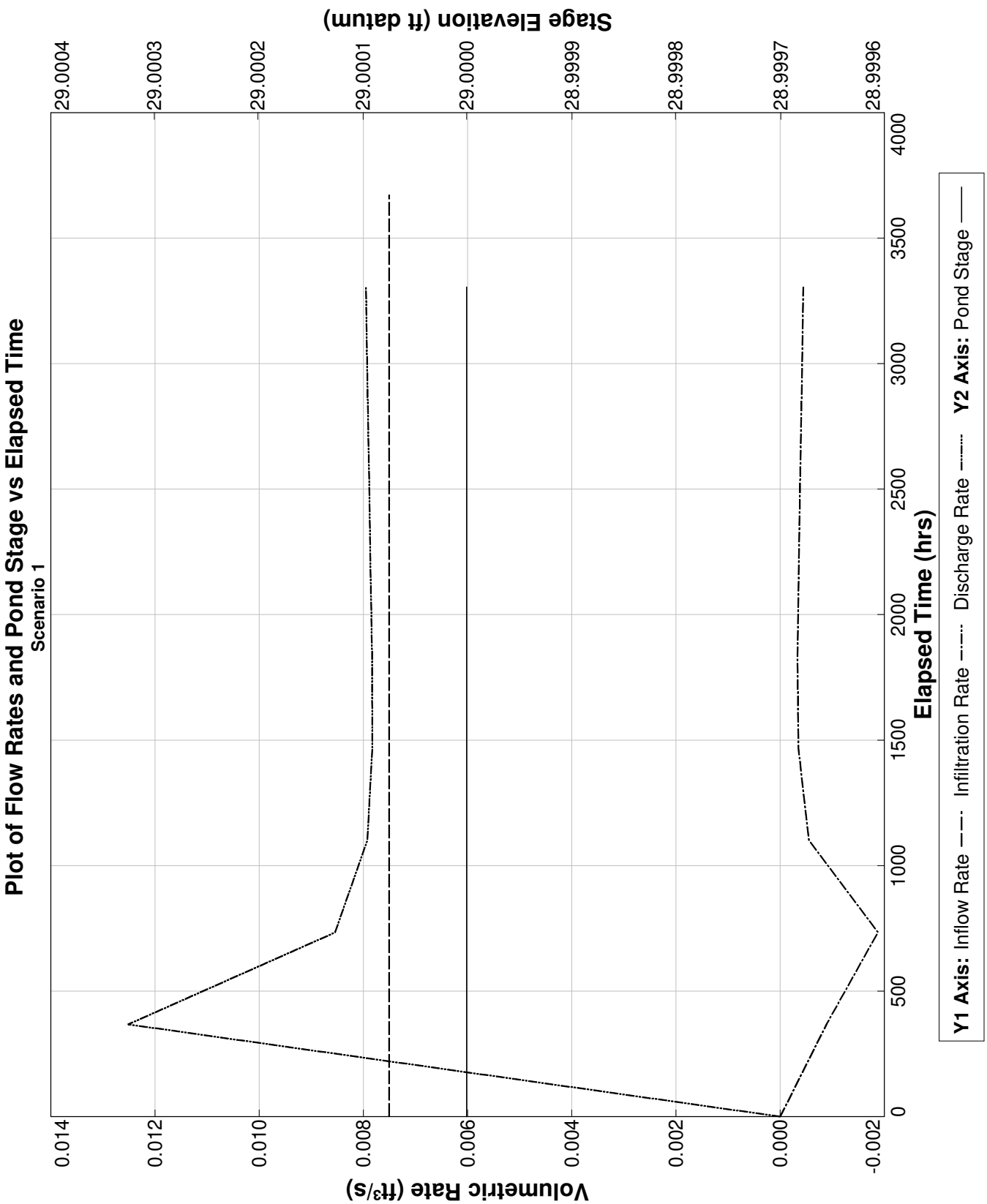
Detailed Results *:: Scenario 1 ::*

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0075	0.00163	29.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0075	0.00163	29.00000	-0.00089	1.251681E-02	9921.600	1648.5	8273.113	S
734.400	0.0075	0.00163	29.00000	-0.00188	8.545865E-03	19843.200	-2351.5	22194.7	S
1101.600	0.0075	0.00163	29.00000	-0.00055	7.925722E-03	29764.800	-3317.0	33081.76	S
1468.800	0.0075	0.00163	29.00000	-0.00035	7.827315E-03	39686.400	-3807.5	43493.89	S
1836.000	0.0075	0.00163	29.00000	-0.00033	7.834828E-03	49608.000	-4237.9	53845.94	S
2203.200	0.0075	0.00163	29.00000	-0.00036	7.862953E-03	59529.600	-4691.9	64221.54	S
2570.400	0.0075	0.00163	29.00000	-0.00039	7.893566E-03	69451.200	-5184.8	74635.98	S
2937.600	0.0075	0.00163	29.00000	-0.00042	7.923078E-03	79372.800	-5717.3	85090.14	S
3304.800	0.0075	0.00163	29.00000	-0.00045	7.950997E-03	89294.400	-6287.9	95582.27	S
3672.000	0.0075	0.00163	29.00000	----	----	99216.000	-6894.3	106110.3	N.A.

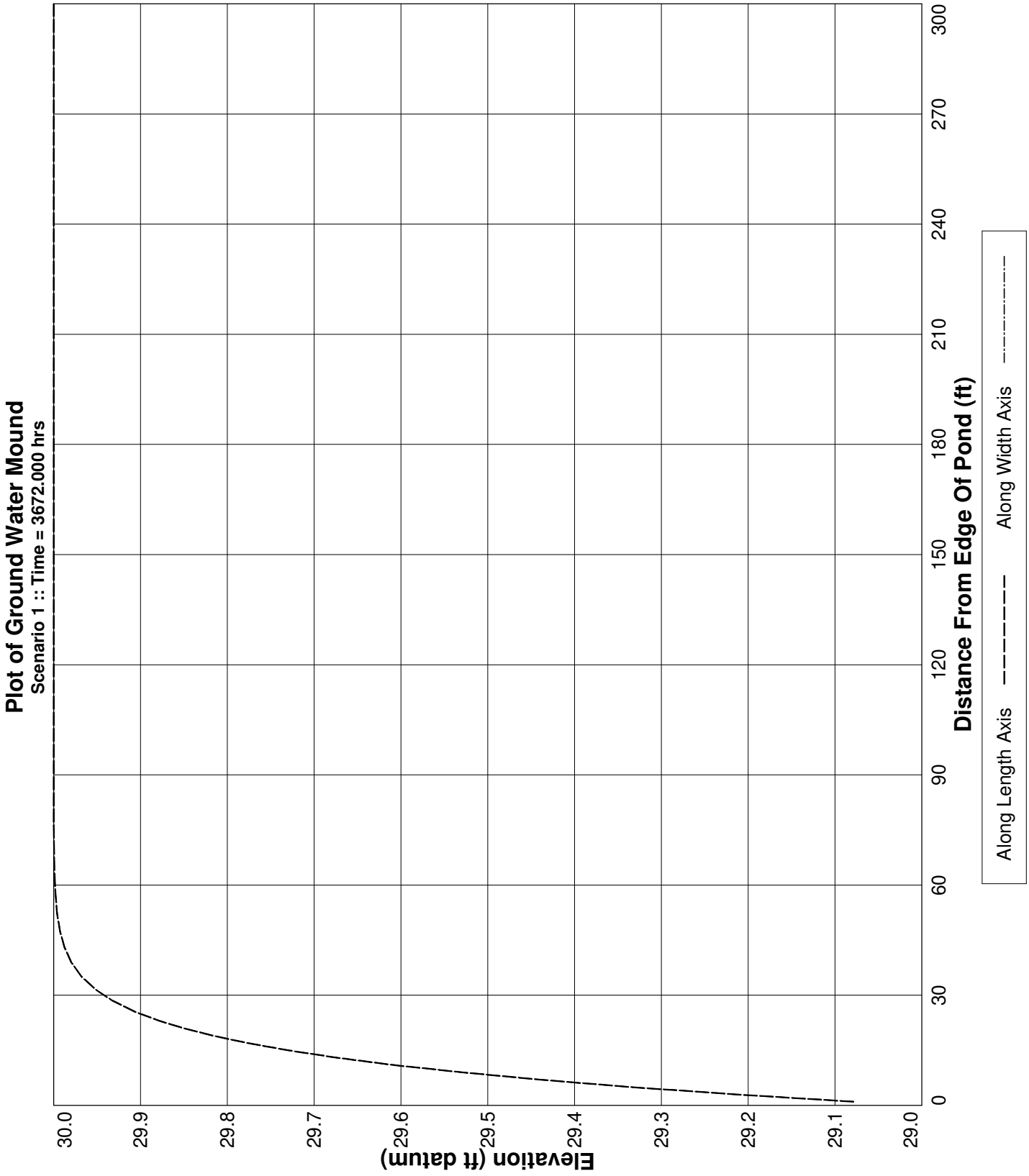
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No. 13, North, Baseflow
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-31-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	6.00
Water Table Elevation, [WT] (ft datum):	27.50
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.03
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	463.0
Equivalent Pond Width, [W] (ft):	72.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
16.00	435.6
29.00	33541.2

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	29
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	26.5
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

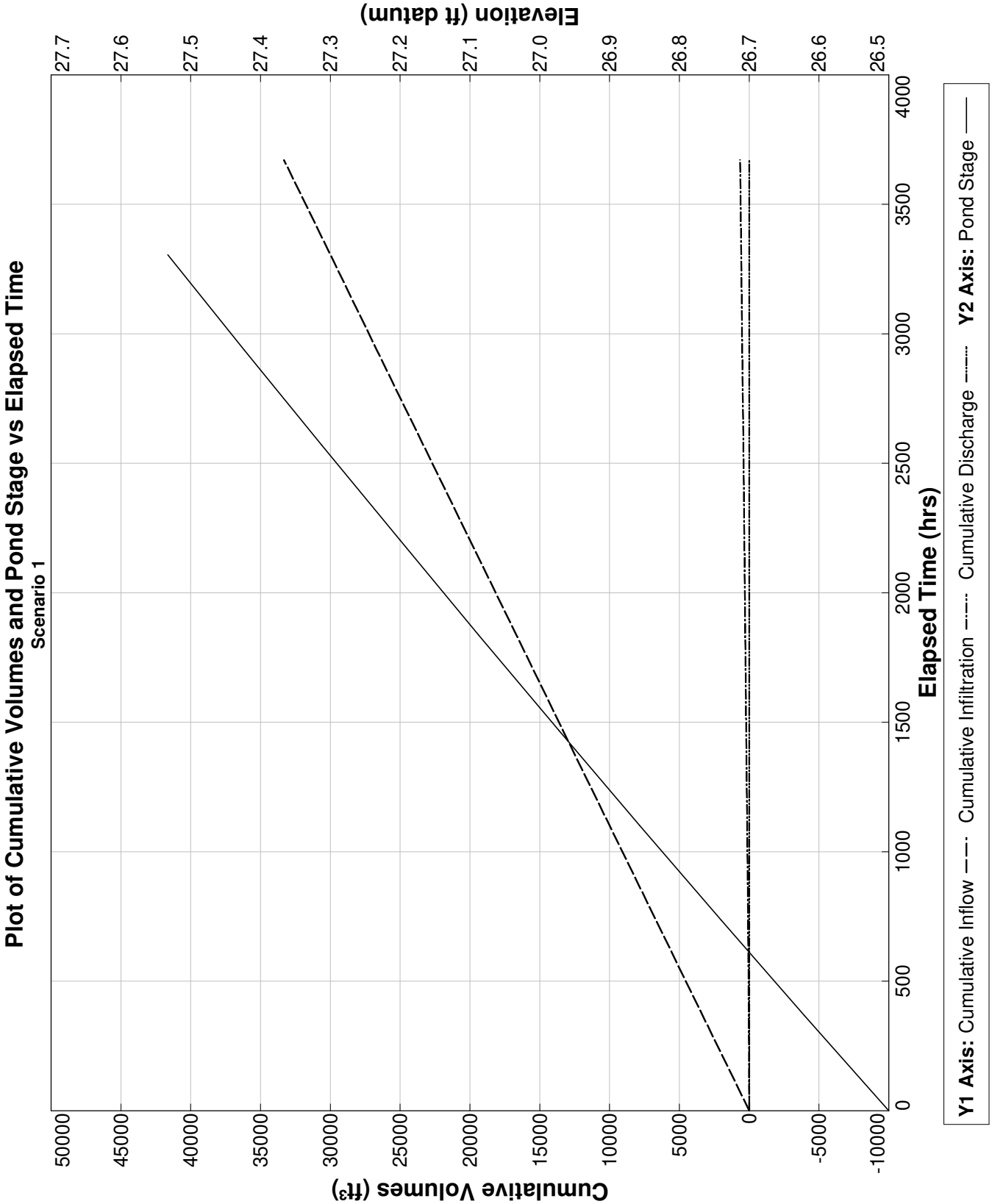
Begin Scenario 1 3/31/2023 12:43:2
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 26.5 ft.
End Scenario 1 3/31/2023 12:43:2

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

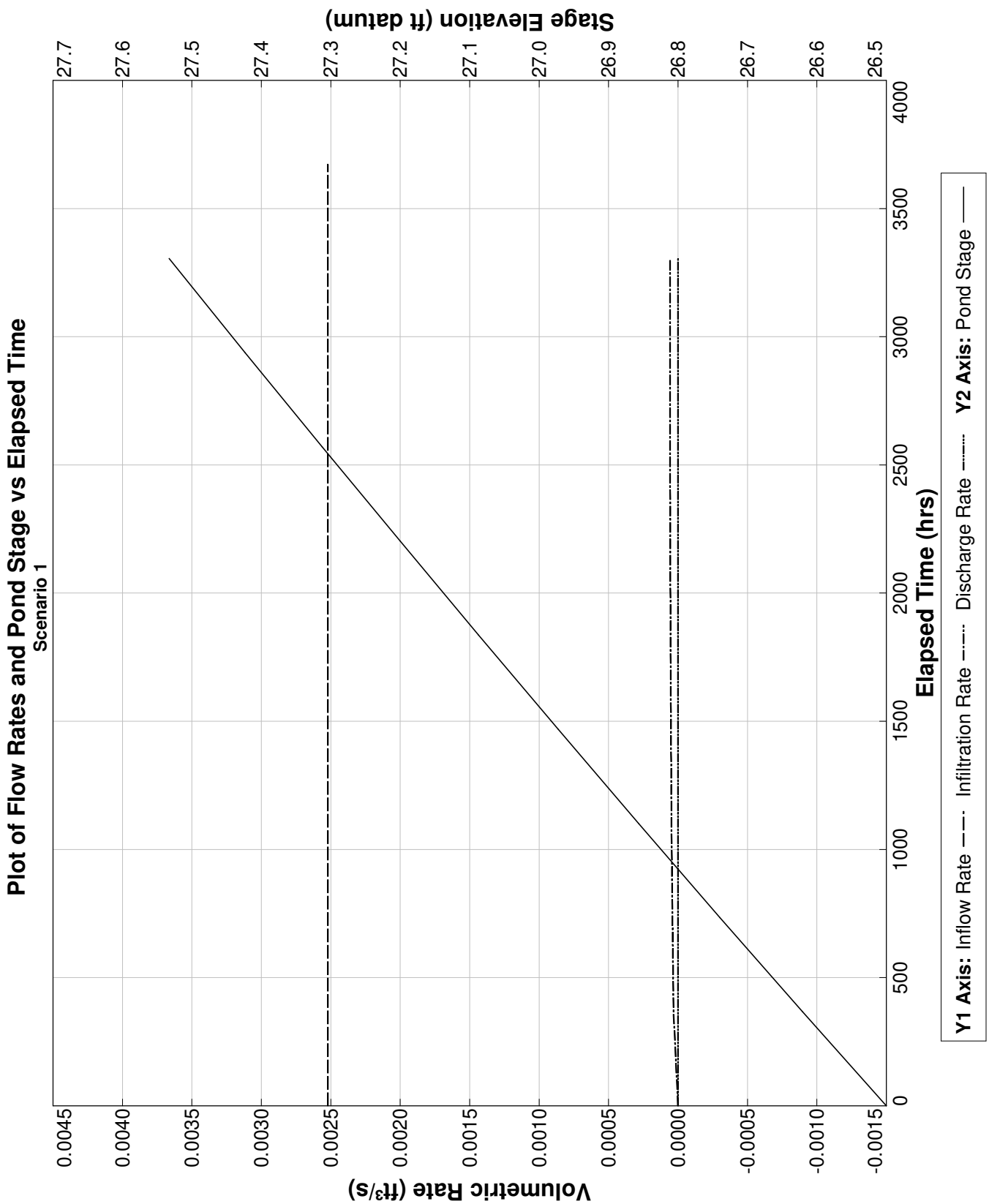
Detailed Results *:: Scenario 1 ::*

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0025	0.00163	26.50000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0025	0.00163	26.62074	0.00003	0	3333.600	34.1	0	S
734.400	0.0025	0.00163	26.73960	0.00004	0	6667.200	83.0	0	S
1101.600	0.0025	0.00163	26.85686	0.00005	0	10000.800	141.2	0	S
1468.800	0.0025	0.00163	26.97265	0.00005	0	13334.400	205.8	0	S
1836.000	0.0025	0.00163	27.08710	0.00005	0	16668.000	274.9	0	S
2203.200	0.0025	0.00163	27.20028	0.00006	0	20001.600	347.2	0	S
2570.400	0.0025	0.00163	27.31227	0.00006	0	23335.200	421.7	0	S
2937.600	0.0025	0.00163	27.42314	0.00006	0	26668.800	497.6	0	S
3304.800	0.0025	0.00163	27.53294	0.00006	0	30002.400	574.0	0	S
3672.000	0.0025	0.00163	27.64171	----	----	33336.000	650.6	0	N.A.

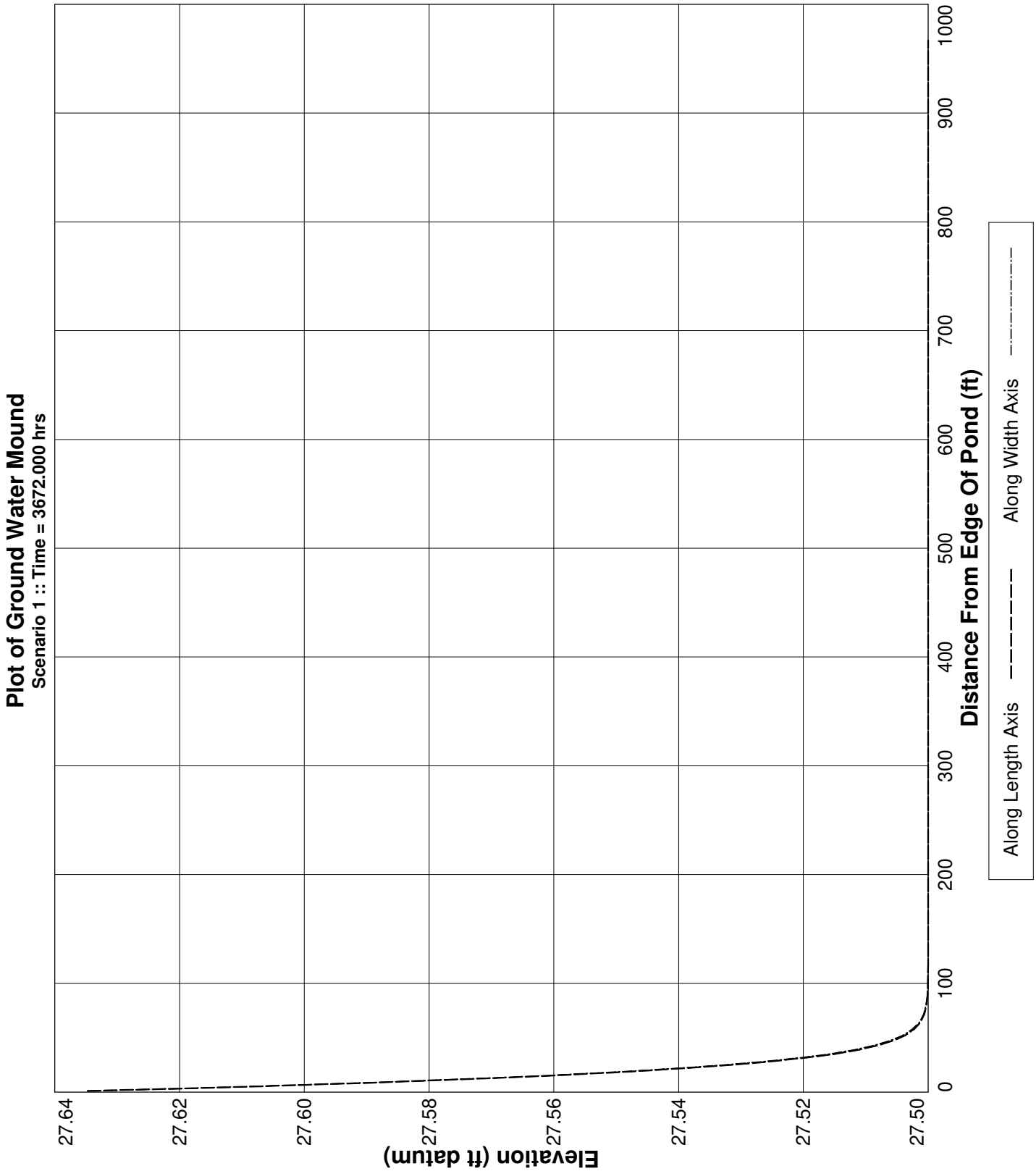
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No. 13, South, Baseflow
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-31-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	6.00
Water Table Elevation, [WT] (ft datum):	29.50
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.03
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	463.0
Equivalent Pond Width, [W] (ft):	72.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
16.00	435.6
29.00	33541.2

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	29
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	28.5
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

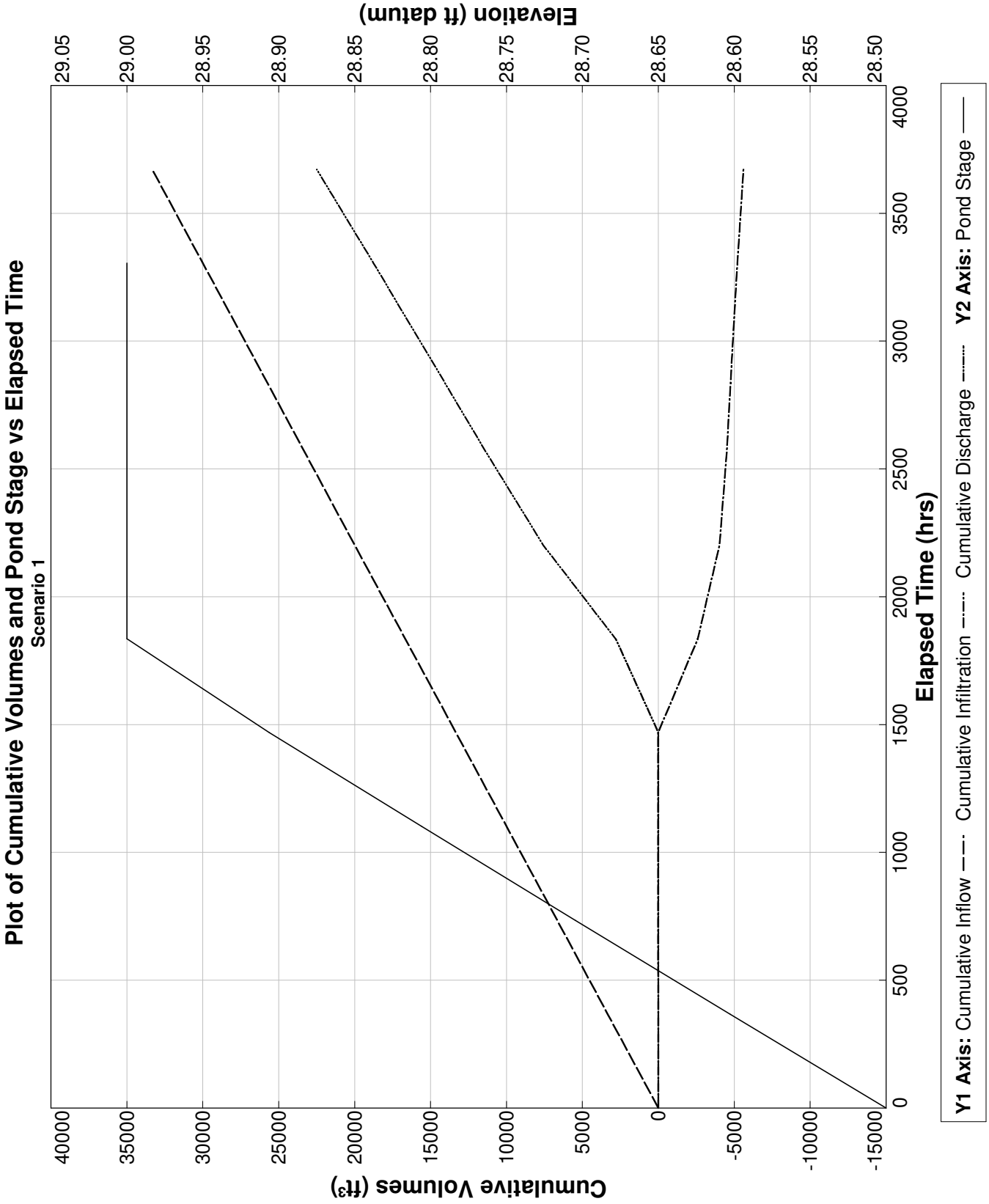
Begin Scenario 1 3/31/2023 12:44:17
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 28.5 ft.
End Scenario 1 3/31/2023 12:44:17

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

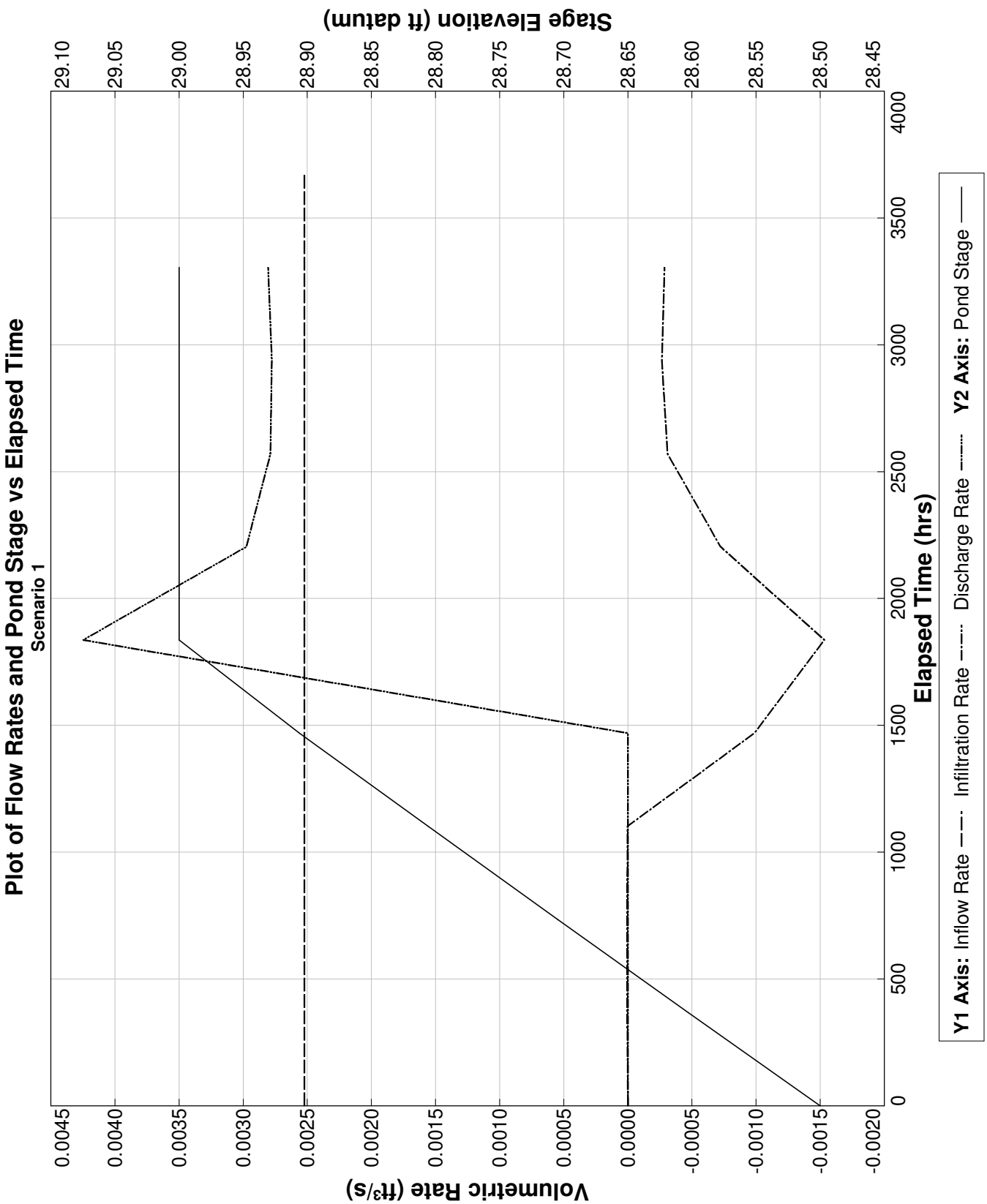
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0025	0.00163	28.50000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0025	0.00163	28.60275	0.00000	0	3333.600	4.8	0	S
734.400	0.0025	0.00163	28.70464	0.00000	0	6667.200	10.5	0	S
1101.600	0.0025	0.00163	28.80575	0.00000	0	10000.800	16.0	0	S
1468.800	0.0025	0.00163	28.90610	-0.00099	0	13334.400	20.5	0	S
1836.000	0.0025	0.00163	29.00000	-0.00153	4.248271E-03	16668.000	-2592.2	2807.937	S
2203.200	0.0025	0.00163	29.00000	-0.00072	2.975078E-03	20001.600	-4033.0	7582.282	S
2570.400	0.0025	0.00163	29.00000	-0.00031	2.786692E-03	23335.200	-4507.7	11390.58	S
2937.600	0.0025	0.00163	29.00000	-0.00027	2.777155E-03	26668.800	-4851.5	15068.06	S
3304.800	0.0025	0.00163	29.00000	-0.00029	.0028063	30002.400	-5208.4	18758.5	S
3672.000	0.0025	0.00163	29.00000	----	----	33336.000	-5608.1	22491.84	N.A.

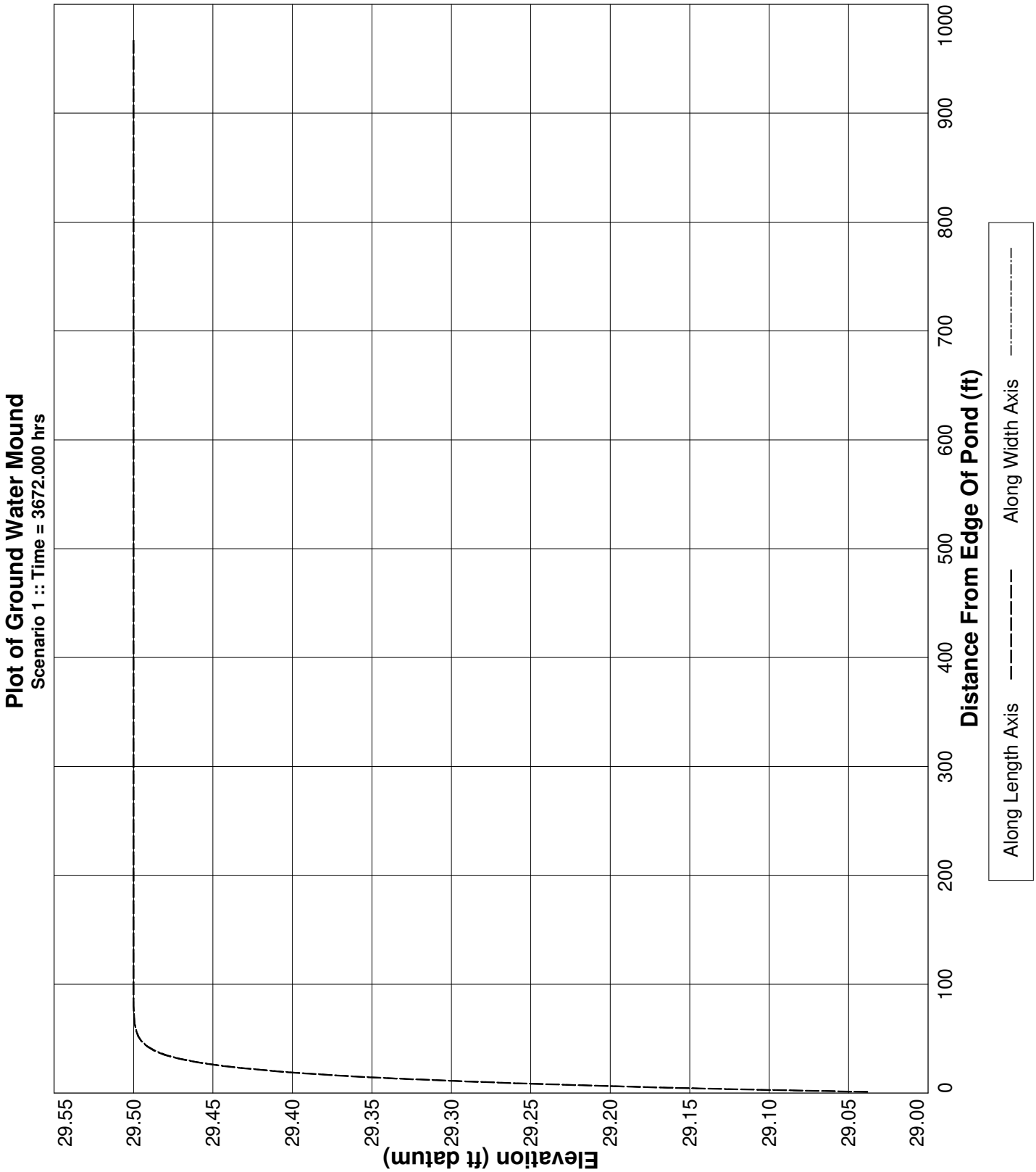
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No.14, West Wetland, without wall
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-23-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	-6.00
Water Table Elevation, [WT] (ft datum):	31.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.03
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	292.0
Equivalent Pond Width, [W] (ft):	155.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft²)
4.00	435.6
29.00	45302.4

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	29
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	30.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

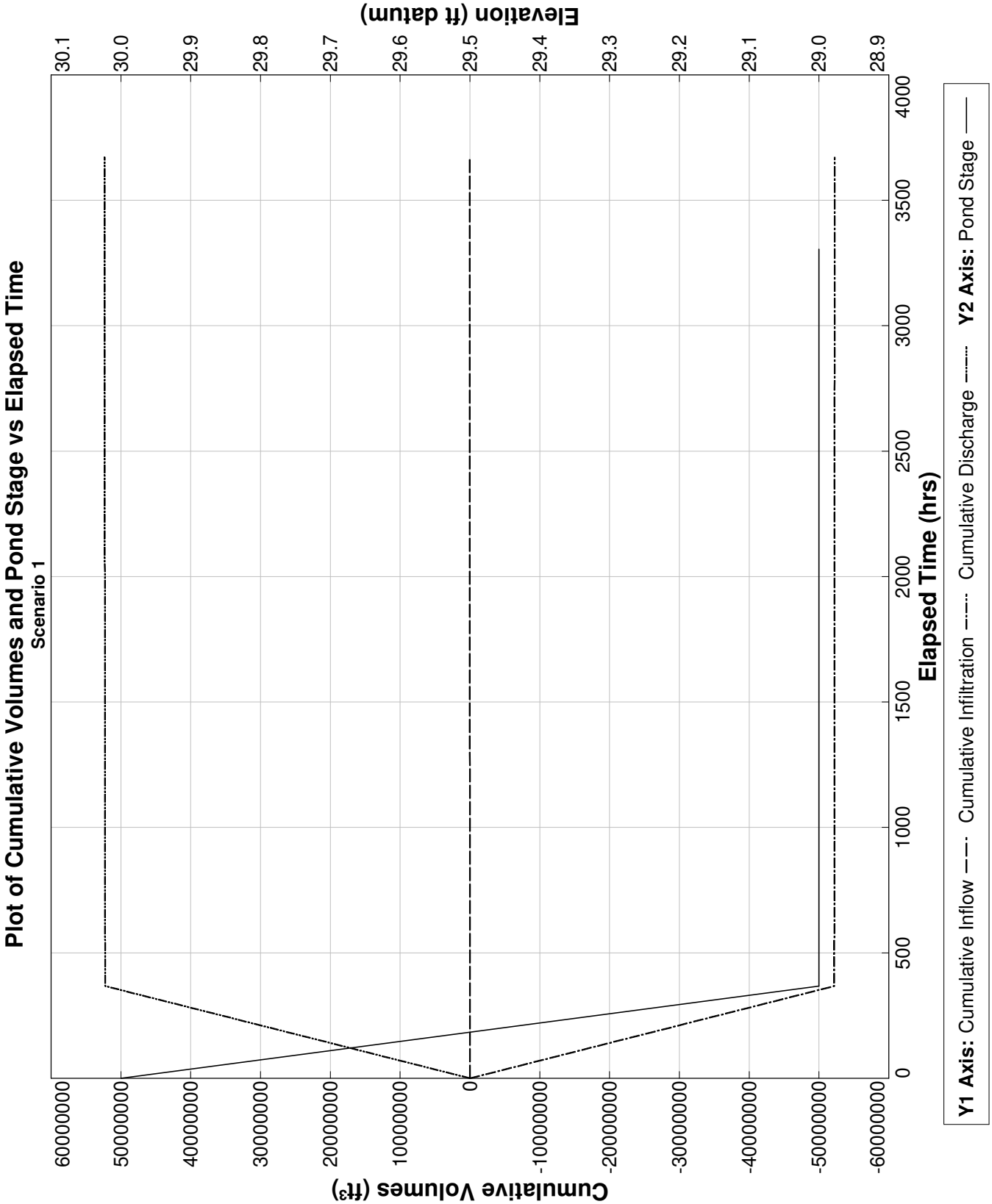
Begin Scenario 1 3/23/2023 16:48:46
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 30.0 ft.
#WARNING: The calculated water budget error exceeded the target water budget error for 5 of 10 saturated stress periods.
Maximum calculated water budget error is -3.68732921662173 percent, for saturated stress period 1.
If convergence is not a problem, it is recommended to reduce the Modflow convergence tolerences
to attempt to decrease the water budget error to within the target level.
End Scenario 1 3/23/2023 16:48:46

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

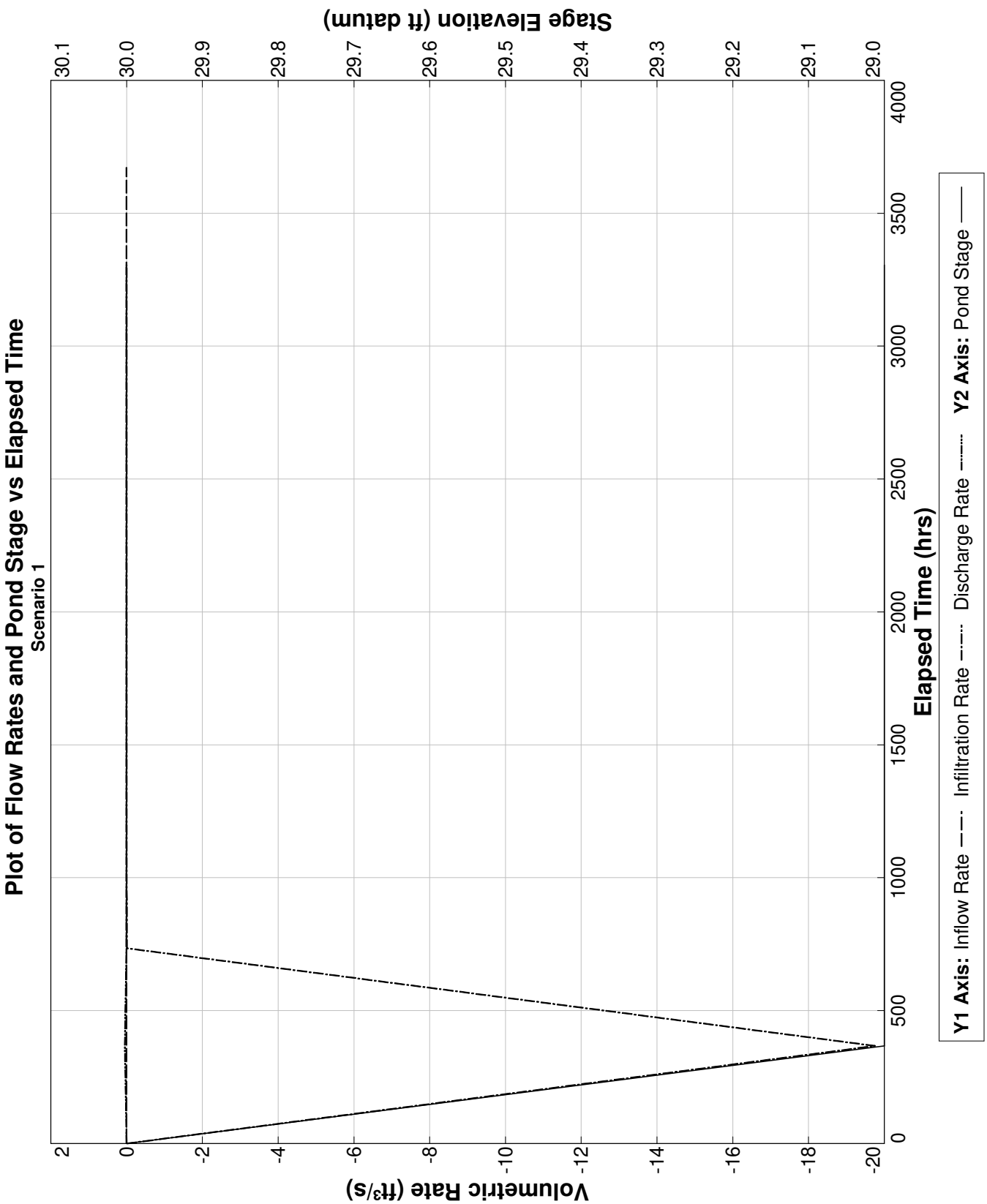
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0034	0.00163	30.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0034	0.00163	29.00000	-19.75278	4.412244E-02	4526.000	-52195180.0	5.2245E+07	S
734.400	0.0034	0.00163	29.00000	-0.01129	5.132435E-03	9052.000	-52223200.0	5.227756E+07	S
1101.600	0.0034	0.00163	29.00000	-0.00116	4.471675E-03	13578.000	-52225030.0	5.228391E+07	S
1468.800	0.0034	0.00163	29.00000	-0.00088	4.269728E-03	18104.000	-52226280.0	5.228968E+07	S
1836.000	0.0034	0.00163	29.00000	-0.00079	4.202647E-03	22630.000	-52227350.0	5.229528E+07	S
2203.200	0.0034	0.00163	29.00000	-0.00076	4.182655E-03	27156.000	-52228370.0	5.230083E+07	S
2570.400	0.0034	0.00163	29.00000	-0.00076	4.181533E-03	31682.000	-52229370.0	5.230636E+07	S
2937.600	0.0034	0.00163	29.00000	-0.00077	4.188455E-03	36208.000	-52230380.0	5.231189E+07	S
3304.800	0.0034	0.00163	29.00000	-0.00078	4.199152E-03	40734.000	-52231400.0	5.231743E+07	S
3672.000	0.0034	0.00163	29.00000	----	----	45260.000	-52232430.0	5.232299E+07	N.A.

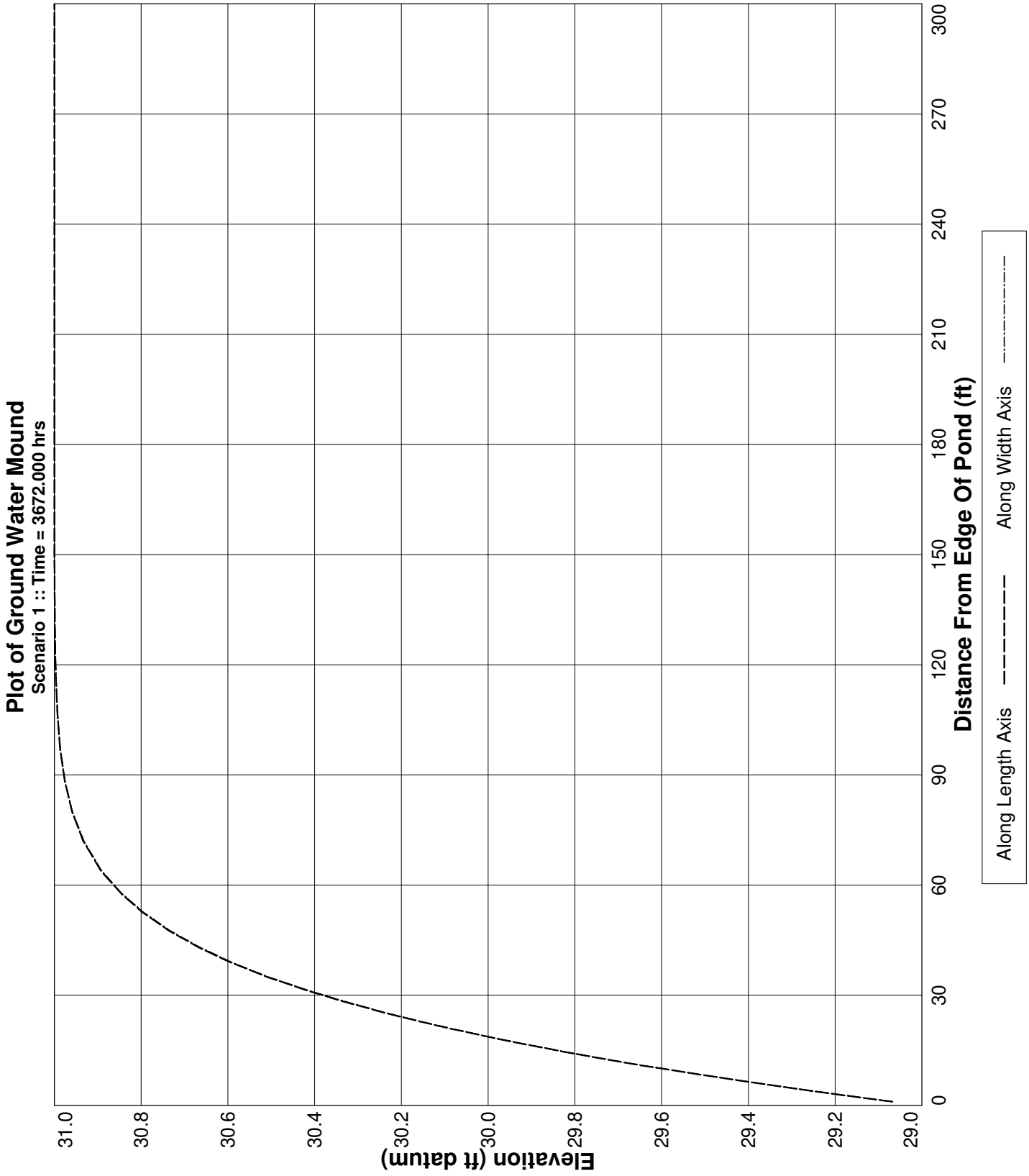
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No.14, Southest Wetland, without wall
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-23-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	-6.00
Water Table Elevation, [WT] (ft datum):	32.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.03
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	292.0
Equivalent Pond Width, [W] (ft):	155.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
4.00	435.6
29.00	45302.4

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	29
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	31.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

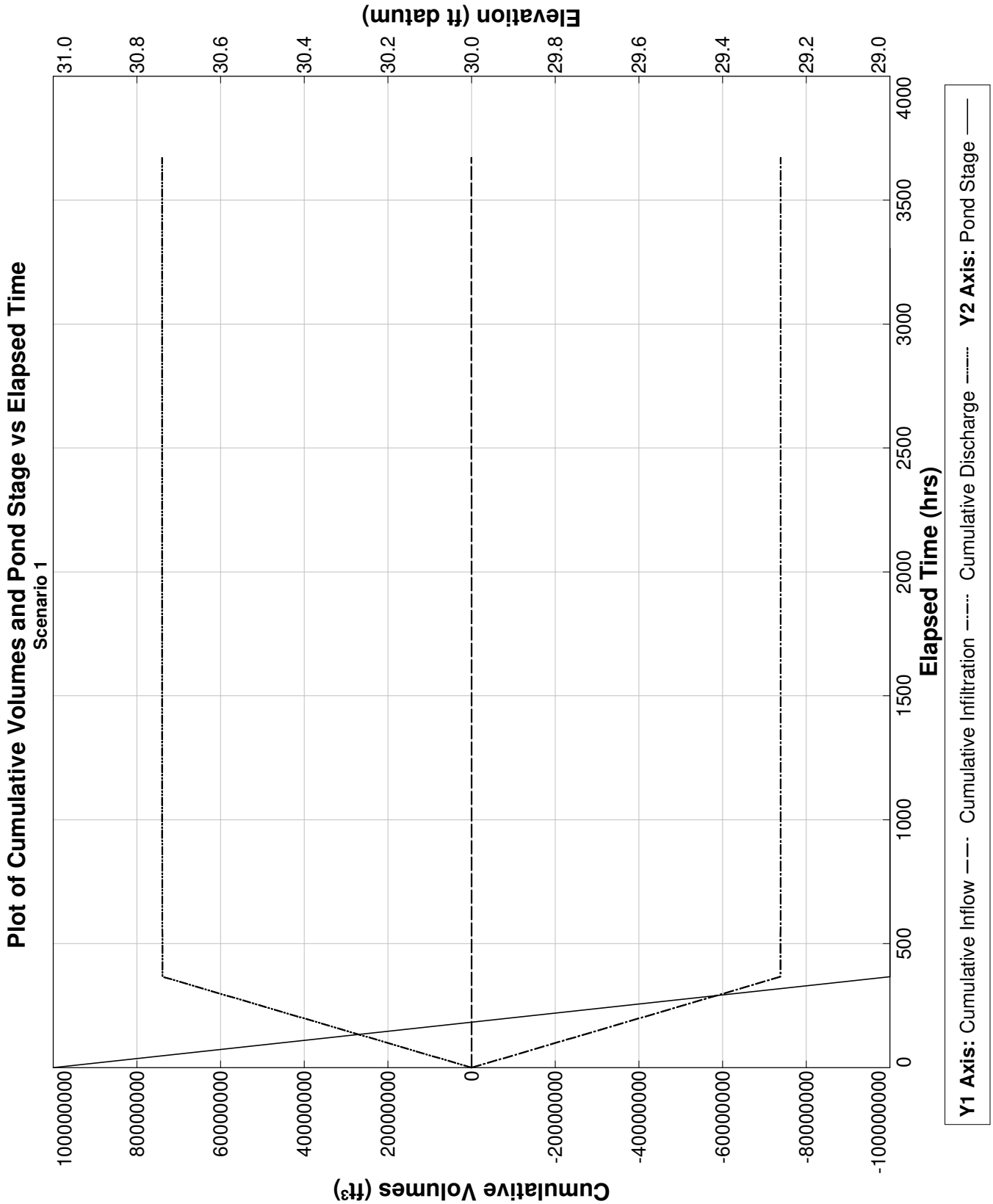
Begin Scenario 1 3/23/2023 16:51:18
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 31.0 ft.
#WARNING: The calculated water budget error exceeded the target water budget error for 5 of 10 saturated stress periods.
Maximum calculated water budget error is -2.59234314332015 percent, for saturated stress period 1.
If convergence is not a problem, it is recommended to reduce the Modflow convergence tolerences
to attempt to decrease the water budget error to within the target level.
End Scenario 1 3/23/2023 16:51:18

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

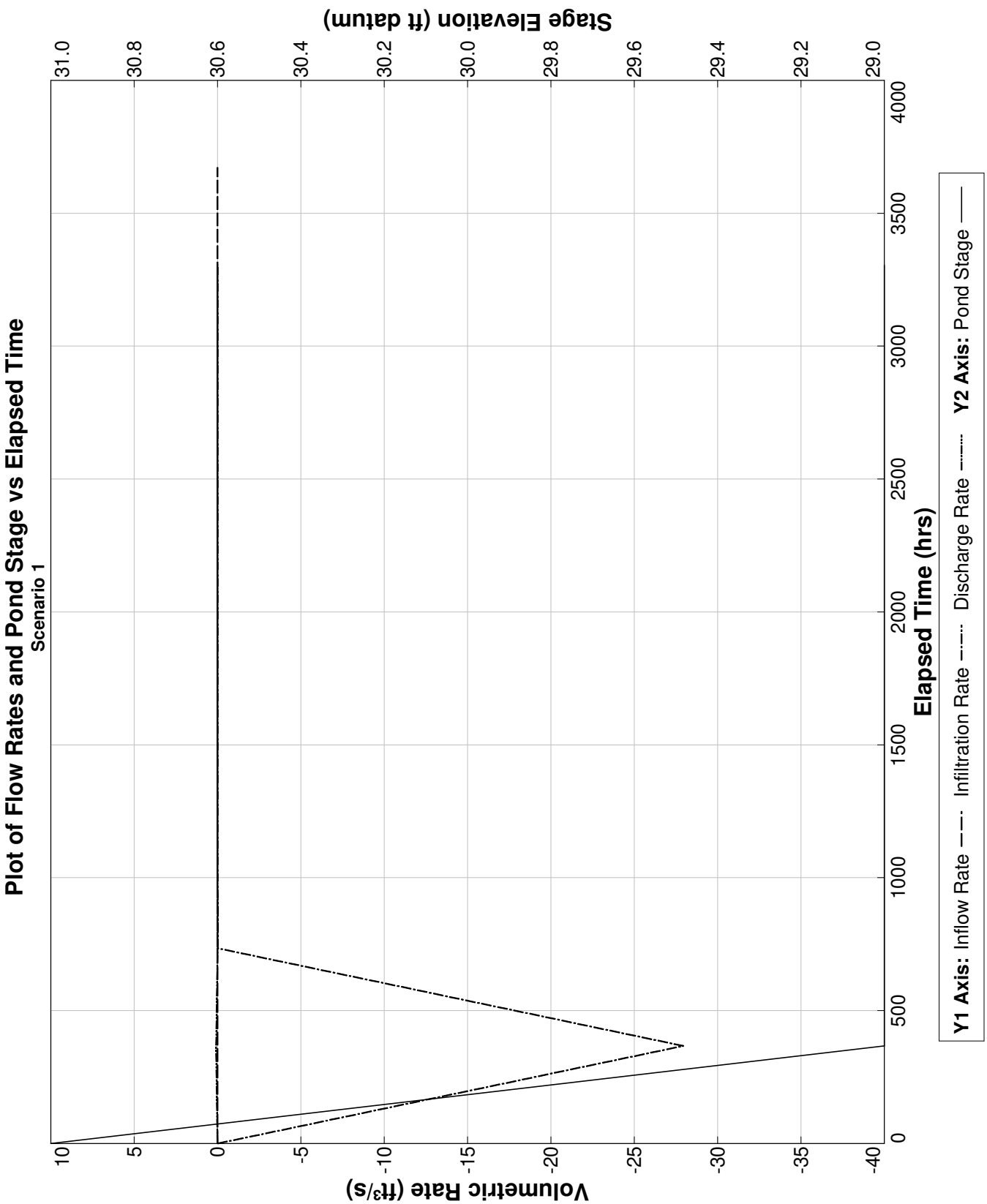
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0034	0.00163	31.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0034	0.00163	29.00000	-27.93421	7.924152E-02	4526.000	-73801590.0	7.389673E+07	S
734.400	0.0034	0.00163	29.00000	-0.02080	6.247943E-03	9052.000	-73853580.0	7.395323E+07	S
1101.600	0.0034	0.00163	29.00000	-0.00191	5.14339E-03	13578.000	-73856580.0	7.396076E+07	S
1468.800	0.0034	0.00163	29.00000	-0.00142	4.788038E-03	18104.000	-73858620.0	7.396732E+07	S
1836.000	0.0034	0.00163	29.00000	-0.00124	4.642711E-03	22630.000	-73860320.0	7.397356E+07	S
2203.200	0.0034	0.00163	29.00000	-0.00116	4.574121E-03	27156.000	-73861890.0	7.397965E+07	S
2570.400	0.0034	0.00163	29.00000	-0.00112	4.538903E-03	31682.000	-73863380.0	7.398567E+07	S
2937.600	0.0034	0.00163	29.00000	-0.00110	4.520325E-03	36208.000	-73864850.0	7.399166E+07	S
3304.800	0.0034	0.00163	29.00000	-0.00109	4.511034E-03	40734.000	-73866290.0	7.399763E+07	S
3672.000	0.0034	0.00163	29.00000	----	----	45260.000	-73867730.0	7.400359E+07	N.A.

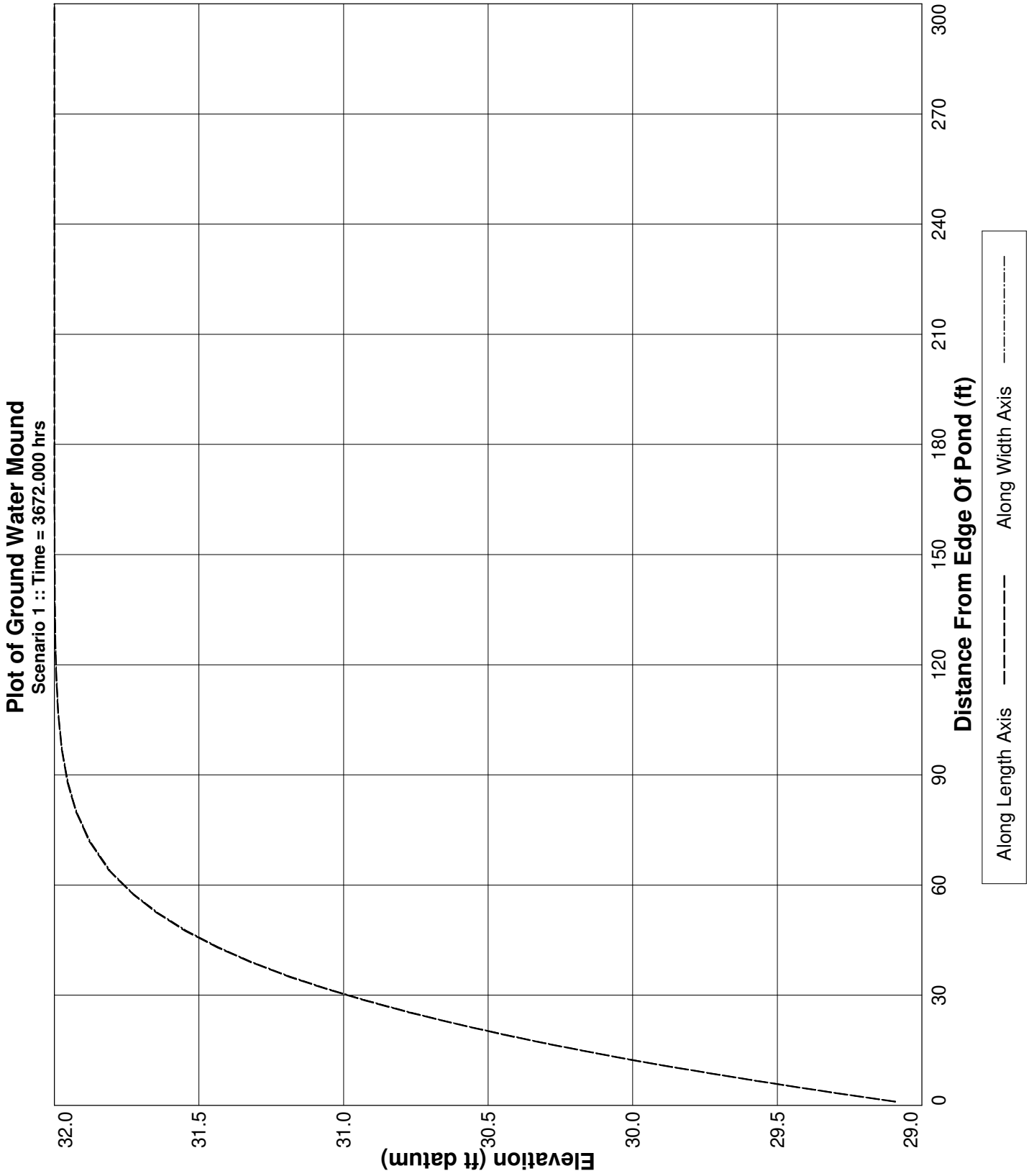
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No. 15, North, Baseflow
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-31-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	5.00
Water Table Elevation, [WT] (ft datum):	29.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	1.03
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	314.0
Equivalent Pond Width, [W] (ft):	118.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
5.00	435.6
24.00	37026.0

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	24
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	28.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

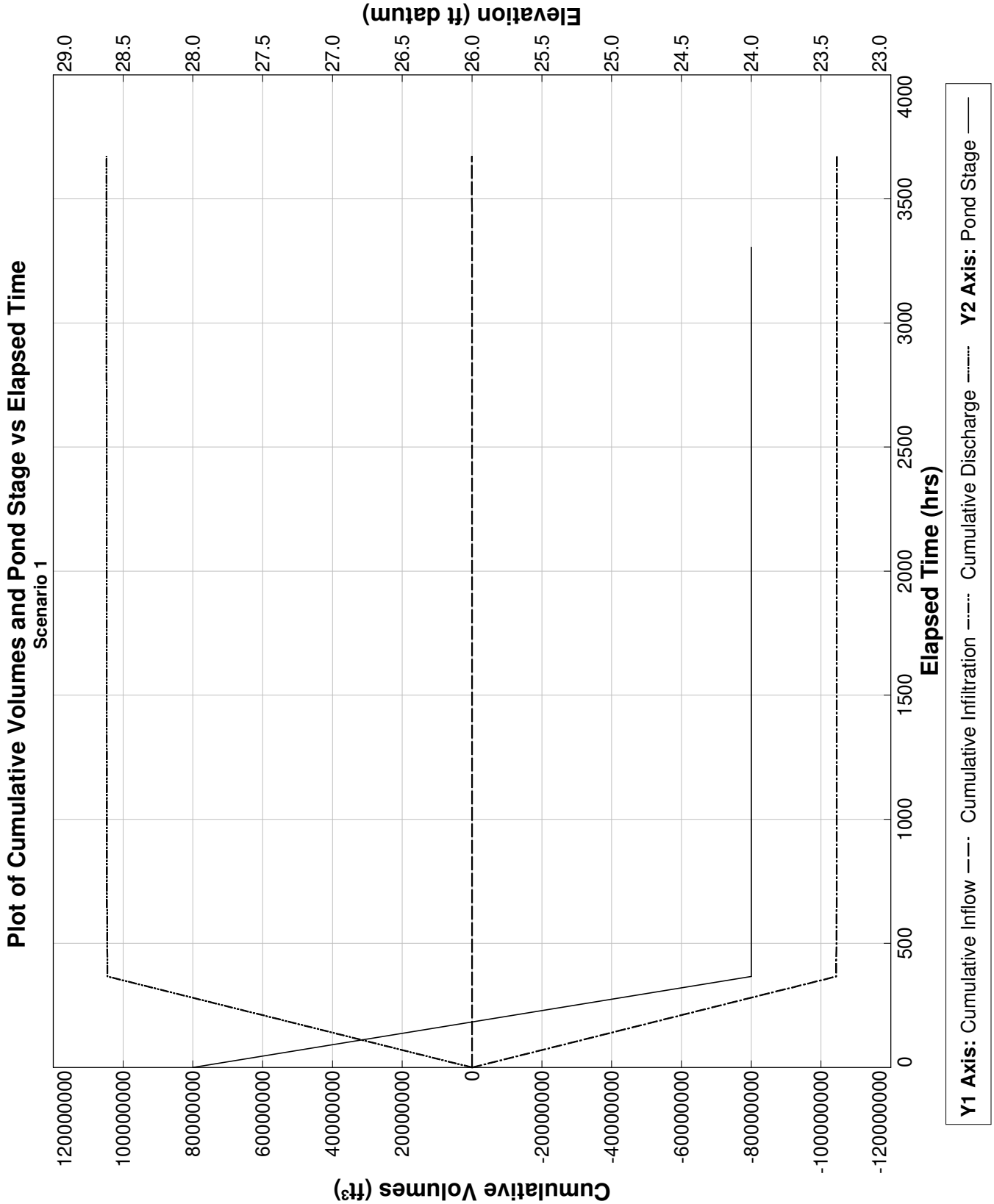
Begin Scenario 1 3/31/2023 13:46:13
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 28.0 ft.
End Scenario 1 3/31/2023 13:46:13

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

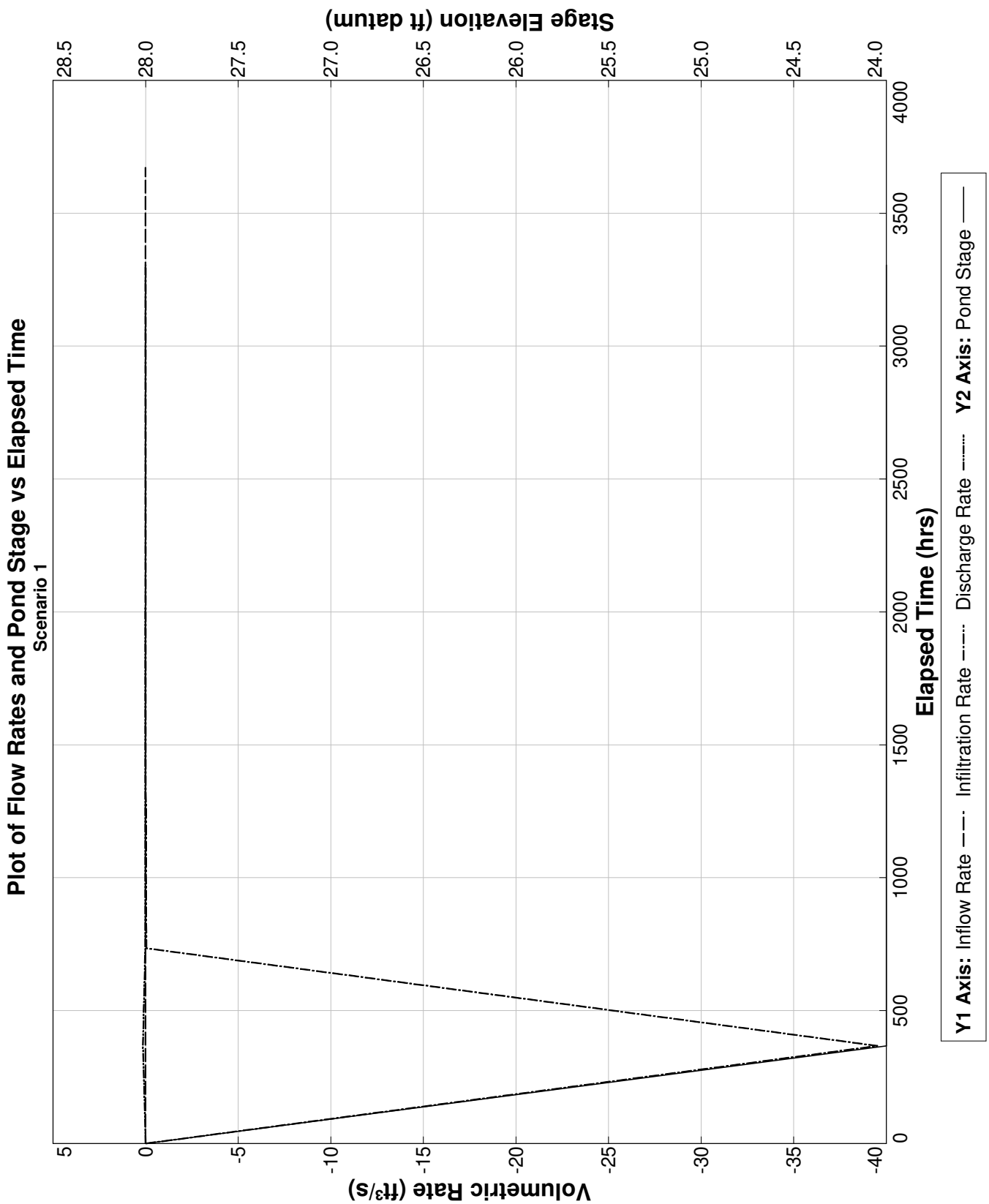
Detailed Results *:: Scenario 1 ::*

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0028	0.00163	28.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0028	0.00163	24.00000	-39.51686	.1420591	3705.200	-104373800.0	1.045256E+08	S
734.400	0.0028	0.00163	24.00000	-0.04595	1.859785E-02	7410.400	-104476200.0	1.046318E+08	S
1101.600	0.0028	0.00163	24.00000	-0.01333	1.575038E-02	11115.600	-104495200.0	1.046545E+08	S
1468.800	0.0028	0.00163	24.00000	-0.01177	1.441977E-02	14820.800	-104511500.0	1.046744E+08	S
1836.000	0.0028	0.00163	24.00000	-0.01096	1.369283E-02	18526.000	-104526400.0	1.04693E+08	S
2203.200	0.0028	0.00163	24.00000	-0.01047	.0132531	22231.200	-104540500.0	1.047108E+08	S
2570.400	0.0028	0.00163	24.00000	-0.01012	1.289258E-02	25936.400	-104554000.0	1.047281E+08	S
2937.600	0.0028	0.00163	24.00000	-0.00985	1.263757E-02	29641.600	-104567200.0	1.04745E+08	S
3304.800	0.0028	0.00163	24.00000	-0.00966	1.245241E-02	33346.800	-104580100.0	1.047615E+08	S
3672.000	0.0028	0.00163	24.00000	----	----	37052.000	-104592800.0	1.047779E+08	N.A.

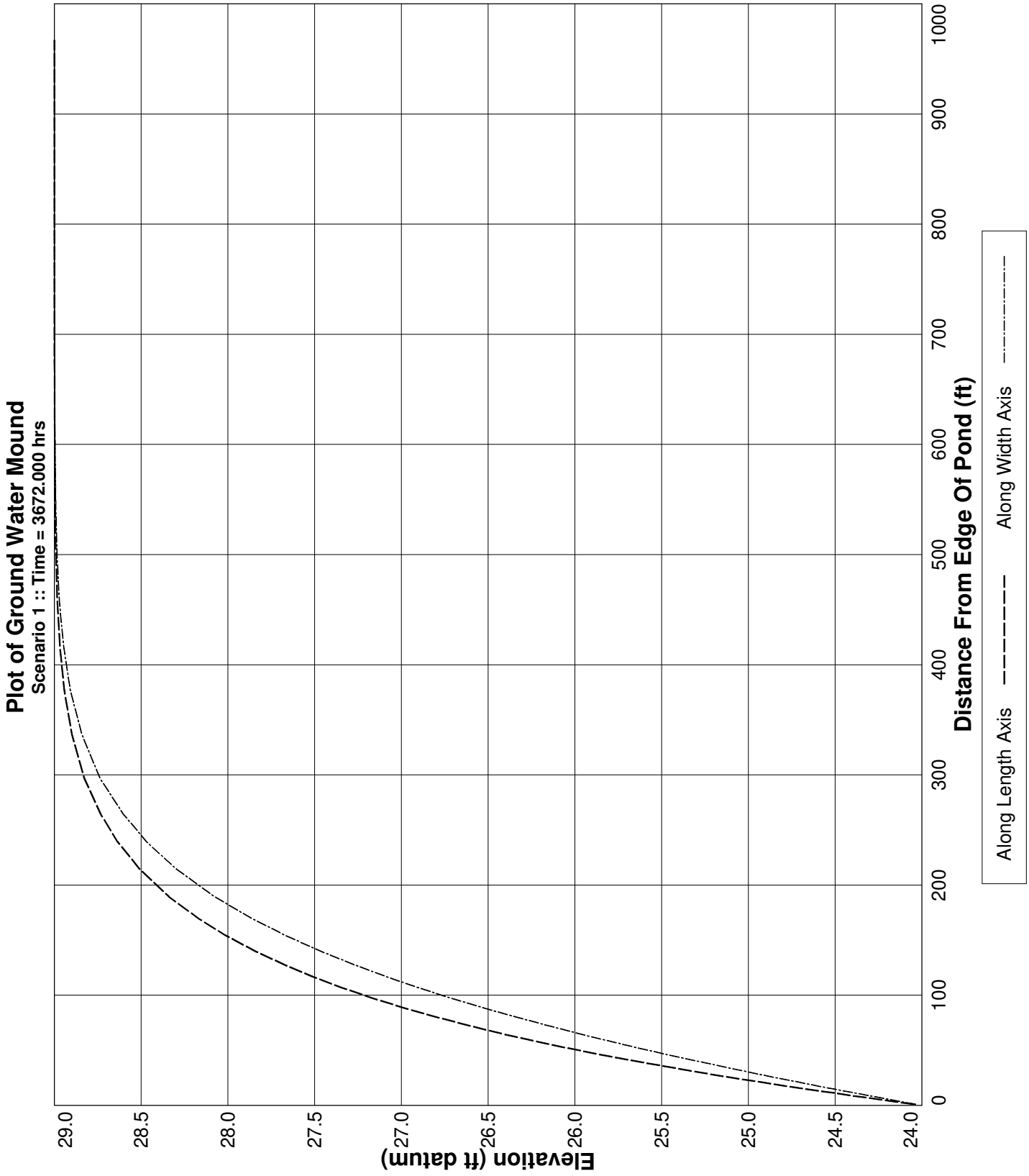
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No. 15, South, Baseflow
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-31-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	5.00
Water Table Elevation, [WT] (ft datum):	27.30
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	1.03
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	314.0
Equivalent Pond Width, [W] (ft):	118.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
5.00	435.6
24.00	37026.0

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	24
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	26.3
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

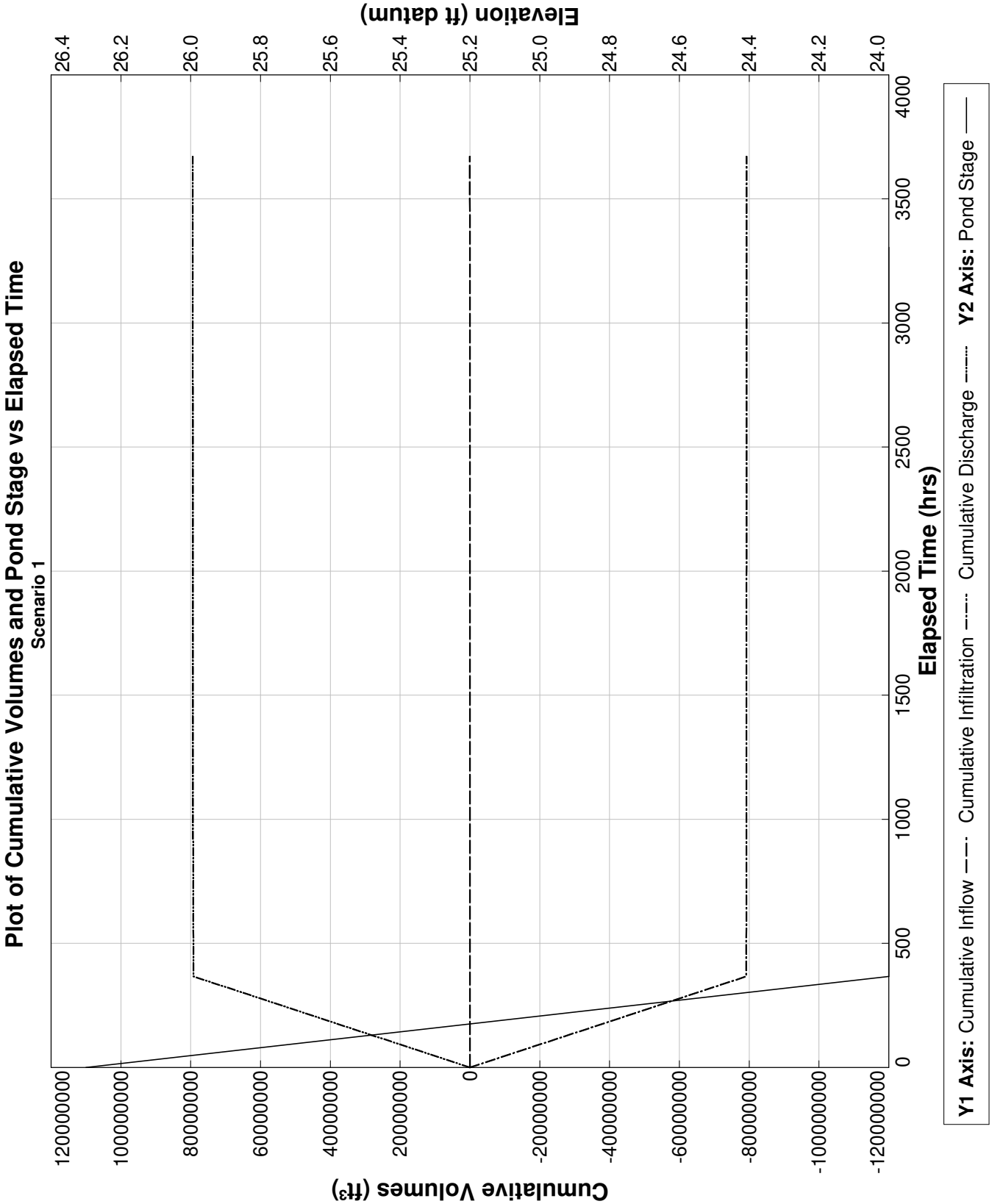
Begin Scenario 1 3/31/2023 13:52:3
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 26.3 ft.
End Scenario 1 3/31/2023 13:52:3

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

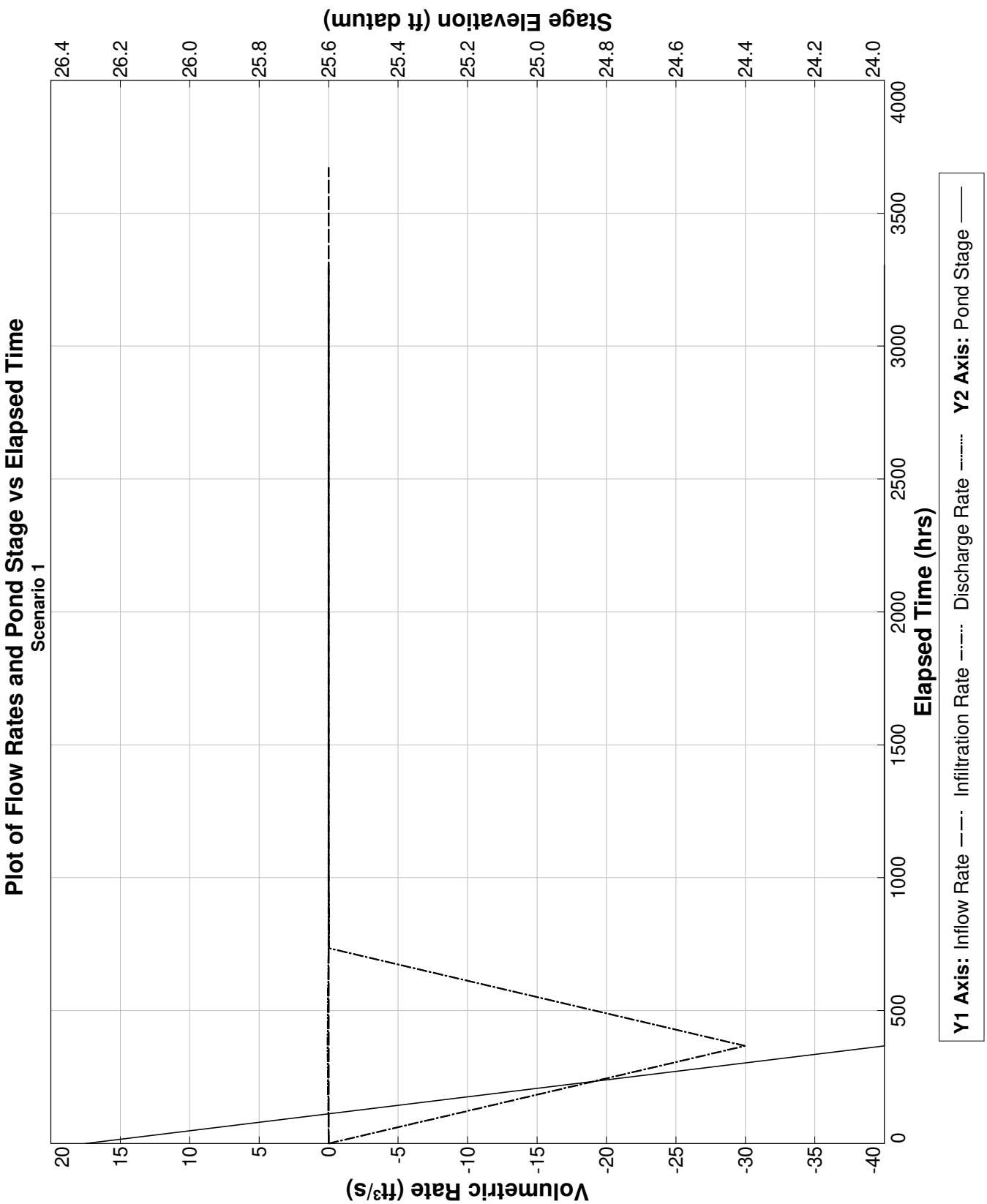
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0028	0.00163	26.30000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0028	0.00163	24.00000	-29.96218	8.344423E-02	3705.200	-79155530.0	7.924439E+07	S
734.400	0.0028	0.00163	24.00000	-0.02697	.0124337	7410.400	-79215200.0	7.930777E+07	S
1101.600	0.0028	0.00163	24.00000	-0.00822	1.078641E-02	11115.600	-79226840.0	7.932311E+07	S
1468.800	0.0028	0.00163	24.00000	-0.00737	1.008727E-02	14820.800	-79236930.0	7.933691E+07	S
1836.000	0.0028	0.00163	24.00000	-0.00695	9.727422E-03	18526.000	-79246320.0	7.935001E+07	S
2203.200	0.0028	0.00163	24.00000	-0.00670	9.482082E-03	22231.200	-79255310.0	7.93627E+07	S
2570.400	0.0028	0.00163	24.00000	-0.00655	9.334095E-03	25936.400	-79264050.0	7.937514E+07	S
2937.600	0.0028	0.00163	24.00000	-0.00647	9.256522E-03	29641.600	-79272620.0	7.938743E+07	S
3304.800	0.0028	0.00163	24.00000	-0.00643	9.226603E-03	33346.800	-79281140.0	7.939965E+07	S
3672.000	0.0028	0.00163	24.00000	----	----	37052.000	-79289630.0	7.941184E+07	N.A.

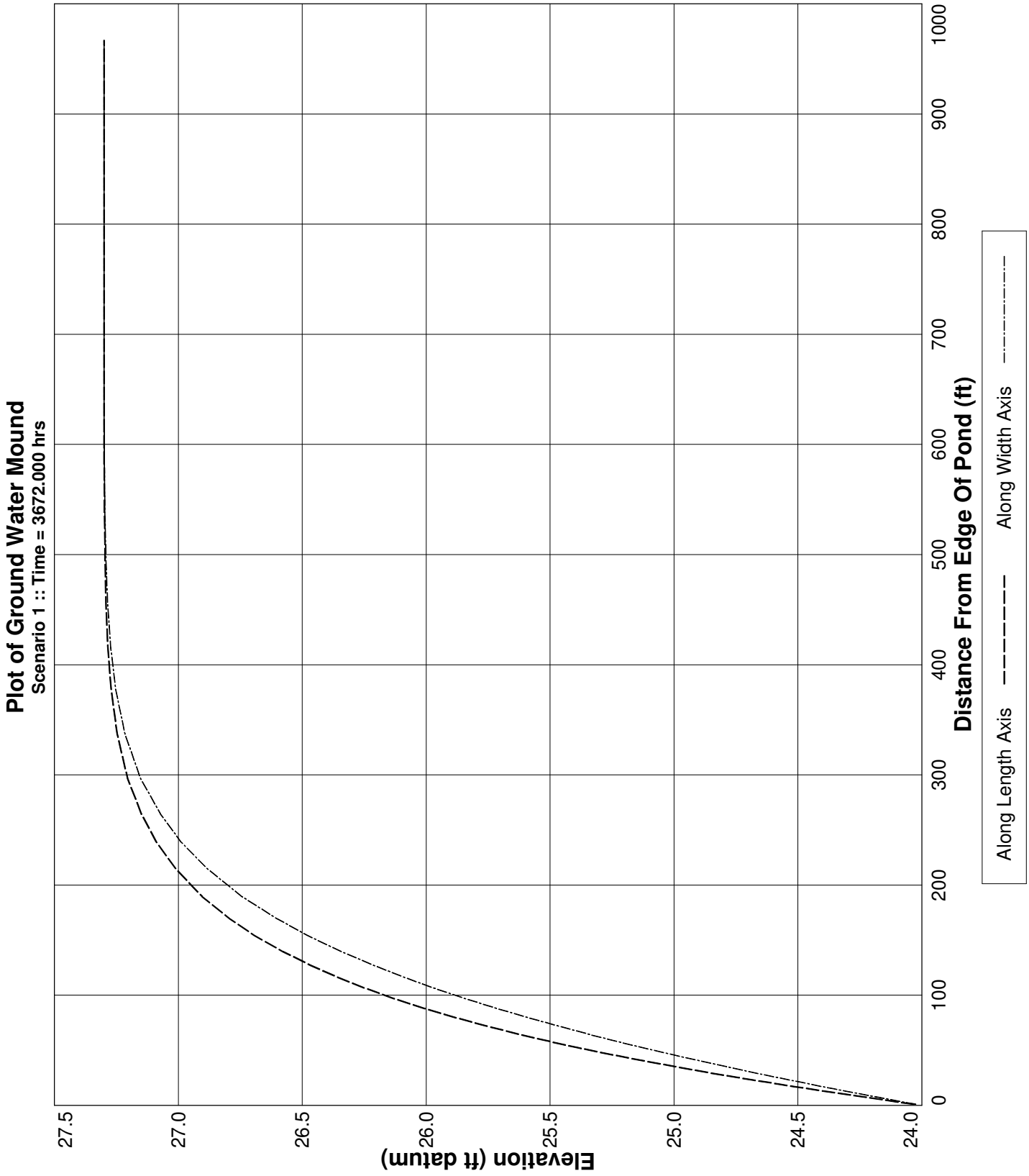
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No. 16, Baseflow
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-31-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	-13.00
Water Table Elevation, [WT] (ft datum):	27.50
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.38
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	429.0
Equivalent Pond Width, [W] (ft):	150.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
-8.00	435.6
24.00	64468.8

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	24
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	26.5
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

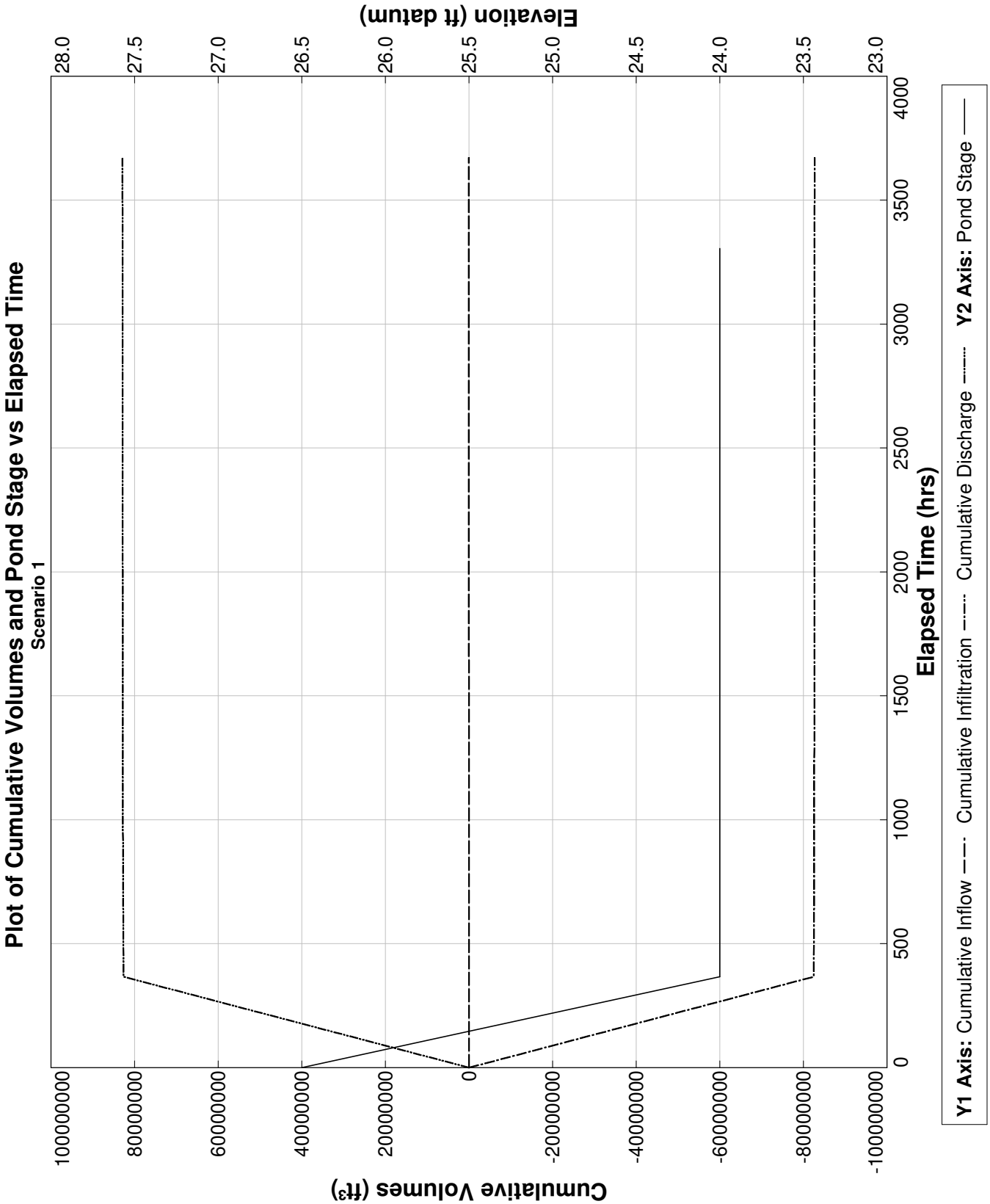
Begin Scenario 1 3/31/2023 14:59:48
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 26.5 ft.
#WARNING: The calculated water budget error exceeded the target water budget error for 4 of 10 saturated stress periods.
Maximum calculated water budget error is -1.76893368832567 percent, for saturated stress period 1.
If convergence is not a problem, it is recommended to reduce the Modflow convergence tolerences
to attempt to decrease the water budget error to within the target level.
End Scenario 1 3/31/2023 14:59:48

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

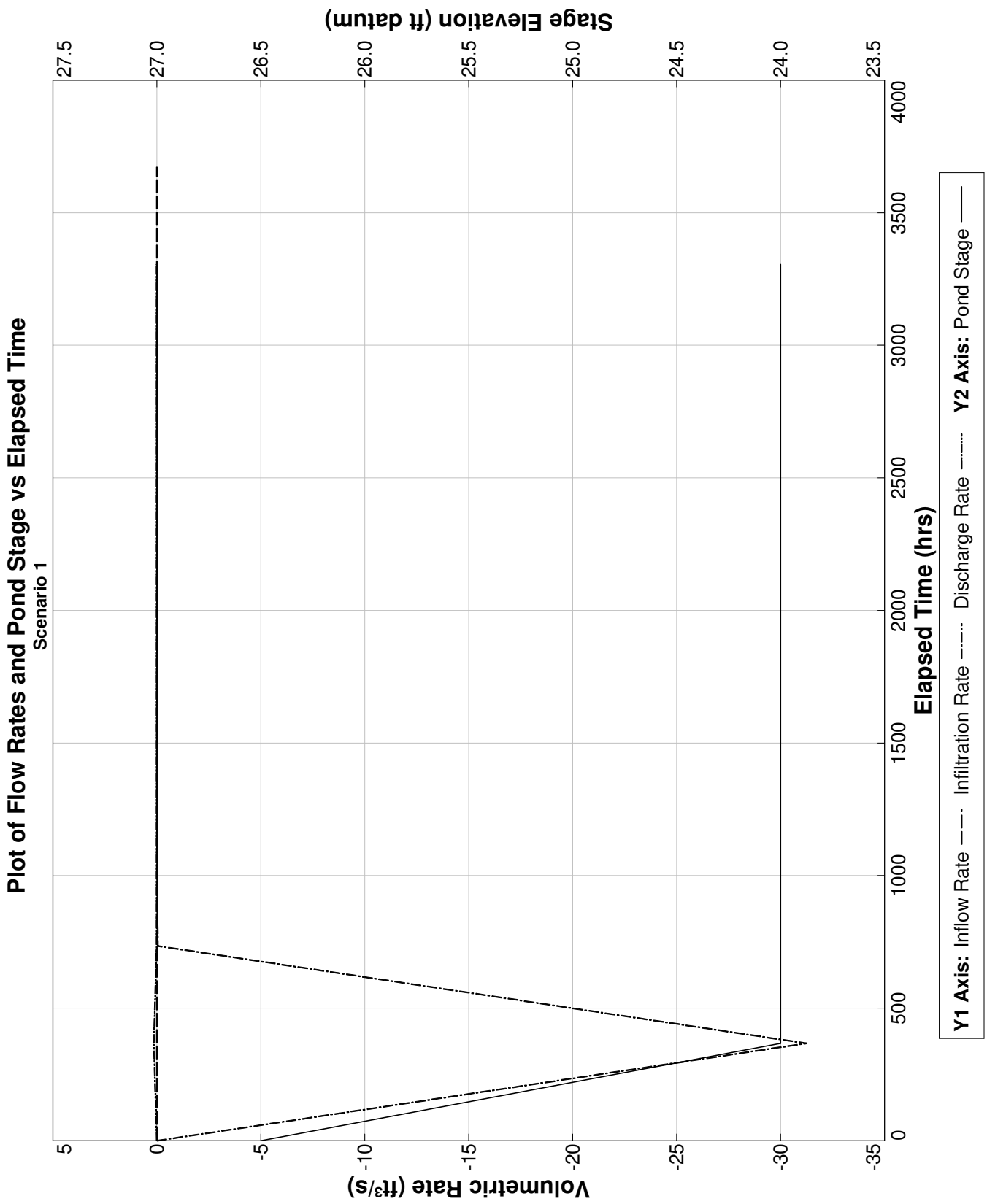
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0049	0.00163	26.50000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0049	0.00163	24.00000	-31.24014	.1490218	6435.000	-82491380.0	8.265899E+07	S
734.400	0.0049	0.00163	24.00000	-0.04378	1.586973E-02	12870.000	-82593940.0	8.276798E+07	S
1101.600	0.0049	0.00163	24.00000	-0.00924	1.381822E-02	19305.000	-82607120.0	8.27876E+07	S
1468.800	0.0049	0.00163	24.00000	-0.00817	1.293008E-02	25740.000	-82618370.0	8.280528E+07	S
1836.000	0.0049	0.00163	24.00000	-0.00763	1.246689E-02	32175.000	-82628720.0	8.282206E+07	S
2203.200	0.0049	0.00163	24.00000	-0.00730	1.213708E-02	38610.000	-82638540.0	8.283833E+07	S
2570.400	0.0049	0.00163	24.00000	-0.00707	1.191574E-02	45045.000	-82648010.0	8.285422E+07	S
2937.600	0.0049	0.00163	24.00000	-0.00692	1.178019E-02	51480.000	-82657230.0	8.286989E+07	S
3304.800	0.0049	0.00163	24.00000	-0.00684	1.169511E-02	57915.000	-82666320.0	8.28854E+07	S
3672.000	0.0049	0.00163	24.00000	----	----	64350.000	-82675320.0	8.290084E+07	N.A.

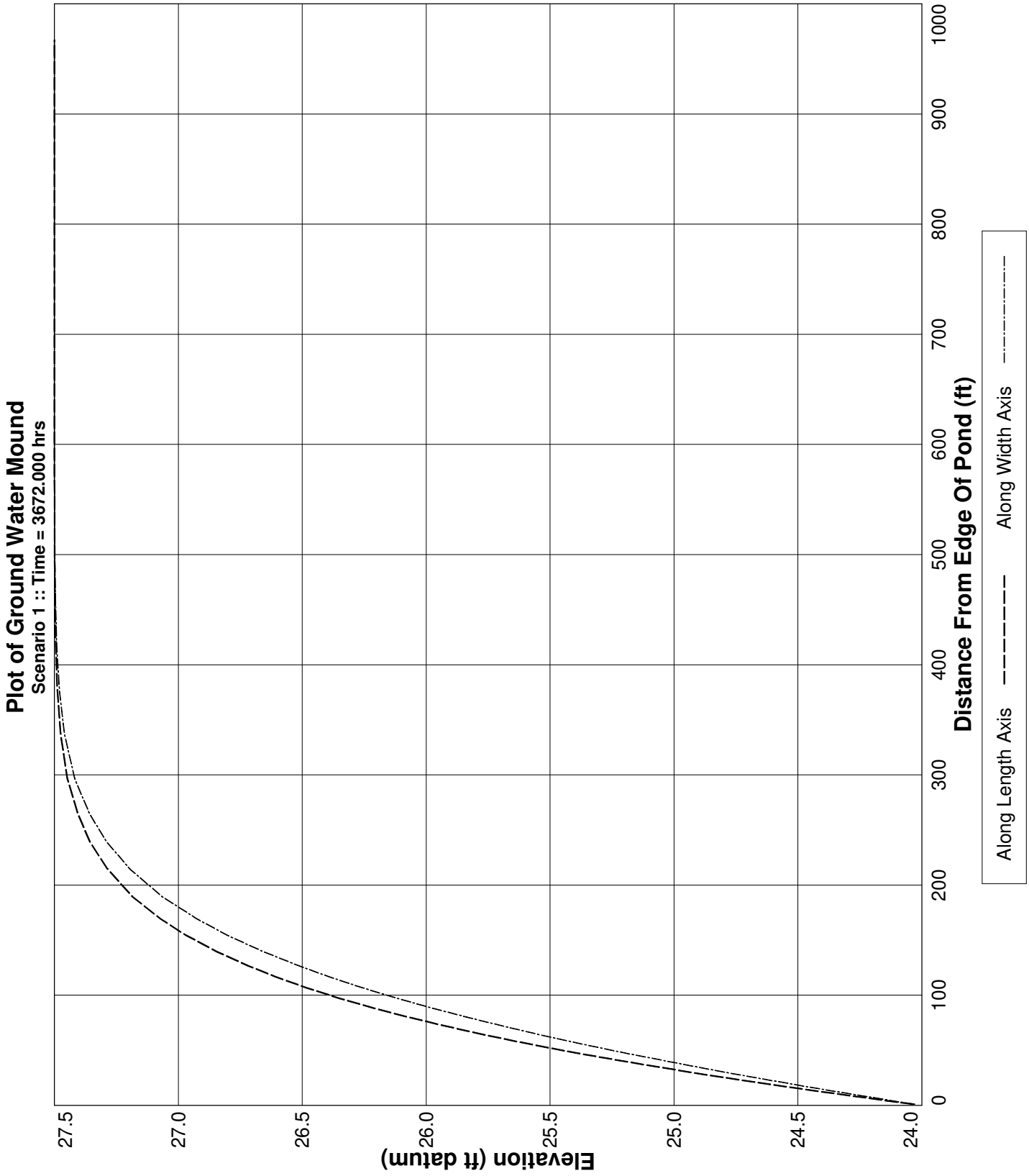
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No.17, Northeast Baseflow
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-27-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	-11.00
Water Table Elevation, [WT] (ft datum):	25.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.38
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	422.0
Equivalent Pond Width, [W] (ft):	152.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft²)
-6.00	435.6
24.00	64033.2

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	24
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	24.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

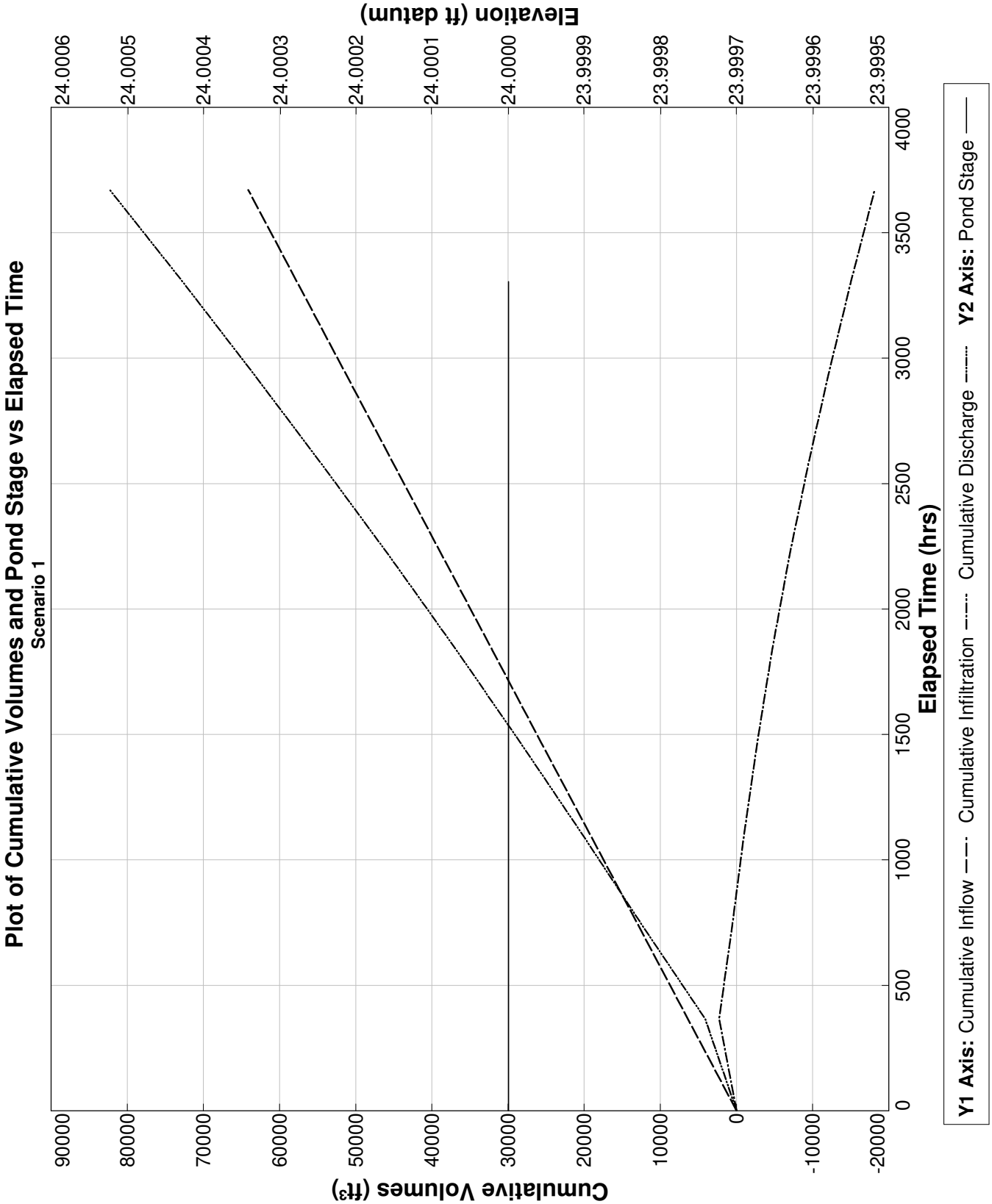
Begin Scenario 1 3/27/2023 13:14:52
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 24.0 ft.
End Scenario 1 3/27/2023 13:14:52

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

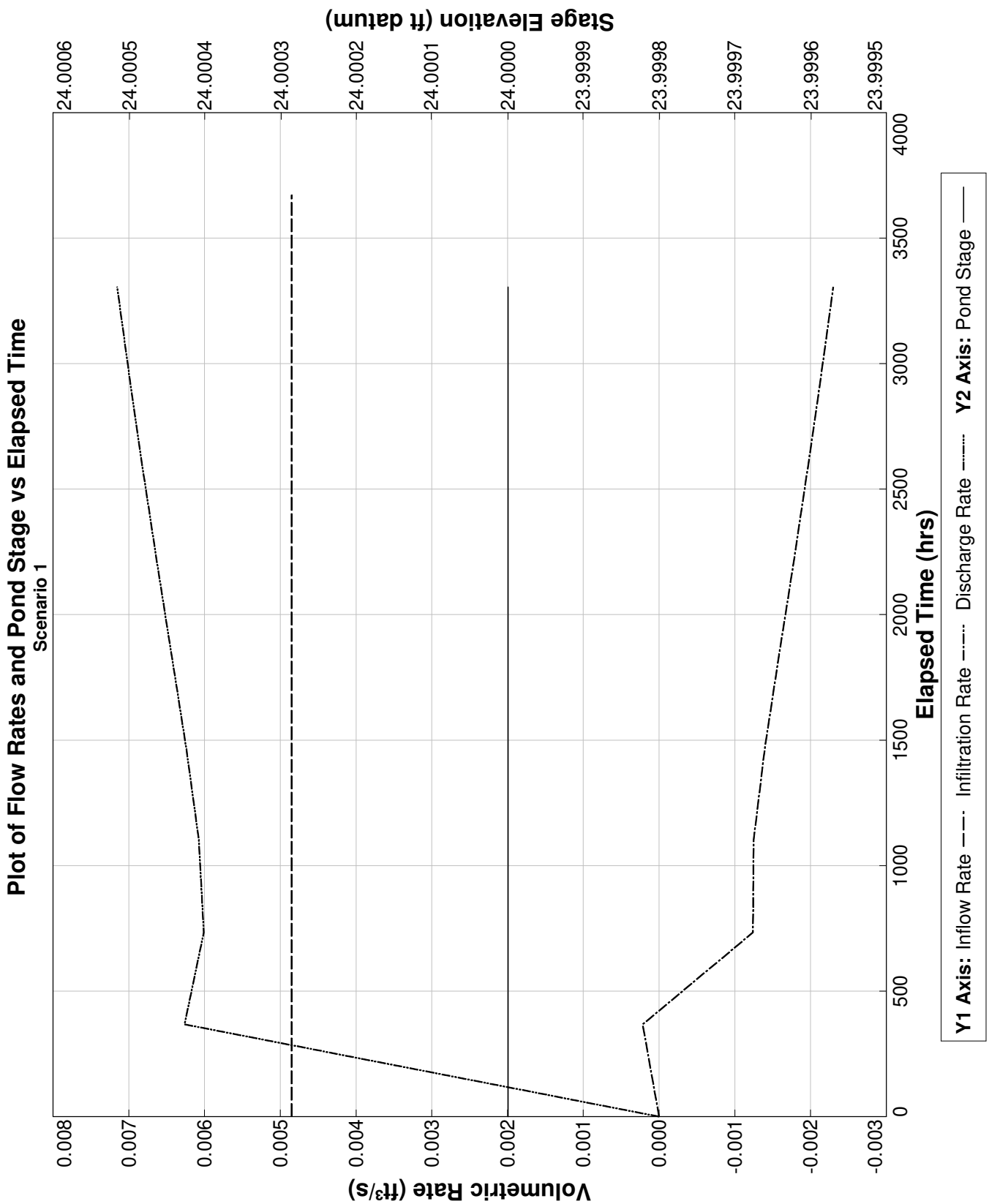
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0049	0.00163	24.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0049	0.00163	24.00000	0.00022	6.264372E-03	6414.400	2273.9	4140.499	S
734.400	0.0049	0.00163	24.00000	-0.00124	6.010464E-03	12828.800	575.1	12253.67	S
1101.600	0.0049	0.00163	24.00000	-0.00125	6.074579E-03	19243.200	-998.2	20241.41	S
1468.800	0.0049	0.00163	24.00000	-0.00140	6.241537E-03	25657.600	-2724.3	28381.87	S
1836.000	0.0049	0.00163	24.00000	-0.00158	6.434317E-03	32072.000	-4688.1	36760.1	S
2203.200	0.0049	0.00163	24.00000	-0.00177	6.626397E-03	38486.400	-6906.3	45392.71	S
2570.400	0.0049	0.00163	24.00000	-0.00196	6.811638E-03	44900.800	-9373.9	54274.71	S
2937.600	0.0049	0.00163	24.00000	-0.00213	6.98632E-03	51315.200	-12079.4	63394.61	S
3304.800	0.0049	0.00163	24.00000	-0.00230	7.153268E-03	57729.600	-15010.7	72740.31	S
3672.000	0.0049	0.00163	24.00000	----	----	64144.000	-18158.2	82302.15	N.A.

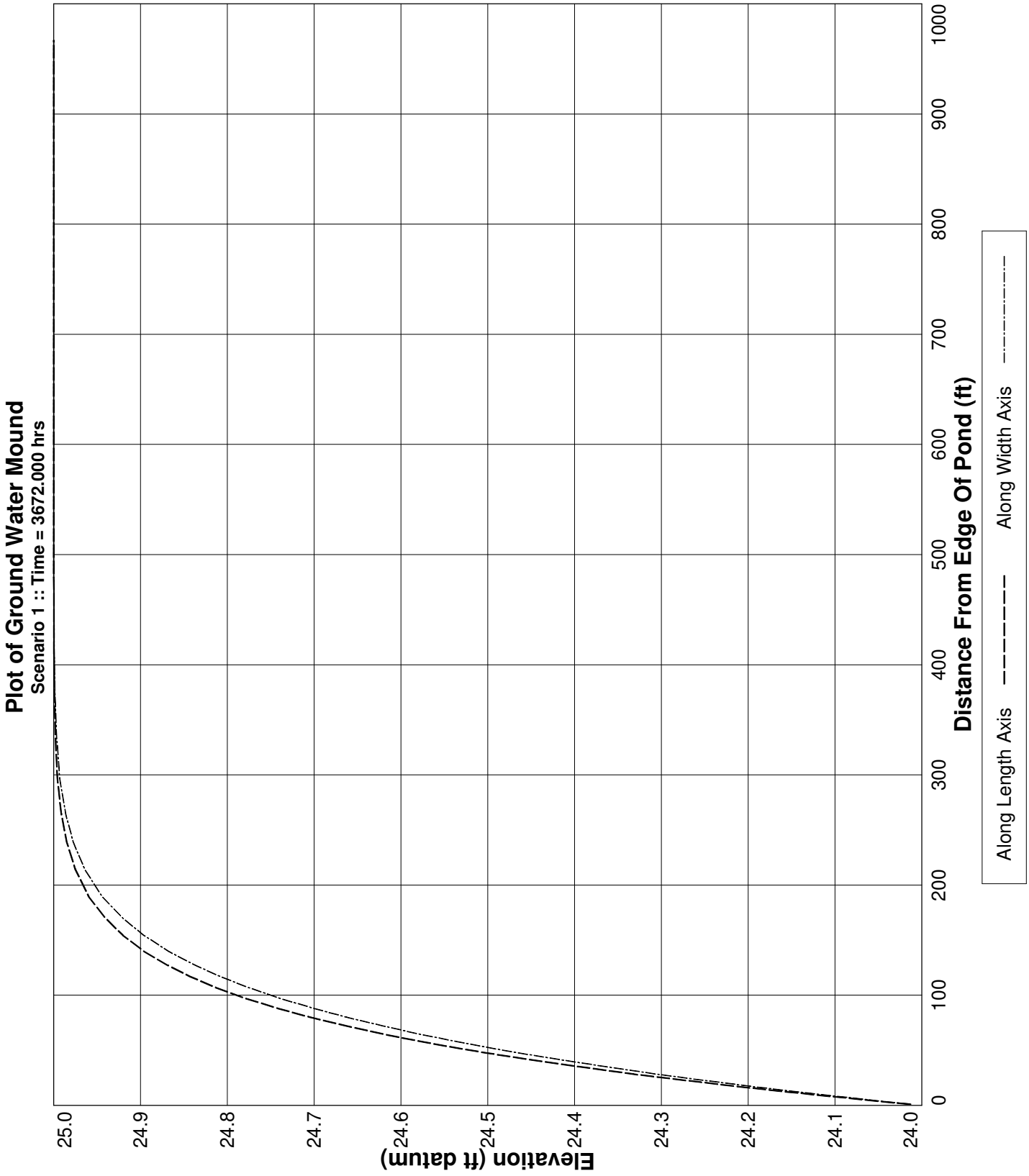
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No.17, Southwest Baseflow
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-27-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	-11.00
Water Table Elevation, [WT] (ft datum):	30.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.38
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	422.0
Equivalent Pond Width, [W] (ft):	152.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
-6.00	435.6
24.00	64033.2

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	24
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	29.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

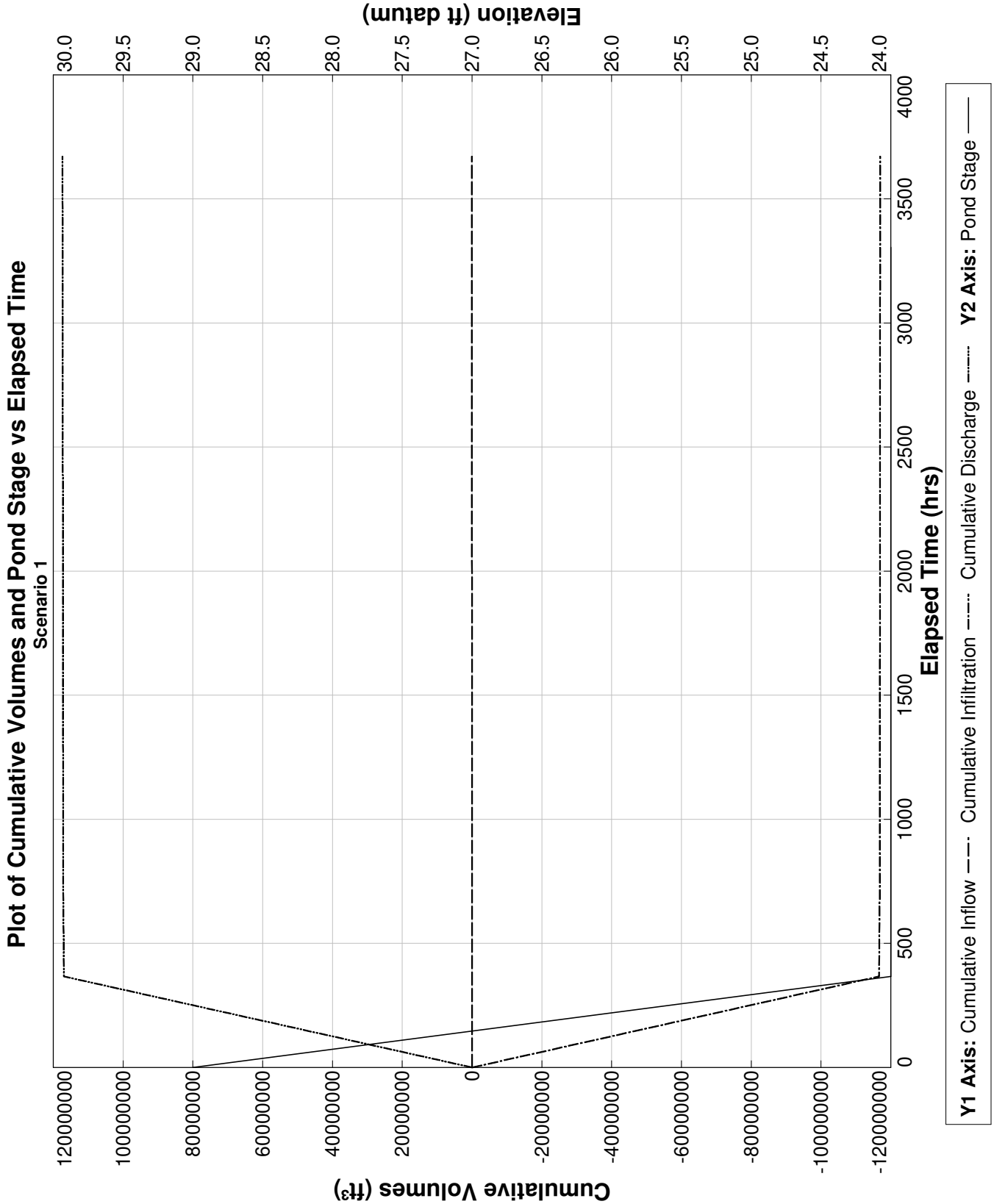
Begin Scenario 1 3/27/2023 13:18:8
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 29.0 ft.
End Scenario 1 3/27/2023 13:18:8

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

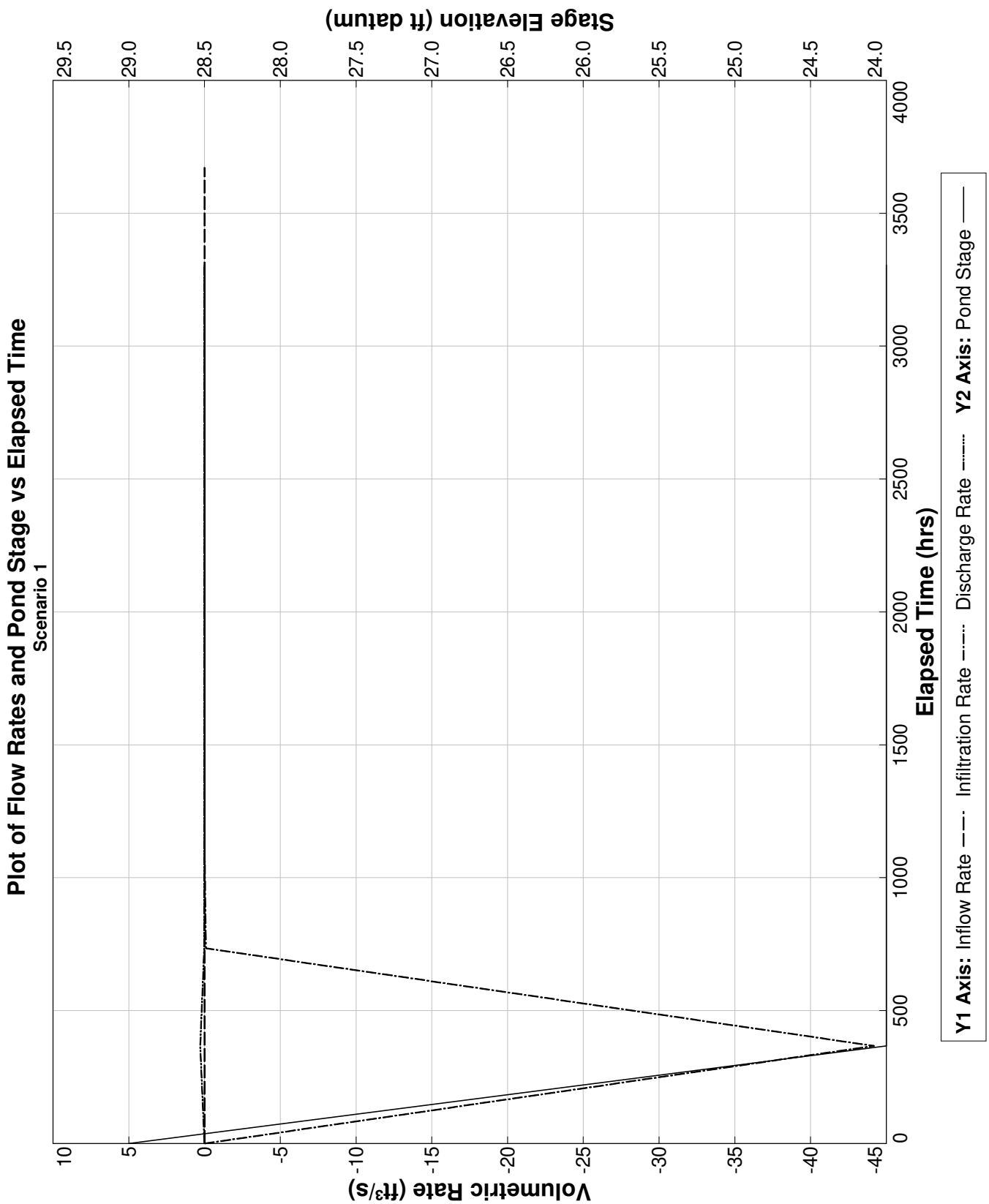
Detailed Results *:: Scenario 1 ::*

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0049	0.00163	29.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0049	0.00163	24.00001	-44.18513	.2851936	6414.400	-116620100.0	1.169467E+08	S
734.400	0.0049	0.00163	24.00000	-0.08389	2.456063E-02	12828.800	-116818400.0	1.171514E+08	S
1101.600	0.0049	0.00163	24.00000	-0.01632	2.067574E-02	19243.200	-116841900.0	1.171813E+08	S
1468.800	0.0049	0.00163	24.00000	-0.01415	1.879672E-02	25657.600	-116861600.0	1.172074E+08	S
1836.000	0.0049	0.00163	24.00000	-0.01300	1.774985E-02	32072.000	-116879300.0	1.172316E+08	S
2203.200	0.0049	0.00163	24.00000	-0.01227	.0170991	38486.400	-116895900.0	1.172546E+08	S
2570.400	0.0049	0.00163	24.00000	-0.01174	1.655909E-02	44900.800	-116911800.0	1.172768E+08	S
2937.600	0.0049	0.00163	24.00000	-0.01131	1.613526E-02	51315.200	-116927000.0	1.172984E+08	S
3304.800	0.0049	0.00163	24.00000	-0.01099	.0158216	57729.600	-116941700.0	1.173196E+08	S
3672.000	0.0049	0.00163	24.00000	----	----	64144.000	-116956000.0	1.173403E+08	N.A.

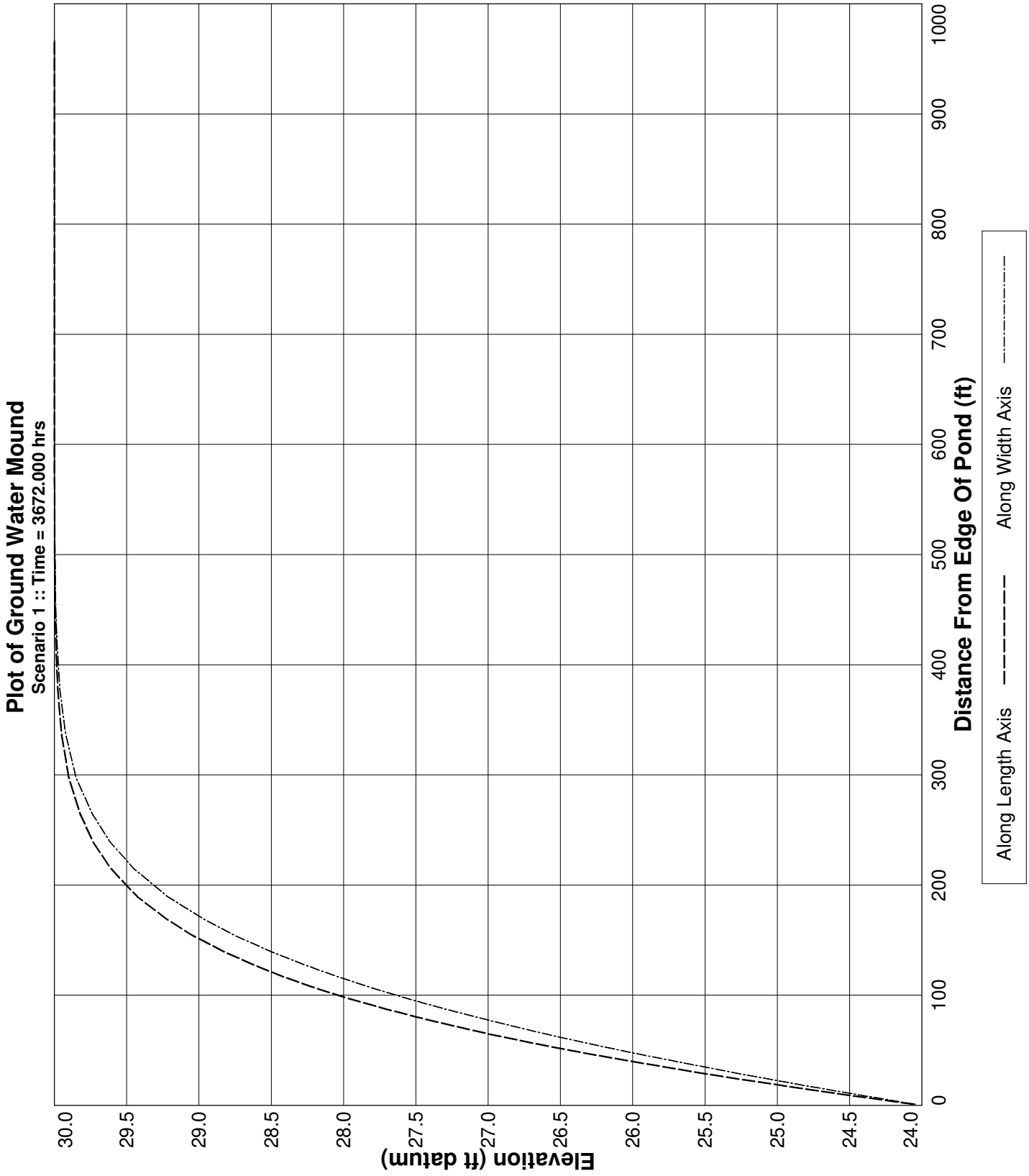
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No. 18, North, Baseflow
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-31-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	-7.00
Water Table Elevation, [WT] (ft datum):	23.50
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.38
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	723.0
Equivalent Pond Width, [W] (ft):	140.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
-2.00	435.6
24.00	101494.8

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	24
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	22.5
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

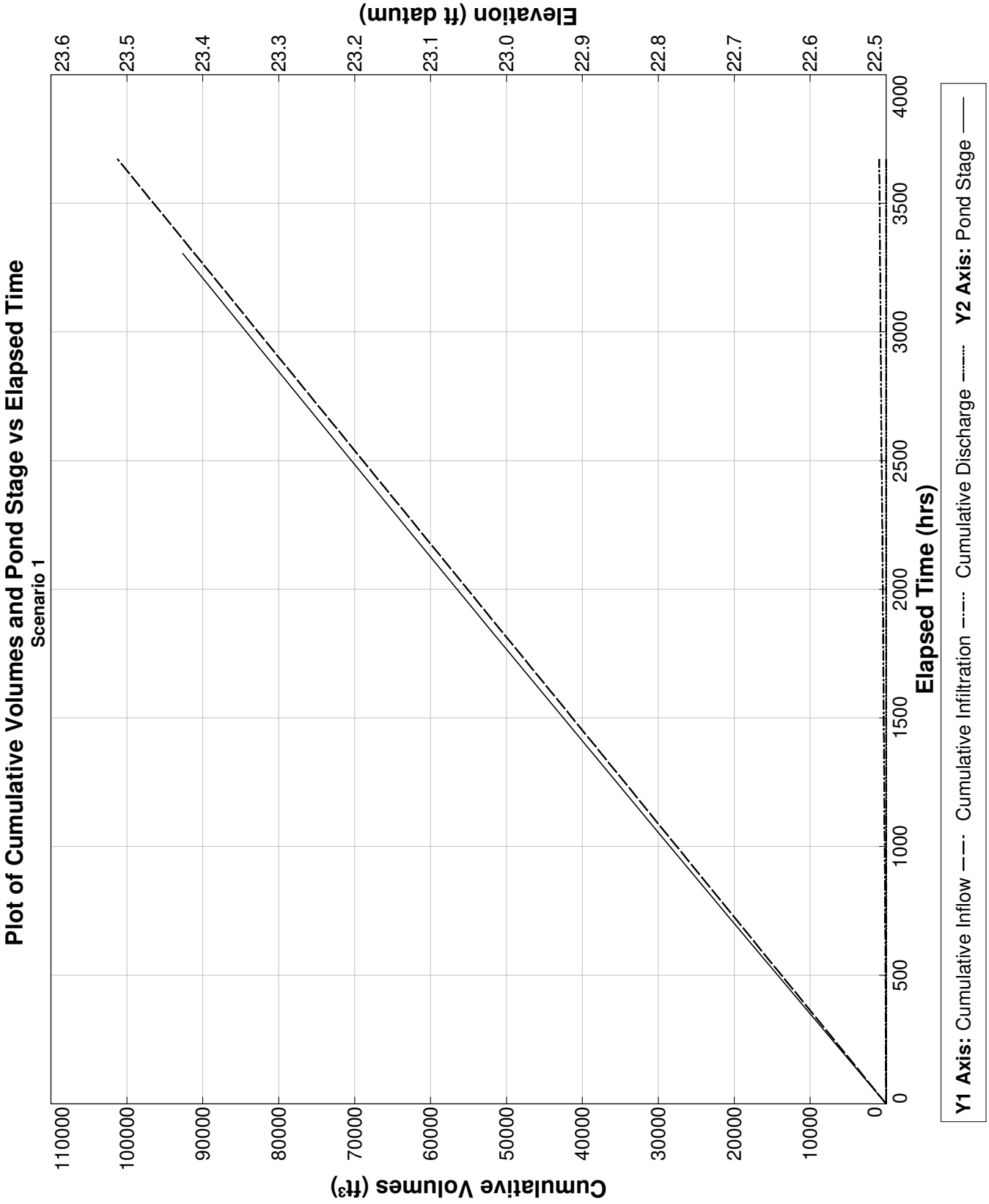
Begin Scenario 1 3/31/2023 15:4:40
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 22.5 ft.
End Scenario 1 3/31/2023 15:4:41

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

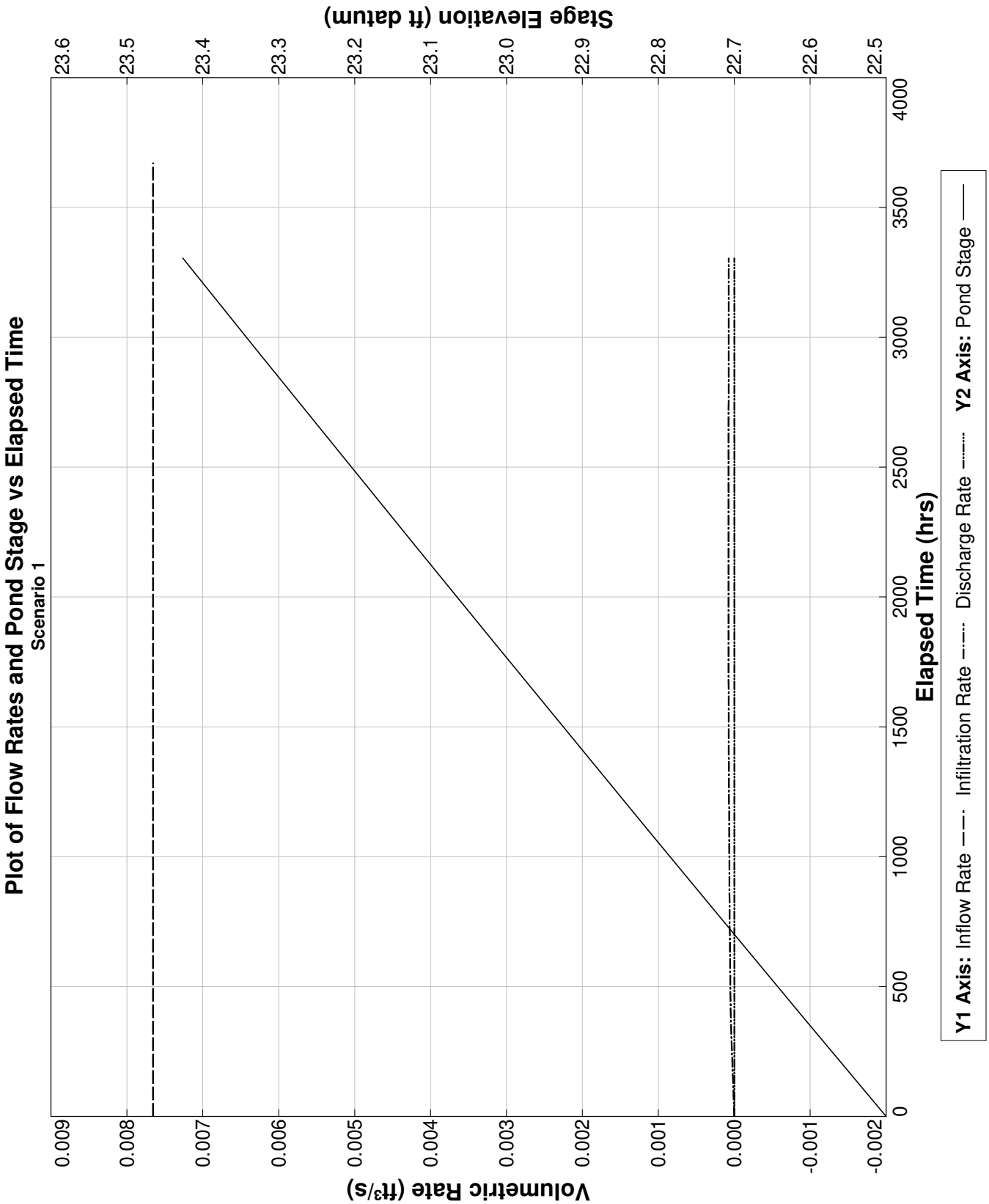
Detailed Results *:: Scenario 1 ::*

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0077	0.00163	22.50000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0077	0.00163	22.60507	0.00005	0	10122.000	49.3	0	S
734.400	0.0077	0.00163	22.70944	0.00006	0	20244.000	122.4	0	S
1101.600	0.0077	0.00163	22.81324	0.00007	0	30366.000	209.0	0	S
1468.800	0.0077	0.00163	22.91653	0.00007	0	40488.000	304.0	0	S
1836.000	0.0077	0.00163	23.01934	0.00008	0	50610.000	403.6	0	S
2203.200	0.0077	0.00163	23.12171	0.00008	0	60732.000	505.4	0	S
2570.400	0.0077	0.00163	23.22367	0.00008	0	70854.000	607.2	0	S
2937.600	0.0077	0.00163	23.32523	0.00007	0	80976.000	707.4	0	S
3304.800	0.0077	0.00163	23.42642	0.00007	0	91098.000	804.7	0	S
3672.000	0.0077	0.00163	23.52725	----	----	101220.000	897.9	0	N.A.

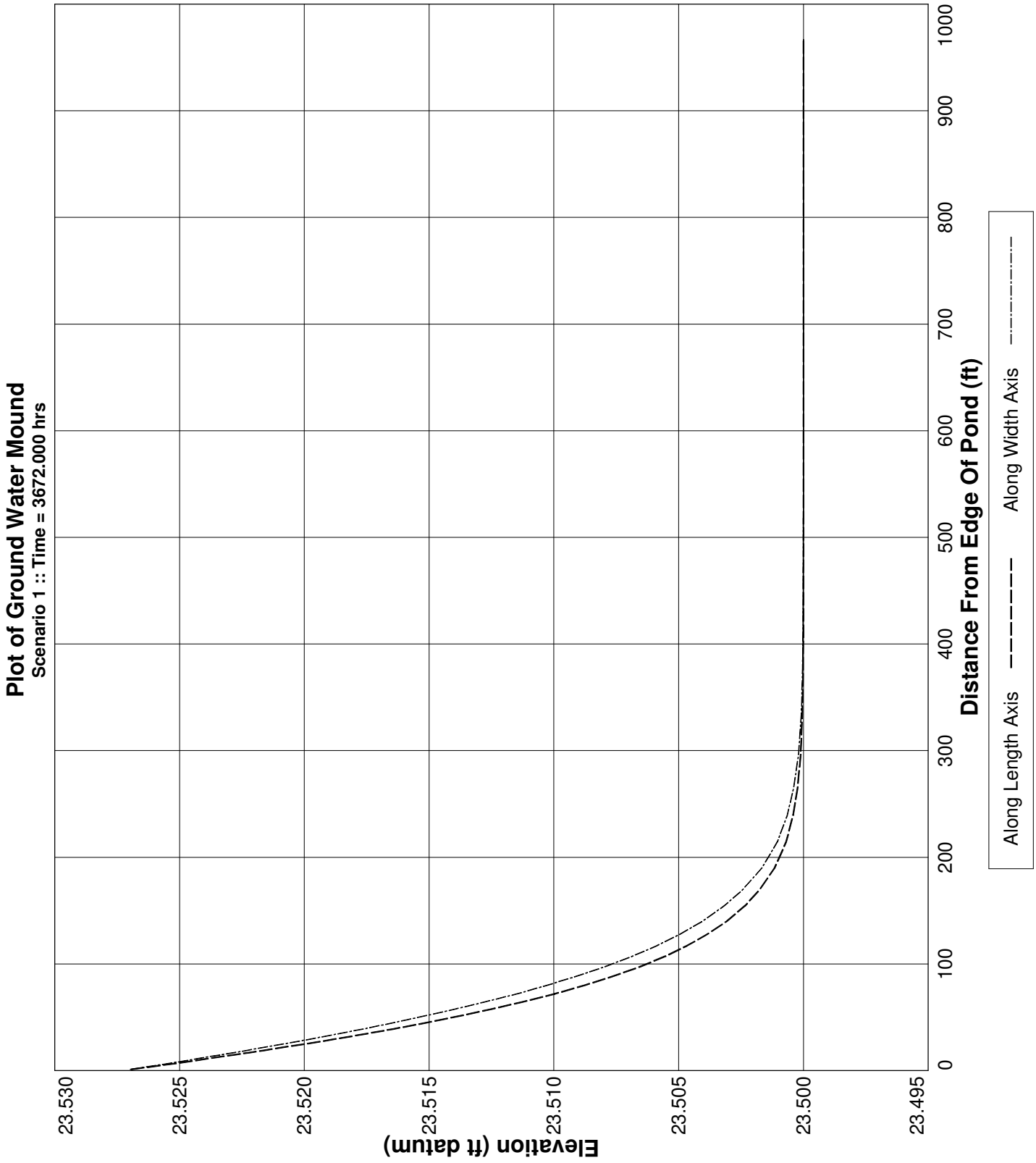
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No. 18, Northeast, Baseflow
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-31-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	-7.00
Water Table Elevation, [WT] (ft datum):	27.50
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.38
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	723.0
Equivalent Pond Width, [W] (ft):	140.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
-2.00	435.6
24.00	101494.8

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	24
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	26.5
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

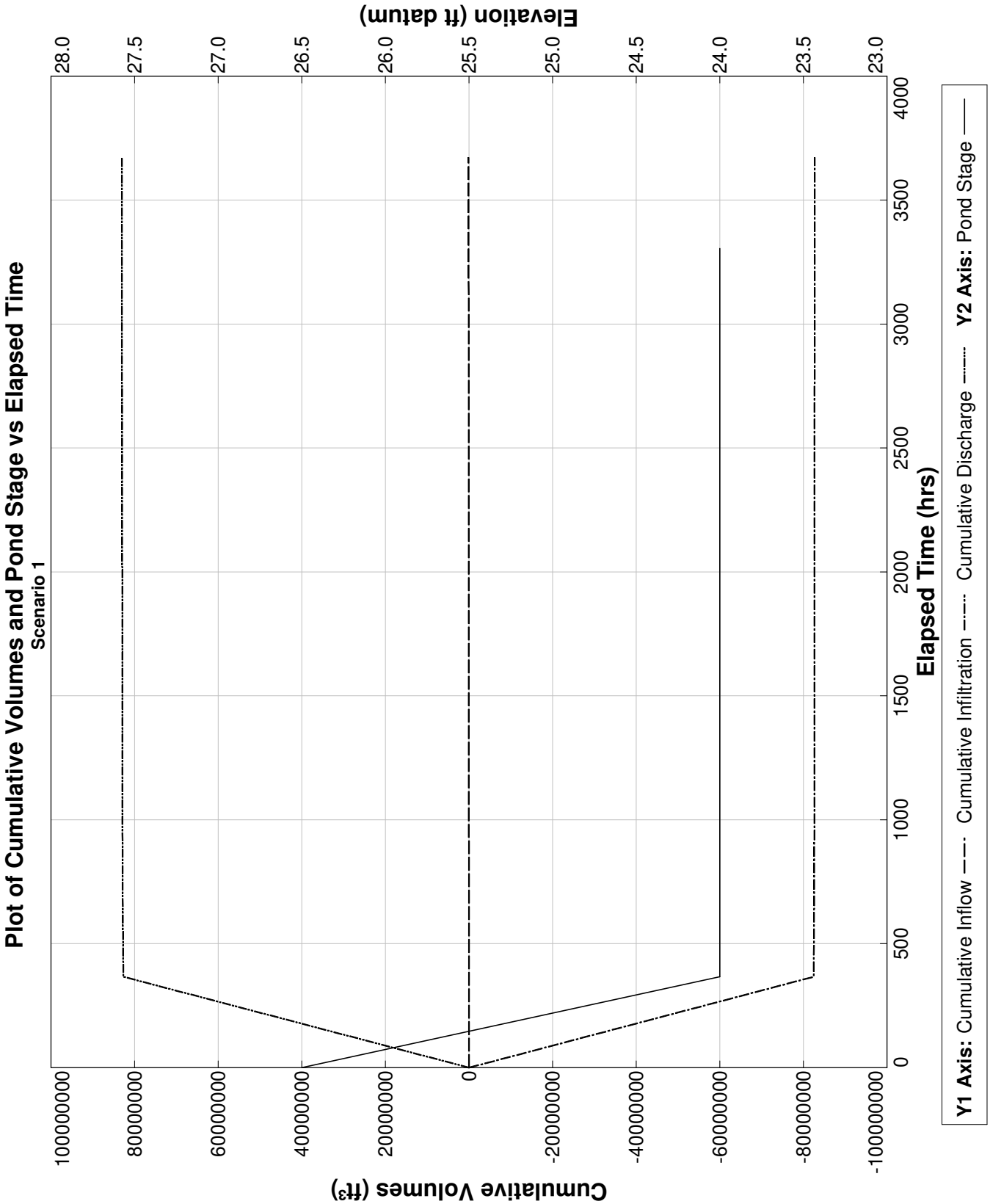
Begin Scenario 1 3/31/2023 15:6:24
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 26.5 ft.
End Scenario 1 3/31/2023 15:6:24

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

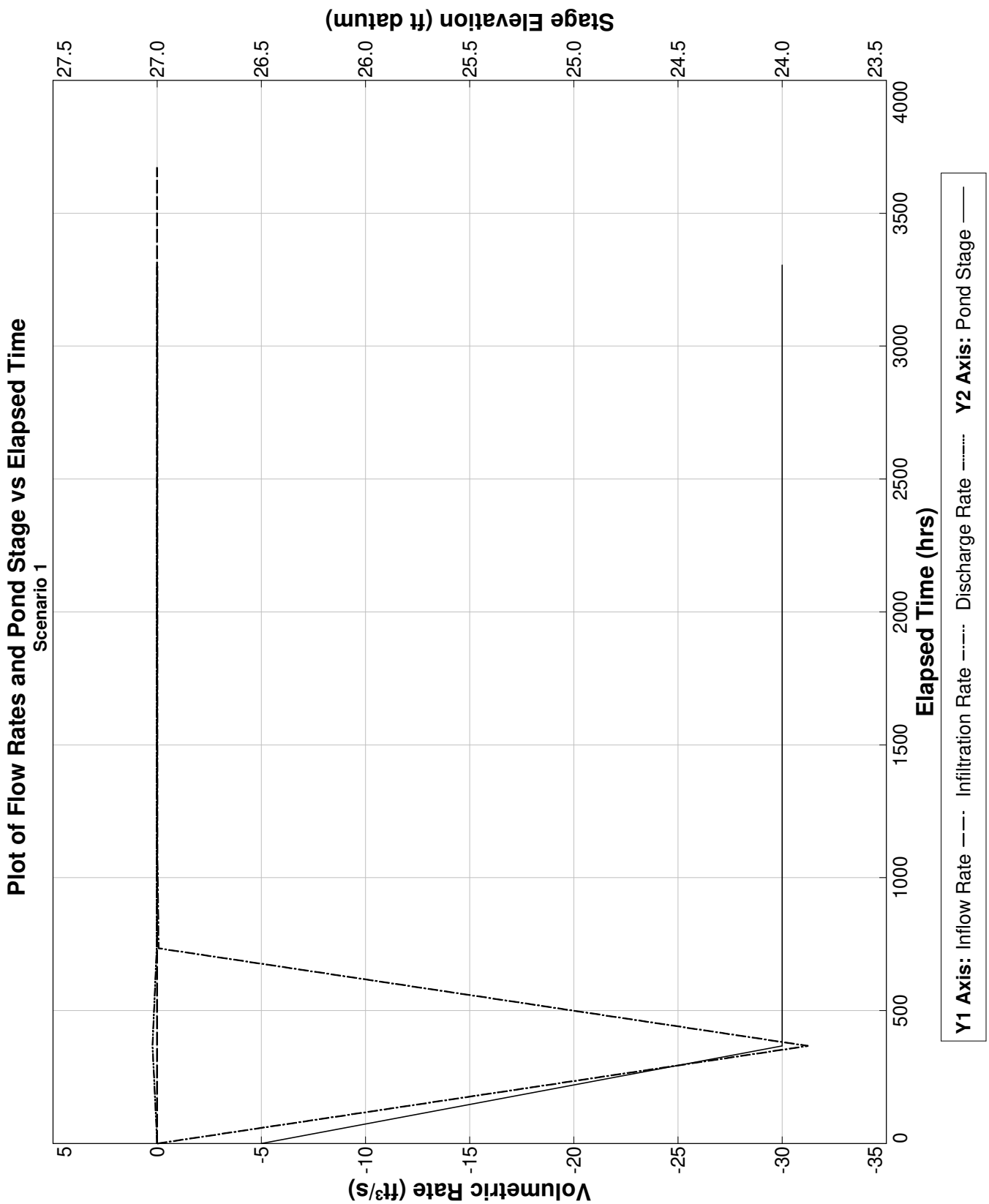
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0077	0.00163	26.50000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0077	0.00163	24.00001	-31.24144	.2242173	10122.000	-82444830.0	8.270869E+07	S
734.400	0.0077	0.00163	24.00000	-0.06414	2.187982E-02	20244.000	-82597370.0	8.287135E+07	S
1101.600	0.0077	0.00163	24.00000	-0.01193	.019226	30366.000	-82614420.0	8.289852E+07	S
1468.800	0.0077	0.00163	24.00000	-0.01052	1.803513E-02	40488.000	-82628920.0	8.292315E+07	S
1836.000	0.0077	0.00163	24.00000	-0.00979	1.739979E-02	50610.000	-82642220.0	8.294657E+07	S
2203.200	0.0077	0.00163	24.00000	-0.00931	1.693595E-02	60732.000	-82654790.0	8.296926E+07	S
2570.400	0.0077	0.00163	24.00000	-0.00898	1.660481E-02	70854.000	-82666840.0	8.299143E+07	S
2937.600	0.0077	0.00163	24.00000	-0.00877	1.641082E-02	80976.000	-82678540.0	8.301326E+07	S
3304.800	0.0077	0.00163	24.00000	-0.00864	1.627942E-02	91098.000	-82690020.0	8.303486E+07	S
3672.000	0.0077	0.00163	24.00000	----	----	101220.000	-82701380.0	8.305634E+07	N.A.

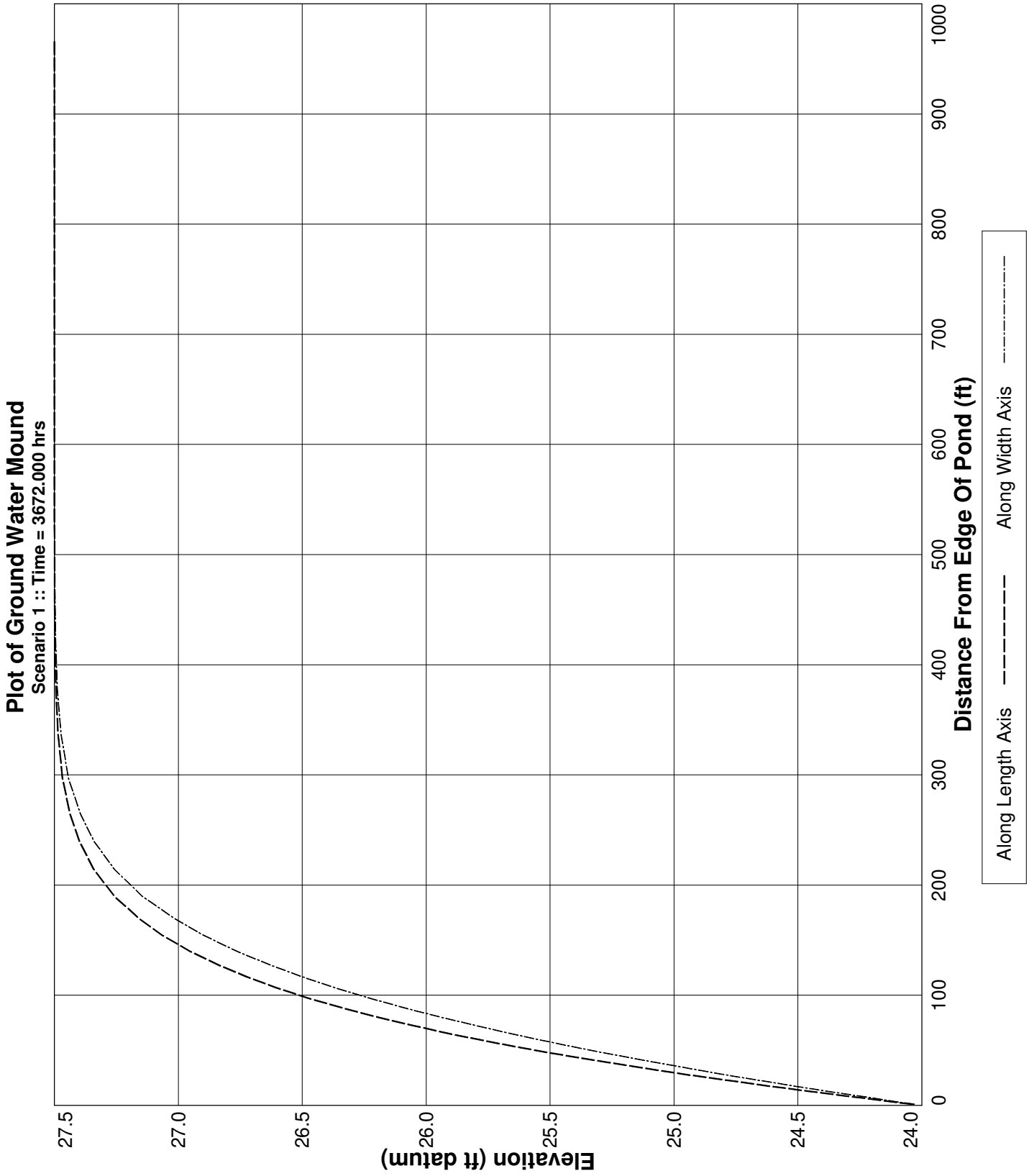
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No. 18, South, Baseflow
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-31-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	-7.00
Water Table Elevation, [WT] (ft datum):	30.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.38
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	723.0
Equivalent Pond Width, [W] (ft):	140.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
-2.00	435.6
24.00	101494.8

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	24
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	29.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

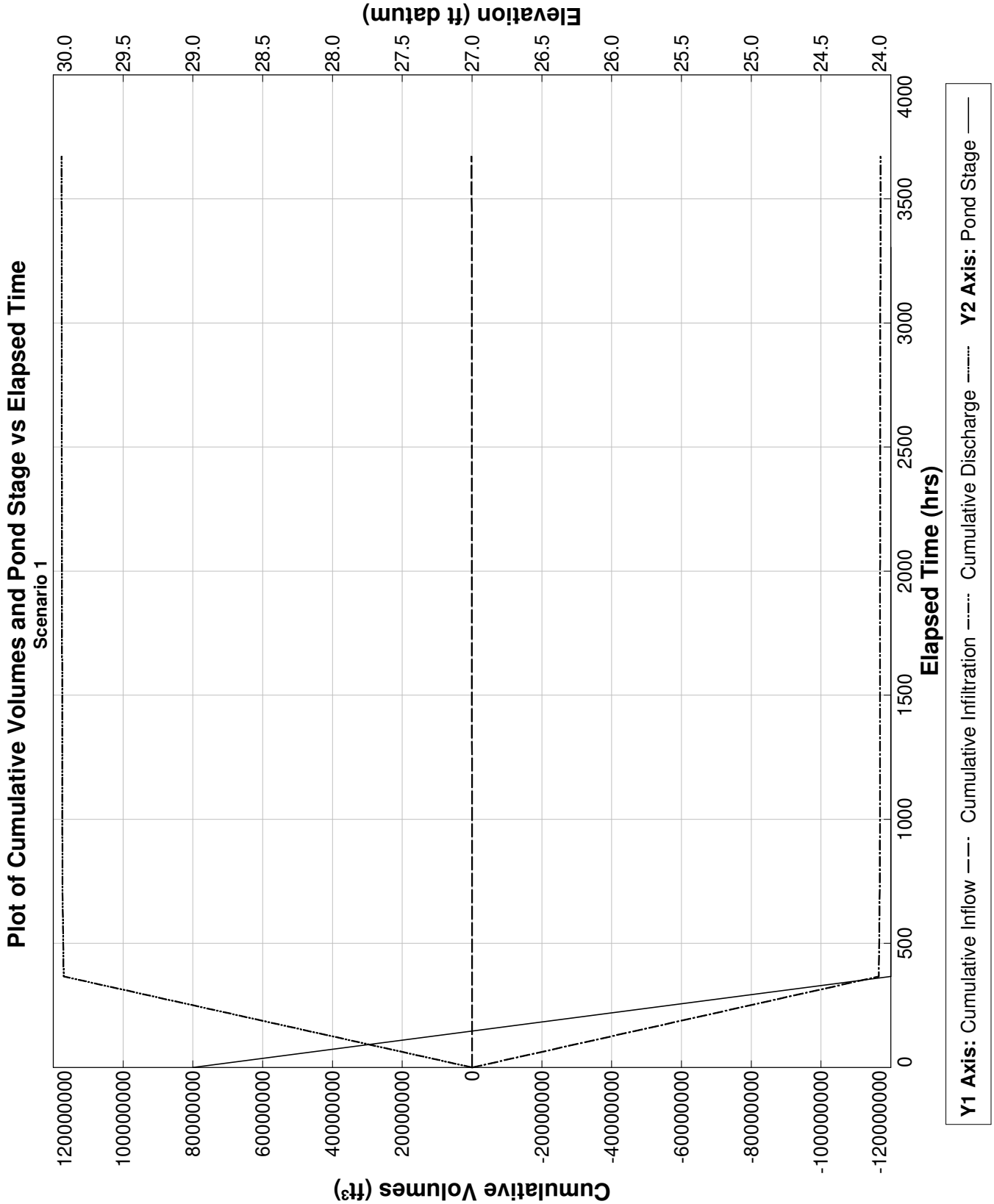
Begin Scenario 1 3/31/2023 15:7:45
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 29.0 ft.
End Scenario 1 3/31/2023 15:7:45

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

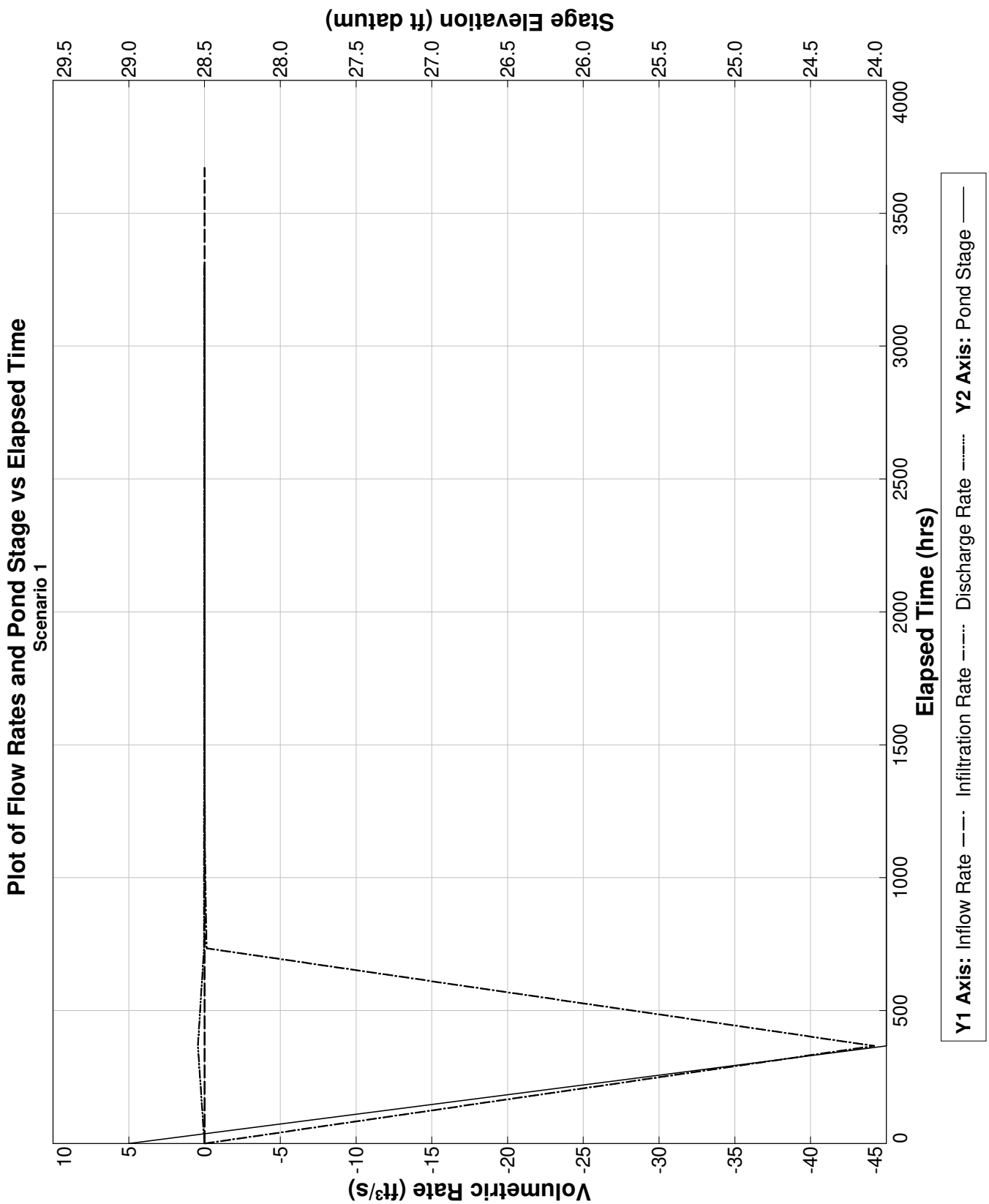
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0077	0.00163	29.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0077	0.00163	24.00003	-44.19249	.4422611	10122.000	-116532900.0	1.170505E+08	S
734.400	0.0077	0.00163	24.00000	-0.12739	.034479	20244.000	-116837900.0	1.173656E+08	S
1101.600	0.0077	0.00163	24.00000	-0.02201	2.896225E-02	30366.000	-116869700.0	1.174075E+08	S
1468.800	0.0077	0.00163	24.00000	-0.01891	.0262794	40488.000	-116896100.0	1.17444E+08	S
1836.000	0.0077	0.00163	24.00000	-0.01720	2.475027E-02	50610.000	-116919700.0	1.174778E+08	S
2203.200	0.0077	0.00163	24.00000	-0.01611	2.366514E-02	60732.000	-116941600.0	1.175098E+08	S
2570.400	0.0077	0.00163	24.00000	-0.01537	2.300315E-02	70854.000	-116962300.0	1.175406E+08	S
2937.600	0.0077	0.00163	24.00000	-0.01481	2.244309E-02	80976.000	-116982200.0	1.175706E+08	S
3304.800	0.0077	0.00163	24.00000	-0.01436	2.198535E-02	91098.000	-117001400.0	1.176E+08	S
3672.000	0.0077	0.00163	24.00000	----	----	101220.000	-117020200.0	1.176288E+08	N.A.

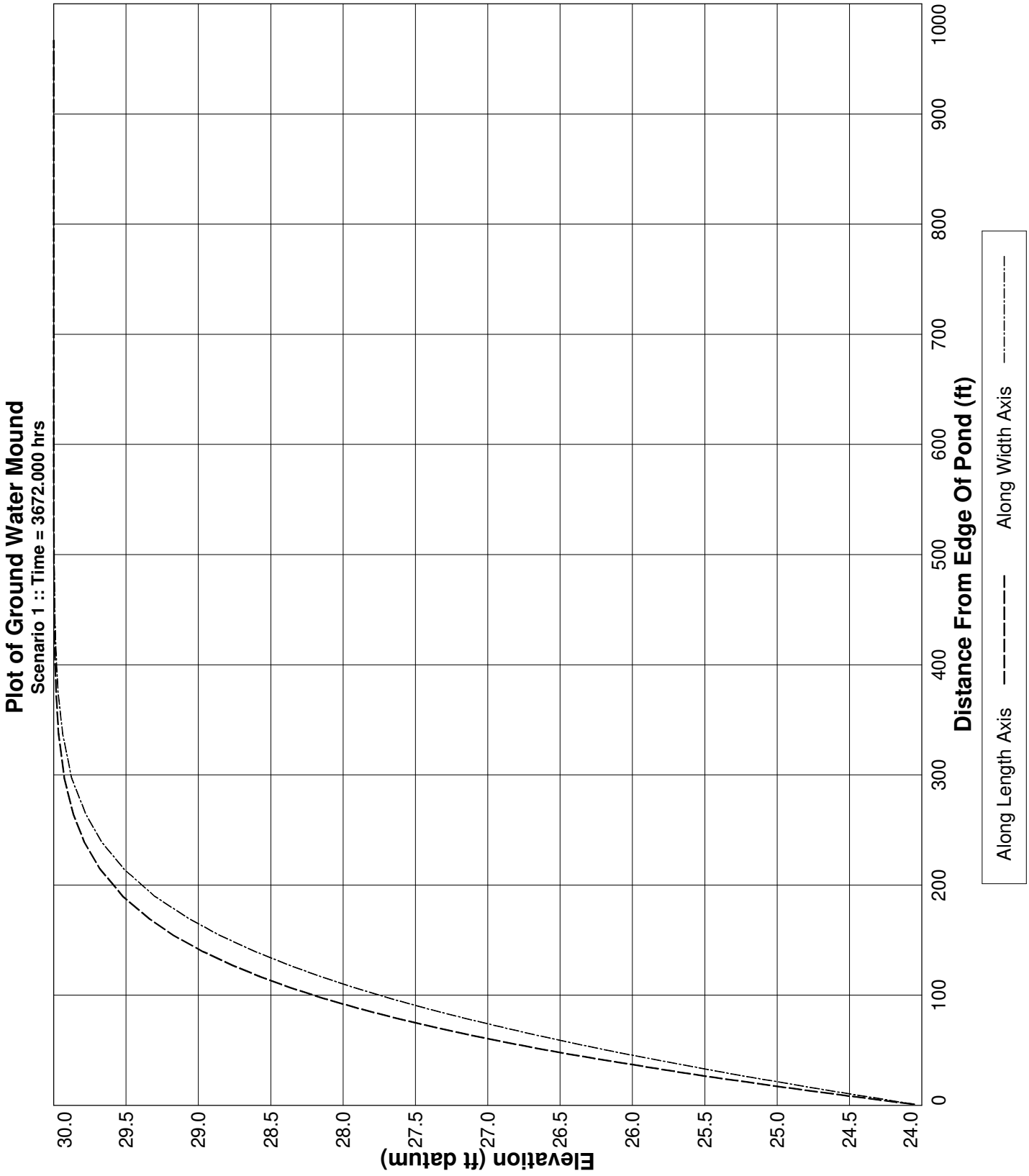
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No. 19, Baseflow
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-31-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	-2.00
Water Table Elevation, [WT] (ft datum):	26.50
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.38
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	424.0
Equivalent Pond Width, [W] (ft):	7.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
3.00	435.6
24.00	40946.4

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	24
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type: Baseflow
Modflow Routing: Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	25.5
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

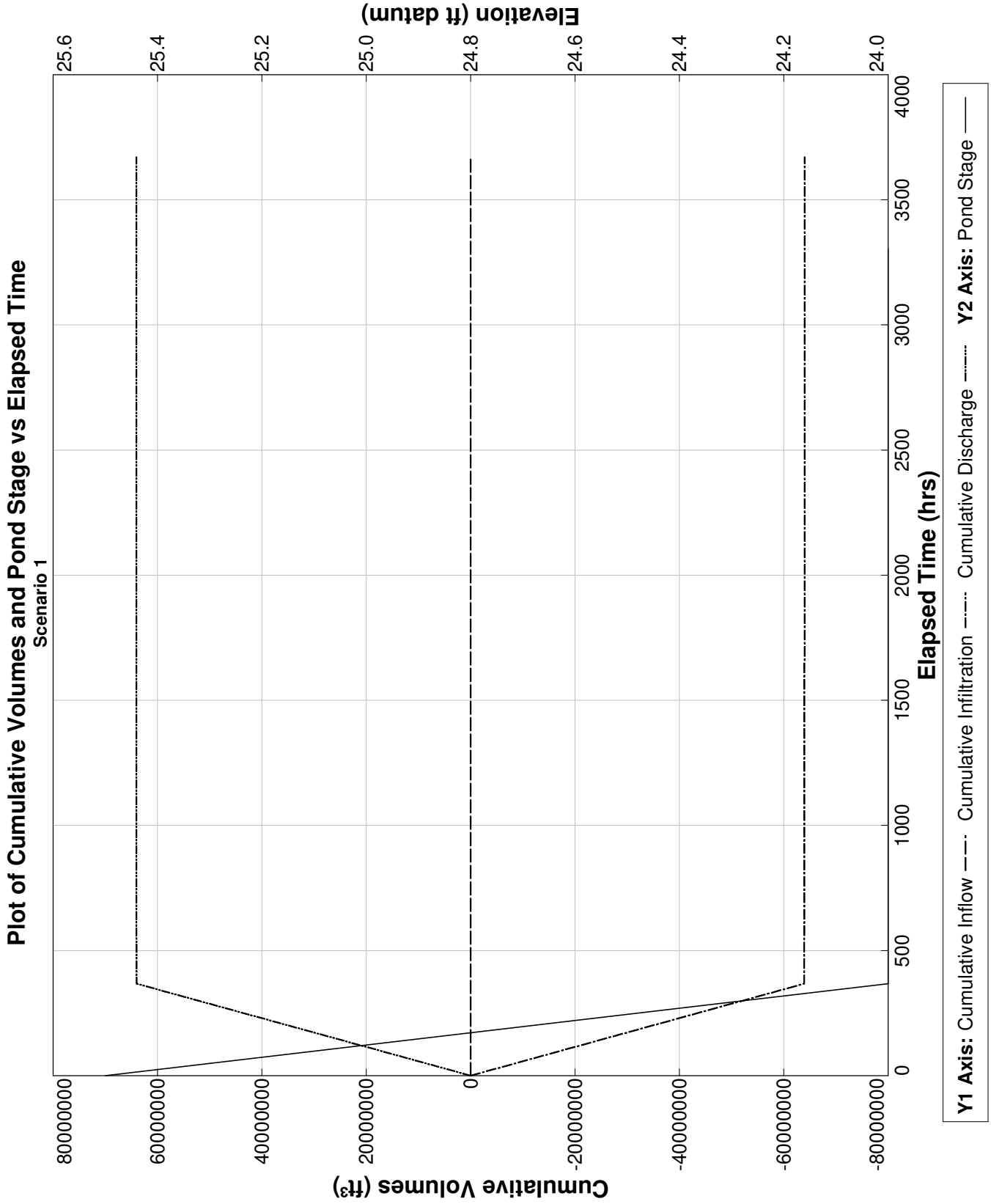
Begin Scenario 1 3/31/2023 16:1:5
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 25.5 ft.
End Scenario 1 3/31/2023 16:1:5

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

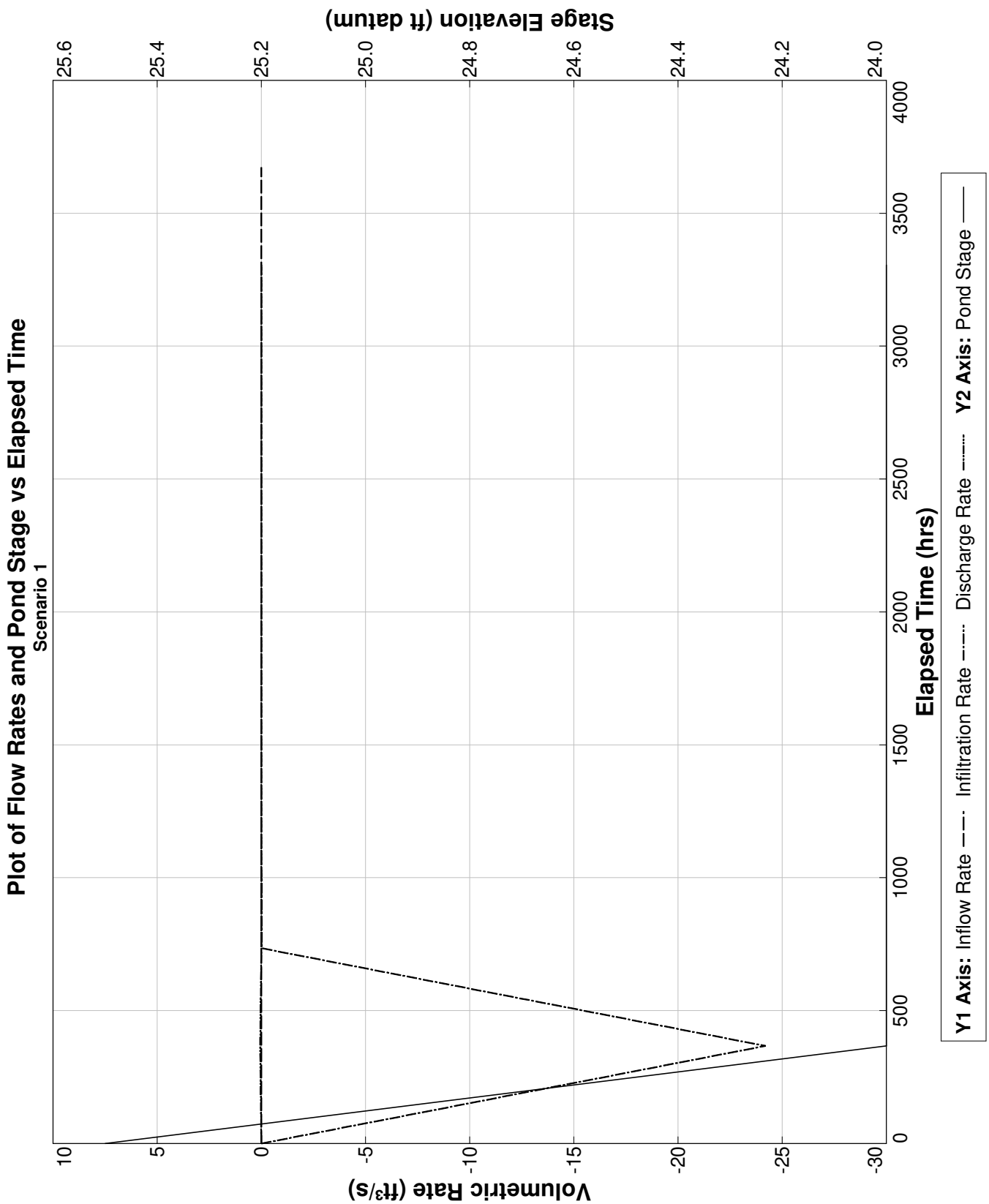
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0002	0.00163	25.50000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0002	0.00163	24.00000	-24.19381	5.455749E-02	296.800	-63925430.0	6.398714E+07	S
734.400	0.0002	0.00163	24.00000	-0.01704	5.113269E-03	593.600	-63964570.0	6.402658E+07	S
1101.600	0.0002	0.00163	24.00000	-0.00414	4.271904E-03	890.400	-63970480.0	6.403278E+07	S
1468.800	0.0002	0.00163	24.00000	-0.00364	3.804288E-03	1187.200	-63975520.0	6.403812E+07	S
1836.000	0.0002	0.00163	24.00000	-0.00337	3.562853E-03	1484.000	-63980090.0	6.404299E+07	S
2203.200	0.0002	0.00163	24.00000	-0.00323	3.43872E-03	1780.800	-63984420.0	6.404762E+07	S
2570.400	0.0002	0.00163	24.00000	-0.00317	3.385219E-03	2077.600	-63988640.0	6.405213E+07	S
2937.600	0.0002	0.00163	24.00000	-0.00315	3.370557E-03	2374.400	-63992800.0	6.40566E+07	S
3304.800	0.0002	0.00163	24.00000	-0.00316	3.379625E-03	2671.200	-63996970.0	6.406106E+07	S
3672.000	0.0002	0.00163	24.00000	----	----	2968.000	-64001160.0	6.406554E+07	N.A.

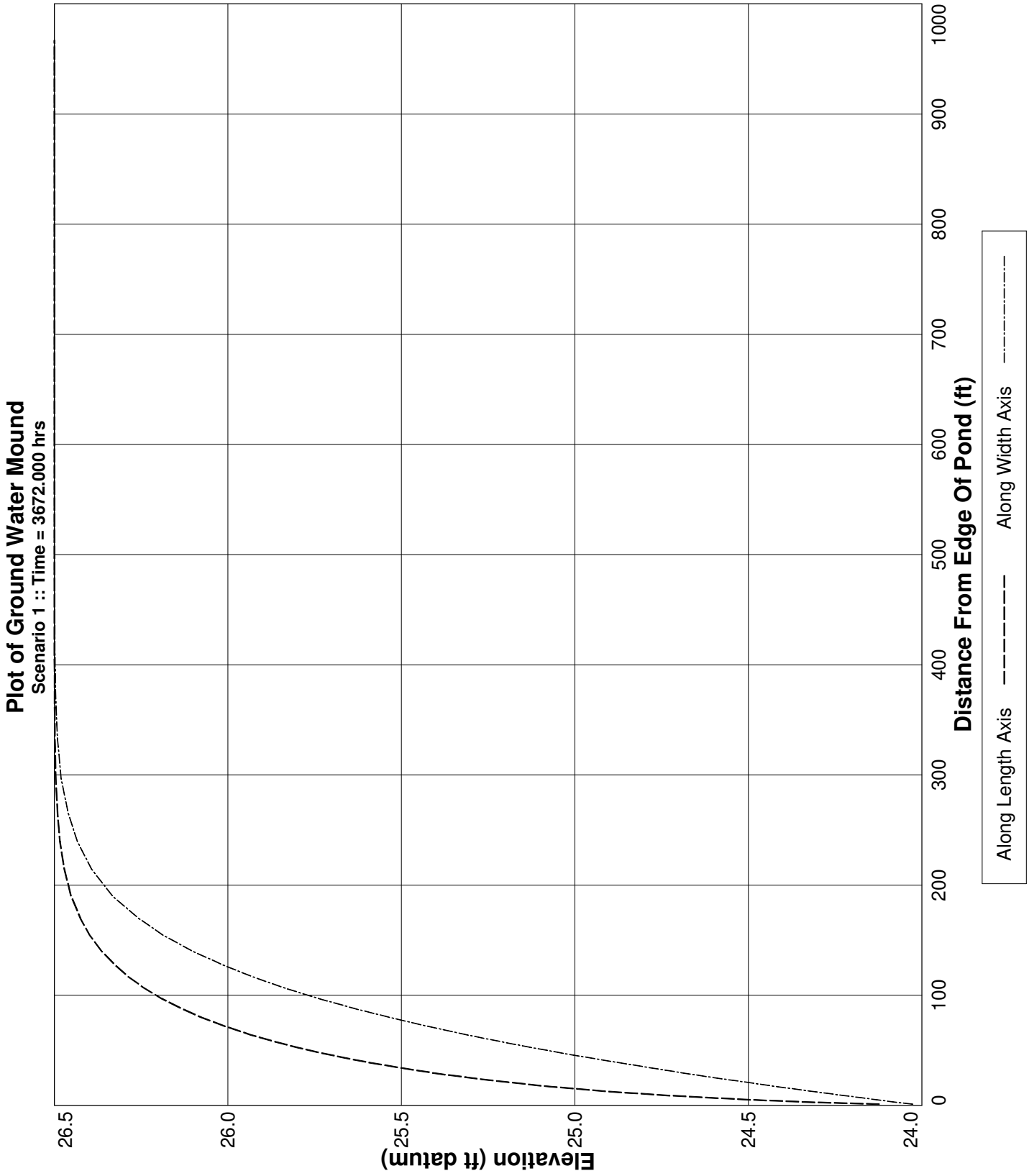
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No. 20, Baseflow
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-31-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	5.00
Water Table Elevation, [WT] (ft datum):	24.50
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	1.22
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	275.0
Equivalent Pond Width, [W] (ft):	62.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
10.00	435.6
24.00	16988.4

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	24
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	23.5
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

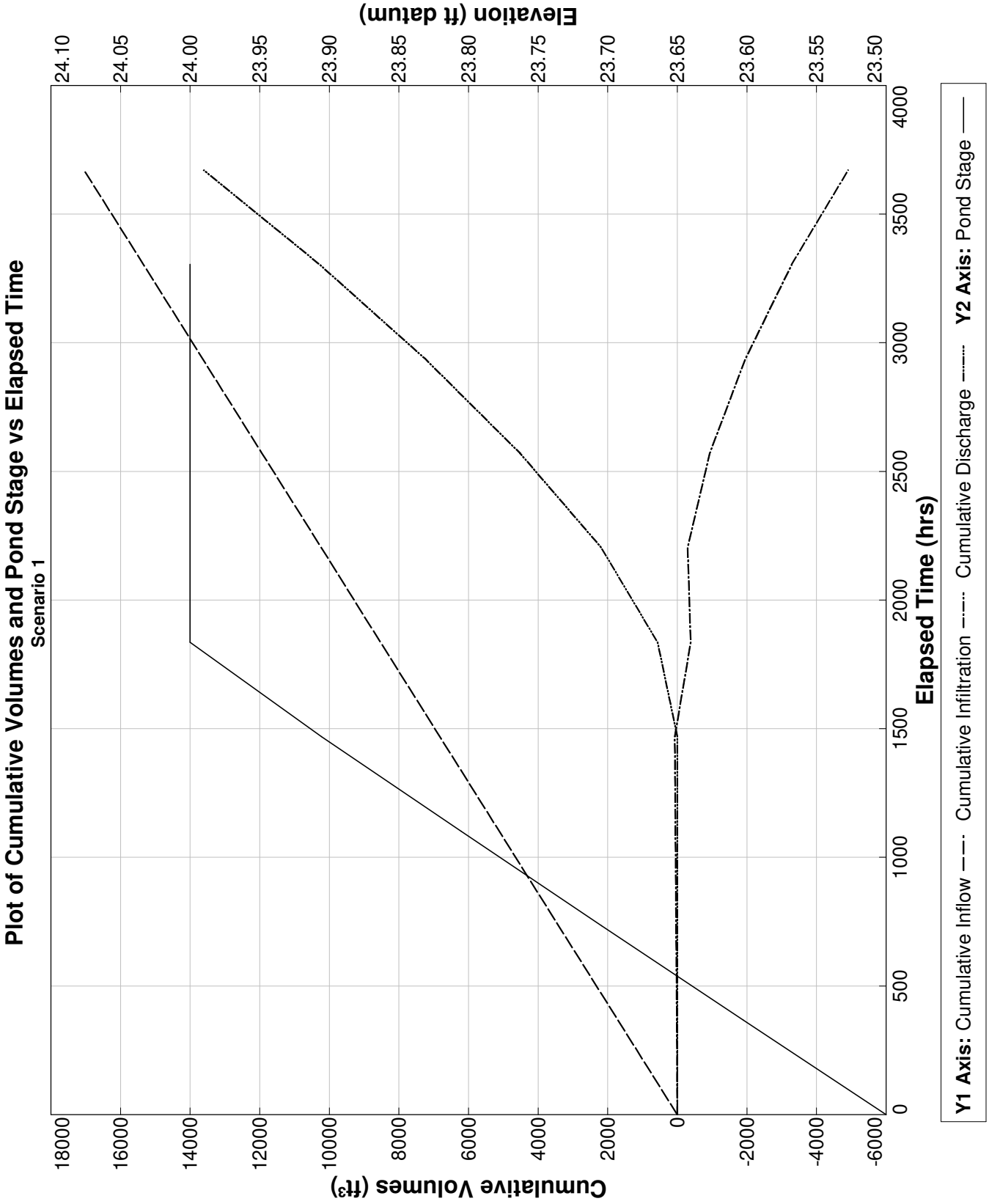
Begin Scenario 1 3/31/2023 15:25:13
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 23.5 ft.
End Scenario 1 3/31/2023 15:25:13

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

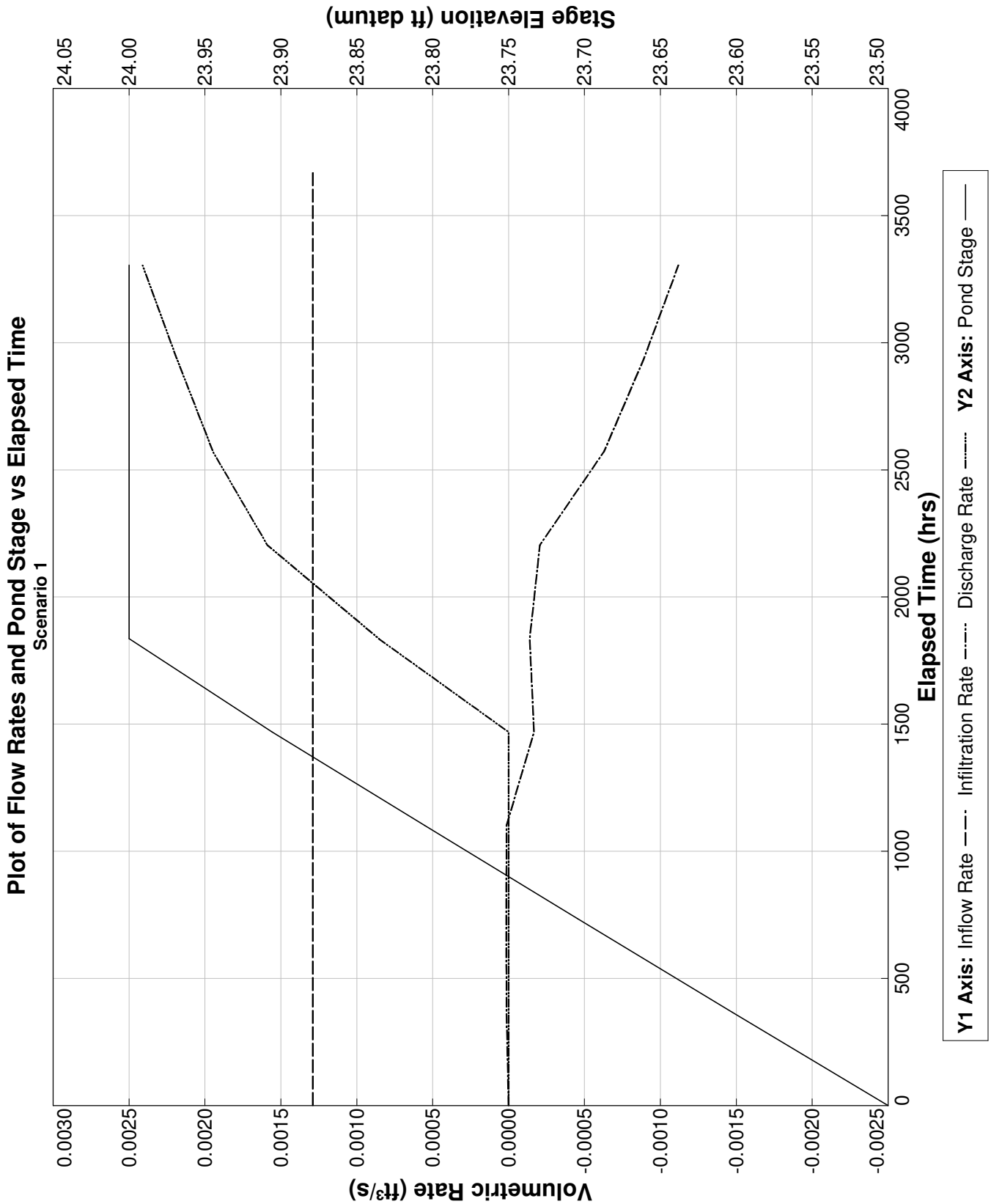
Detailed Results *:: Scenario 1 ::*

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0013	0.00163	23.50000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0013	0.00163	23.60269	0.00001	0	1705.000	14.9	0	S
734.400	0.0013	0.00163	23.70437	0.00001	0	3410.000	34.2	0	S
1101.600	0.0013	0.00163	23.80532	0.00001	0	5115.000	53.5	0	S
1468.800	0.0013	0.00163	23.90566	-0.00017	0	6820.000	71.0	0	S
1836.000	0.0013	0.00163	24.00000	-0.00014	8.561544E-04	8525.000	-387.3	565.8839	S
2203.200	0.0013	0.00163	24.00000	-0.00021	1.588584E-03	10230.000	-298.2	2181.758	S
2570.400	0.0013	0.00163	24.00000	-0.00063	1.946643E-03	11935.000	-929.8	4518.401	S
2937.600	0.0013	0.00163	24.00000	-0.00089	2.185157E-03	13640.000	-1955.8	7249.356	S
3304.800	0.0013	0.00163	24.00000	-0.00112	2.410858E-03	15345.000	-3288.5	10287.14	S
3672.000	0.0013	0.00163	24.00000	----	----	17050.000	-4912.7	13616.33	N.A.

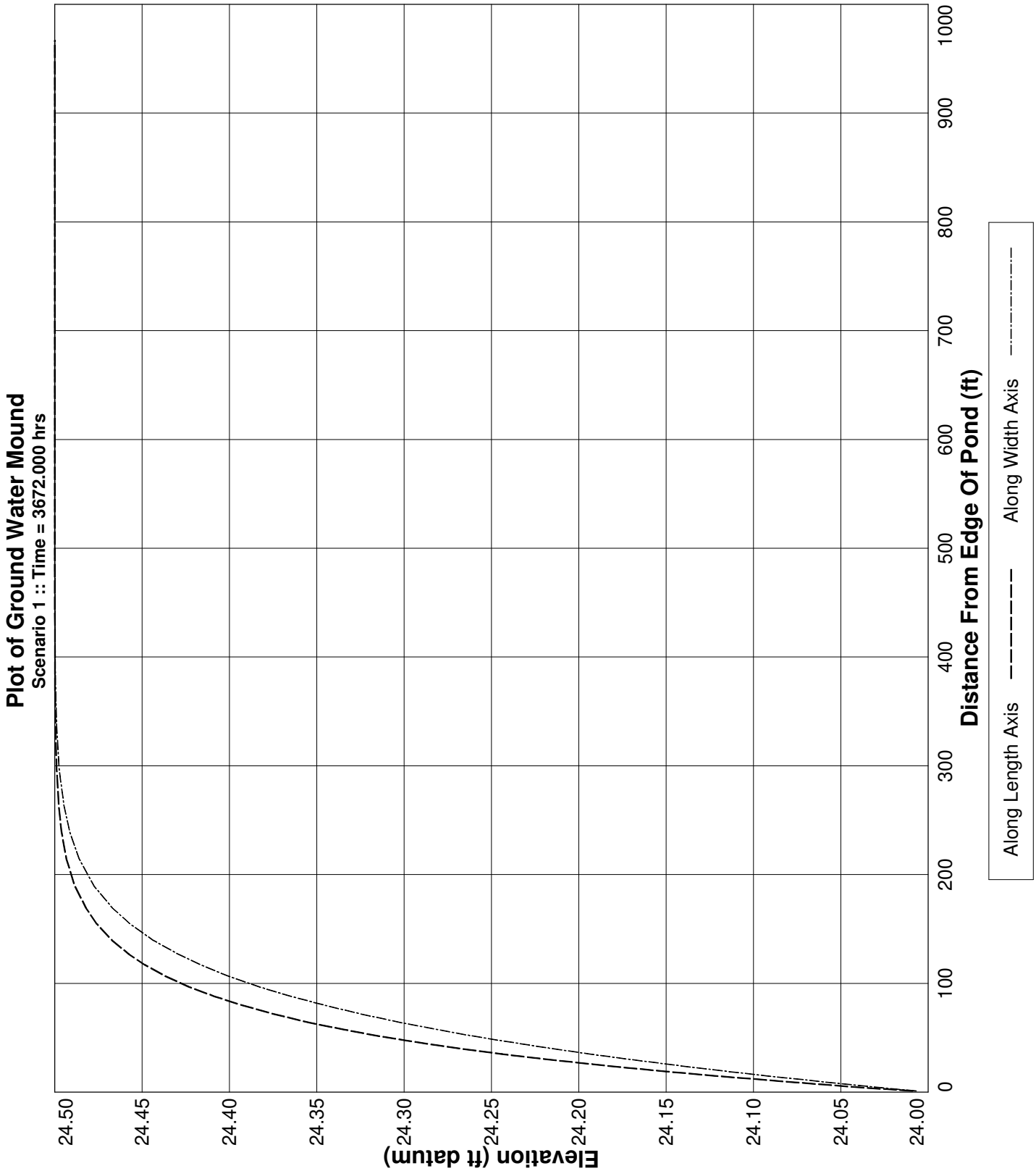
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No.21, North Wetland, without wall
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-24-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	-20.00
Water Table Elevation, [WT] (ft datum):	24.58
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	1.22
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	991.0
Equivalent Pond Width, [W] (ft):	546.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
-15.00	196020.0
24.00	541015.2

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	24
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	23.58
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

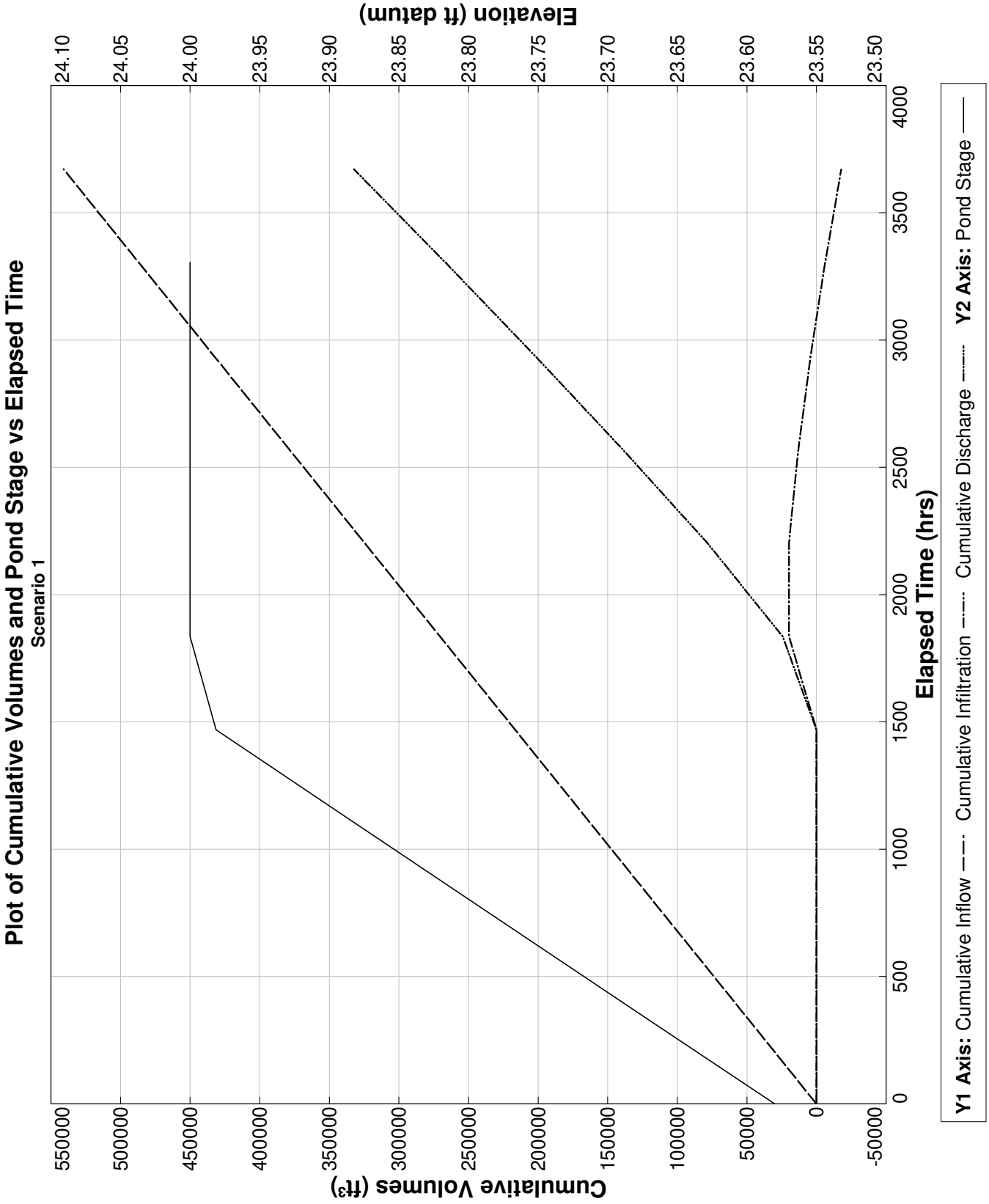
Begin Scenario 1 3/24/2023 7:28:29
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 23.58 ft.
End Scenario 1 3/24/2023 7:28:29

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

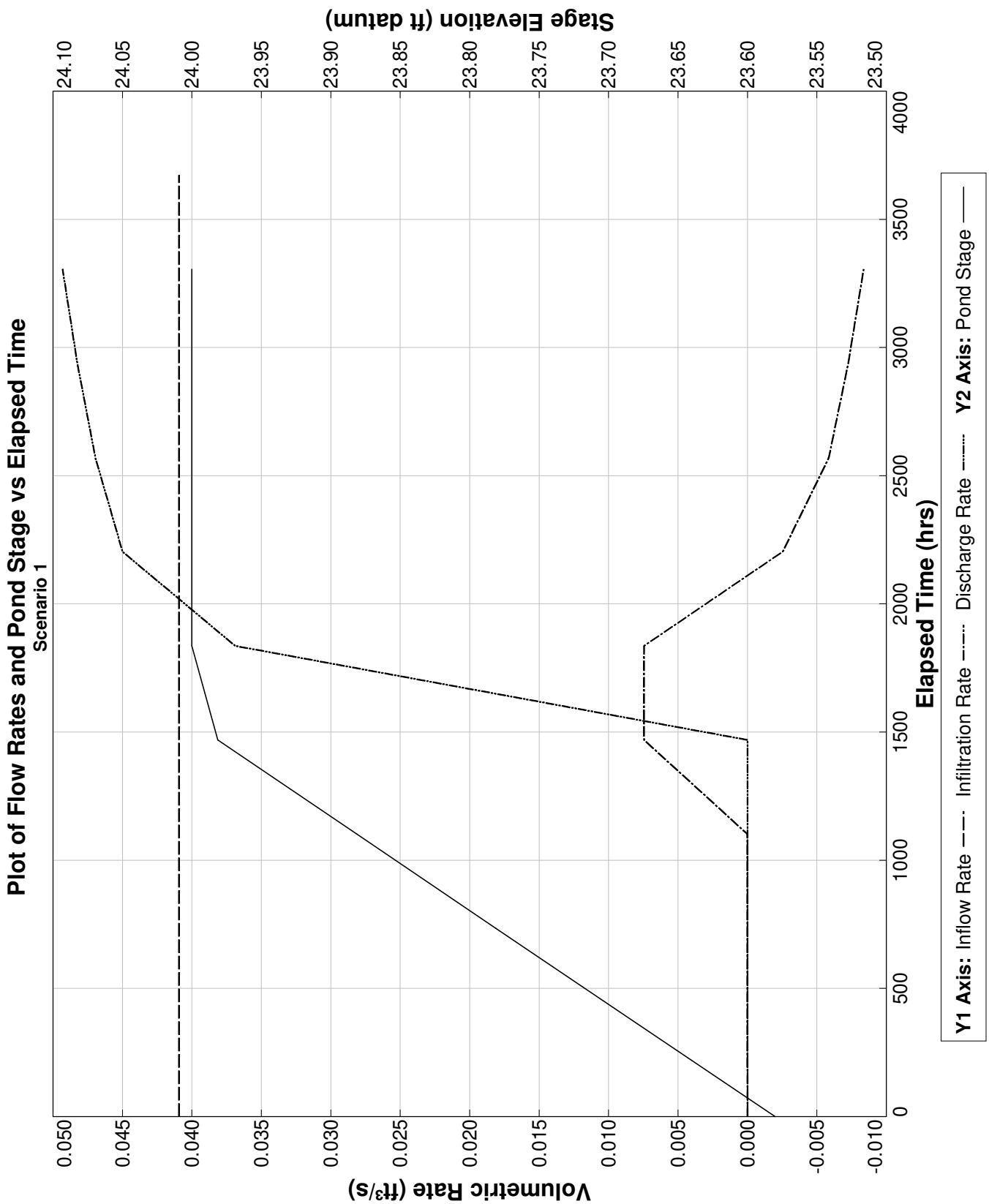
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0409	0.00163	23.58000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0409	0.00163	23.68060	0.00001	0	54108.600	11.4	0	S
734.400	0.0409	0.00163	23.78104	0.00001	0	108217.200	18.7	0	S
1101.600	0.0409	0.00163	23.88131	0.00001	0	162325.800	28.6	0	S
1468.800	0.0409	0.00163	23.98143	0.00745	0	216434.400	34.2	0	S
1836.000	0.0409	0.00163	24.00000	0.00744	3.688659E-02	270543.000	19716.1	24380.56	S
2203.200	0.0409	0.00163	24.00000	-0.00253	4.500166E-02	324651.600	19699.8	78505.41	S
2570.400	0.0409	0.00163	24.00000	-0.00585	4.694673E-02	378760.200	13034.2	139279.6	S
2937.600	0.0409	0.00163	24.00000	-0.00726	4.824956E-02	432868.800	4221.8	202200.6	S
3304.800	0.0409	0.00163	24.00000	-0.00836	4.930437E-02	486977.400	-6148.8	266679.8	S
3672.000	0.0409	0.00163	24.00000	----	----	541086.000	-17880.2	332519.8	N.A.

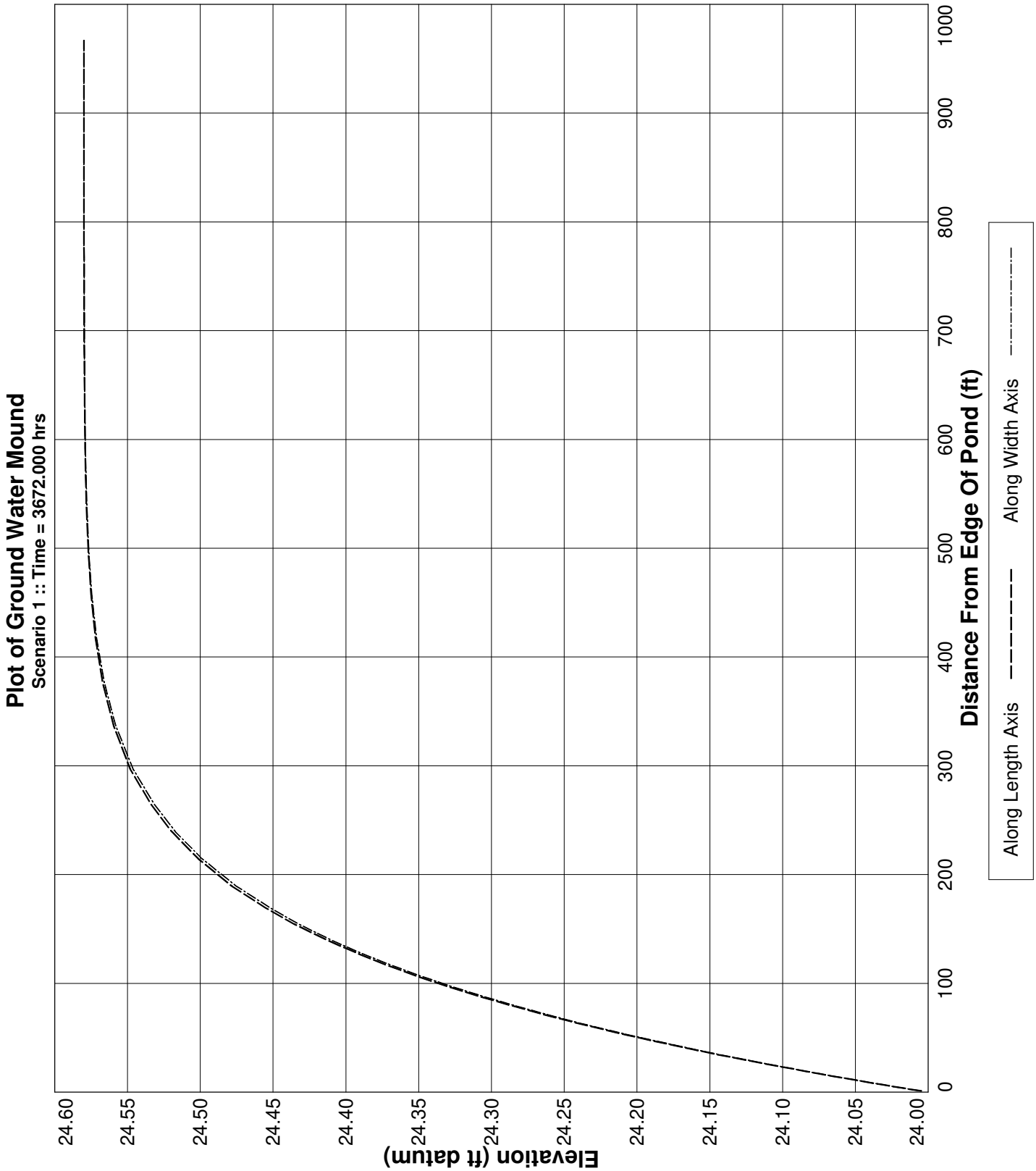
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No.21, North Wetland, with wall
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-24-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	-20.00
Water Table Elevation, [WT] (ft datum):	24.58
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.01
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	991.0
Equivalent Pond Width, [W] (ft):	546.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
-15.00	196020.0
24.00	541015.2

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	24
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	23.58
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

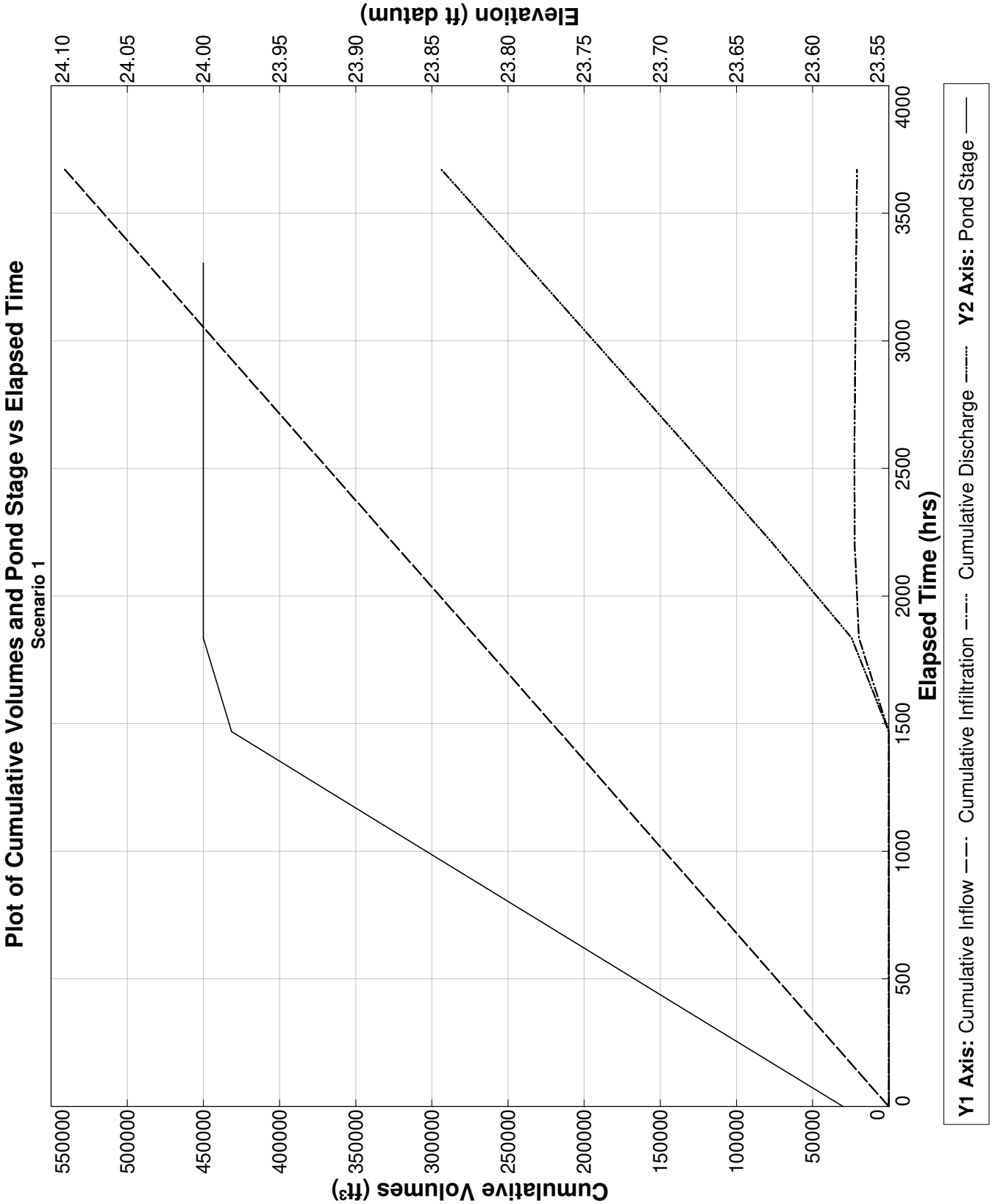
Begin Scenario 1 3/24/2023 7:31:11
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 23.58 ft.
End Scenario 1 3/24/2023 7:31:11

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

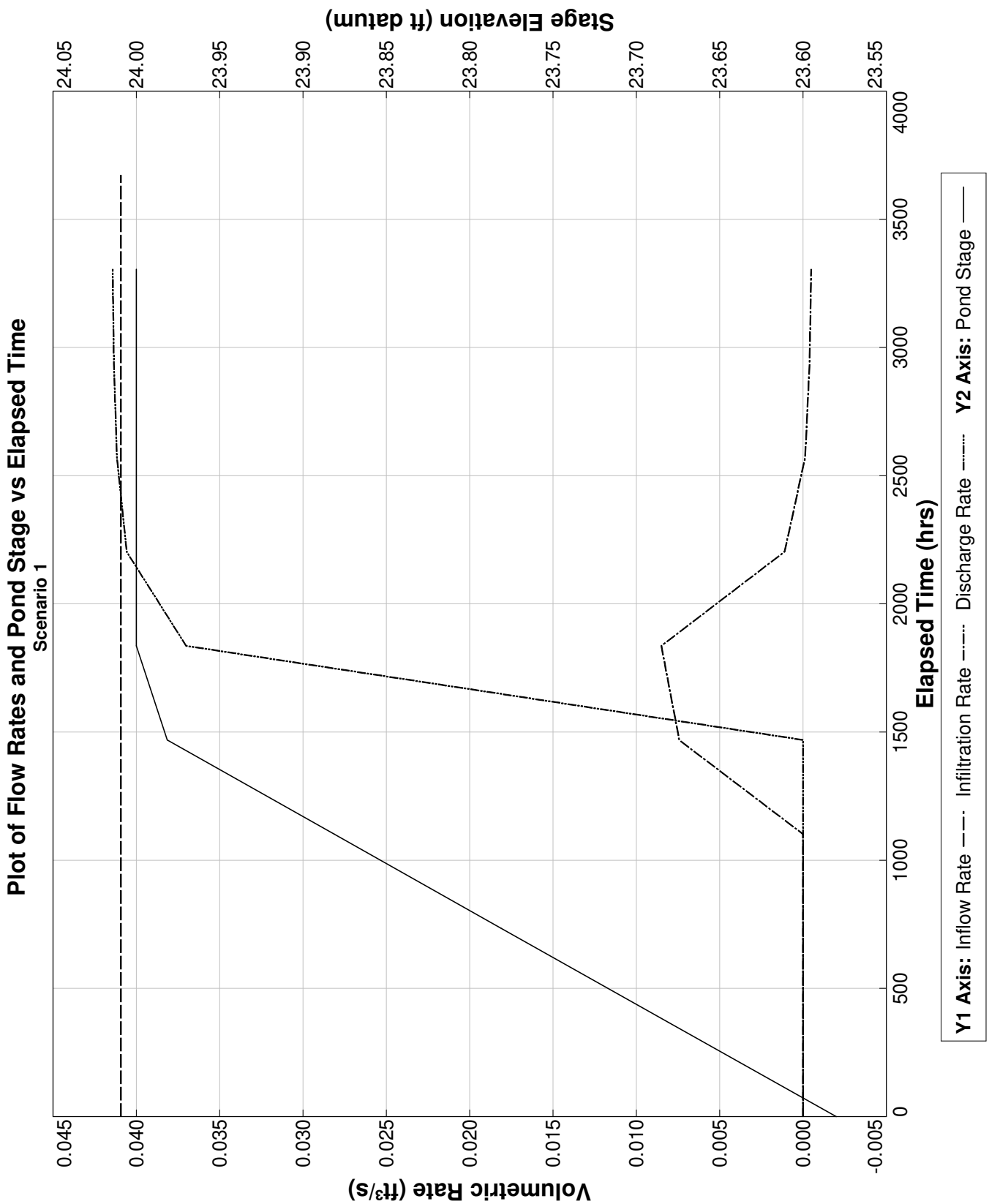
Detailed Results *:: Scenario 1 ::*

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0409	0.00163	23.58000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0409	0.00163	23.68062	0.00000	0	54108.600	1.7	0	S
734.400	0.0409	0.00163	23.78107	0.00000	0	108217.200	3.9	0	S
1101.600	0.0409	0.00163	23.88136	0.00000	0	162325.800	6.0	0	S
1468.800	0.0409	0.00163	23.98148	0.00743	0	216434.400	7.8	0	S
1836.000	0.0409	0.00163	24.00000	0.00850	3.700336E-02	270543.000	19638.9	24457.74	S
2203.200	0.0409	0.00163	24.00000	0.00110	4.056894E-02	324651.600	22475.3	75729.93	S
2570.400	0.0409	0.00163	24.00000	-0.00013	4.117129E-02	378760.200	22556.9	129757	S
2937.600	0.0409	0.00163	24.00000	-0.00039	4.134231E-02	432868.800	22127.3	184295.2	S
3304.800	0.0409	0.00163	24.00000	-0.00049	4.142555E-02	486977.400	21529.6	239001.4	S
3672.000	0.0409	0.00163	24.00000	----	----	541086.000	20837.0	293802.7	N.A.

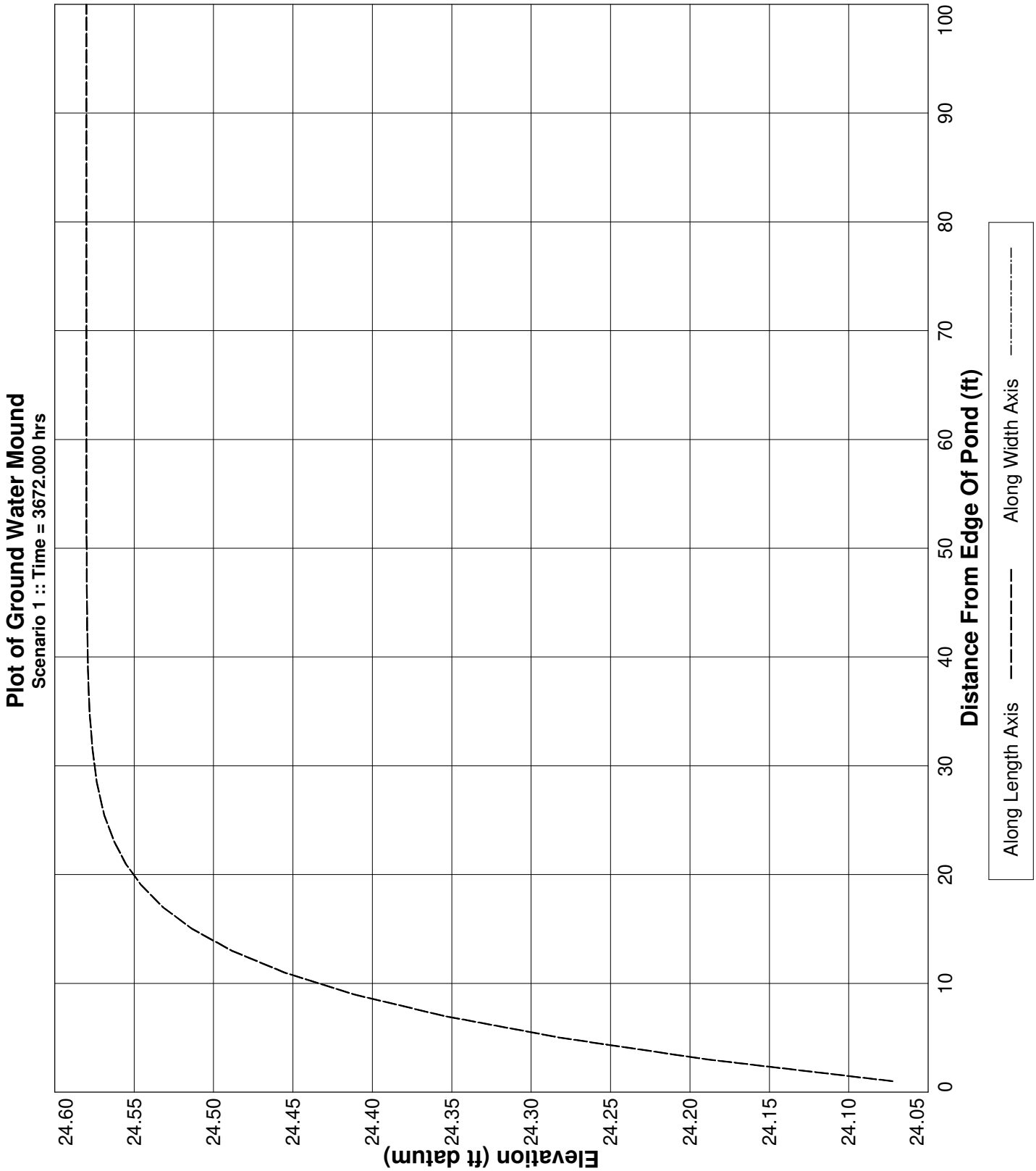
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No.21, Northwest Wetland, without wall
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-24-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	-20.00
Water Table Elevation, [WT] (ft datum):	25.43
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	1.22
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	991.0
Equivalent Pond Width, [W] (ft):	546.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
-15.00	196020.0
24.00	541015.2

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	24
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	24.43
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

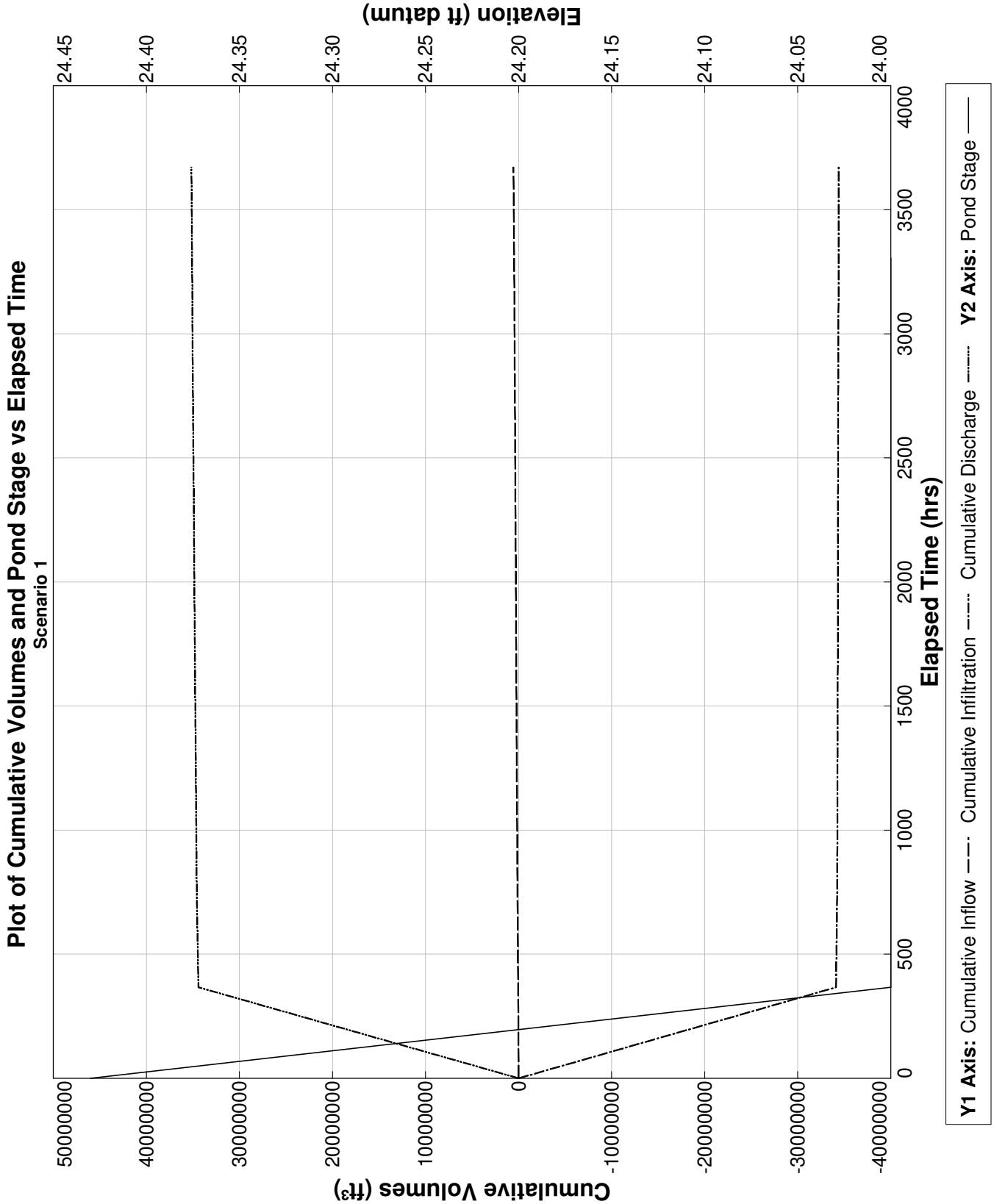
Begin Scenario 1 3/24/2023 7:33:55
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 24.43 ft.
End Scenario 1 3/24/2023 7:33:55

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

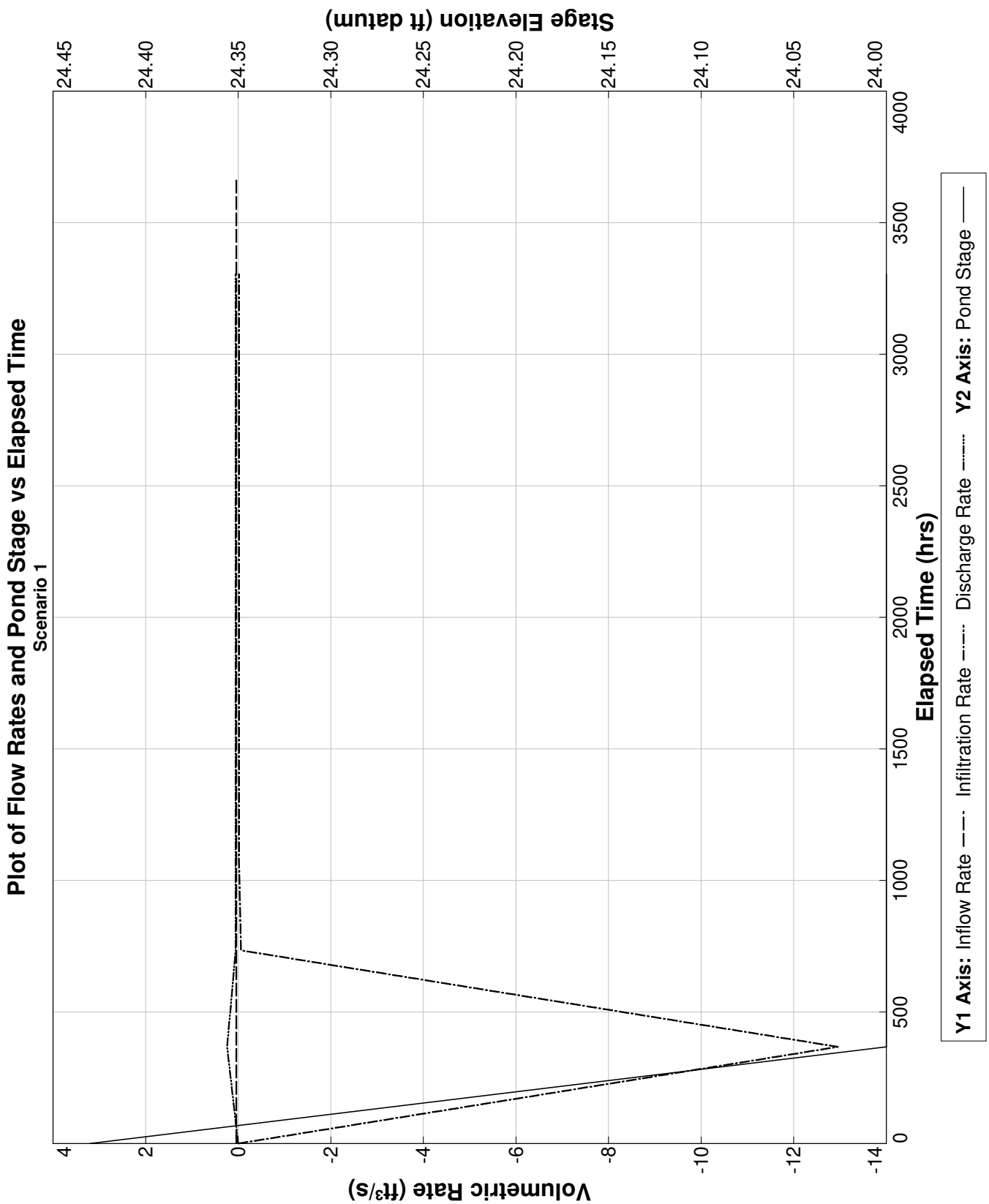
Detailed Results *:: Scenario 1 ::*

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0409	0.00163	24.43000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0409	0.00163	24.00001	-12.95376	.2359383	54108.600	-34109420.0	3.439616E+07	S
734.400	0.0409	0.00163	24.00000	-0.05915	5.508325E-02	108217.200	-34247660.0	3.458852E+07	S
1101.600	0.0409	0.00163	24.00000	-0.01346	5.422789E-02	162325.800	-34265800.0	3.466076E+07	S
1468.800	0.0409	0.00163	24.00000	-0.01320	.0540338	216434.400	-34283250.0	3.473232E+07	S
1836.000	0.0409	0.00163	24.00000	-0.01338	5.423898E-02	270543.000	-34300710.0	3.480389E+07	S
2203.200	0.0409	0.00163	24.00000	-0.01382	5.472725E-02	324651.600	-34318620.0	3.487591E+07	S
2570.400	0.0409	0.00163	24.00000	-0.01438	5.530401E-02	378760.200	-34337240.0	3.494864E+07	S
2937.600	0.0409	0.00163	24.00000	-0.01499	.0559148	432868.800	-34356640.0	3.502215E+07	S
3304.800	0.0409	0.00163	24.00000	-0.01560	5.653441E-02	486977.400	-34376860.0	3.509647E+07	S
3672.000	0.0409	0.00163	24.00000	----	----	541086.000	-34397890.0	3.517162E+07	N.A.

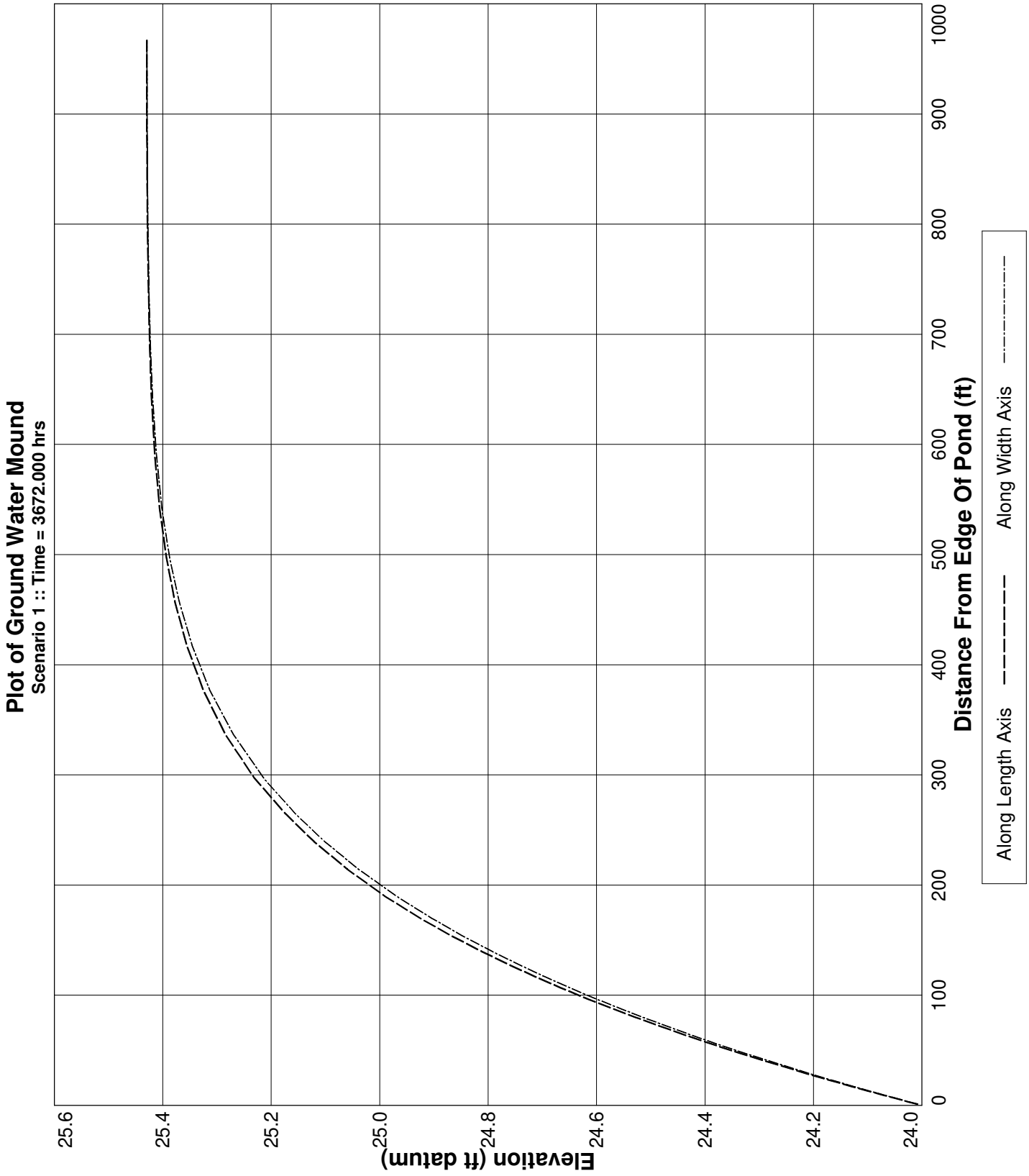
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No.21, Northwest Wetland, with wall
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-24-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	-20.00
Water Table Elevation, [WT] (ft datum):	25.43
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.01
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	991.0
Equivalent Pond Width, [W] (ft):	546.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
-15.00	196020.0
24.00	541015.2

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	24
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	24.43
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

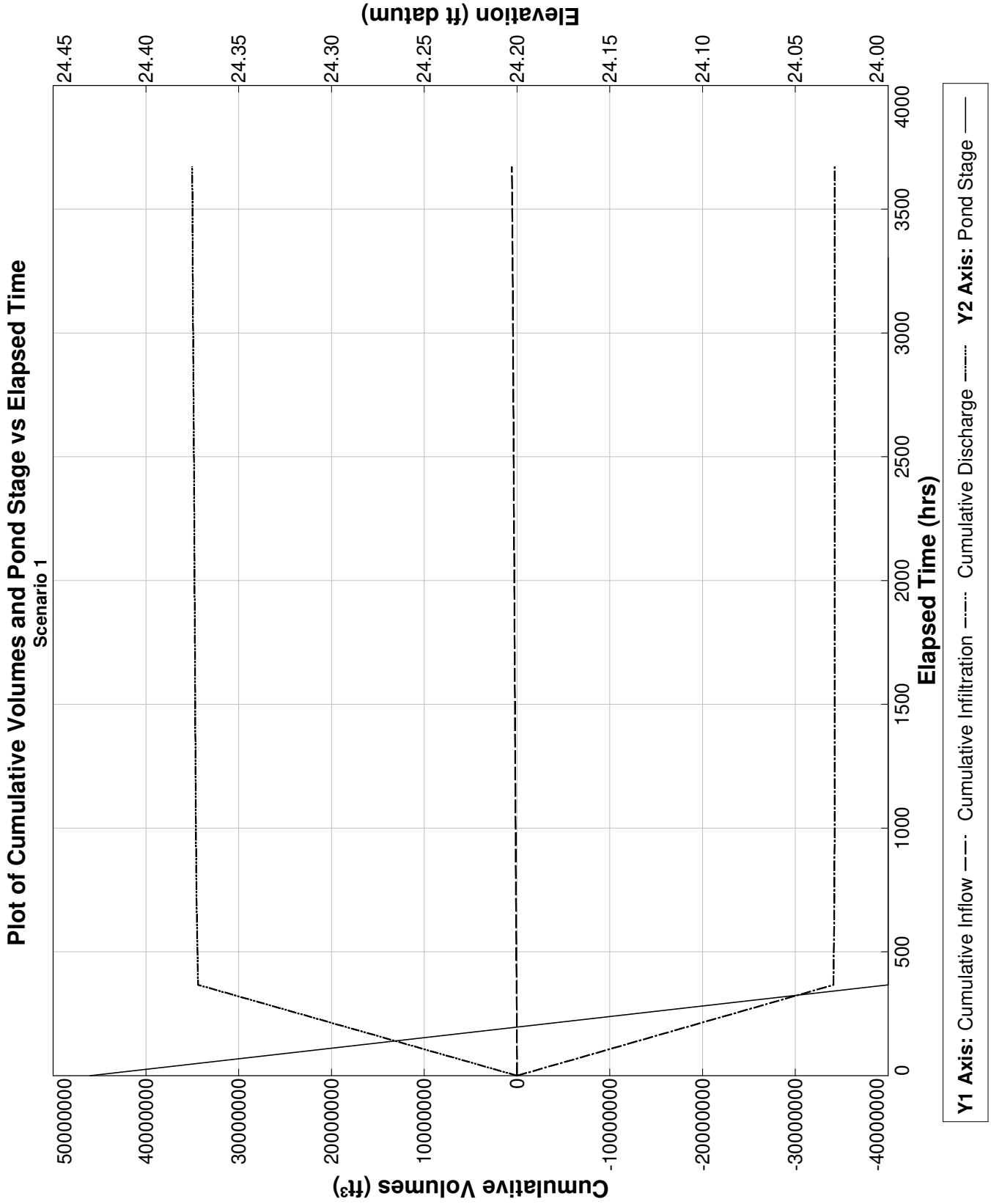
Begin Scenario 1 3/24/2023 7:35:56
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 24.43 ft.
#WARNING: The calculated water budget error exceeded the target water budget error for 2 of 10 saturated stress periods.
Maximum calculated water budget error is -1.29296707442610 percent, for saturated stress period 2.
If convergence is not a problem, it is recommended to reduce the Modflow convergence tolerences
to attempt to decrease the water budget error to within the target level.
End Scenario 1 3/24/2023 7:35:56

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

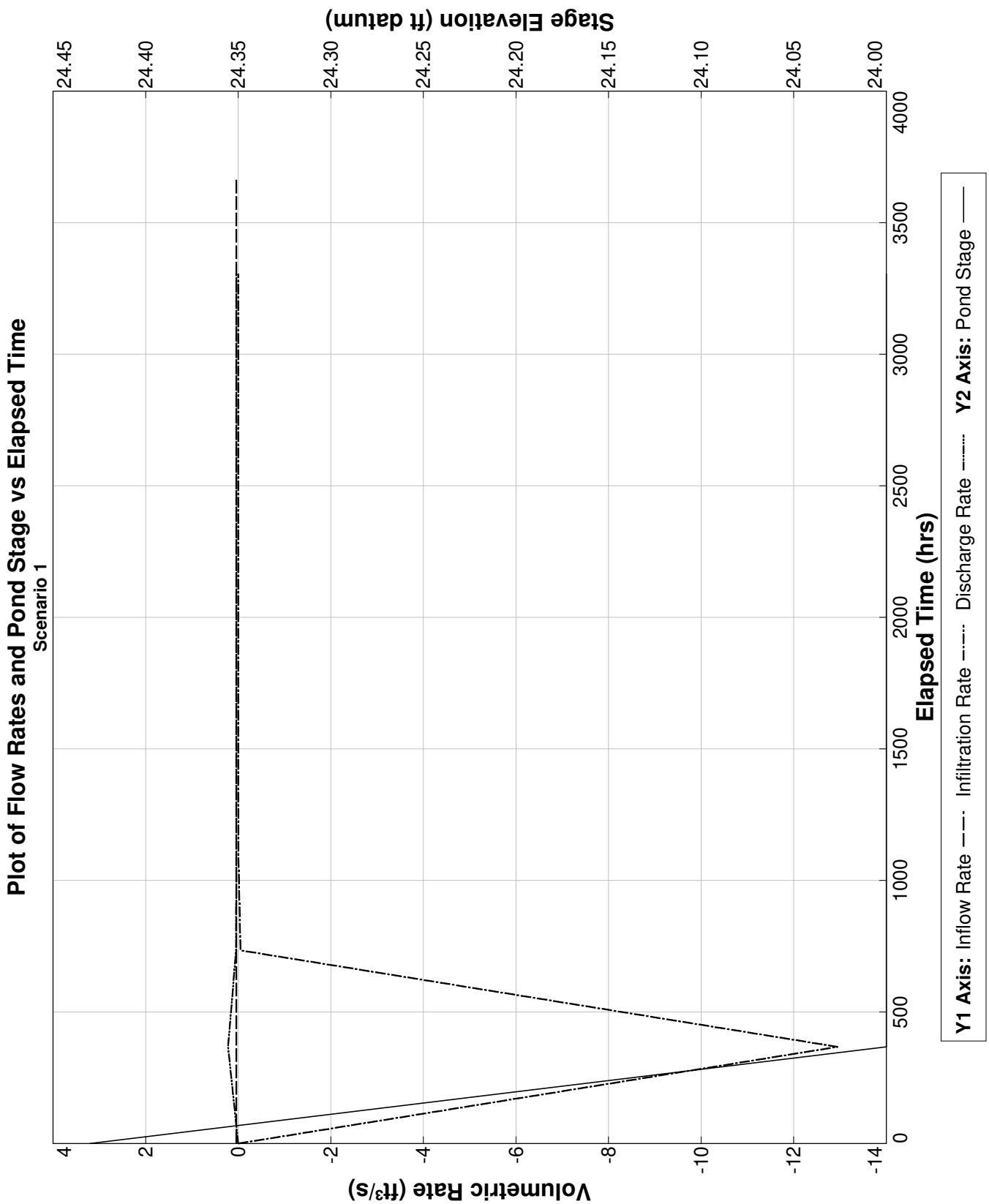
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0409	0.00163	24.43000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0409	0.00163	24.00001	-12.94374	.2203139	54108.600	-34099100.0	3.438584E+07	S
734.400	0.0409	0.00163	24.00000	-0.04787	4.625302E-02	108217.200	-34221170.0	3.456202E+07	S
1101.600	0.0409	0.00163	24.00000	-0.00228	4.238152E-02	162325.800	-34225650.0	3.462061E+07	S
1468.800	0.0409	0.00163	24.00000	-0.00101	4.182446E-02	216434.400	-34227200.0	3.467626E+07	S
1836.000	0.0409	0.00163	24.00000	-0.00083	4.173641E-02	270543.000	-34228320.0	3.47315E+07	S
2203.200	0.0409	0.00163	24.00000	-0.00081	4.174157E-02	324651.600	-34229380.0	3.478667E+07	S
2570.400	0.0409	0.00163	24.00000	-0.00084	4.176686E-02	378760.200	-34230470.0	3.484187E+07	S
2937.600	0.0409	0.00163	24.00000	-0.00087	4.179668E-02	432868.800	-34231600.0	3.48971E+07	S
3304.800	0.0409	0.00163	24.00000	-0.00090	4.182742E-02	486977.400	-34232760.0	3.495237E+07	S
3672.000	0.0409	0.00163	24.00000	----	----	541086.000	-34233960.0	3.500768E+07	N.A.

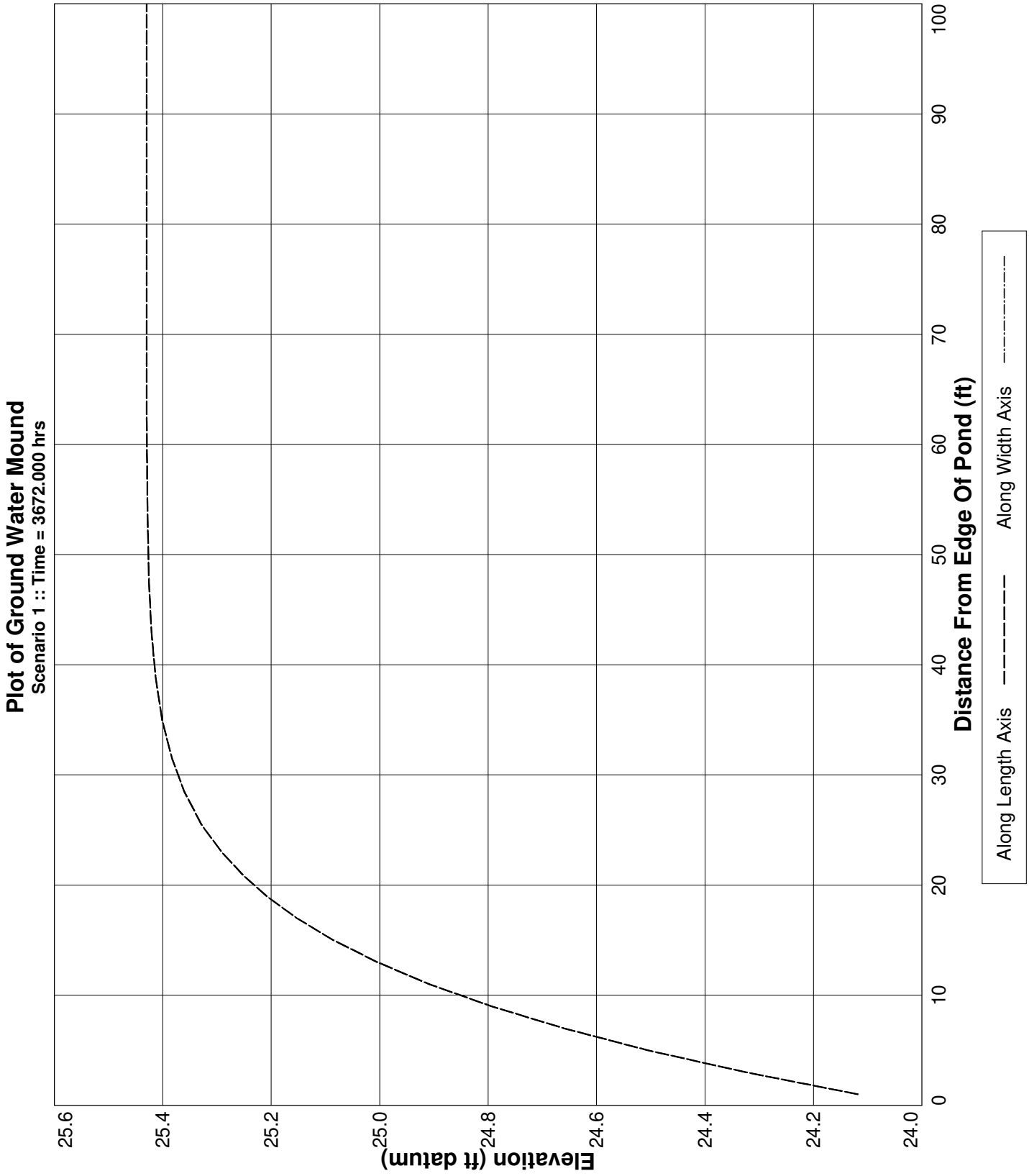
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No.21, West Wetland, without wall
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-24-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	-20.00
Water Table Elevation, [WT] (ft datum):	26.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	1.22
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	991.0
Equivalent Pond Width, [W] (ft):	546.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
-15.00	196020.0
24.00	541015.2

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	24
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	25.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

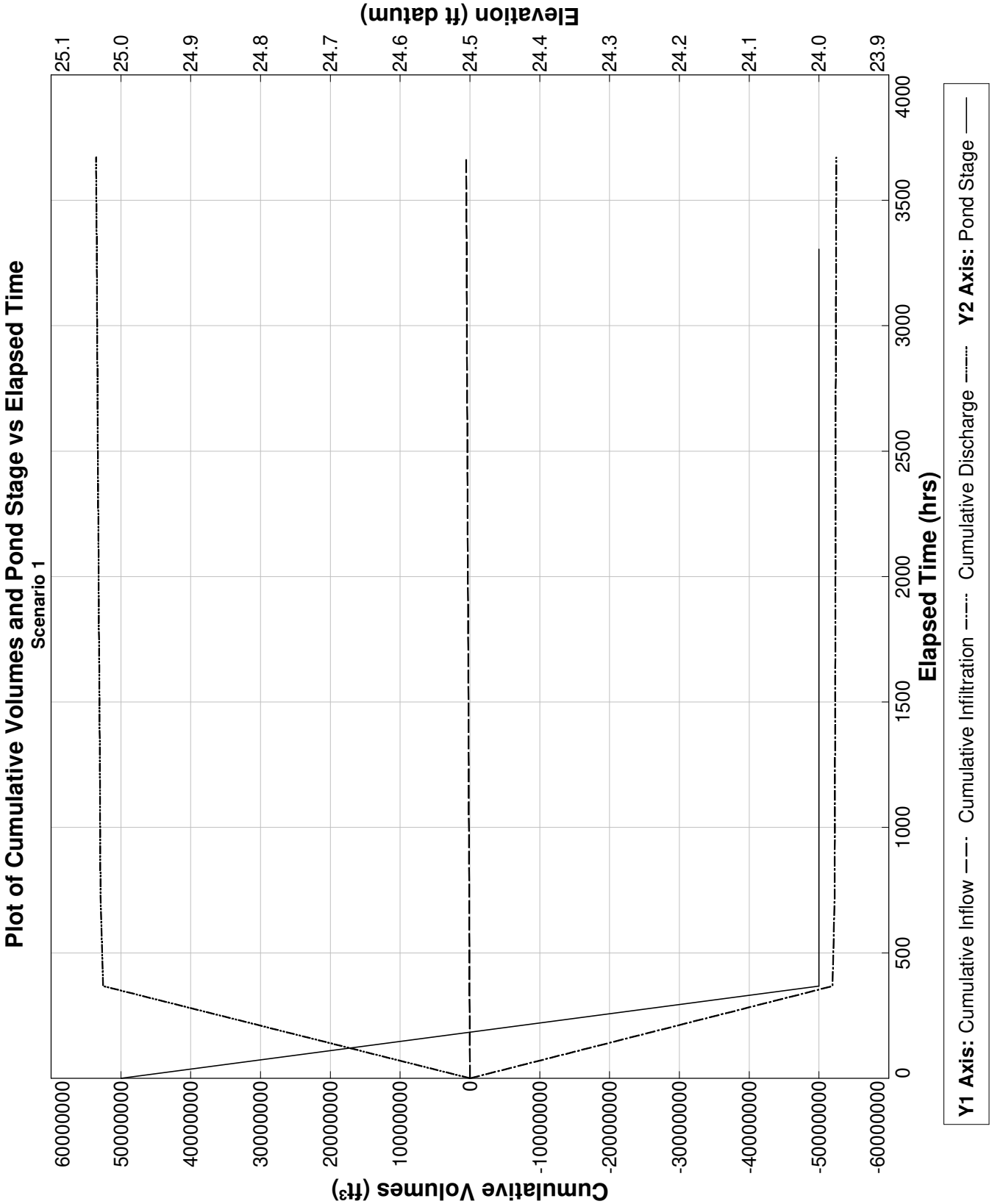
Begin Scenario 1 3/24/2023 8:8:22
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 25.0 ft.
End Scenario 1 3/24/2023 8:8:22

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

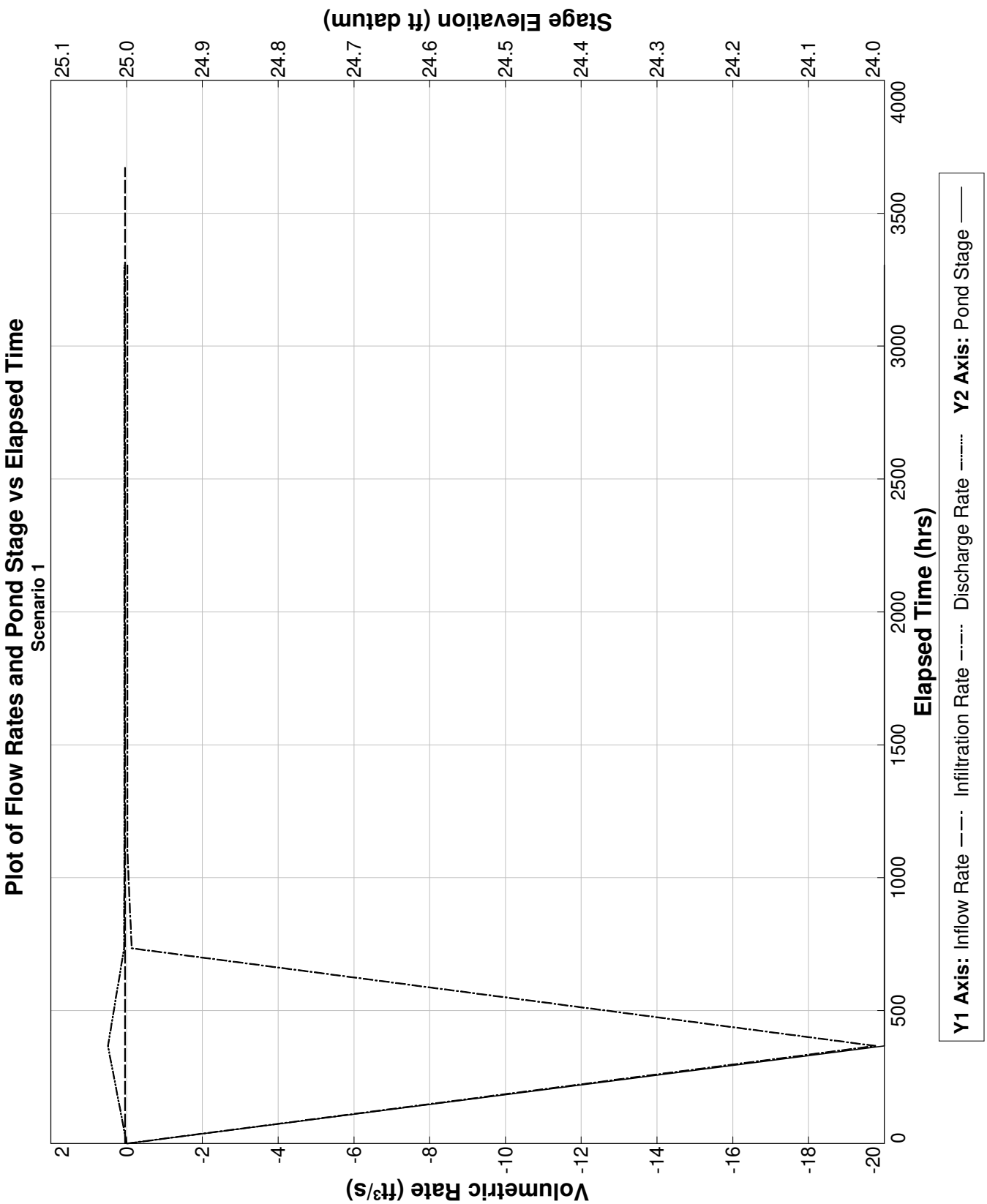
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0409	0.00163	25.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0409	0.00163	24.00004	-19.76531	.4890663	54108.600	-51943990.0	5.253909E+07	S
734.400	0.0409	0.00163	24.00000	-0.12960	6.536592E-02	108217.200	-52256320.0	5.290555E+07	S
1101.600	0.0409	0.00163	24.00000	-0.02189	6.235068E-02	162325.800	-52286620.0	5.298997E+07	S
1468.800	0.0409	0.00163	24.00000	-0.02046	.0612131	216434.400	-52314190.0	5.307164E+07	S
1836.000	0.0409	0.00163	24.00000	-0.01993	6.079696E-02	270543.000	-52340720.0	5.315228E+07	S
2203.200	0.0409	0.00163	24.00000	-0.01977	6.065019E-02	324651.600	-52366890.0	5.323255E+07	S
2570.400	0.0409	0.00163	24.00000	-0.01983	6.072201E-02	378760.200	-52393000.0	5.331278E+07	S
2937.600	0.0409	0.00163	24.00000	-0.02003	6.093873E-02	432868.800	-52419300.0	5.339319E+07	S
3304.800	0.0409	0.00163	24.00000	-0.02033	6.124605E-02	486977.400	-52445960.0	5.347395E+07	S
3672.000	0.0409	0.00163	24.00000	----	----	541086.000	-52473050.0	5.355515E+07	N.A.

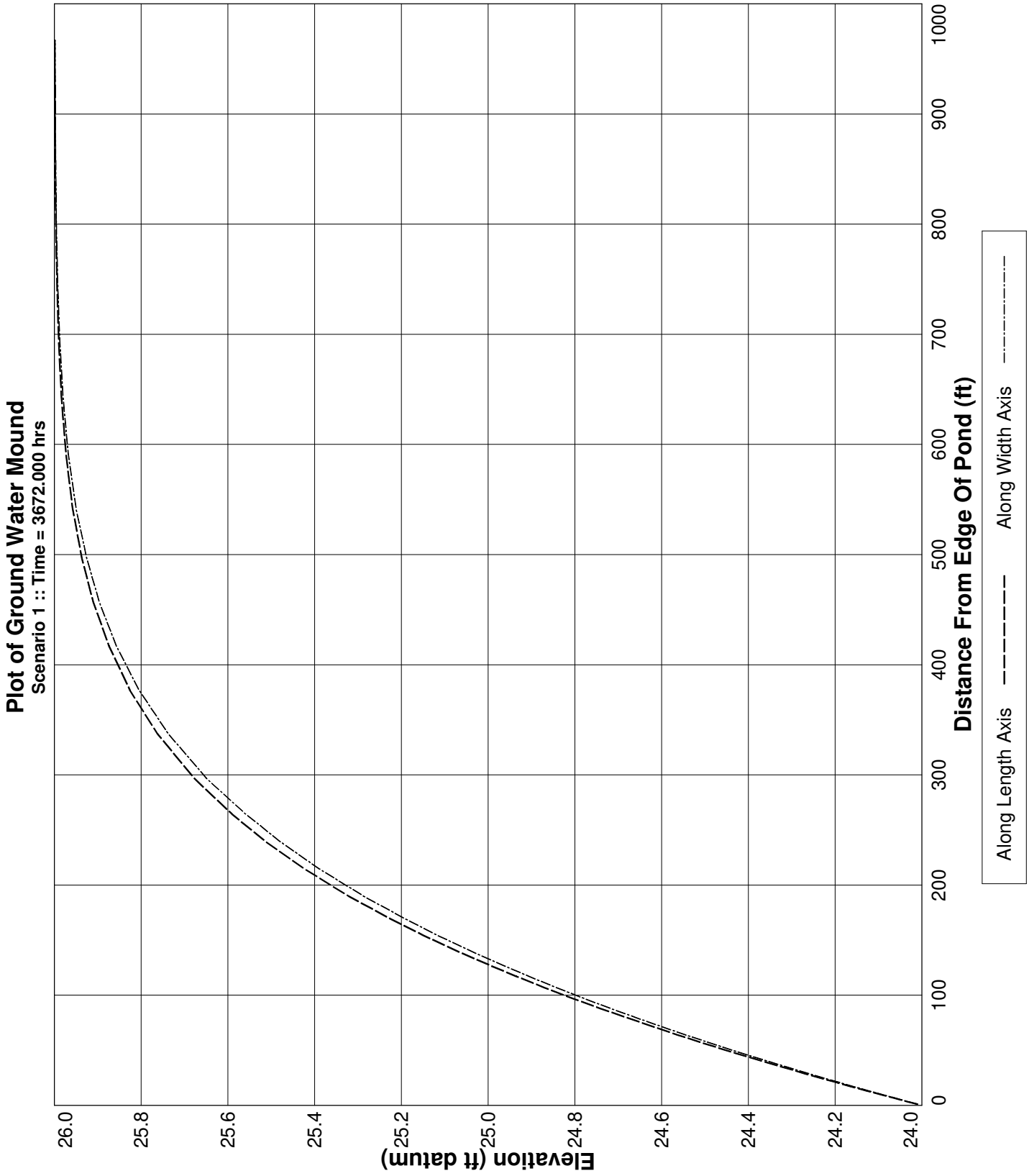
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No.21, West Wetland, with wall
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-24-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	-20.00
Water Table Elevation, [WT] (ft datum):	26.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.01
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	991.0
Equivalent Pond Width, [W] (ft):	546.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft²)
-15.00	196020.0
24.00	541015.2

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	24
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	25.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

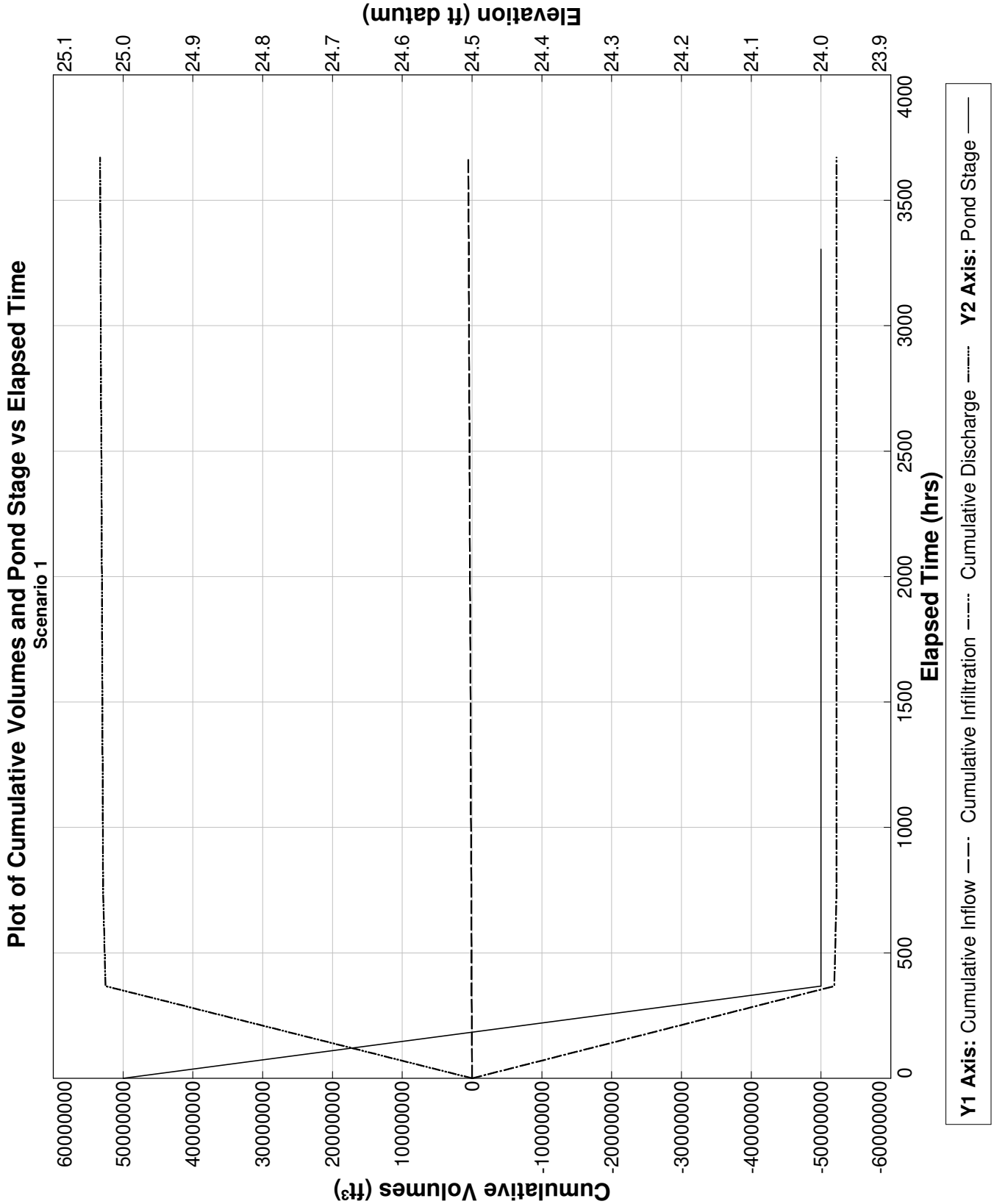
Begin Scenario 1 3/24/2023 8:10:40
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 25.0 ft.
End Scenario 1 3/24/2023 8:10:41

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

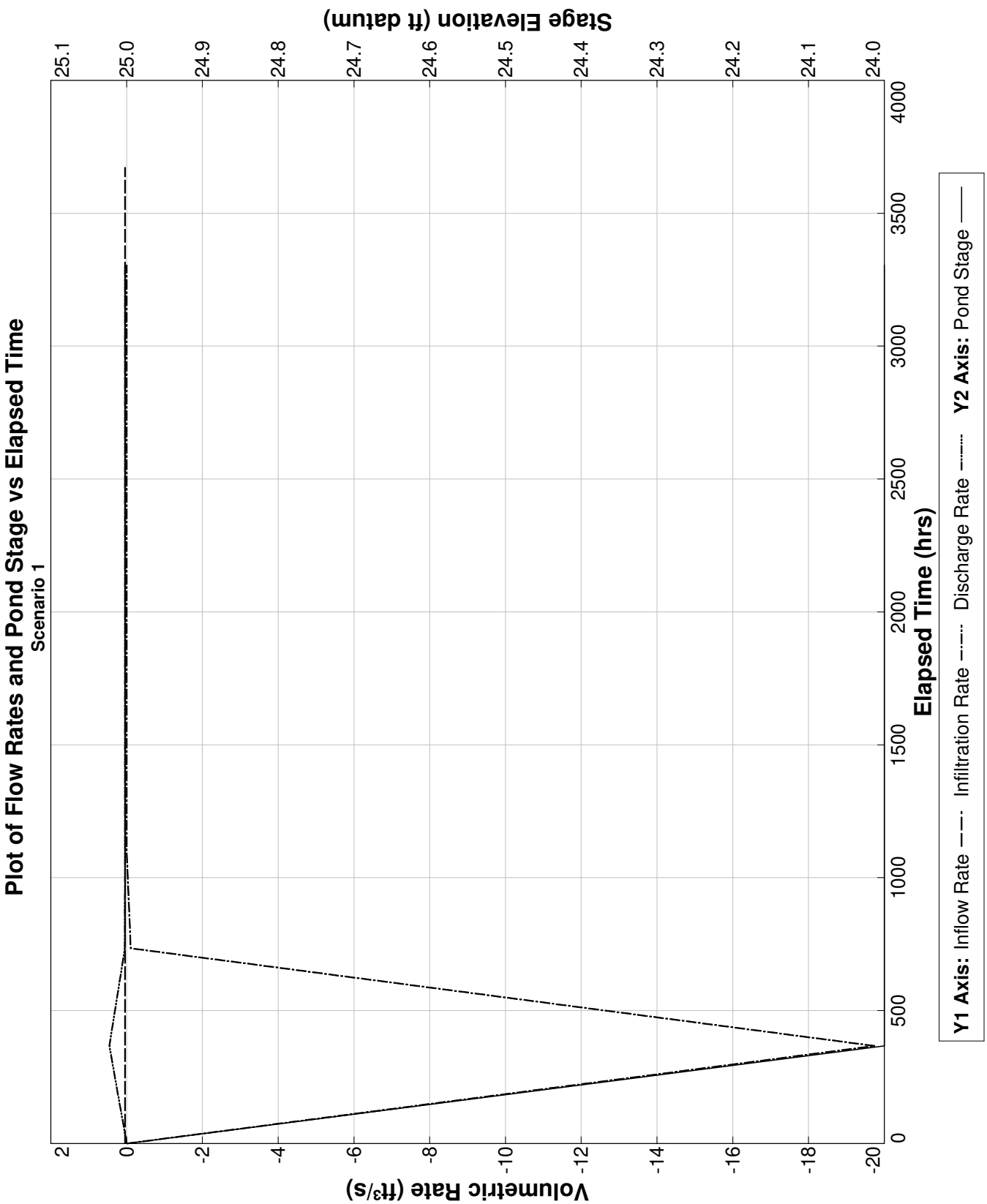
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0409	0.00163	25.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0409	0.00163	24.00004	-19.74320	.4547299	54108.600	-51921290.0	5.25164E+07	S
734.400	0.0409	0.00163	24.00000	-0.10621	4.558417E-02	108217.200	-52197850.0	5.284708E+07	S
1101.600	0.0409	0.00163	24.00000	-0.00237	4.271642E-02	162325.800	-52202110.0	5.290545E+07	S
1468.800	0.0409	0.00163	24.00000	-0.00137	4.219673E-02	216434.400	-52204120.0	5.296157E+07	S
1836.000	0.0409	0.00163	24.00000	-0.00117	4.208223E-02	270543.000	-52205720.0	5.301728E+07	S
2203.200	0.0409	0.00163	24.00000	-0.00113	.0420564	324651.600	-52207220.0	5.307289E+07	S
2570.400	0.0409	0.00163	24.00000	-0.00113	4.205551E-02	378760.200	-52208710.0	5.312848E+07	S
2937.600	0.0409	0.00163	24.00000	-0.00113	4.206432E-02	432868.800	-52210200.0	5.318408E+07	S
3304.800	0.0409	0.00163	24.00000	-0.00115	4.207805E-02	486977.400	-52211710.0	5.32397E+07	S
3672.000	0.0409	0.00163	24.00000	----	----	541086.000	-52213230.0	5.329534E+07	N.A.

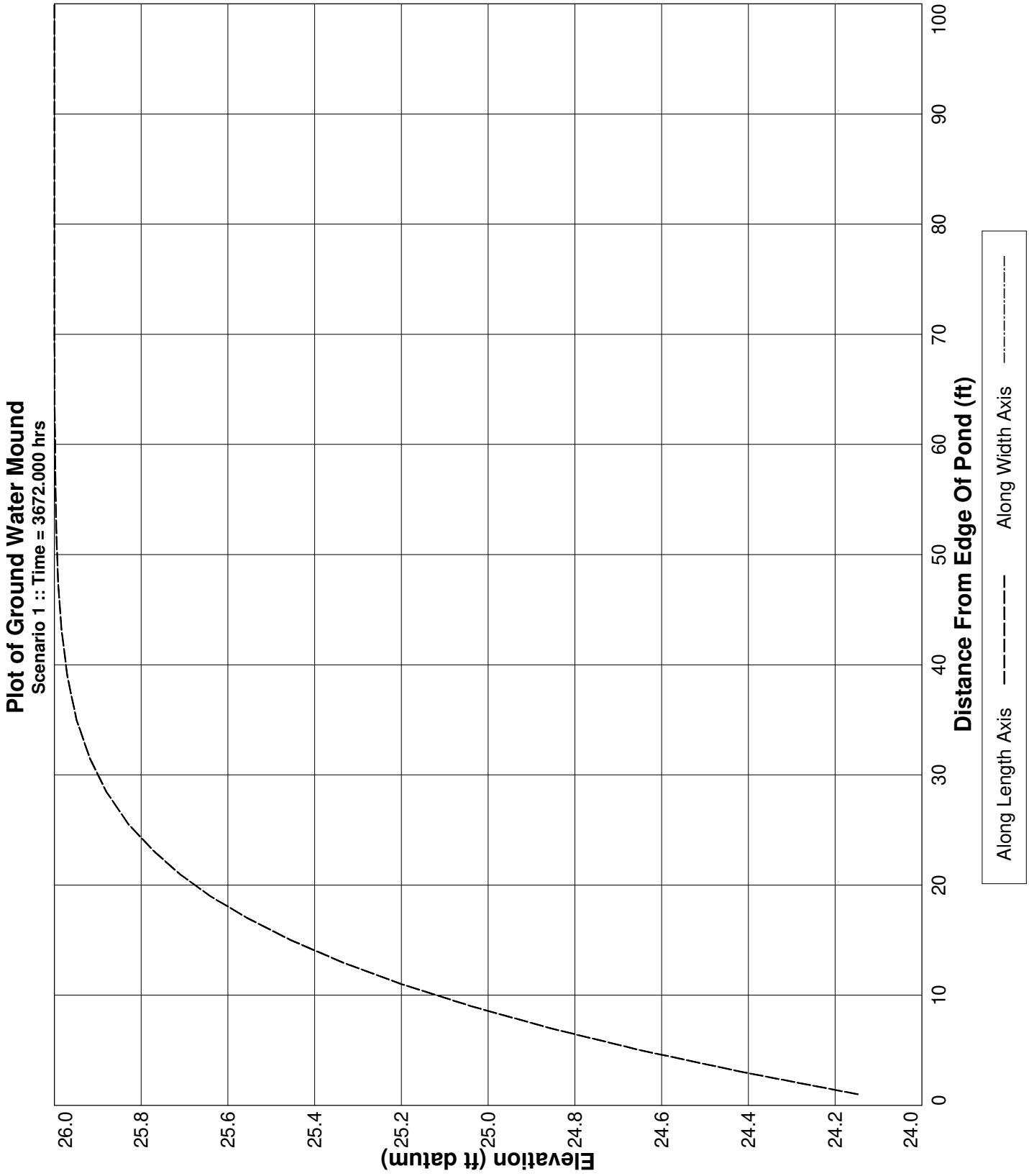
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No.21, South Wetland, without wall
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-24-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	-20.00
Water Table Elevation, [WT] (ft datum):	27.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	1.22
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	991.0
Equivalent Pond Width, [W] (ft):	546.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
-15.00	196020.0
24.00	541015.2

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	24
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	26.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

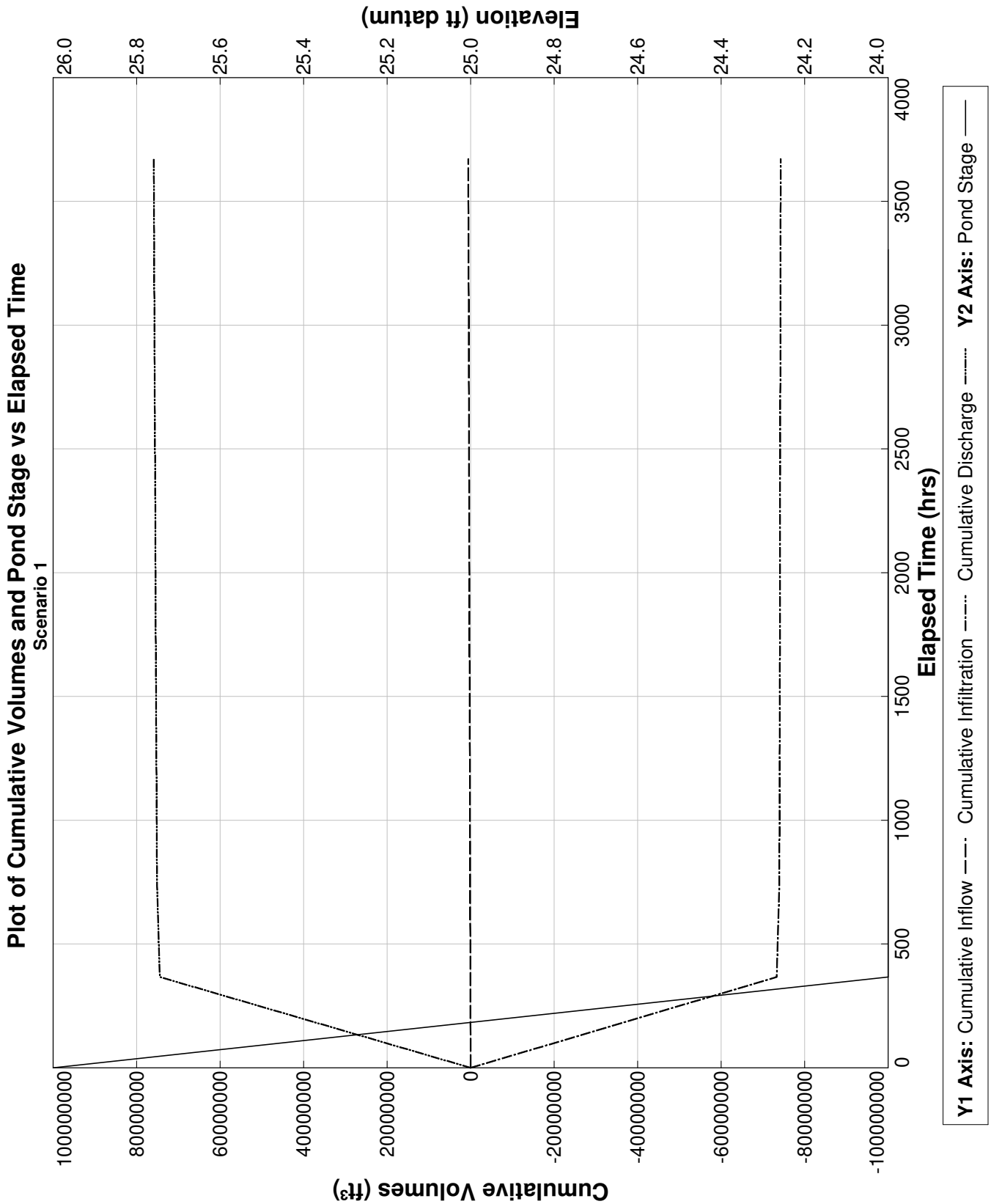
Begin Scenario 1 3/24/2023 8:13:26
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 26.0 ft.
End Scenario 1 3/24/2023 8:13:26

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

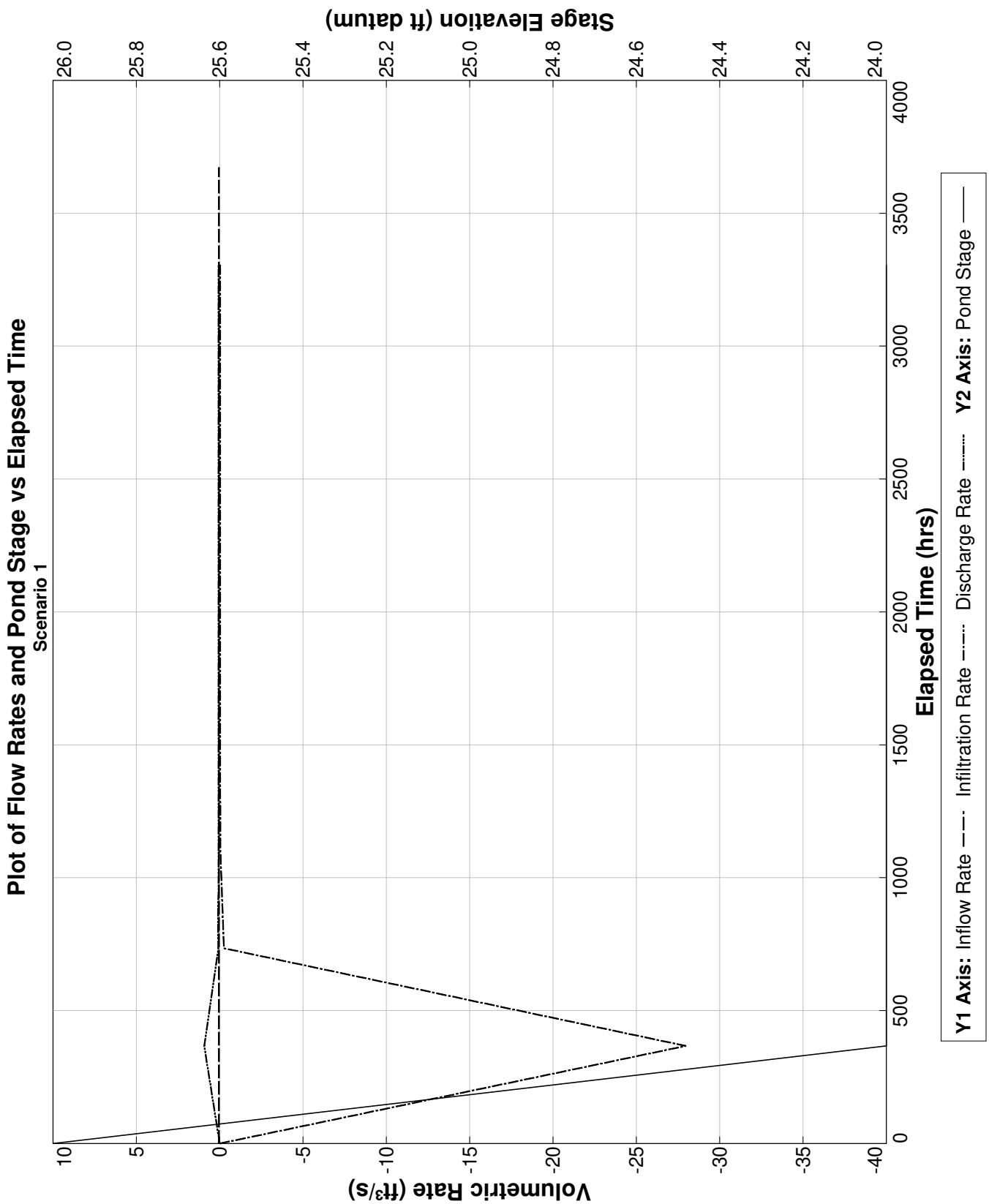
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0409	0.00163	26.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0409	0.00163	24.00014	-27.96815	.9334161	54108.600	-73325240.0	7.44613E+07	S
734.400	0.0409	0.00163	24.00000	-0.25336	8.366934E-02	108217.200	-73943300.0	7.513355E+07	S
1101.600	0.0409	0.00163	24.00000	-0.03664	7.654971E-02	162325.800	-73995100.0	7.523945E+07	S
1468.800	0.0409	0.00163	24.00000	-0.03295	7.352799E-02	216434.400	-74040180.0	7.533865E+07	S
1836.000	0.0409	0.00163	24.00000	-0.03118	7.193171E-02	270543.000	-74082220.0	7.543479E+07	S
2203.200	0.0409	0.00163	24.00000	-0.03019	7.106412E-02	324651.600	-74122620.0	7.55293E+07	S
2570.400	0.0409	0.00163	24.00000	-0.02955	7.041793E-02	378760.200	-74162020.0	7.562282E+07	S
2937.600	0.0409	0.00163	24.00000	-0.02915	7.003199E-02	432868.800	-74200750.0	7.571565E+07	S
3304.800	0.0409	0.00163	24.00000	-0.02894	6.982991E-02	486977.400	-74239090.0	7.58081E+07	S
3672.000	0.0409	0.00163	24.00000	----	----	541086.000	-74277260.0	7.590037E+07	N.A.

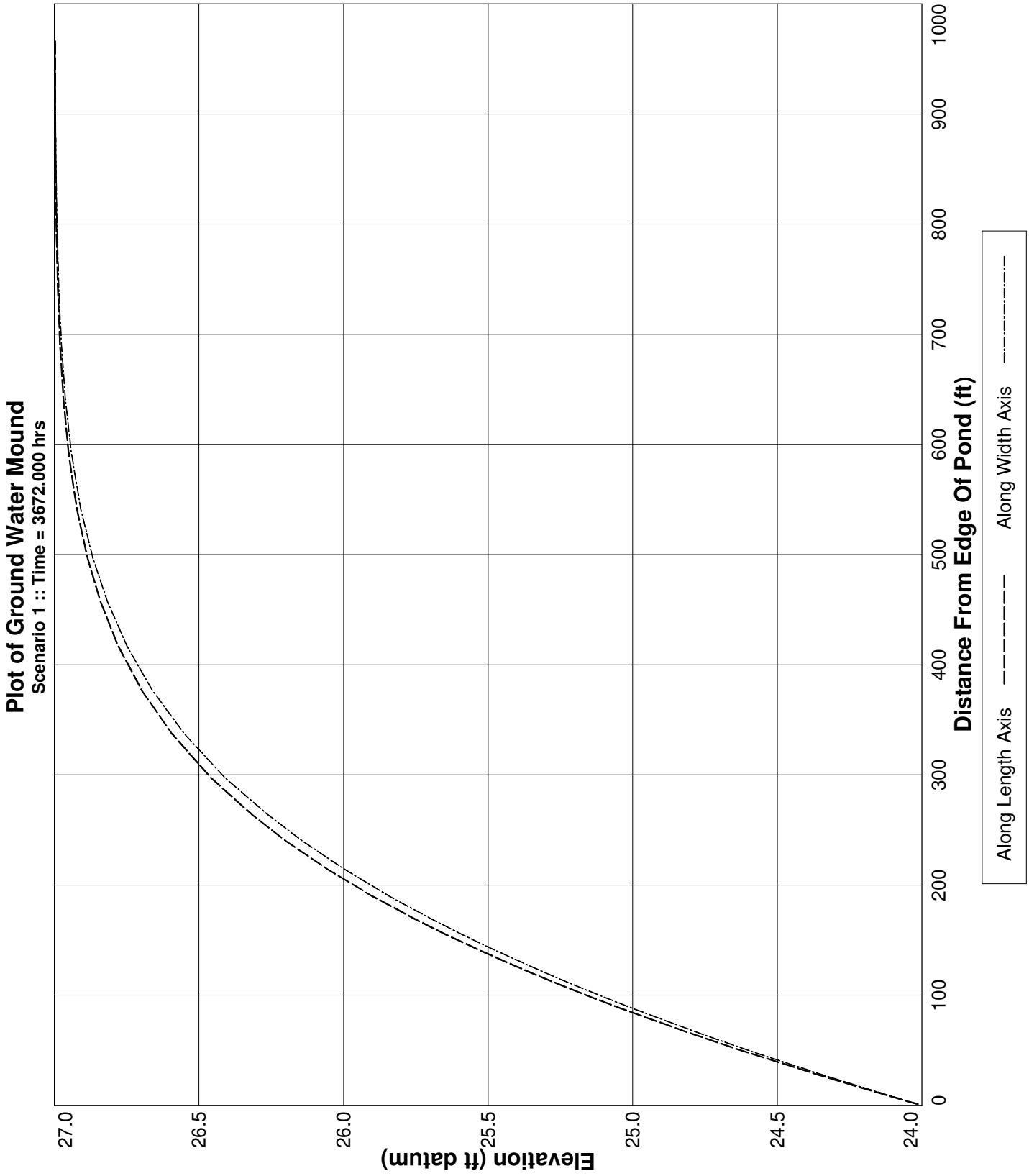
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No.21, South Wetland, with wall
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-24-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	-20.00
Water Table Elevation, [WT] (ft datum):	27.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.01
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	991.0
Equivalent Pond Width, [W] (ft):	546.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
-15.00	196020.0
24.00	541015.2

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	24
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	26.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
  Perimeter boundary condition: constant head
  Maximum iterations of outer loop: 150
  Maximum iterations of inner loop: 60
  Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
  Instantanerous storage coefficient: Volumetric balance
  Default head closure tolerance: .01
  Default residual closure tolerance: .5
  Target water budget error: 1
  On failure to converge: Rerun limiting inner loop to one iteration
    > Maximum number of iterations of outer loop: 500
  Running Average Porosity is active
    > Starting on pass: 2
    > When outer iteration reaches: 50
    > Number of data points: 4
  Running Average Pond Stage (for discharge structures with tailwater) is active
    > Starting on pass: 2
    > When outer iteration reaches: 50
    > Number of data points: 4
  Grid size: 1000 ft (from pond centerline)
  Mound Output: all stress periods

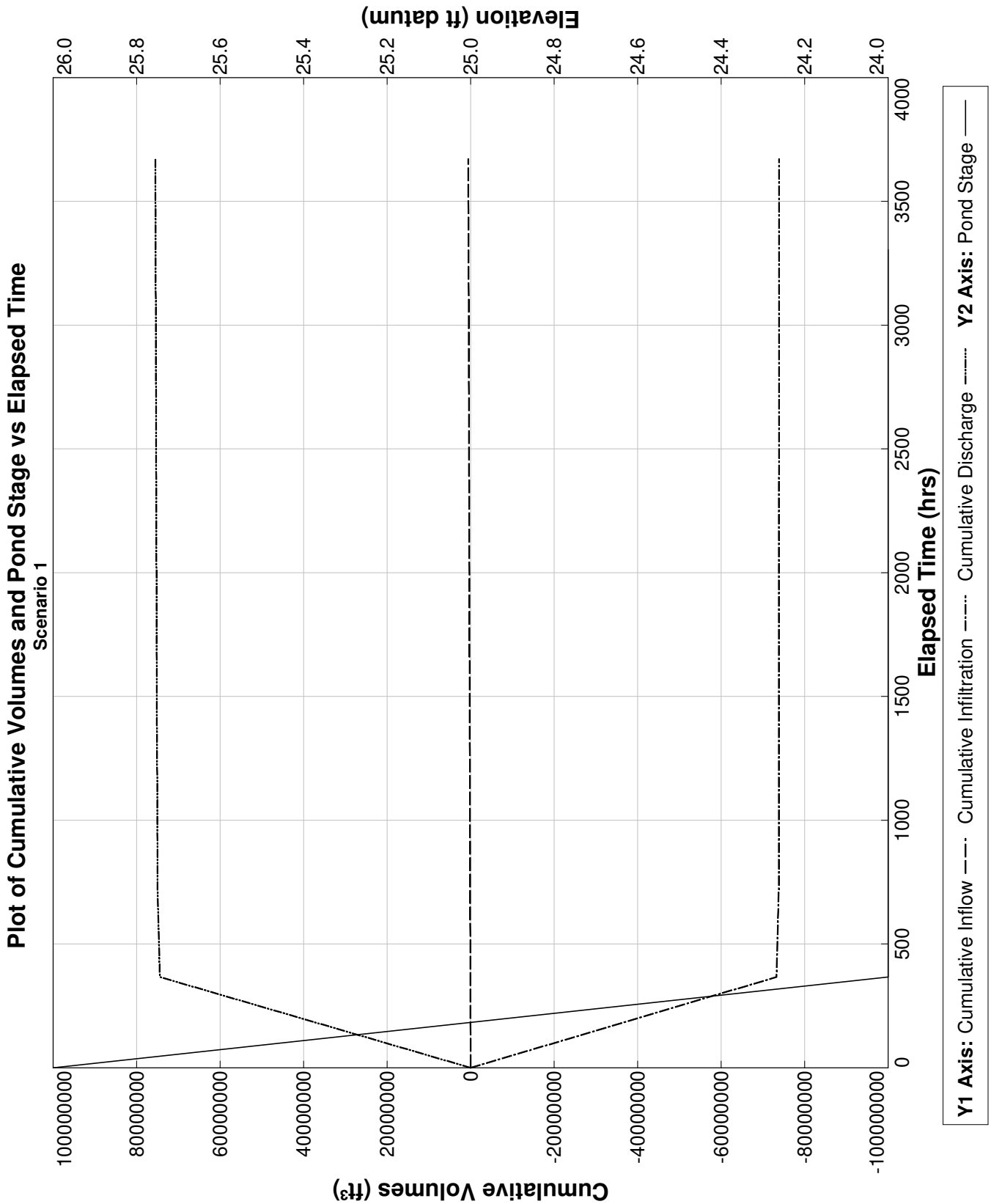
Begin Scenario 1 3/24/2023 8:15:17
  Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
  Baseflow hydrograph: Initial GWT (seasonal low) is 26.0 ft.
End Scenario 1 3/24/2023 8:15:17

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

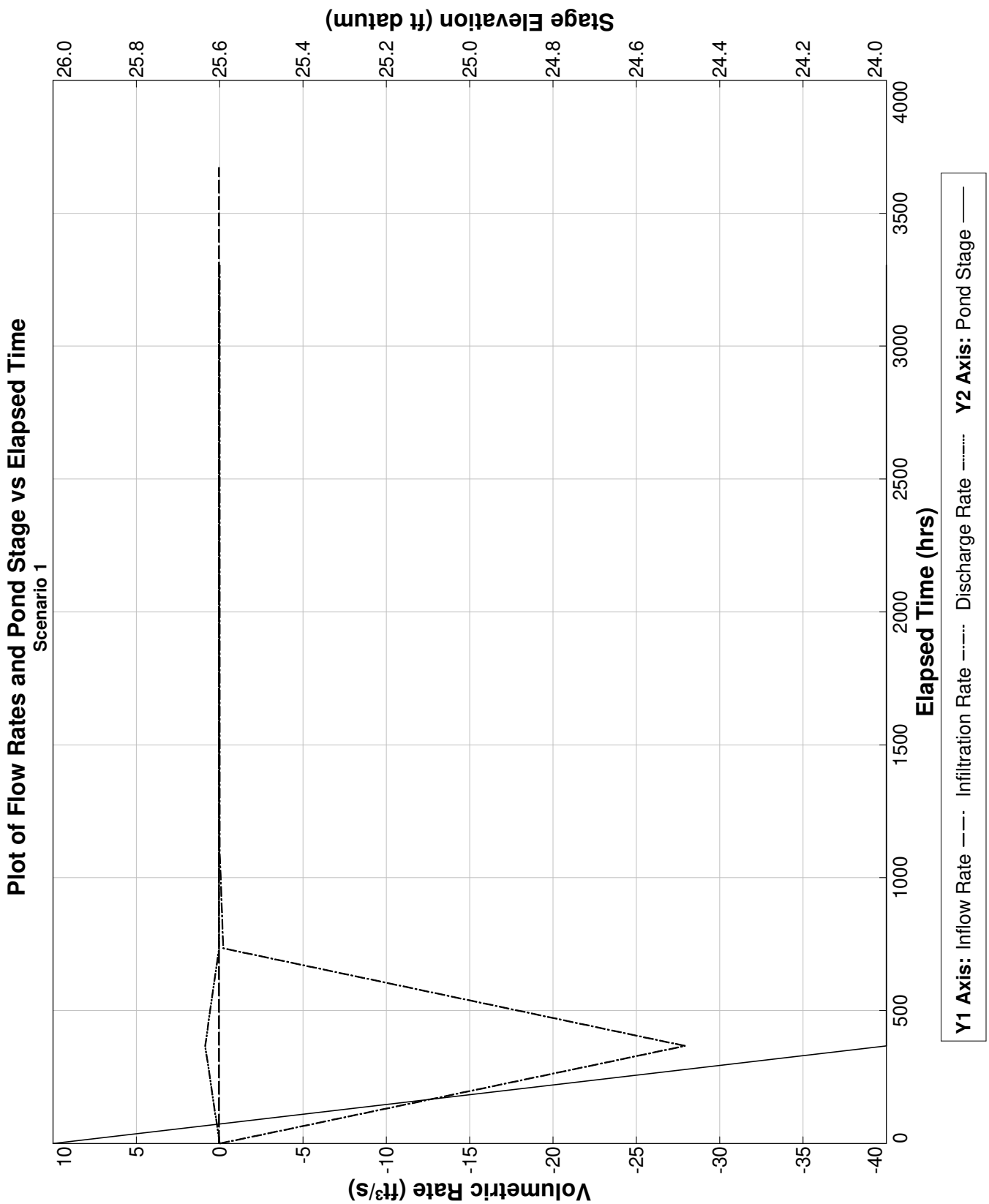
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0409	0.00163	26.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0409	0.00163	24.00013	-27.92639	.867875	54108.600	-73281910.0	7.441798E+07	S
734.400	0.0409	0.00163	24.00000	-0.21081	4.773509E-02	108217.200	-73832910.0	7.502316E+07	S
1101.600	0.0409	0.00163	24.00000	-0.00360	4.373162E-02	162325.800	-73839260.0	7.508362E+07	S
1468.800	0.0409	0.00163	24.00000	-0.00214	4.293222E-02	216434.400	-73842430.0	7.51409E+07	S
1836.000	0.0409	0.00163	24.00000	-0.00181	4.270587E-02	270543.000	-73844930.0	7.51975E+07	S
2203.200	0.0409	0.00163	24.00000	-0.00169	.0426128	324651.600	-73847220.0	7.52539E+07	S
2570.400	0.0409	0.00163	24.00000	-0.00164	4.256401E-02	378760.200	-73849400.0	7.531019E+07	S
2937.600	0.0409	0.00163	24.00000	-0.00161	4.253598E-02	432868.800	-73851540.0	7.536644E+07	S
3304.800	0.0409	0.00163	24.00000	-0.00159	4.252008E-02	486977.400	-73853650.0	7.542266E+07	S
3672.000	0.0409	0.00163	24.00000	----	----	541086.000	-73855740.0	7.547886E+07	N.A.

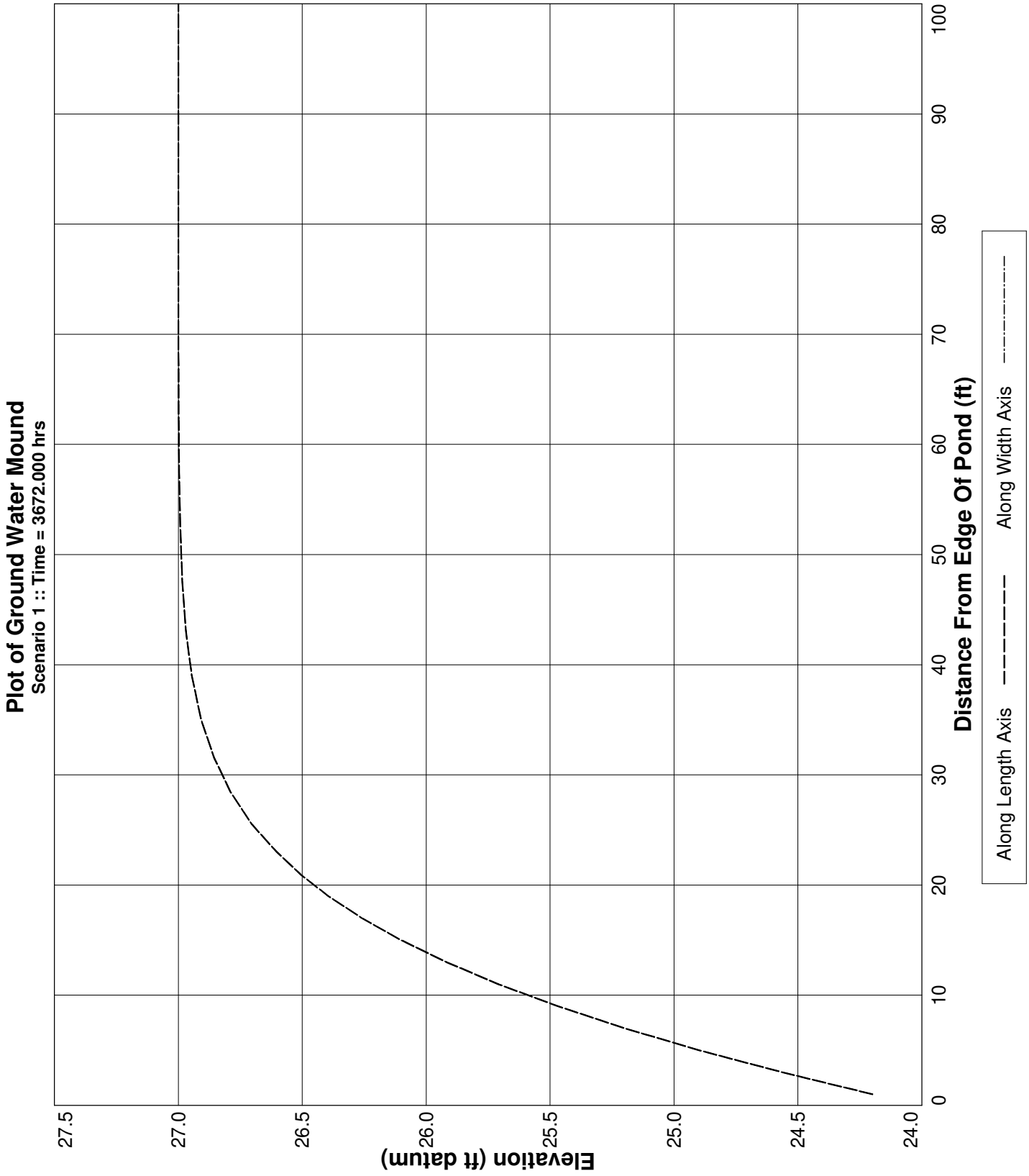
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF 21, SW, Baseflow, without wall
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-30-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	8.00
Water Table Elevation, [WT] (ft datum):	24.25
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	1.12
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	991.0
Equivalent Pond Width, [W] (ft):	546.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
13.00	435.6
24.00	21780.0

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	24
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	23.25
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

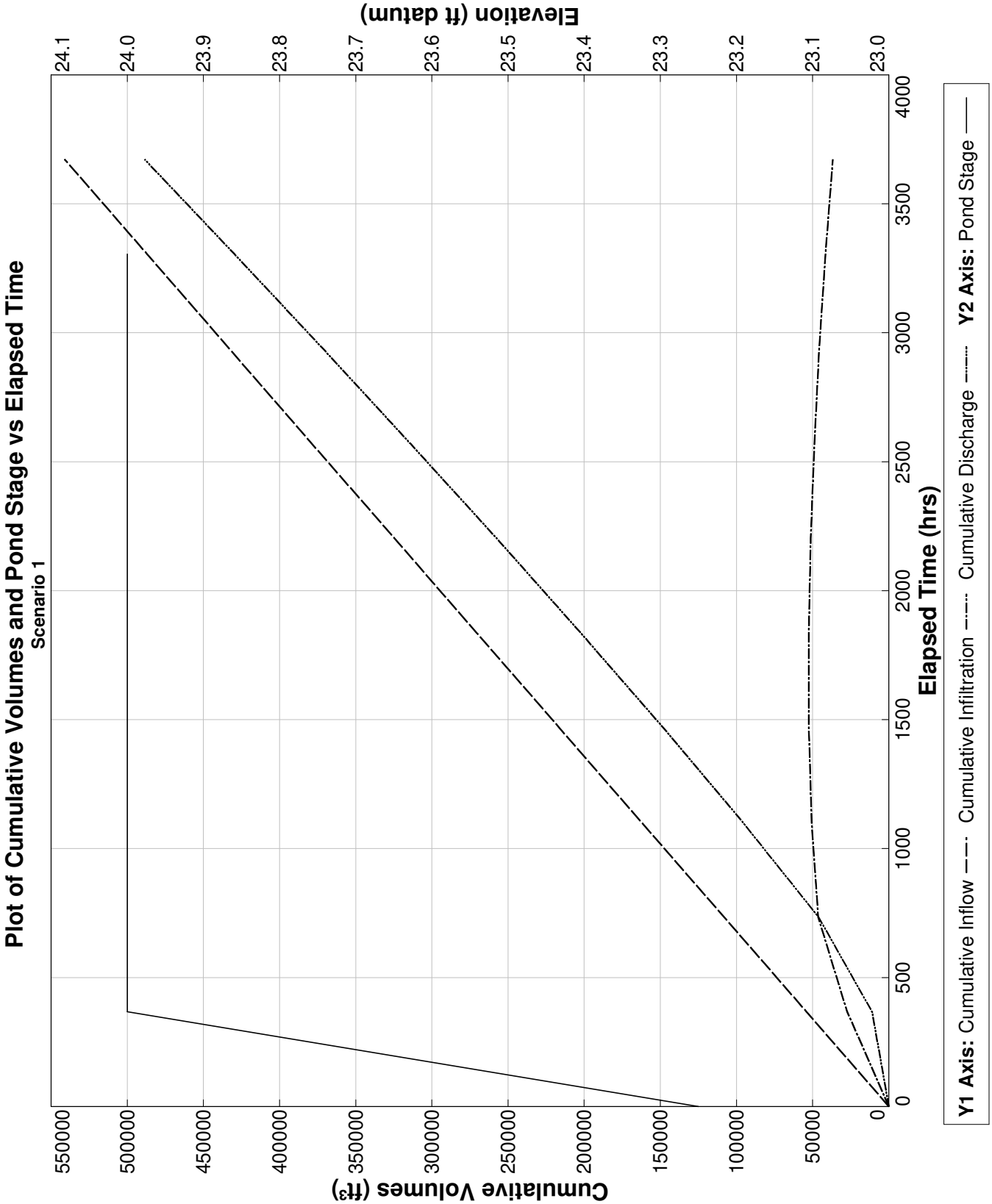
Begin Scenario 1 3/30/2023 10:36:17
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 23.25 ft.
End Scenario 1 3/30/2023 10:36:17

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

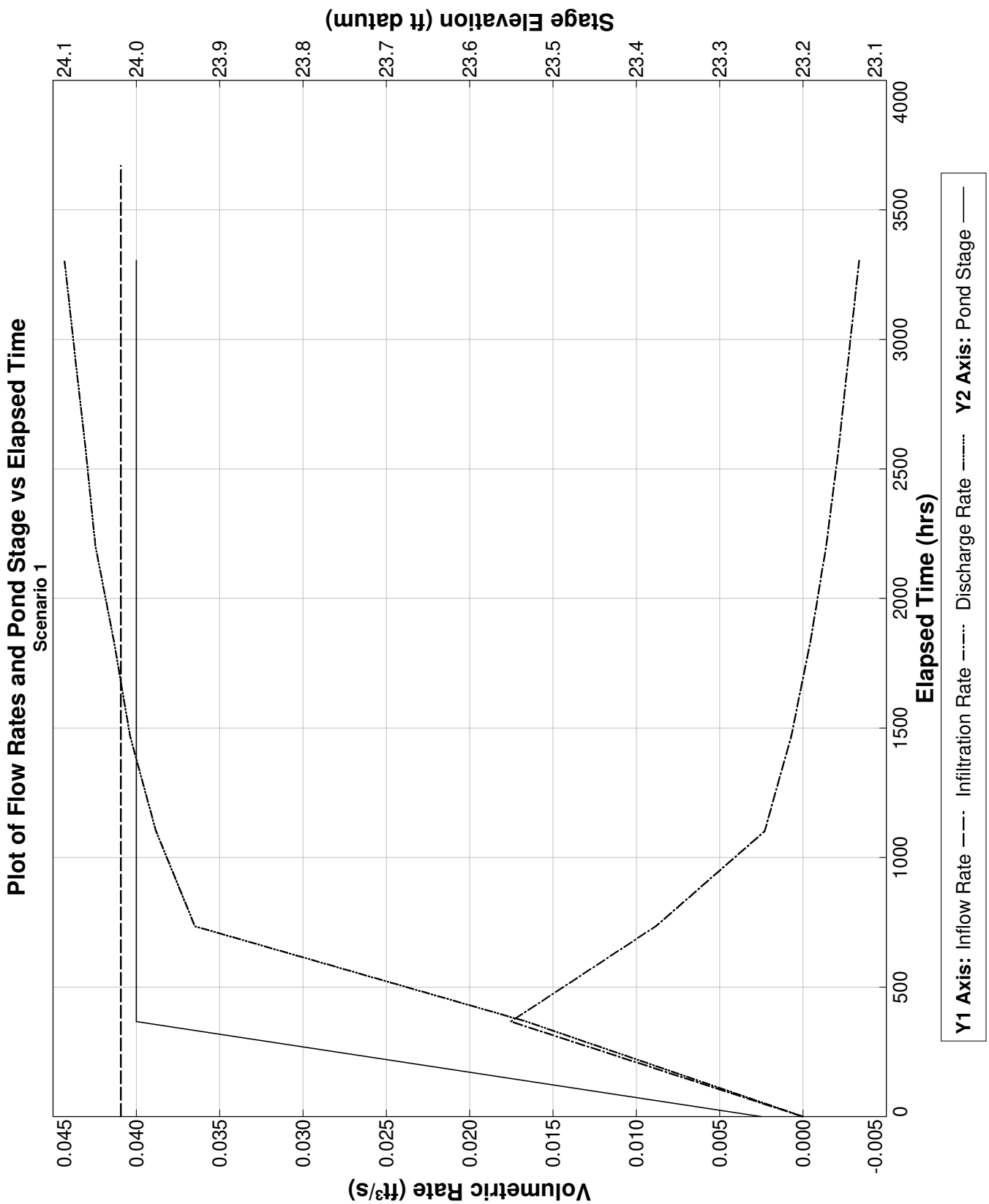
Detailed Results *:: Scenario 1 ::*

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0409	0.00163	23.25000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0409	0.00163	24.00000	0.01753	1.660622E-02	54108.600	27343.3	10976.05	S
734.400	0.0409	0.00163	24.00000	0.00883	3.648921E-02	108217.200	46357.9	46070	S
1101.600	0.0409	0.00163	24.00000	0.00231	3.881412E-02	162325.800	50694.0	95842.49	S
1468.800	0.0409	0.00163	24.00000	0.00070	4.038507E-02	216434.400	52455.1	148190	S
1836.000	0.0409	0.00163	24.00000	-0.00045	4.135233E-02	270543.000	52538.6	202215.1	S
2203.200	0.0409	0.00163	24.00000	-0.00139	4.245126E-02	324651.600	51256.4	257606	S
2570.400	0.0409	0.00163	24.00000	-0.00212	4.302899E-02	378760.200	48865.9	314105	S
2937.600	0.0409	0.00163	24.00000	-0.00274	4.368092E-02	432868.800	45662.8	371416.8	S
3304.800	0.0409	0.00163	24.00000	-0.00337	4.431501E-02	486977.400	41609.6	429578.6	S
3672.000	0.0409	0.00163	24.00000	----	----	541086.000	36748.9	488547.8	N.A.

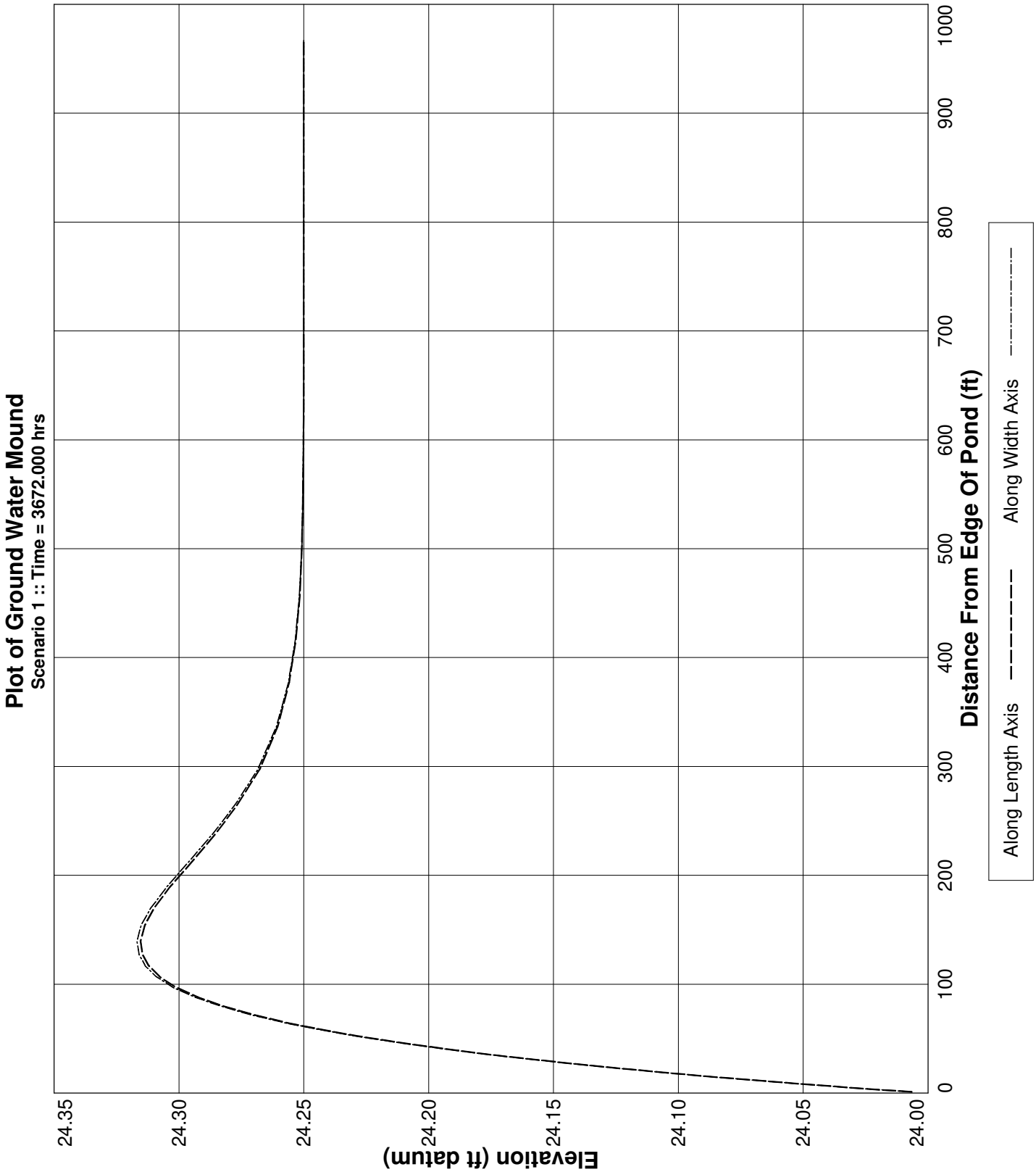
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF 21, SW, Baseflow
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-30-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	8.00
Water Table Elevation, [WT] (ft datum):	24.25
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.01
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	991.0
Equivalent Pond Width, [W] (ft):	546.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
13.00	435.6
24.00	21780.0

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	24
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	23.25
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

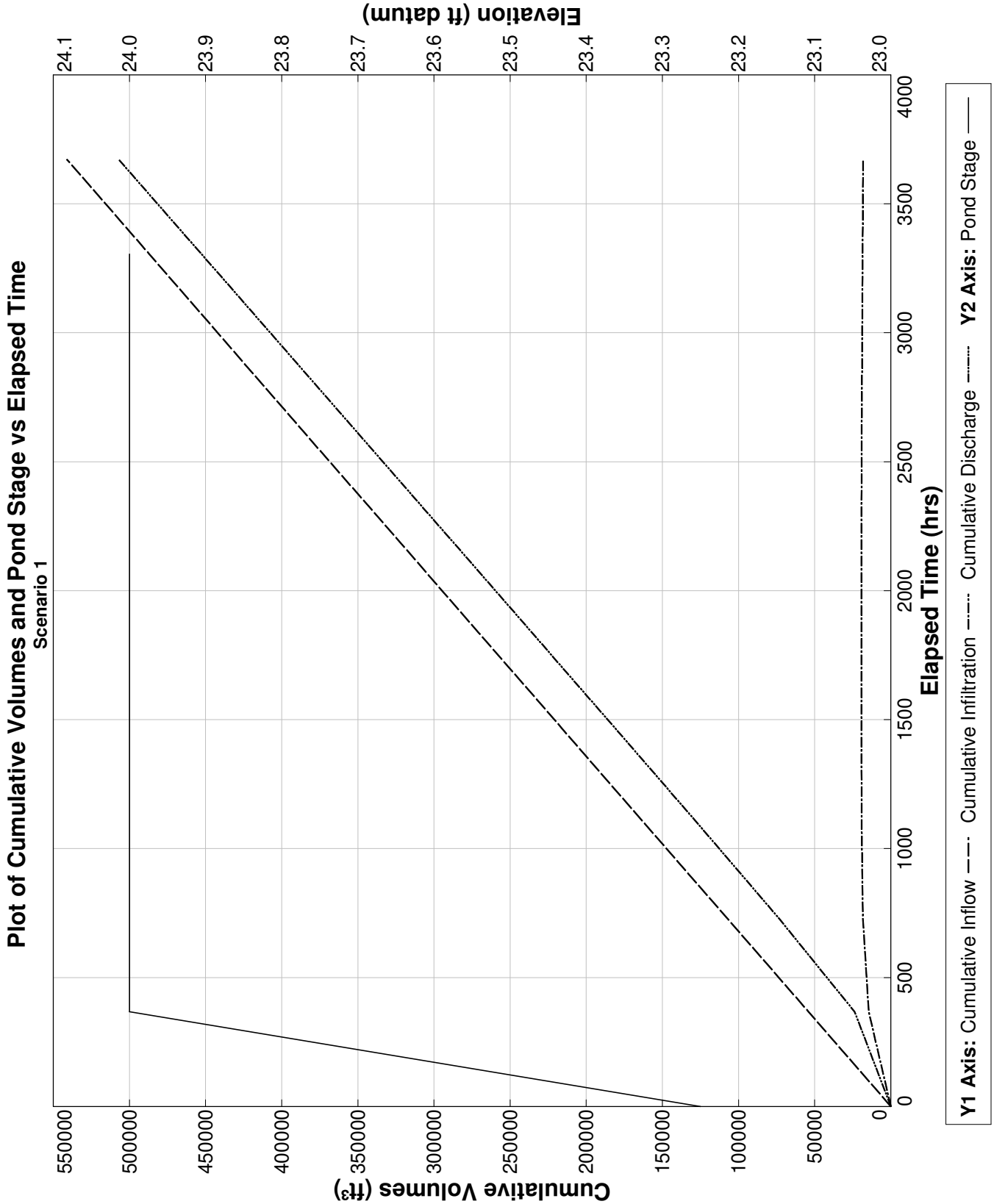
Begin Scenario 1 3/30/2023 10:32:17
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 23.25 ft.
#WARNING: The calculated water budget error exceeded the target water budget error for 4 of 10 saturated stress periods.
Maximum calculated water budget error is -4.39925880082418 percent, for saturated stress period 1.
If convergence is not a problem, it is recommended to reduce the Modflow convergence tolerences
to attempt to decrease the water budget error to within the target level.
End Scenario 1 3/30/2023 10:32:17

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

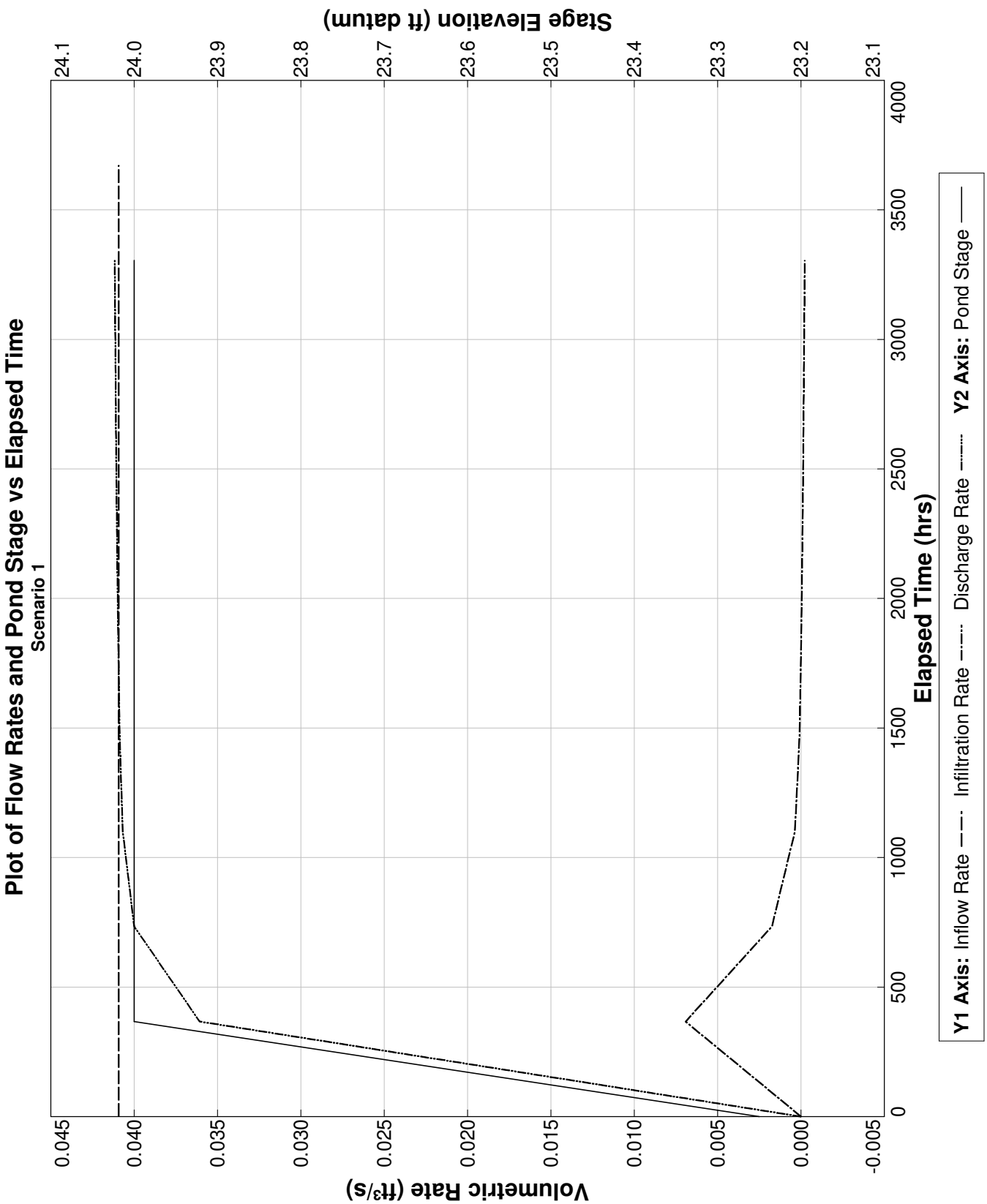
Detailed Results *:: Scenario 1 ::*

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0409	0.00163	23.25000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0409	0.00163	24.00000	0.00693	3.606441E-02	54108.600	14482.2	23837.13	S
734.400	0.0409	0.00163	24.00000	0.00174	4.000076E-02	108217.200	18314.8	74113.17	S
1101.600	0.0409	0.00163	24.00000	0.00037	.0406881	162325.800	19091.3	127445.3	S
1468.800	0.0409	0.00163	24.00000	0.00009	4.086834E-02	216434.400	19294.3	181350.8	S
1836.000	0.0409	0.00163	24.00000	-0.00002	4.095949E-02	270543.000	19318.0	235435.8	S
2203.200	0.0409	0.00163	24.00000	-0.00009	4.102408E-02	324651.600	19238.7	289623.6	S
2570.400	0.0409	0.00163	24.00000	-0.00014	4.107643E-02	378760.200	19082.2	343888.8	S
2937.600	0.0409	0.00163	24.00000	-0.00019	4.112139E-02	432868.800	18861.3	398218.3	S
3304.800	0.0409	0.00163	24.00000	-0.00023	4.116125E-02	486977.400	18584.4	452603.8	S
3672.000	0.0409	0.00163	24.00000	----	----	541086.000	18257.2	507039.5	N.A.

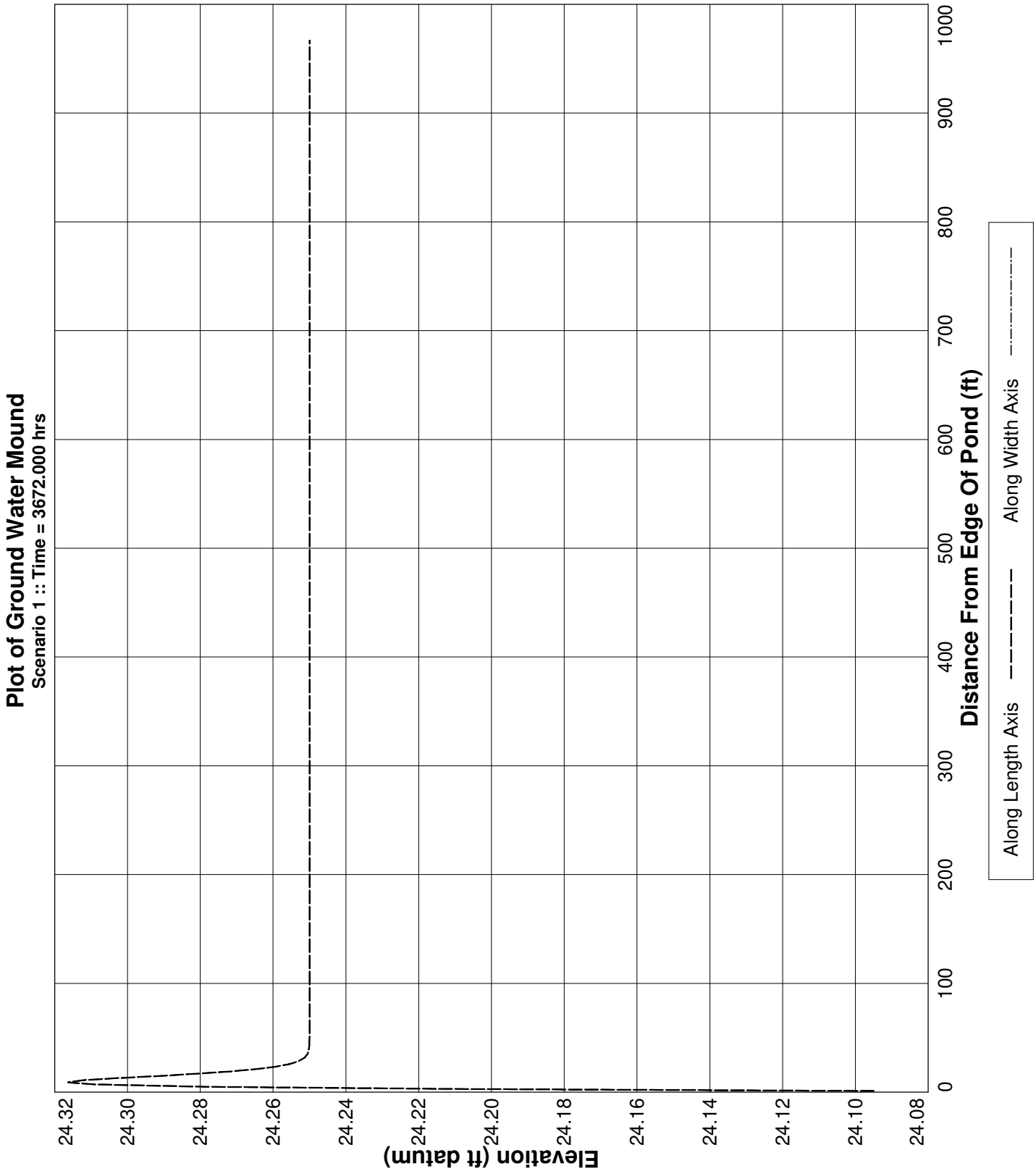
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF 21, North, Baseflow, with wall
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-30-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	8.00
Water Table Elevation, [WT] (ft datum):	26.25
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.01
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	991.0
Equivalent Pond Width, [W] (ft):	546.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft²)
13.00	435.6
24.00	21780.0

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	24
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	25.25
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

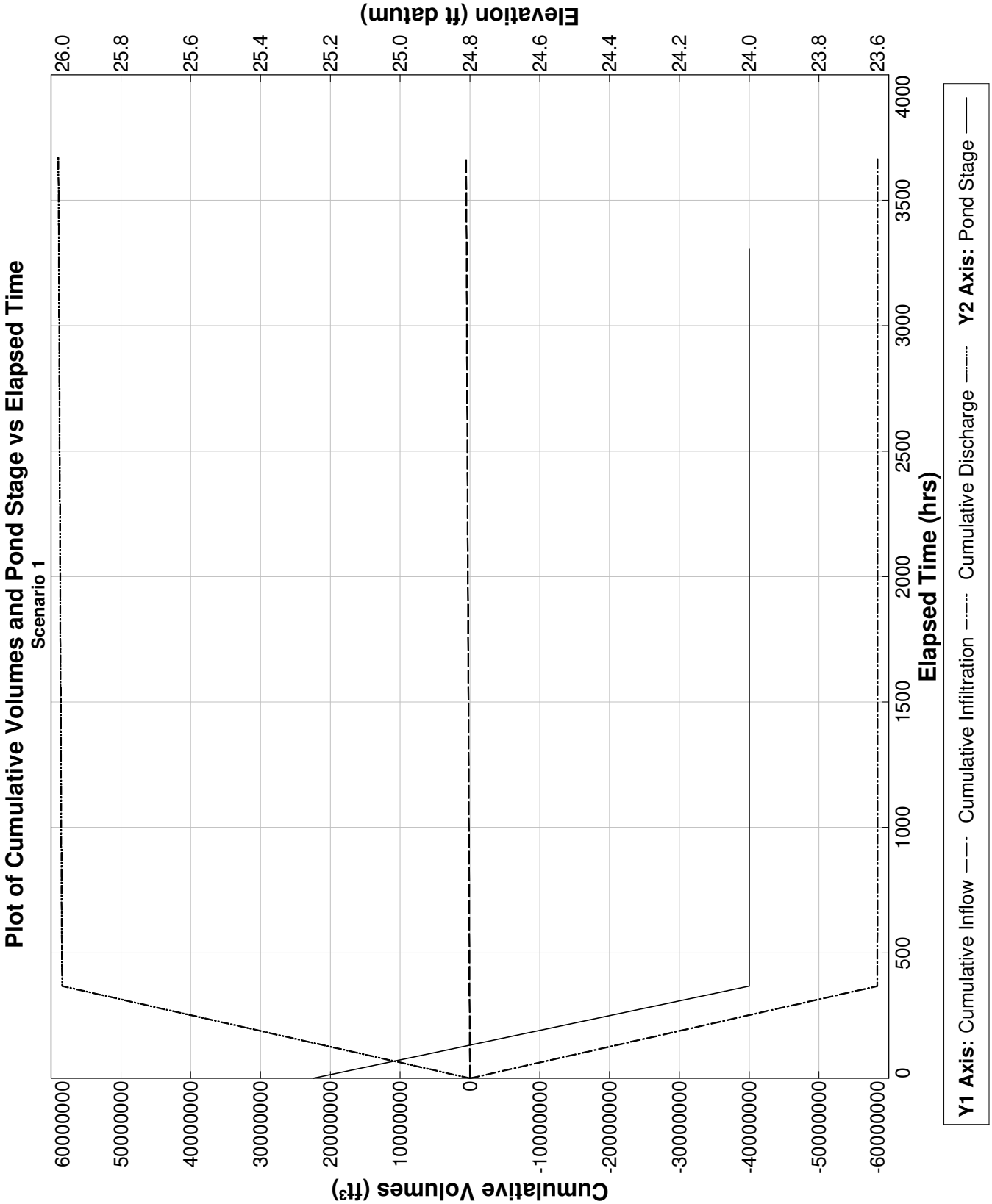
Begin Scenario 1 3/30/2023 10:38:42
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 25.25 ft.
#WARNING: The calculated water budget error exceeded the target water budget error for 5 of 10 saturated stress periods.
Maximum calculated water budget error is -3.68287443504082 percent, for saturated stress period 1.
If convergence is not a problem, it is recommended to reduce the Modflow convergence tolerences
to attempt to decrease the water budget error to within the target level.
End Scenario 1 3/30/2023 10:38:43

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

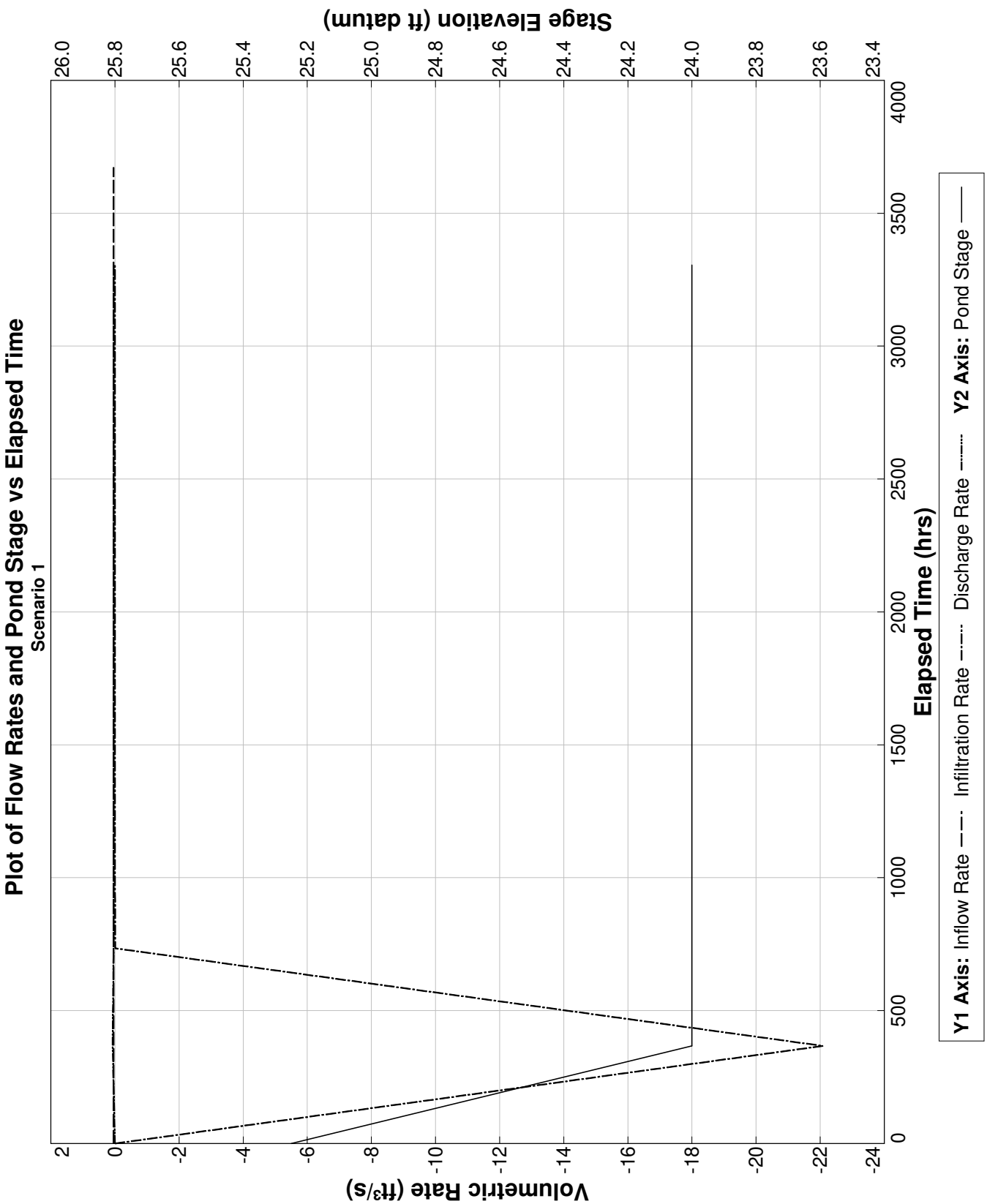
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0409	0.00163	25.25000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0409	0.00163	24.00000	-22.07639	7.049491E-02	54108.600	-58344340.0	5.842568E+07	S
734.400	0.0409	0.00163	24.00000	-0.00963	.0447859	108217.200	-58366430.0	5.850188E+07	S
1101.600	0.0409	0.00163	24.00000	-0.00180	4.217643E-02	162325.800	-58369800.0	5.855935E+07	S
1468.800	0.0409	0.00163	24.00000	-0.00094	4.180247E-02	216434.400	-58371200.0	5.861486E+07	S
1836.000	0.0409	0.00163	24.00000	-0.00081	4.172376E-02	270543.000	-58372300.0	5.867007E+07	S
2203.200	0.0409	0.00163	24.00000	-0.00077	4.170075E-02	324651.600	-58373330.0	5.872521E+07	S
2570.400	0.0409	0.00163	24.00000	-0.00076	4.169398E-02	378760.200	-58374340.0	5.878033E+07	S
2937.600	0.0409	0.00163	24.00000	-0.00076	4.169431E-02	432868.800	-58375350.0	5.883544E+07	S
3304.800	0.0409	0.00163	24.00000	-0.00077	4.169865E-02	486977.400	-58376360.0	5.889056E+07	S
3672.000	0.0409	0.00163	24.00000	----	----	541086.000	-58377380.0	5.894569E+07	N.A.

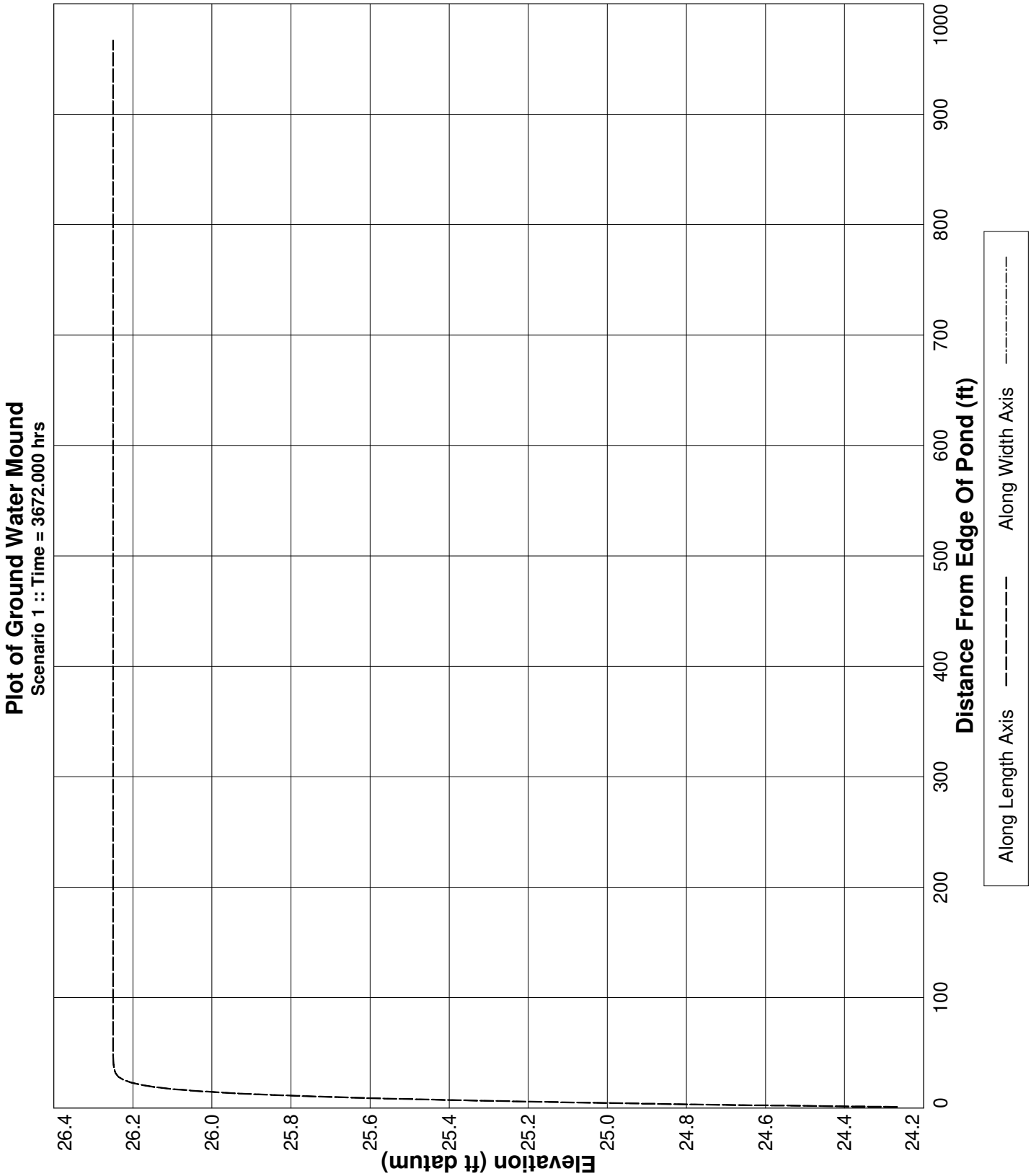
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No. 22, Baseflow
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-31-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	1.00
Water Table Elevation, [WT] (ft datum):	25.50
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.38
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	476.0
Equivalent Pond Width, [W] (ft):	83.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
5.00	435.6
24.00	39639.6

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	24
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	24.5
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

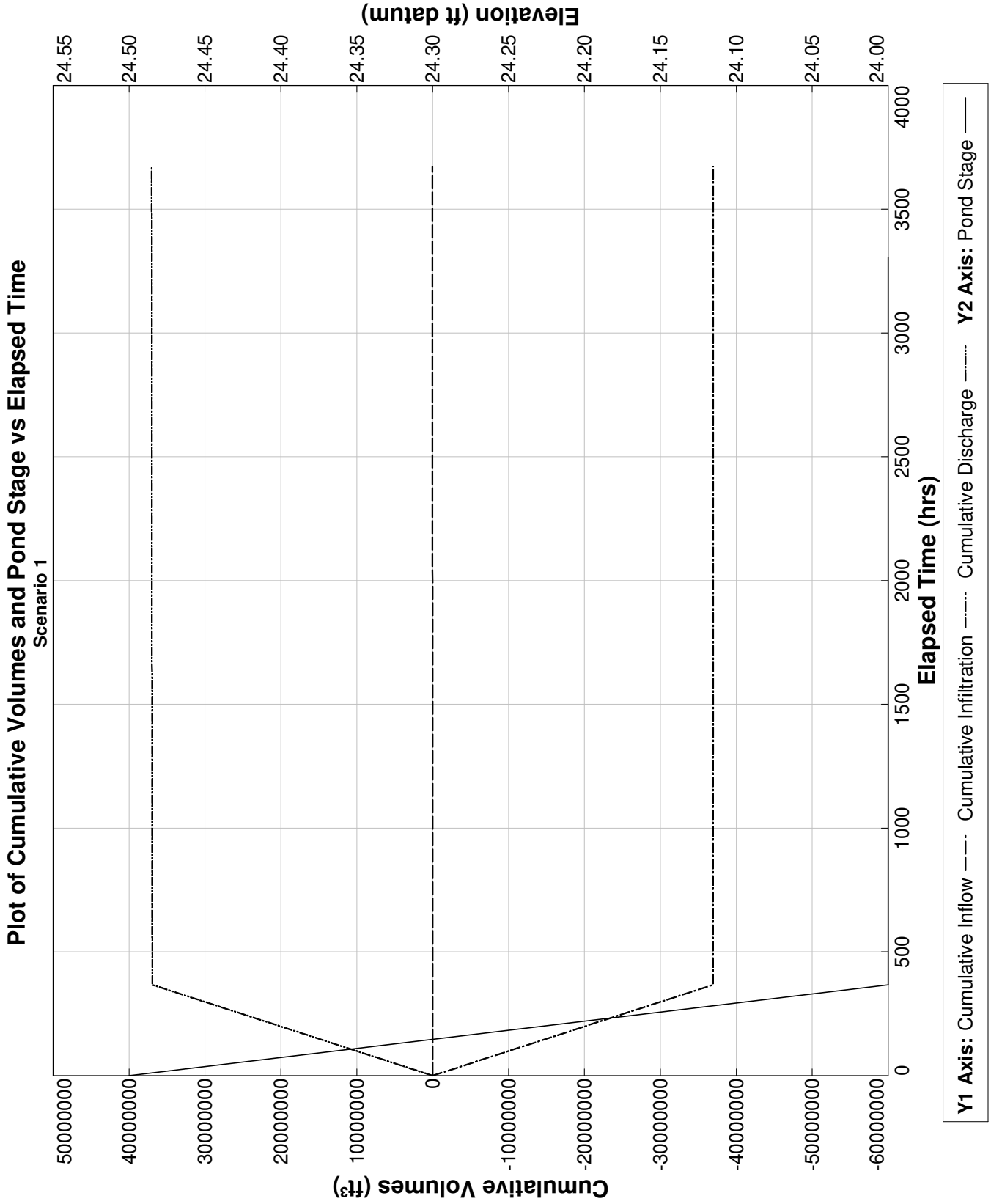
Begin Scenario 1 3/31/2023 16:23:52
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 24.5 ft.
End Scenario 1 3/31/2023 16:23:52

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

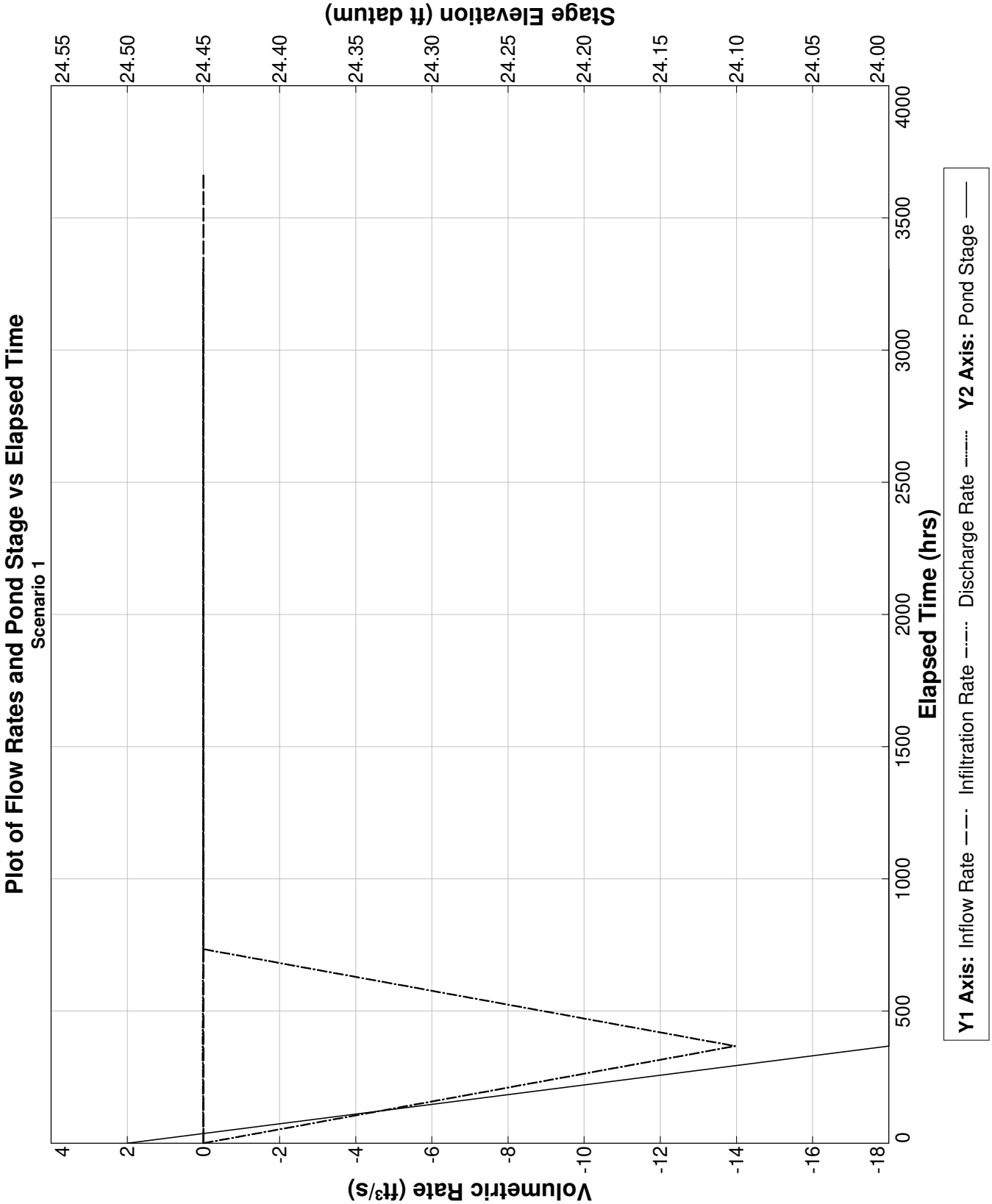
Detailed Results *:: Scenario 1 ::*

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0030	0.00163	24.50000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0030	0.00163	24.00000	-13.96739	2.208493E-02	3950.800	-36913000.0	3.693677E+07	S
734.400	0.0030	0.00163	24.00000	-0.00683	5.915789E-03	7901.600	-36927560.0	3.695528E+07	S
1101.600	0.0030	0.00163	24.00000	-0.00246	5.348713E-03	11852.400	-36931050.0	3.696272E+07	S
1468.800	0.0030	0.00163	24.00000	-0.00222	5.168676E-03	15803.200	-36934050.0	3.696968E+07	S
1836.000	0.0030	0.00163	24.00000	-0.00217	5.140661E-03	19754.000	-36936920.0	3.697649E+07	S
2203.200	0.0030	0.00163	24.00000	-0.00220	5.179018E-03	23704.800	-36939790.0	3.698331E+07	S
2570.400	0.0030	0.00163	24.00000	-0.00226	5.247192E-03	27655.600	-36942730.0	3.69902E+07	S
2937.600	0.0030	0.00163	24.00000	-0.00234	5.328834E-03	31606.400	-36945770.0	3.699719E+07	S
3304.800	0.0030	0.00163	24.00000	-0.00243	5.416472E-03	35557.200	-36948920.0	3.70043E+07	S
3672.000	0.0030	0.00163	24.00000	----	----	39508.000	-36952190.0	3.701152E+07	N.A.

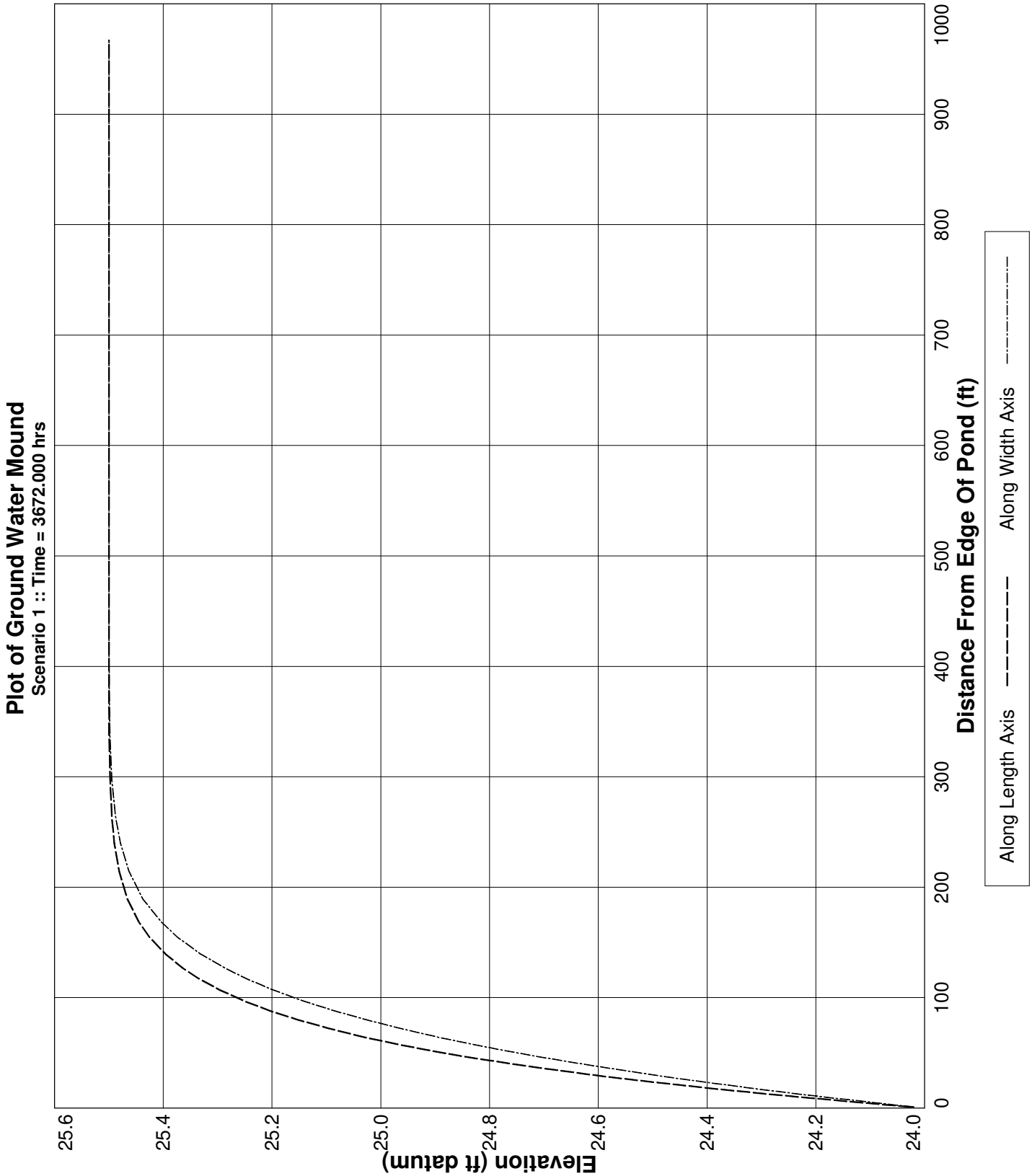
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No. 23, Baseflow
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-31-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	1.00
Water Table Elevation, [WT] (ft datum):	25.70
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.17
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	371.0
Equivalent Pond Width, [W] (ft):	92.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
3.00	435.6
24.00	33976.8

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	24
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type: Baseflow
Modflow Routing: Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	24.7
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

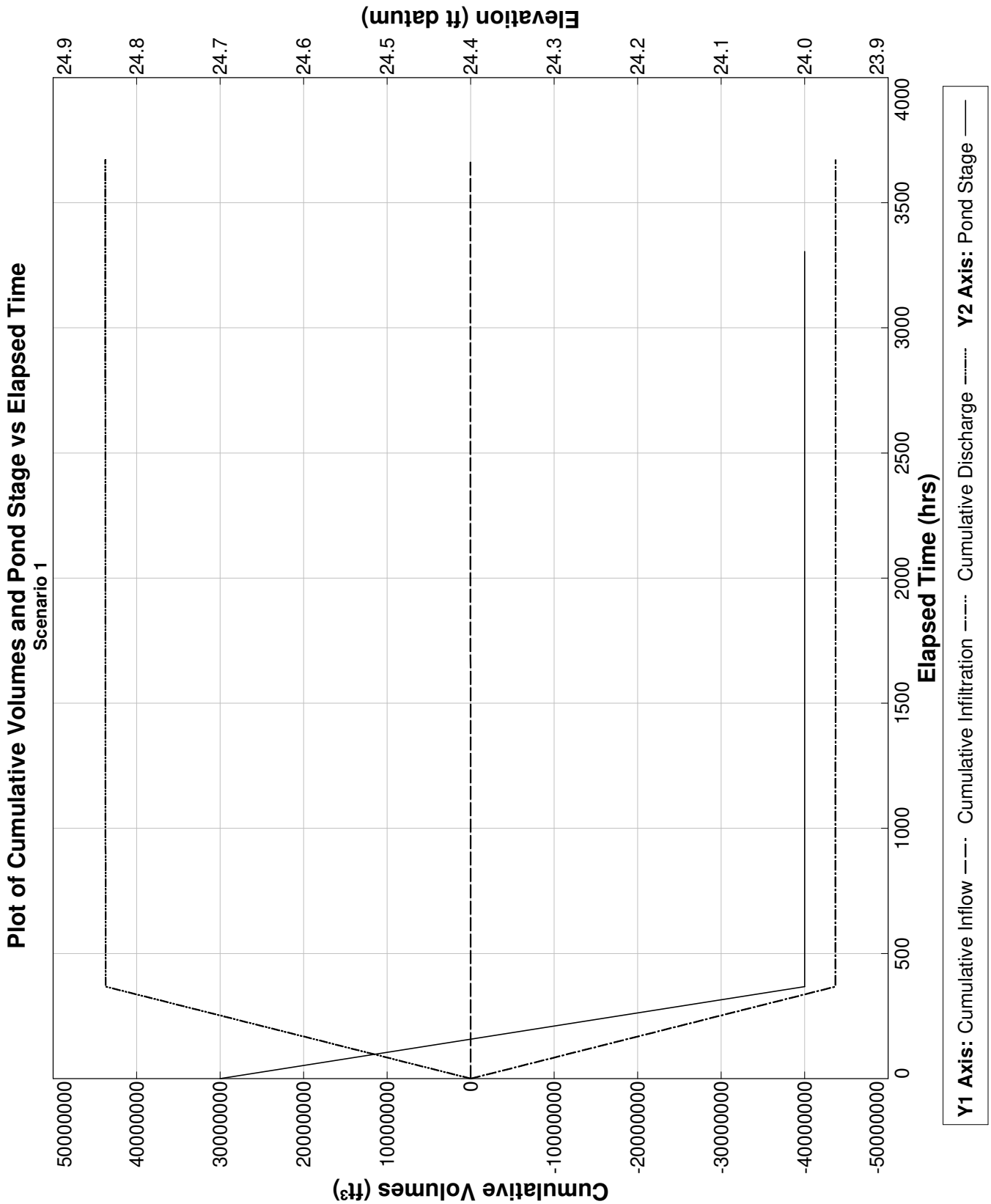
Begin Scenario 1 3/31/2023 16:41:28
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 24.7 ft.
End Scenario 1 3/31/2023 16:41:28

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

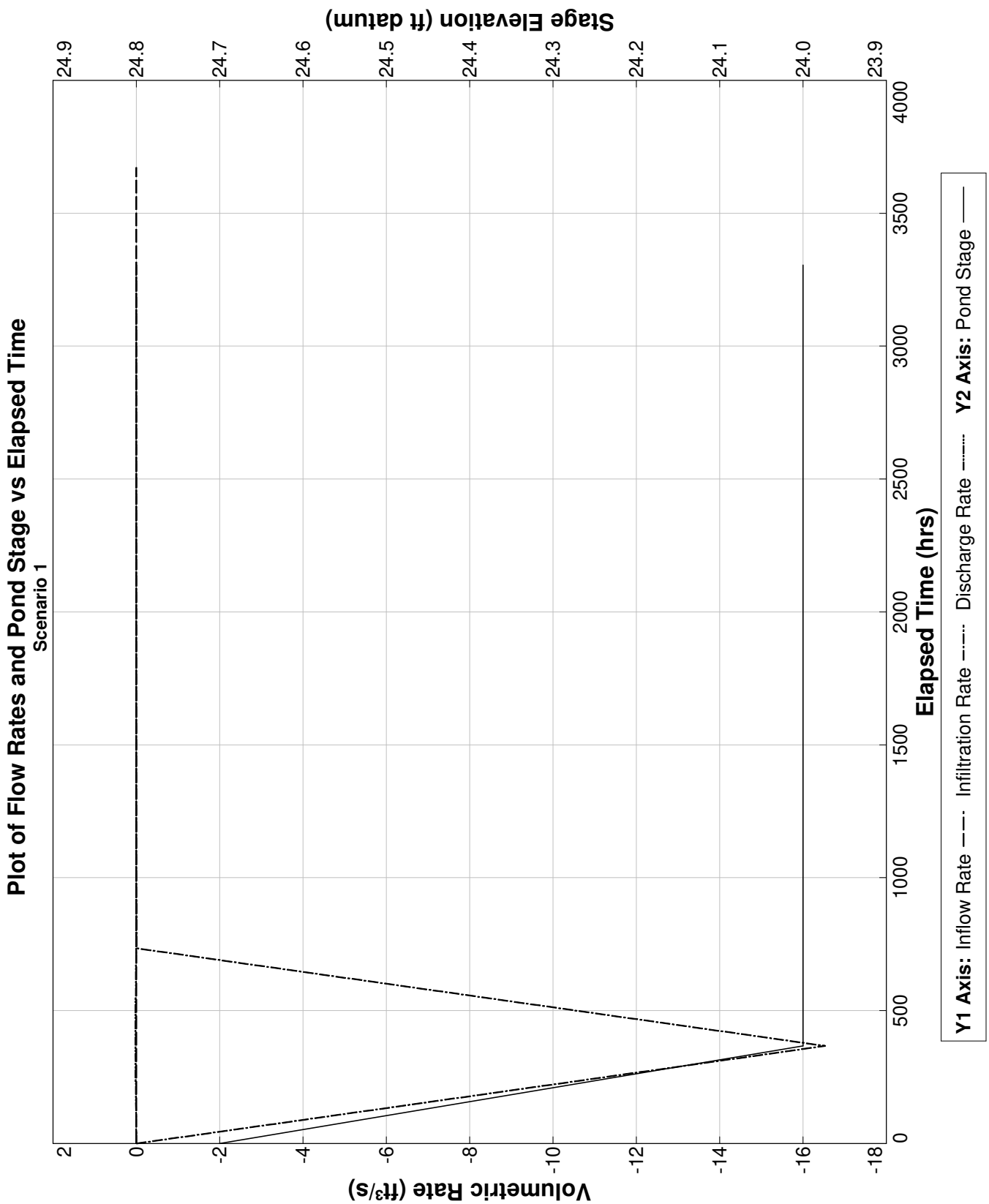
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0026	0.00163	24.70000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0026	0.00163	24.00000	-16.52557	2.391021E-02	3413.200	-43675510.0	4.370271E+07	S
734.400	0.0026	0.00163	24.00000	-0.00675	4.626543E-03	6826.400	-43690960.0	4.372157E+07	S
1101.600	0.0026	0.00163	24.00000	-0.00164	4.145148E-03	10239.600	-43693340.0	4.372737E+07	S
1468.800	0.0026	0.00163	24.00000	-0.00142	3.973704E-03	13652.800	-43695300.0	4.373274E+07	S
1836.000	0.0026	0.00163	24.00000	-0.00135	3.921841E-03	17066.000	-43697100.0	4.373796E+07	S
2203.200	0.0026	0.00163	24.00000	-0.00134	3.920607E-03	20479.200	-43698880.0	4.374314E+07	S
2570.400	0.0026	0.00163	24.00000	-0.00136	3.942114E-03	23892.400	-43700660.0	4.374834E+07	S
2937.600	0.0026	0.00163	24.00000	-0.00139	3.974331E-03	27305.600	-43702480.0	4.375357E+07	S
3304.800	0.0026	0.00163	24.00000	-0.00143	4.01182E-03	30718.800	-43704340.0	4.375884E+07	S
3672.000	0.0026	0.00163	24.00000	----	----	34132.000	-43706260.0	4.376418E+07	N.A.

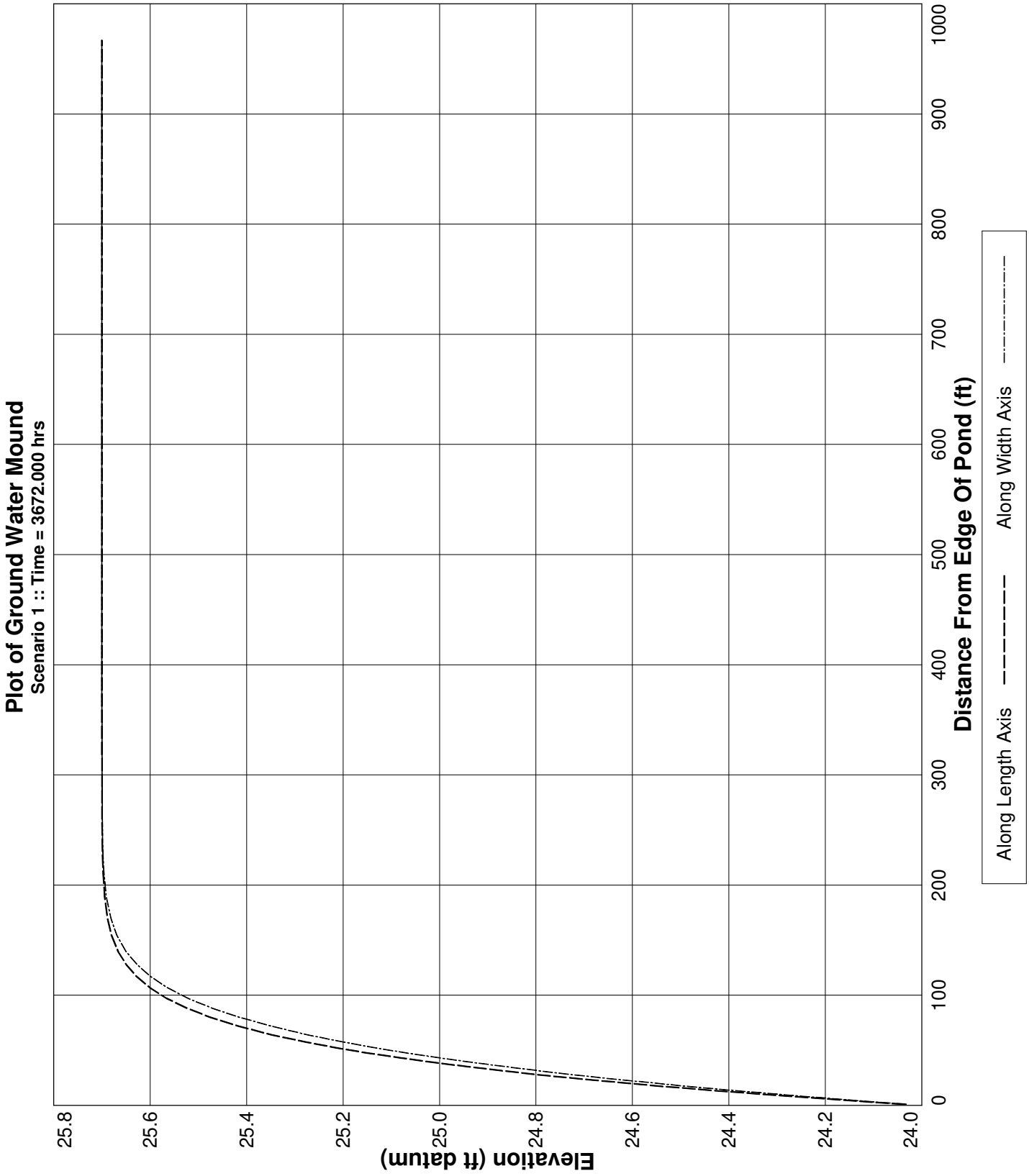
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No.24, Baseflow
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	04-06-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	-20.00
Water Table Elevation, [WT] (ft datum):	23.30
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	1.22
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	486.0
Equivalent Pond Width, [W] (ft):	202.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
-15.00	196020.0
21.00	98010.0

Ditch Data

Ditch (or interceptor trench) parallel to length axis is inactive

Ditch (or interceptor trench) parallel to width axis is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	21
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	22.3
Recharge is applied inside pond (in addition to outside pond)?	Yes

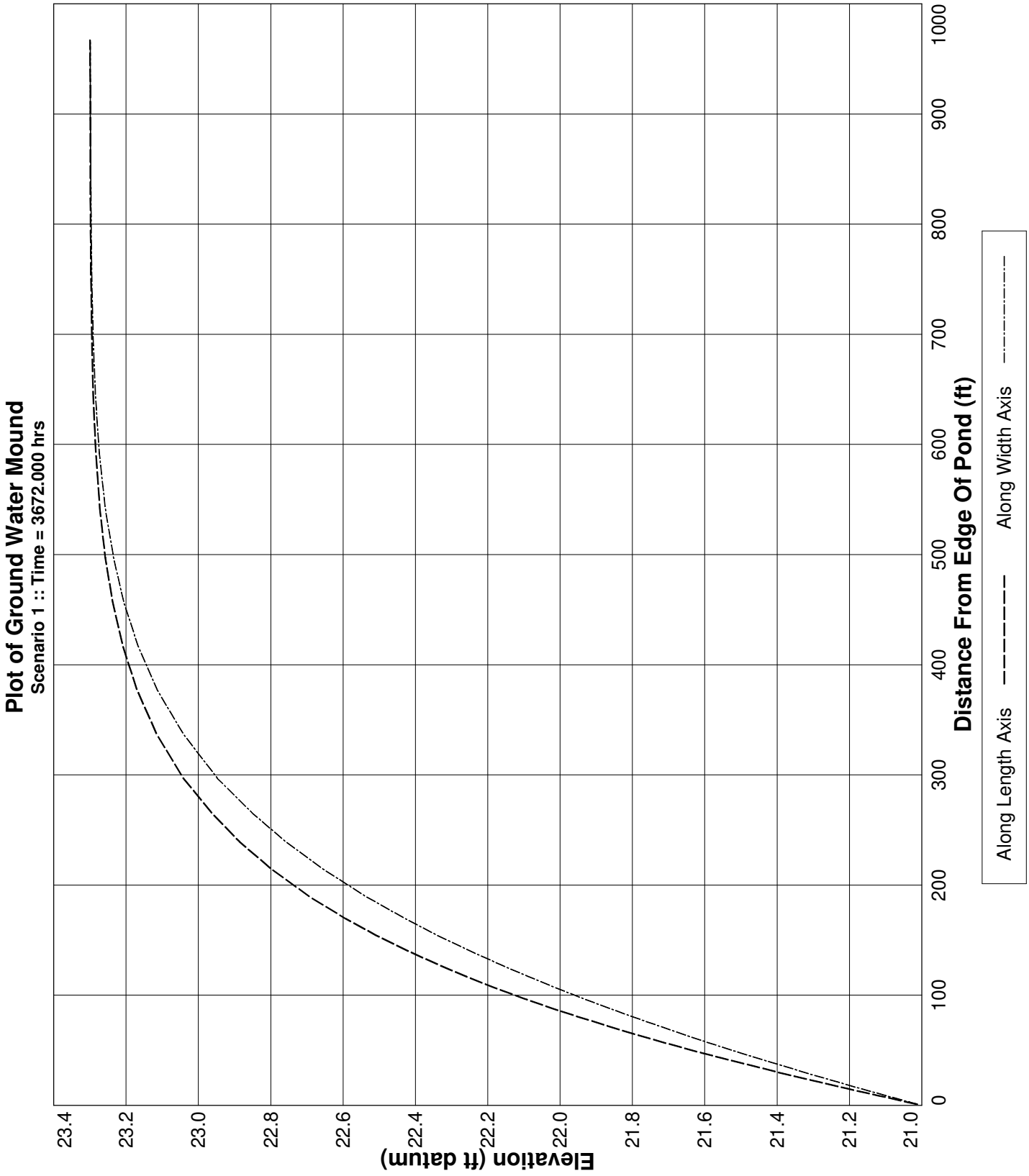
Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Detailed Results *:: Scenario 1 ::*

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0074	0.00163	22.30000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0074	0.00163	21.00000	-22.53154	.1265114	9817.200	-59481610.0	5.961884E+07	S
734.400	0.0074	0.00163	21.00000	-0.04007	2.175922E-02	19634.400	-59569790.0	5.971684E+07	S
1101.600	0.0074	0.00163	21.00000	-0.01281	1.993839E-02	29451.600	-59587530.0	5.97444E+07	S
1468.800	0.0074	0.00163	21.00000	-0.01193	1.929601E-02	39268.800	-59603650.0	5.977033E+07	S
1836.000	0.0074	0.00163	21.00000	-0.01153	1.889502E-02	49086.000	-59619080.0	5.979557E+07	S
2203.200	0.0074	0.00163	21.00000	-0.01134	1.872508E-02	58903.200	-59634120.0	5.982044E+07	S
2570.400	0.0074	0.00163	21.00000	-0.01130	.0187035	68720.400	-59649040.0	5.984518E+07	S
2937.600	0.0074	0.00163	21.00000	-0.01136	.0187731	78537.600	-59664000.0	5.986995E+07	S
3304.800	0.0074	0.00163	21.00000	-0.01149	1.890796E-02	88354.800	-59679080.0	5.989485E+07	S
3672.000	0.0074	0.00163	21.00000	----	----	98172.000	-59694380.0	5.991996E+07	N.A.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No. 25, Baseflow
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-31-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	4.00
Water Table Elevation, [WT] (ft datum):	25.50
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.17
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	286.0
Equivalent Pond Width, [W] (ft):	61.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
9.00	435.6
24.00	17424.0

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	24
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	24.5
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

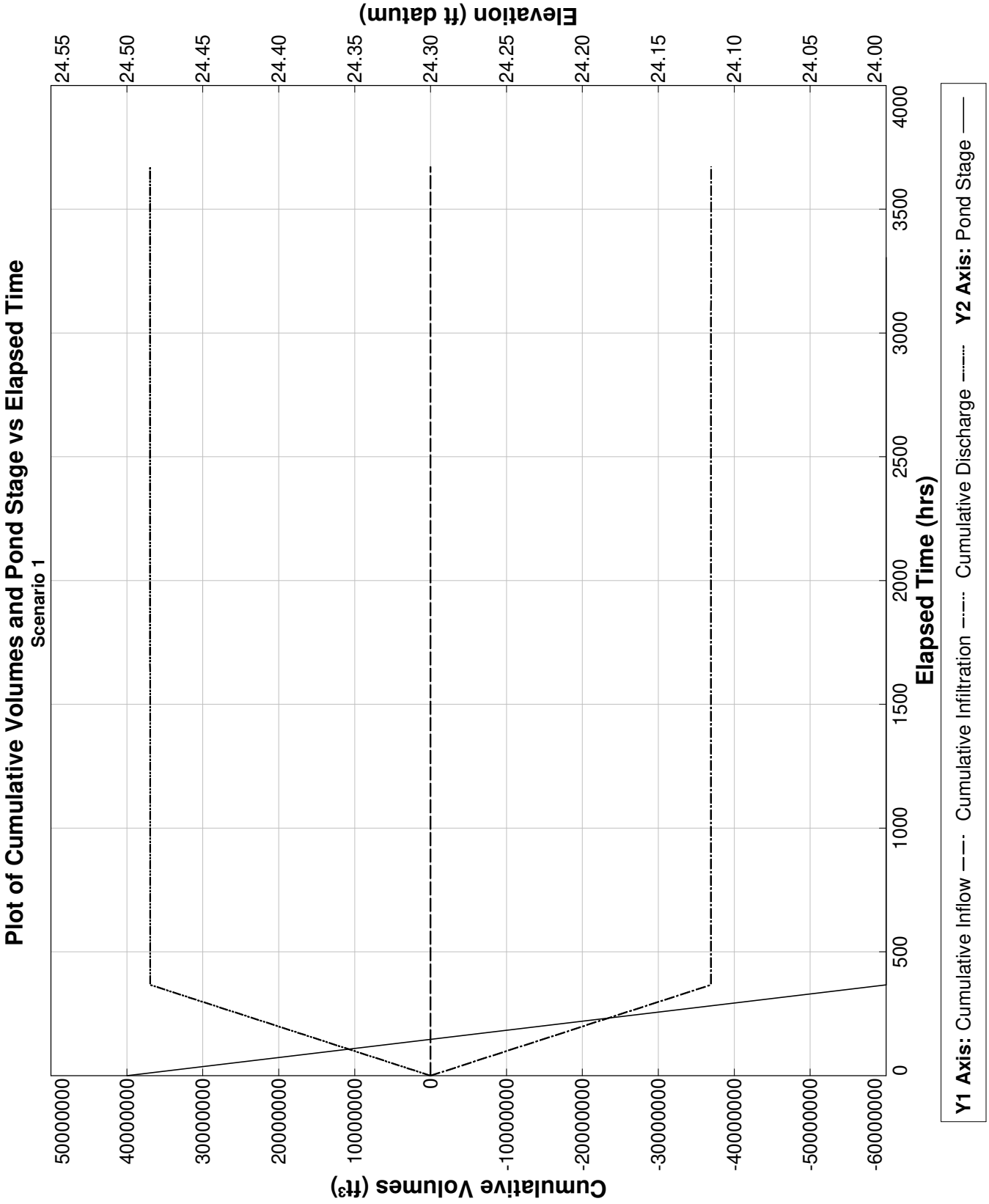
Begin Scenario 1 3/31/2023 16:48:0
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 24.5 ft.
End Scenario 1 3/31/2023 16:48:0

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

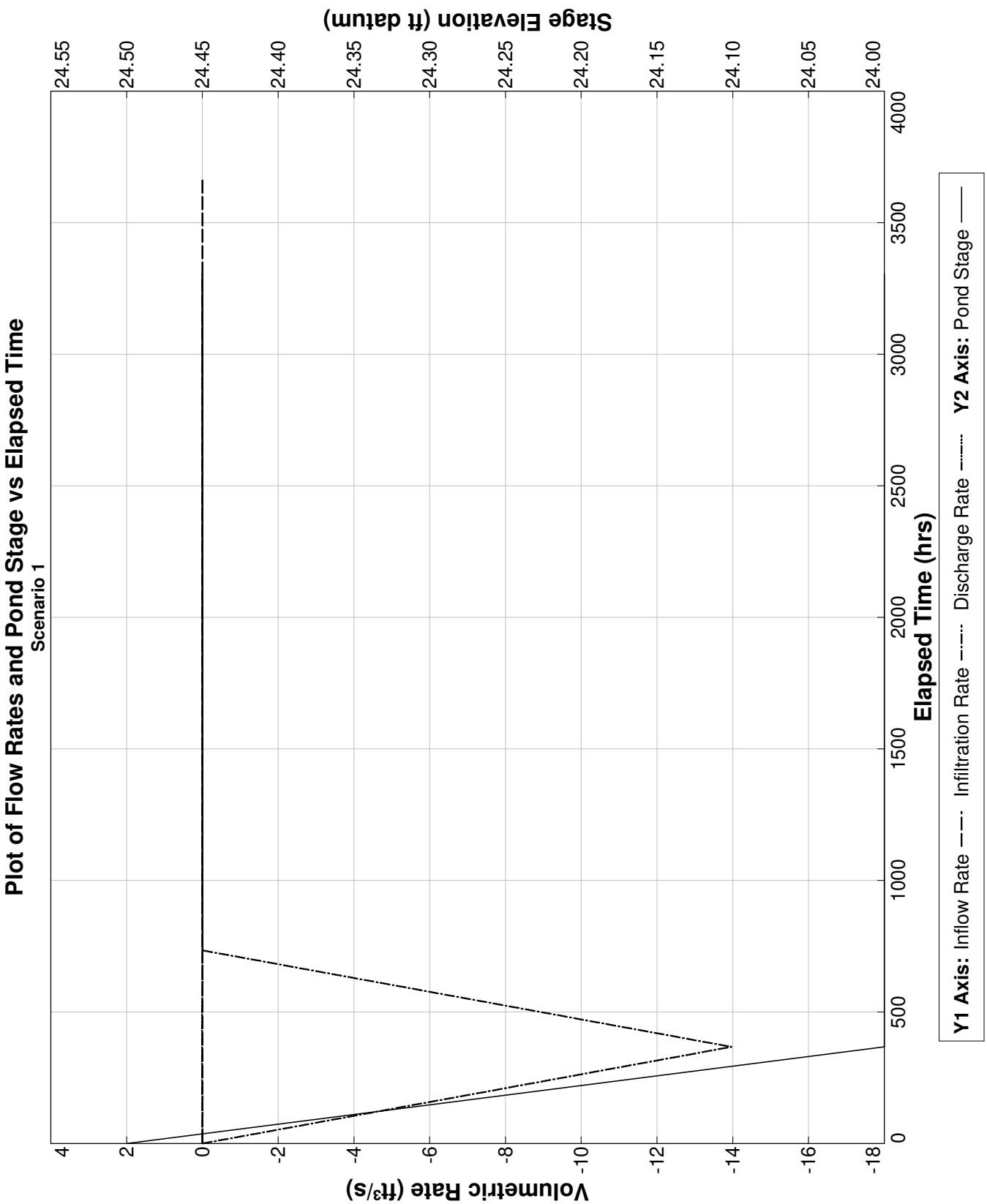
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0013	0.00163	24.50000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0013	0.00163	24.00000	-13.96647	9.902963E-03	1744.600	-36918260.0	3.692872E+07	S
734.400	0.0013	0.00163	24.00000	-0.00329	3.083654E-03	3489.200	-36925100.0	3.69373E+07	S
1101.600	0.0013	0.00163	24.00000	-0.00119	2.385807E-03	5233.800	-36926970.0	3.694092E+07	S
1468.800	0.0013	0.00163	24.00000	-0.00092	2.200062E-03	6978.400	-36928260.0	3.694395E+07	S
1836.000	0.0013	0.00163	24.00000	-0.00085	2.157617E-03	8723.000	-36929400.0	3.694683E+07	S
2203.200	0.0013	0.00163	24.00000	-0.00085	2.163194E-03	10467.600	-36930510.0	3.694968E+07	S
2570.400	0.0013	0.00163	24.00000	-0.00087	2.186756E-03	12212.200	-36931640.0	3.695256E+07	S
2937.600	0.0013	0.00163	24.00000	-0.00090	2.217444E-03	13956.800	-36932800.0	3.695547E+07	S
3304.800	0.0013	0.00163	24.00000	-0.00093	2.250981E-03	15701.400	-36934010.0	3.695842E+07	S
3672.000	0.0013	0.00163	24.00000	----	----	17446.000	-36935270.0	3.696142E+07	N.A.

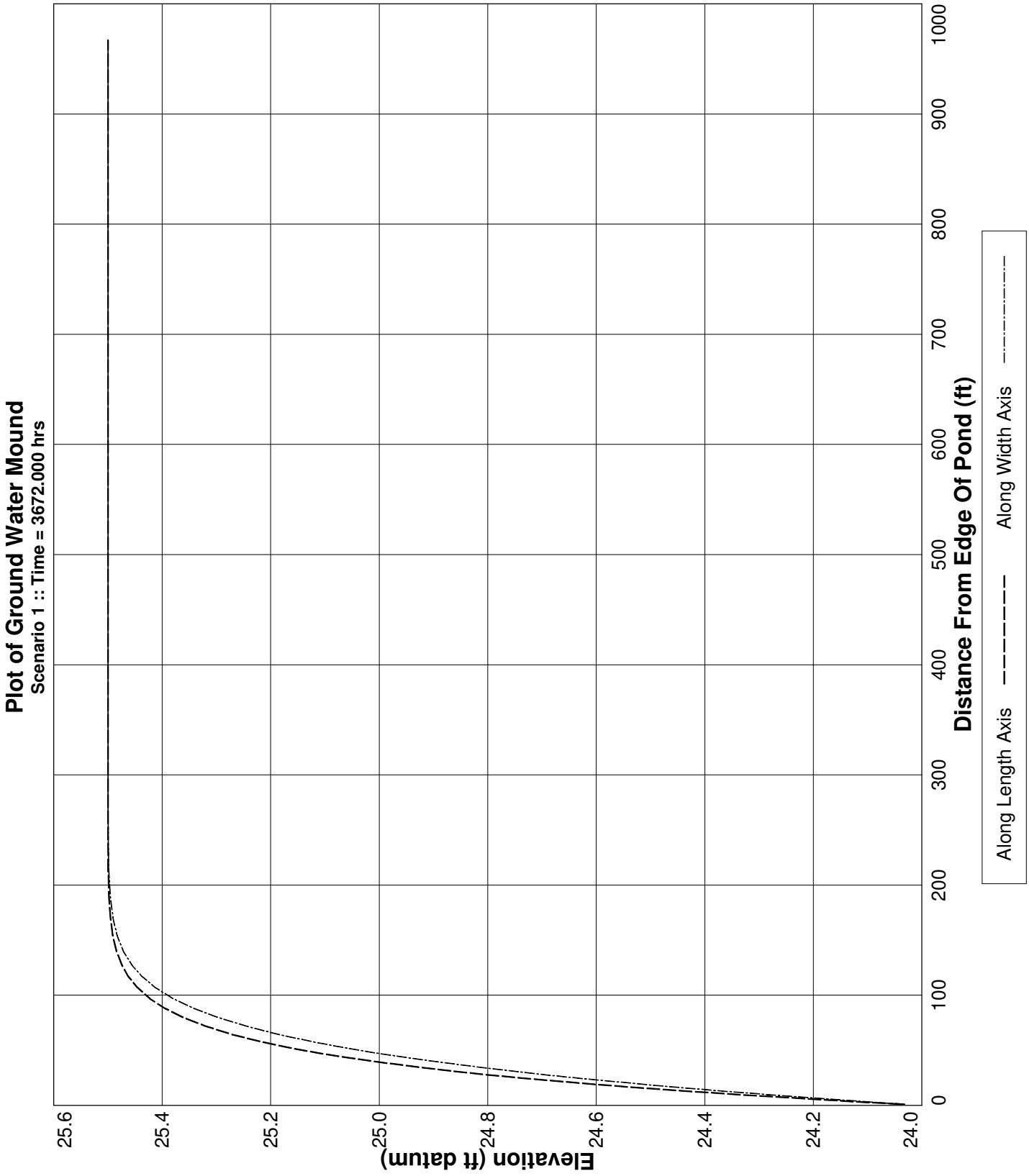
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No.26, Baseflow, revised
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	04-06-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	-11.00
Water Table Elevation, [WT] (ft datum):	26.50
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.17
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	541.0
Equivalent Pond Width, [W] (ft):	128.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
4.00	435.6
24.00	69260.4

Ditch Data

Ditch (or interceptor trench) parallel to length axis is inactive

Ditch (or interceptor trench) parallel to width axis is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	24
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	25.5
Recharge is applied inside pond (in addition to outside pond)?	Yes

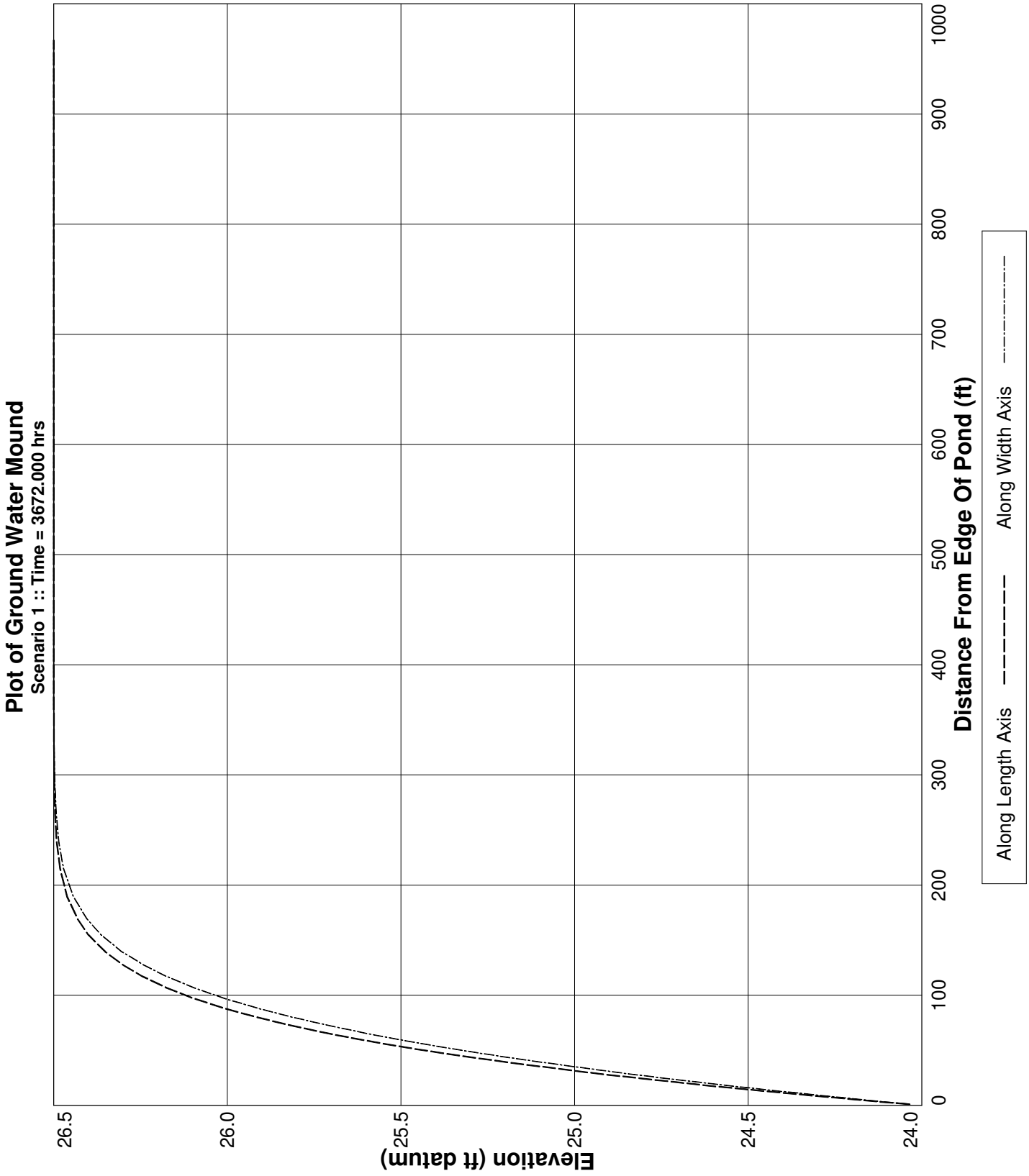
Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0052	0.00163	25.50000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0052	0.00163	24.00000	-24.19534	9.692141E-02	6924.800	-63904330.0	6.401514E+07	S
734.400	0.0052	0.00163	24.00000	-0.02683	1.081686E-02	13849.600	-63968610.0	6.408636E+07	S
1101.600	0.0052	0.00163	24.00000	-0.00463	9.734863E-03	20774.400	-63975270.0	6.409994E+07	S
1468.800	0.0052	0.00163	24.00000	-0.00401	9.174484E-03	27699.200	-63980850.0	6.411244E+07	S
1836.000	0.0052	0.00163	24.00000	-0.00369	8.893592E-03	34624.000	-63985860.0	6.412438E+07	S
2203.200	0.0052	0.00163	24.00000	-0.00353	8.751402E-03	41548.800	-63990600.0	6.413604E+07	S
2570.400	0.0052	0.00163	24.00000	-0.00346	8.686858E-03	48473.600	-63995200.0	6.414757E+07	S
2937.600	0.0052	0.00163	24.00000	-0.00343	8.664525E-03	55398.400	-63999750.0	6.415904E+07	S
3304.800	0.0052	0.00163	24.00000	-0.00343	8.667946E-03	62323.200	-64004280.0	6.417049E+07	S
3672.000	0.0052	0.00163	24.00000	----	----	69248.000	-64008820.0	6.418196E+07	N.A.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No. 27, Baseflow
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-31-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	-8.00
Water Table Elevation, [WT] (ft datum):	27.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.17
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	744.0
Equivalent Pond Width, [W] (ft):	115.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
-3.00	435.6
24.00	85813.2

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	24
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	26.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

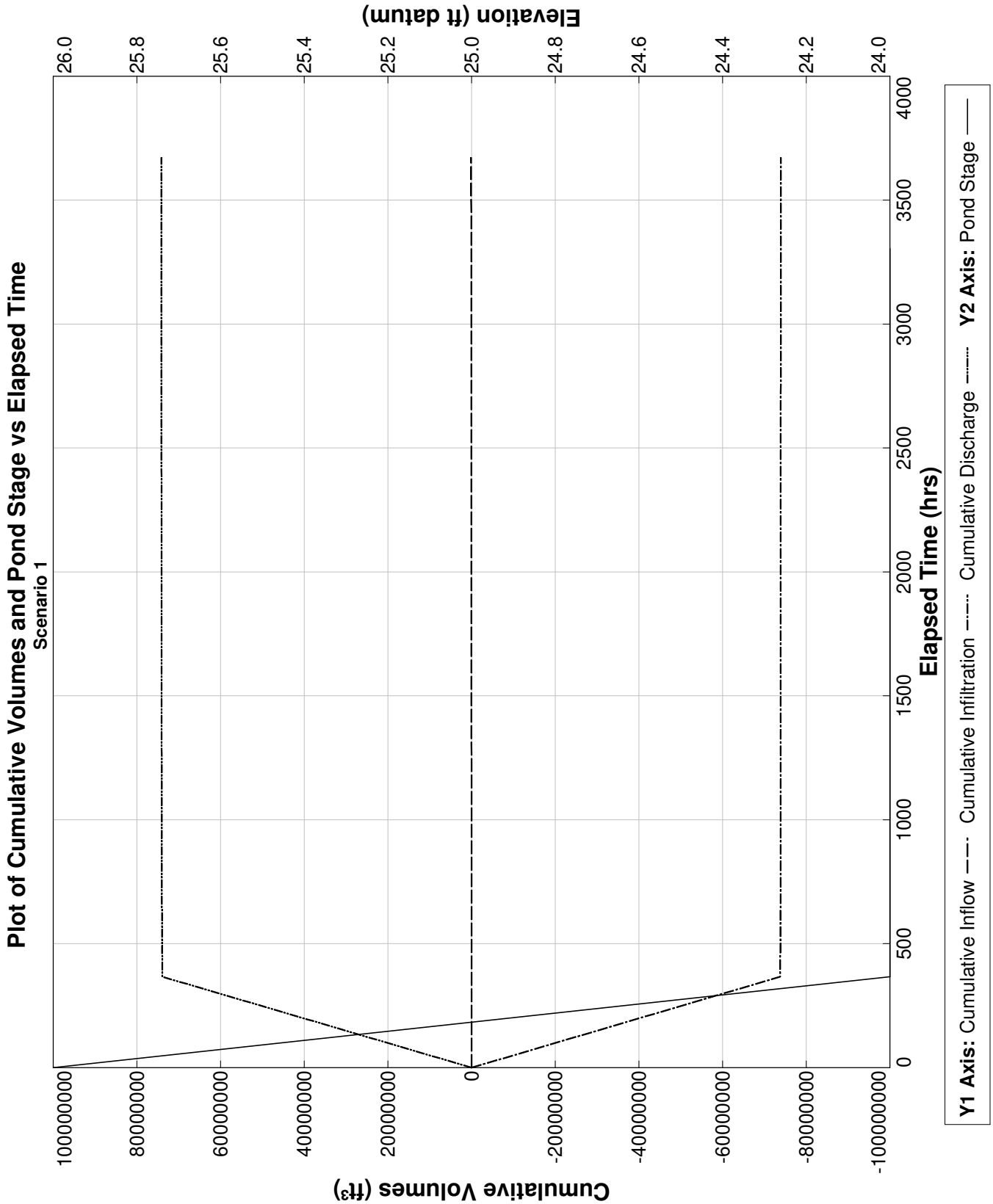
Begin Scenario 1 3/31/2023 17:3:25
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 26.0 ft.
End Scenario 1 3/31/2023 17:3:25

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

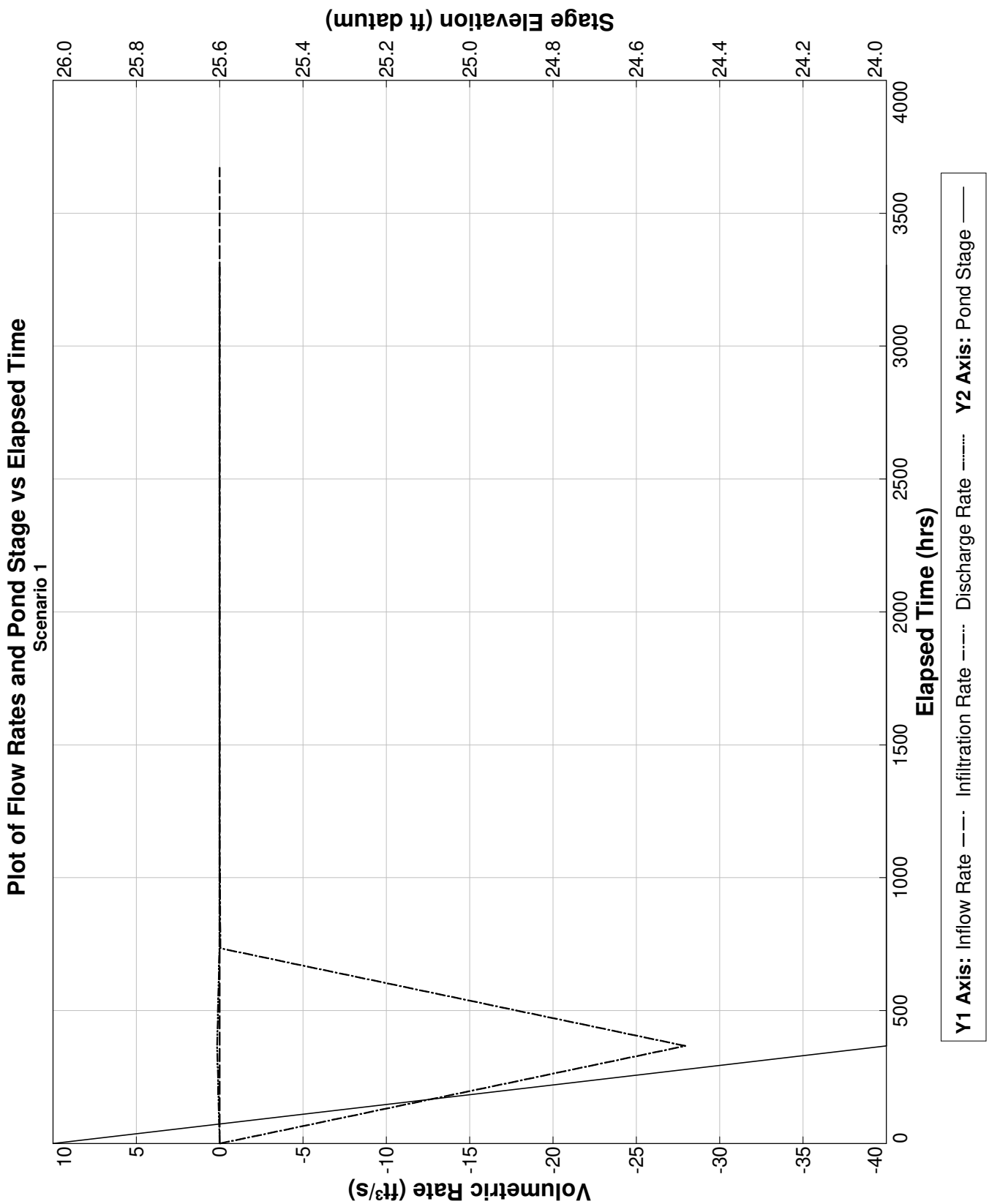
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0065	0.00163	26.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0065	0.00163	24.00000	-27.93779	.1498244	8556.000	-73763190.0	7.394338E+07	S
734.400	0.0065	0.00163	24.00000	-0.04131	1.418319E-02	17112.000	-73863040.0	7.405178E+07	S
1101.600	0.0065	0.00163	24.00000	-0.00661	1.295572E-02	25668.000	-73872420.0	7.406972E+07	S
1468.800	0.0065	0.00163	24.00000	-0.00583	1.223336E-02	34224.000	-73880510.0	7.408637E+07	S
1836.000	0.0065	0.00163	24.00000	-0.00537	1.180145E-02	42780.000	-73887850.0	7.410226E+07	S
2203.200	0.0065	0.00163	24.00000	-0.00510	1.154776E-02	51336.000	-73894720.0	7.411769E+07	S
2570.400	0.0065	0.00163	24.00000	-0.00494	1.139549E-02	59892.000	-73901330.0	7.413285E+07	S
2937.600	0.0065	0.00163	24.00000	-0.00485	1.130976E-02	68448.000	-73907780.0	7.414786E+07	S
3304.800	0.0065	0.00163	24.00000	-0.00480	1.126467E-02	77004.000	-73914140.0	7.416278E+07	S
3672.000	0.0065	0.00163	24.00000	----	----	85560.000	-73920470.0	7.417766E+07	N.A.

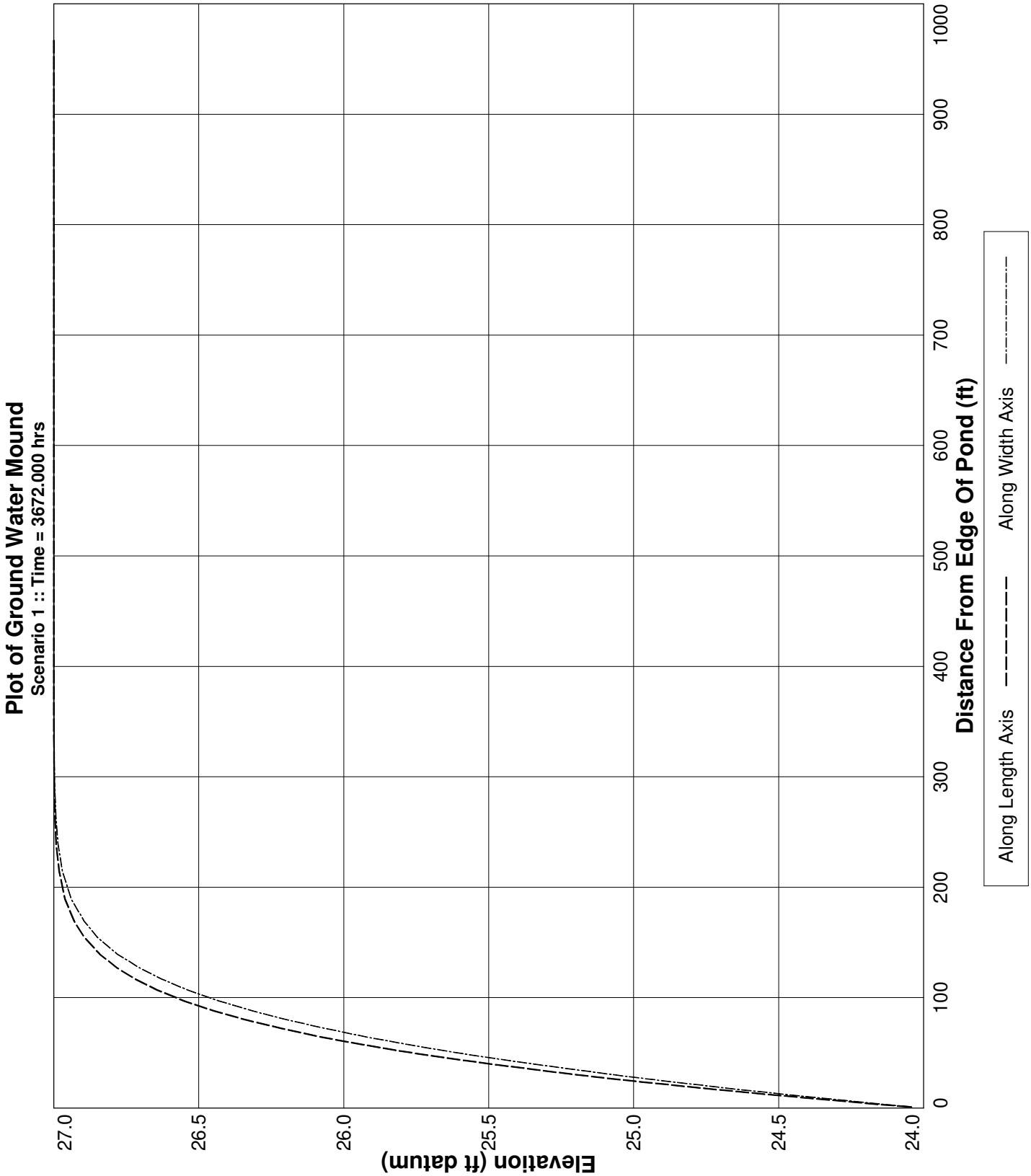
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No. 28, Baseflow
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-31-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	-14.00
Water Table Elevation, [WT] (ft datum):	26.80
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.69
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	437.0
Equivalent Pond Width, [W] (ft):	203.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
-9.00	2613.6
24.00	88862.4

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	24
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	25.8
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

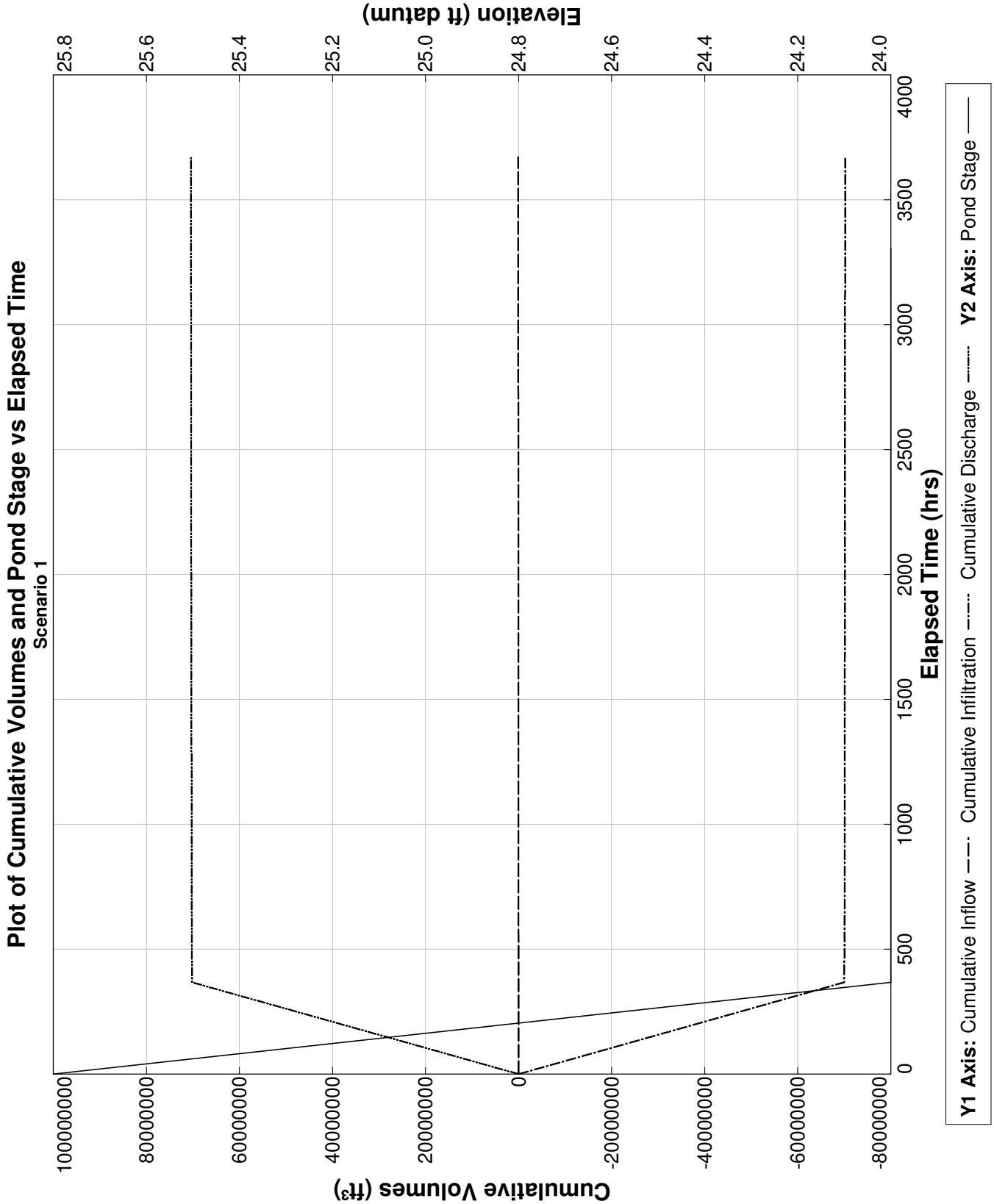
Begin Scenario 1 3/31/2023 17:12:38
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 25.8 ft.
End Scenario 1 3/31/2023 17:12:38

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

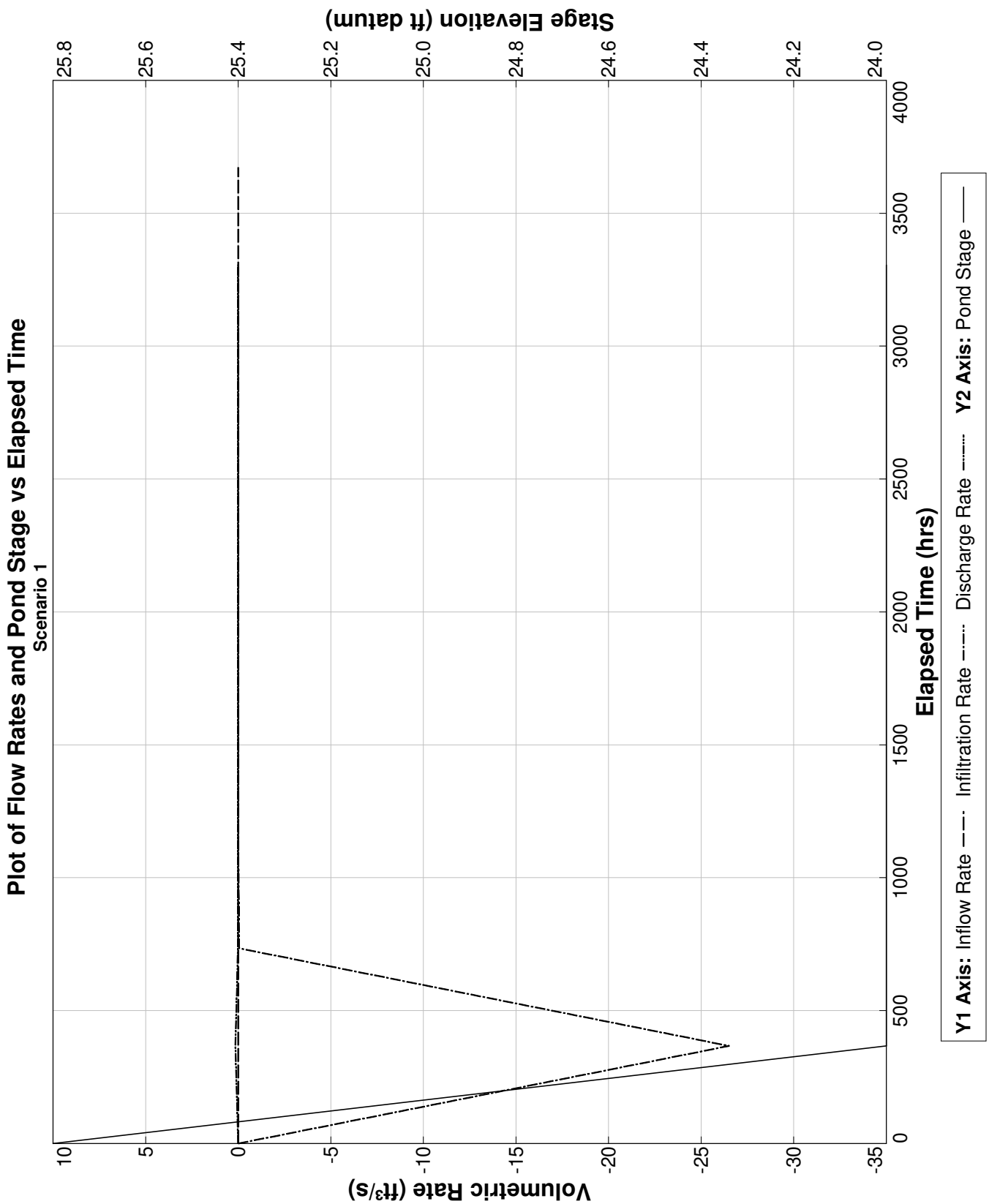
Detailed Results *:: Scenario 1 ::*

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0067	0.00163	25.80000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0067	0.00163	24.00000	-26.50919	.1483564	8871.100	-69984140.0	7.015296E+07	S
734.400	0.0067	0.00163	24.00000	-0.04430	.019259	17742.200	-70086050.0	7.026374E+07	S
1101.600	0.0067	0.00163	24.00000	-0.01076	1.715996E-02	26613.300	-70101250.0	7.028782E+07	S
1468.800	0.0067	0.00163	24.00000	-0.00971	1.631786E-02	35484.400	-70114500.0	7.030994E+07	S
1836.000	0.0067	0.00163	24.00000	-0.00922	1.589099E-02	44355.500	-70126930.0	7.033123E+07	S
2203.200	0.0067	0.00163	24.00000	-0.00893	1.561263E-02	53226.600	-70138880.0	7.035206E+07	S
2570.400	0.0067	0.00163	24.00000	-0.00878	1.546643E-02	62097.700	-70150540.0	7.03726E+07	S
2937.600	0.0067	0.00163	24.00000	-0.00871	1.540638E-02	70968.800	-70162080.0	7.0393E+07	S
3304.800	0.0067	0.00163	24.00000	-0.00870	1.540573E-02	79839.900	-70173580.0	7.041337E+07	S
3672.000	0.0067	0.00163	24.00000	----	----	88711.000	-70185100.0	7.043376E+07	N.A.

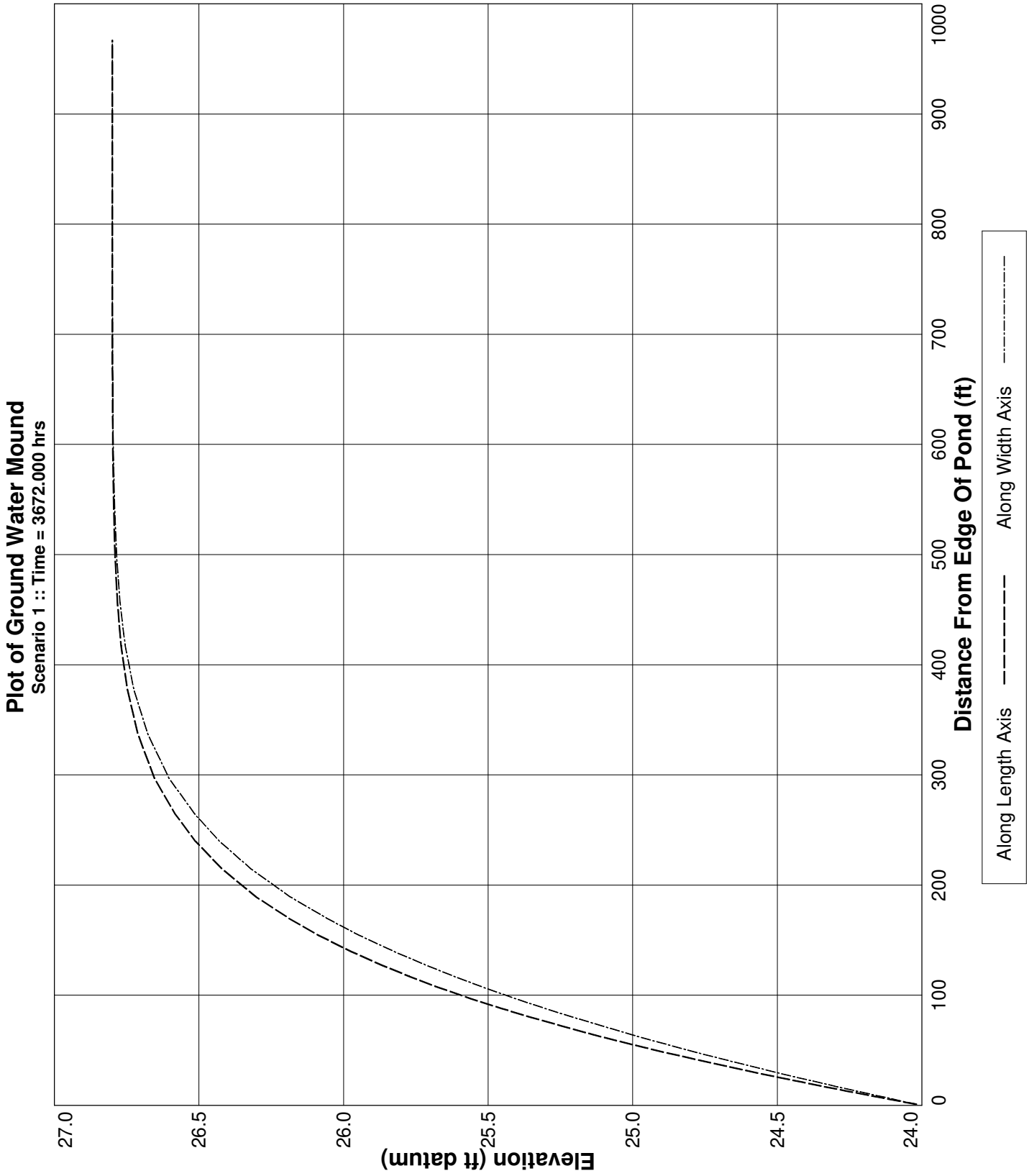
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No. 29, Baseflow
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-31-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	11.00
Water Table Elevation, [WT] (ft datum):	27.30
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.69
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	436.0
Equivalent Pond Width, [W] (ft):	52.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
16.00	435.6
24.00	22651.2

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	24
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	26.3
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

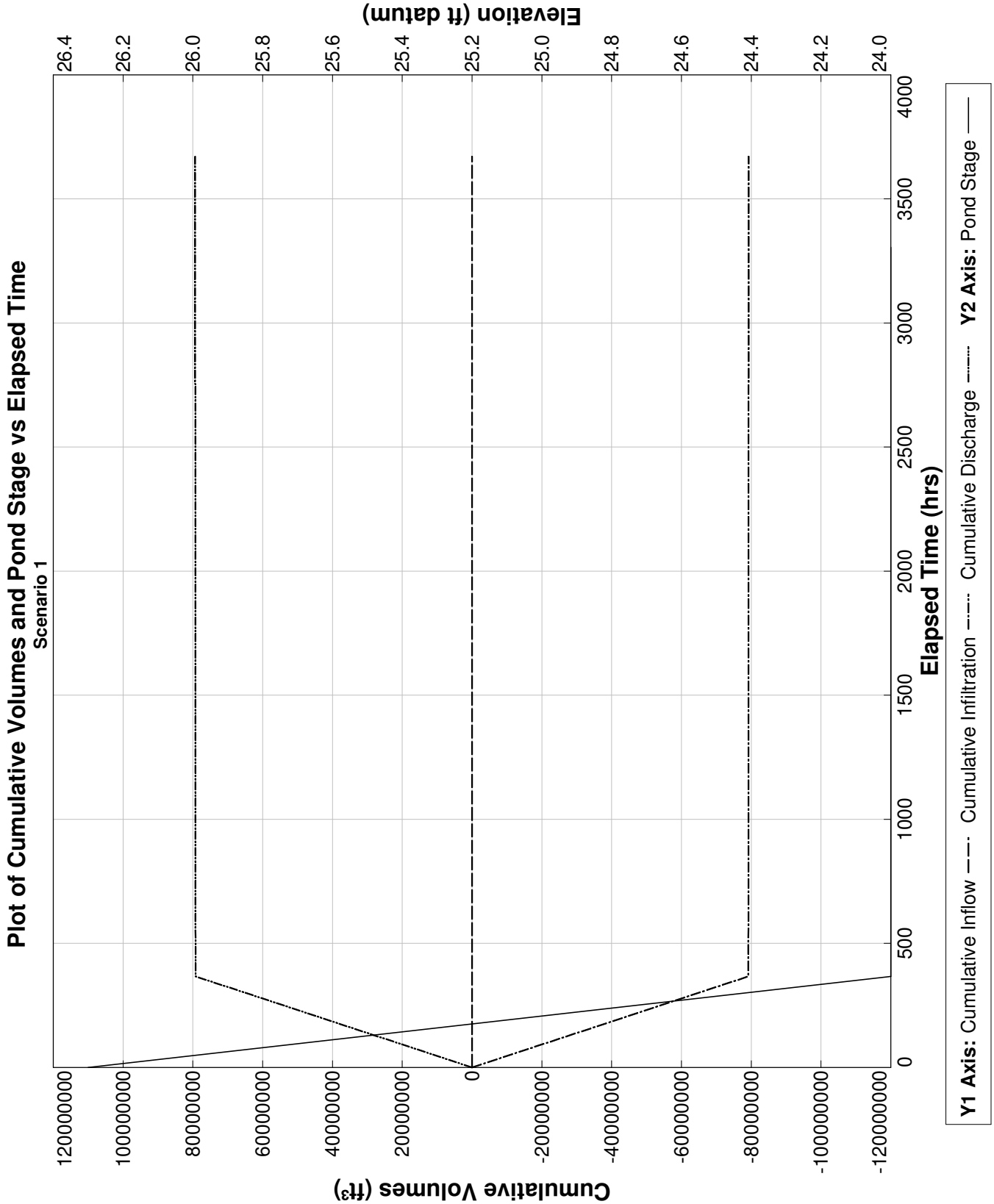
Begin Scenario 1 3/31/2023 17:23:34
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 26.3 ft.
End Scenario 1 3/31/2023 17:23:35

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

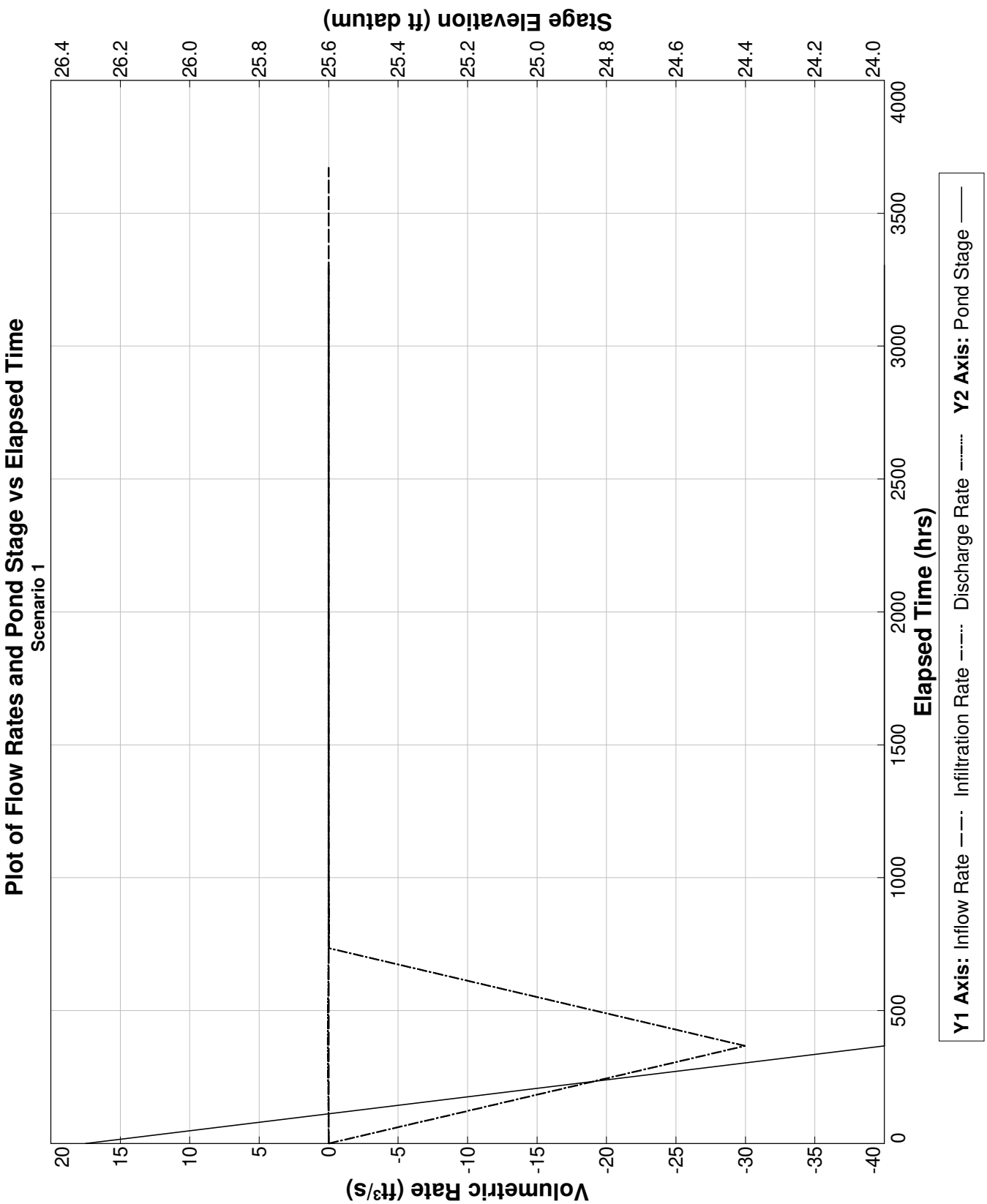
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0017	0.00163	26.30000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0017	0.00163	24.00000	-29.95983	5.339636E-02	2267.200	-79170170.0	7.922454E+07	S
734.400	0.0017	0.00163	24.00000	-0.01788	8.757223E-03	4534.400	-79208980.0	7.926562E+07	S
1101.600	0.0017	0.00163	24.00000	-0.00594	7.46257E-03	6801.600	-79217440.0	7.927634E+07	S
1468.800	0.0017	0.00163	24.00000	-0.00526	6.930464E-03	9068.800	-79224680.0	7.928585E+07	S
1836.000	0.0017	0.00163	24.00000	-0.00489	6.578005E-03	11336.000	-79231340.0	7.929478E+07	S
2203.200	0.0017	0.00163	24.00000	-0.00466	6.347908E-03	13603.200	-79237620.0	7.930332E+07	S
2570.400	0.0017	0.00163	24.00000	-0.00452	6.218017E-03	15870.400	-79243660.0	7.931162E+07	S
2937.600	0.0017	0.00163	24.00000	-0.00443	6.139801E-03	18137.600	-79249560.0	7.931979E+07	S
3304.800	0.0017	0.00163	24.00000	-0.00439	6.102621E-03	20404.800	-79255380.0	7.932789E+07	S
3672.000	0.0017	0.00163	24.00000	----	----	22672.000	-79261180.0	7.933594E+07	N.A.

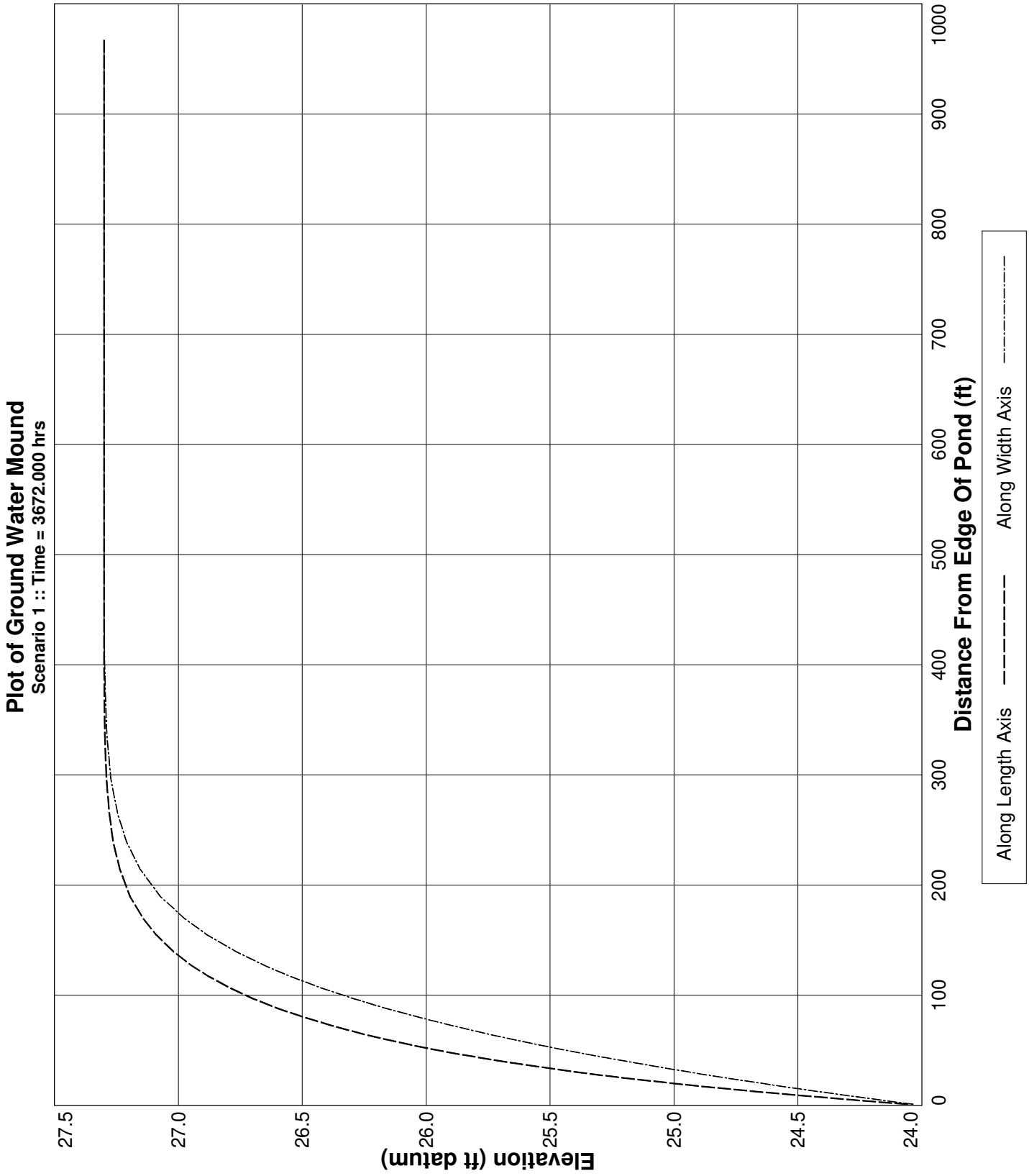
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No.30, Baseflow
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-27-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	6.00
Water Table Elevation, [WT] (ft datum):	27.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.69
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	302.0
Equivalent Pond Width, [W] (ft):	79.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
6.00	435.6
28.00	23958.0

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	28
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type: Baseflow
Modflow Routing: Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	26.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

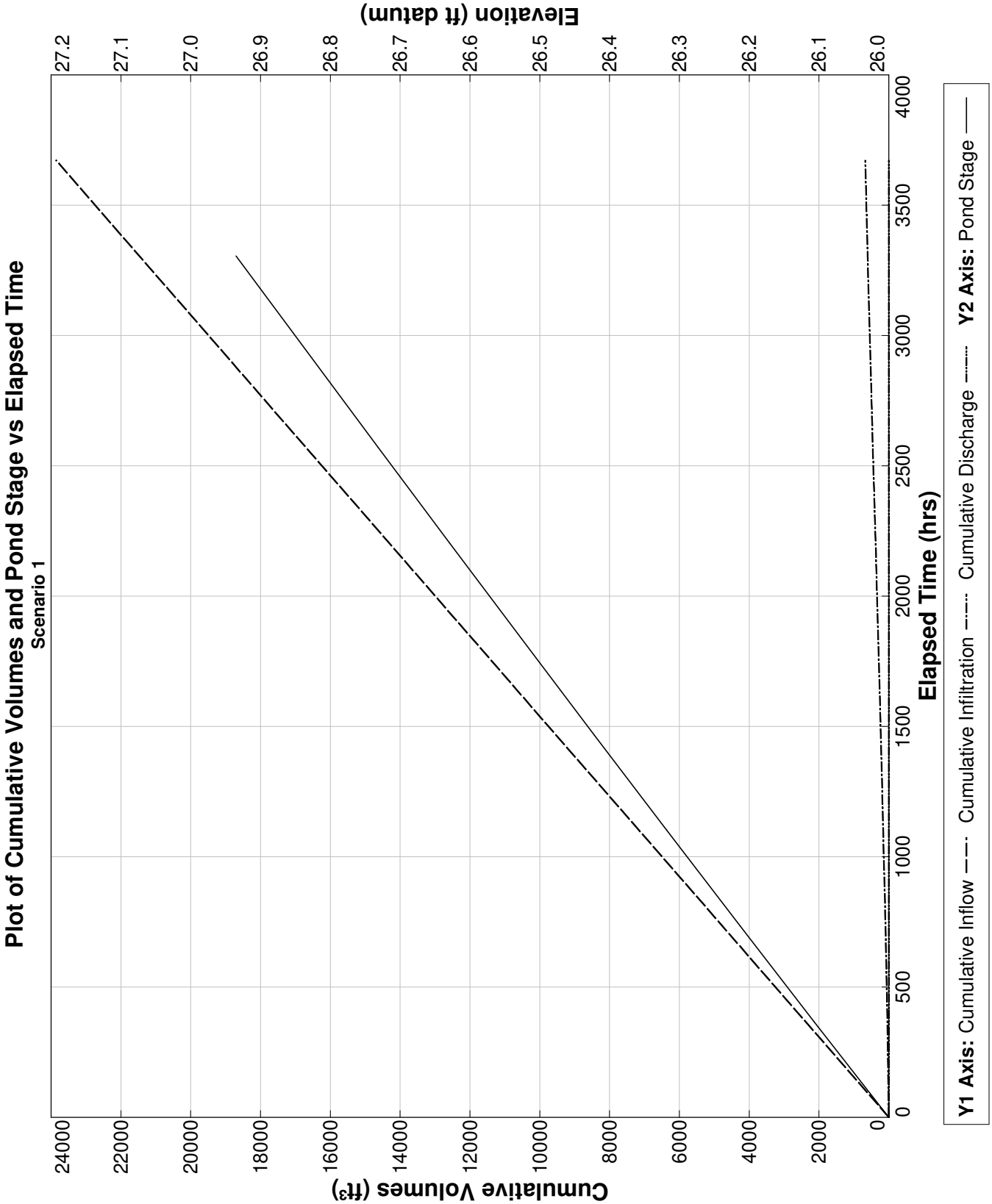
Begin Scenario 1 3/27/2023 14:23:49
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 26.0 ft.
End Scenario 1 3/27/2023 14:23:49

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

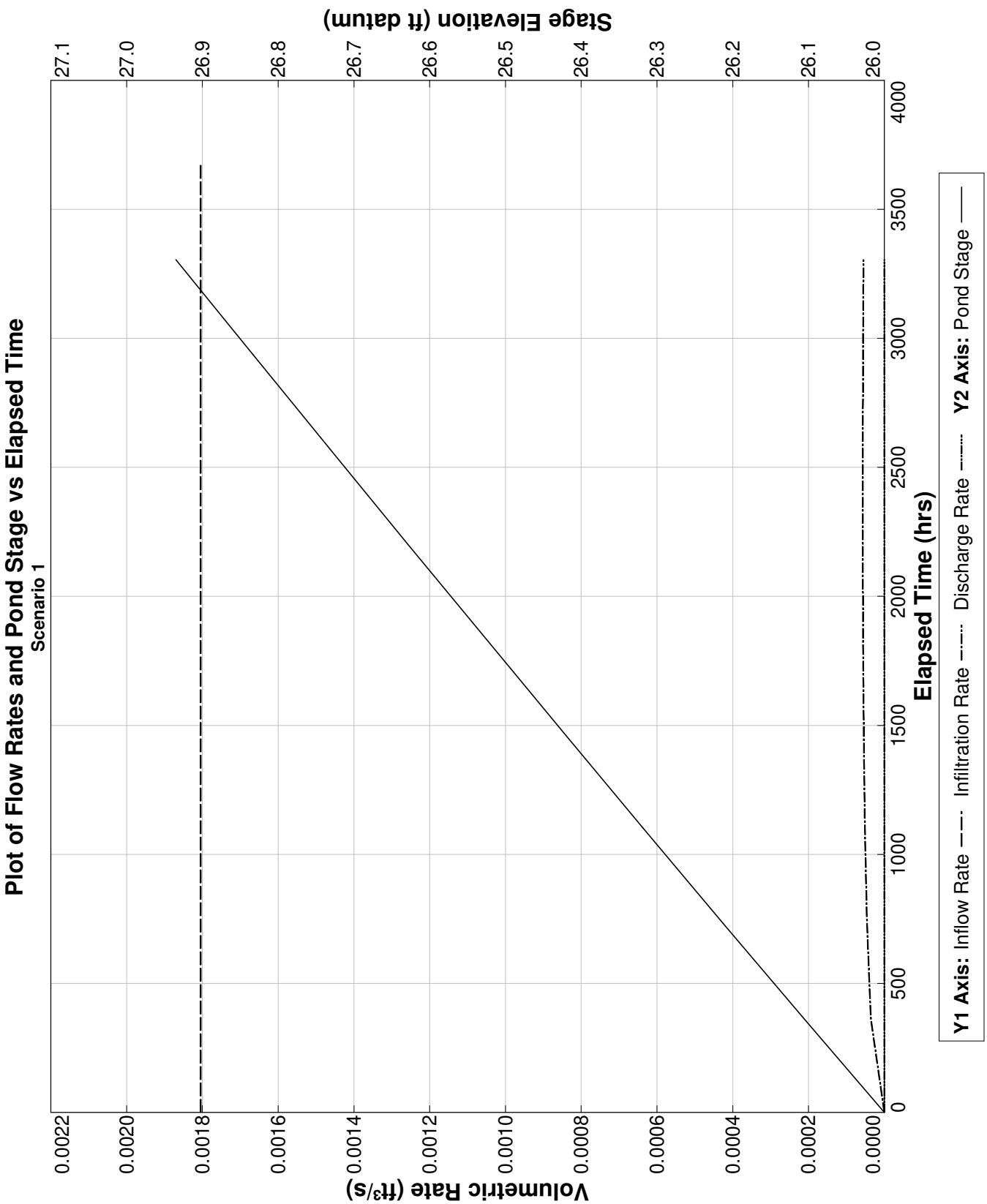
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0018	0.00163	26.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0018	0.00163	26.10725	0.00004	0	2385.800	39.5	0	S
734.400	0.0018	0.00163	26.21320	0.00005	0	4771.600	95.4	0	S
1101.600	0.0018	0.00163	26.31820	0.00005	0	7157.400	160.3	0	S
1468.800	0.0018	0.00163	26.42242	0.00005	0	9543.200	230.7	0	S
1836.000	0.0018	0.00163	26.52598	0.00006	0	11929.000	304.3	0	S
2203.200	0.0018	0.00163	26.62896	0.00006	0	14314.800	379.6	0	S
2570.400	0.0018	0.00163	26.73142	0.00006	0	16700.600	455.3	0	S
2937.600	0.0018	0.00163	26.83341	0.00006	0	19086.400	530.4	0	S
3304.800	0.0018	0.00163	26.93497	0.00006	0	21472.200	604.3	0	S
3672.000	0.0018	0.00163	27.03613	----	----	23858.000	676.2	0	N.A.

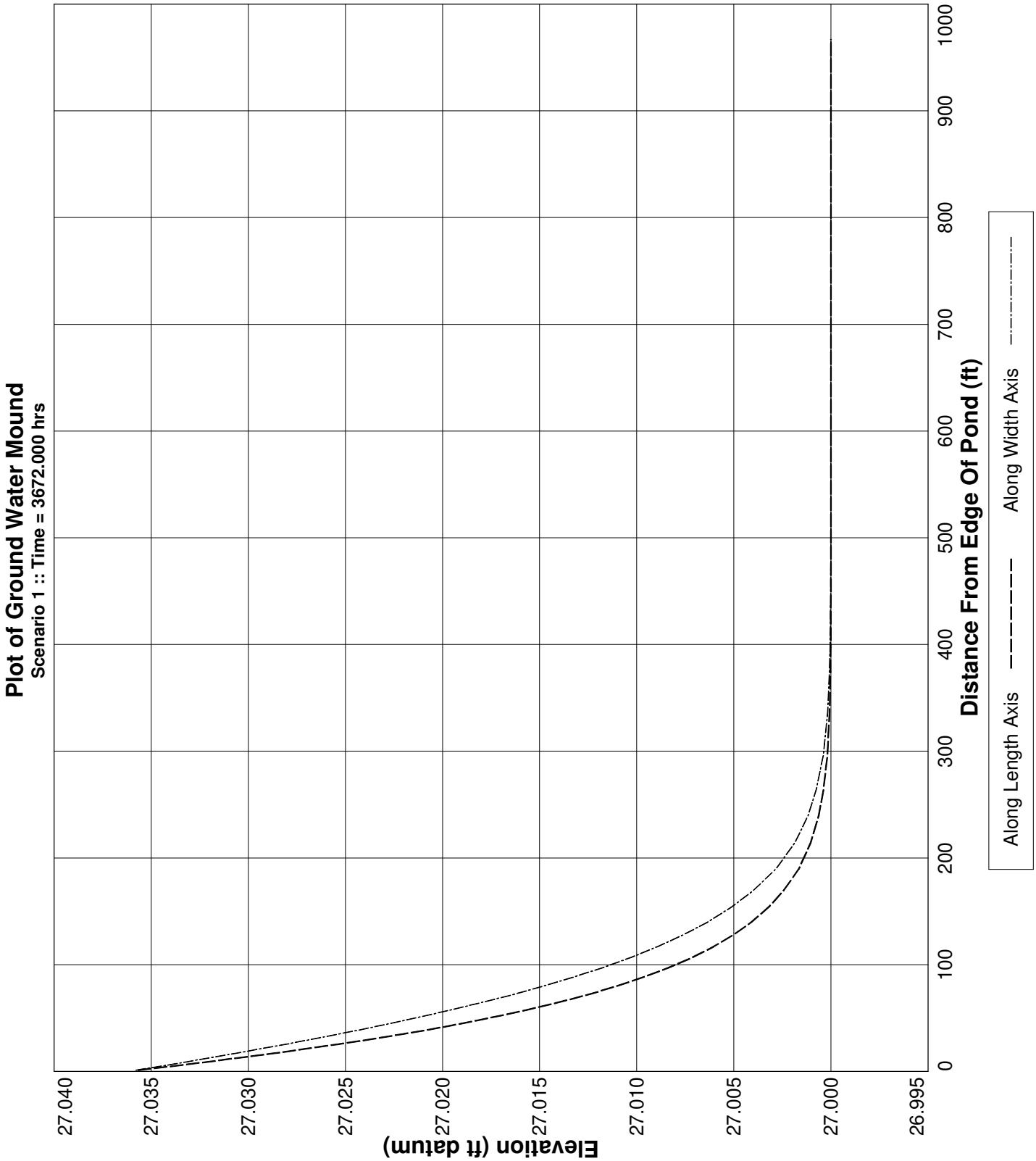
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No.31, South Wetland, without wall
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-24-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	2.00
Water Table Elevation, [WT] (ft datum):	34.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	1.27
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	363.0
Equivalent Pond Width, [W] (ft):	110.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
-15.00	435.6
33.00	541015.2

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	33
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	33.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

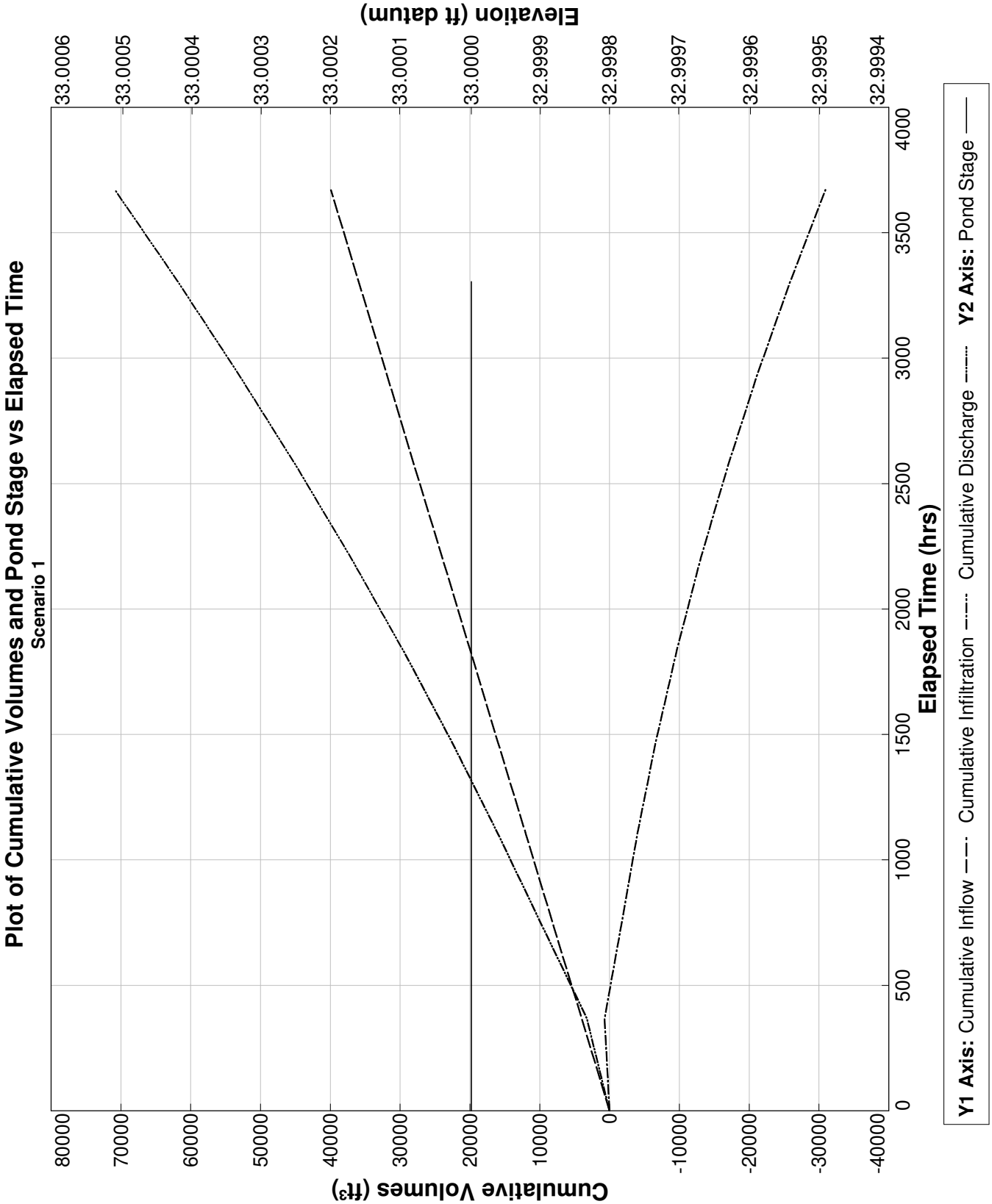
Begin Scenario 1 3/24/2023 9:42:51
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 33.0 ft.
End Scenario 1 3/24/2023 9:42:51

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

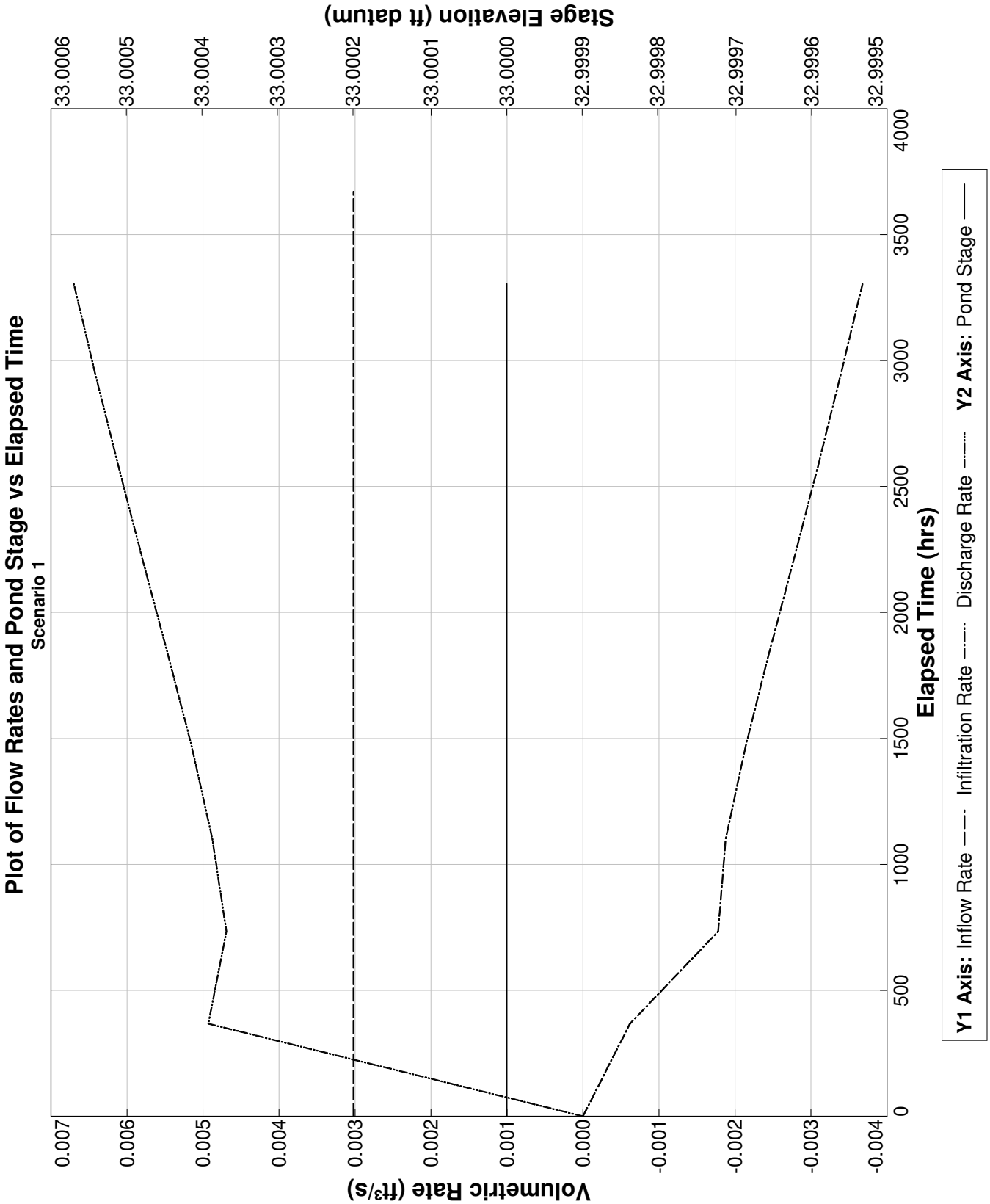
Detailed Results *:: Scenario 1 ::*

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0030	0.00163	33.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0030	0.00163	33.00000	-0.00062	4.931005E-03	3993.000	733.8	3259.197	S
734.400	0.0030	0.00163	33.00000	-0.00178	4.691044E-03	7986.000	-1633.0	9618.986	S
1101.600	0.0030	0.00163	33.00000	-0.00188	4.876826E-03	11979.000	-3964.0	15942.97	S
1468.800	0.0030	0.00163	33.00000	-0.00214	5.147957E-03	15972.000	-6596.9	22568.95	S
1836.000	0.0030	0.00163	33.00000	-0.00245	5.46381E-03	19965.000	-9617.9	29582.9	S
2203.200	0.0030	0.00163	33.00000	-0.00277	5.789357E-03	23958.000	-13062.8	37020.79	S
2570.400	0.0030	0.00163	33.00000	-0.00308	6.103339E-03	27951.000	-16930.4	44881.39	S
2937.600	0.0030	0.00163	33.00000	-0.00339	6.409447E-03	31944.000	-21207.8	53151.84	S
3304.800	0.0030	0.00163	33.00000	-0.00368	6.700269E-03	35937.000	-25879.8	61816.84	S
3672.000	0.0030	0.00163	33.00000	----	----	39930.000	-30931.6	70861.59	N.A.

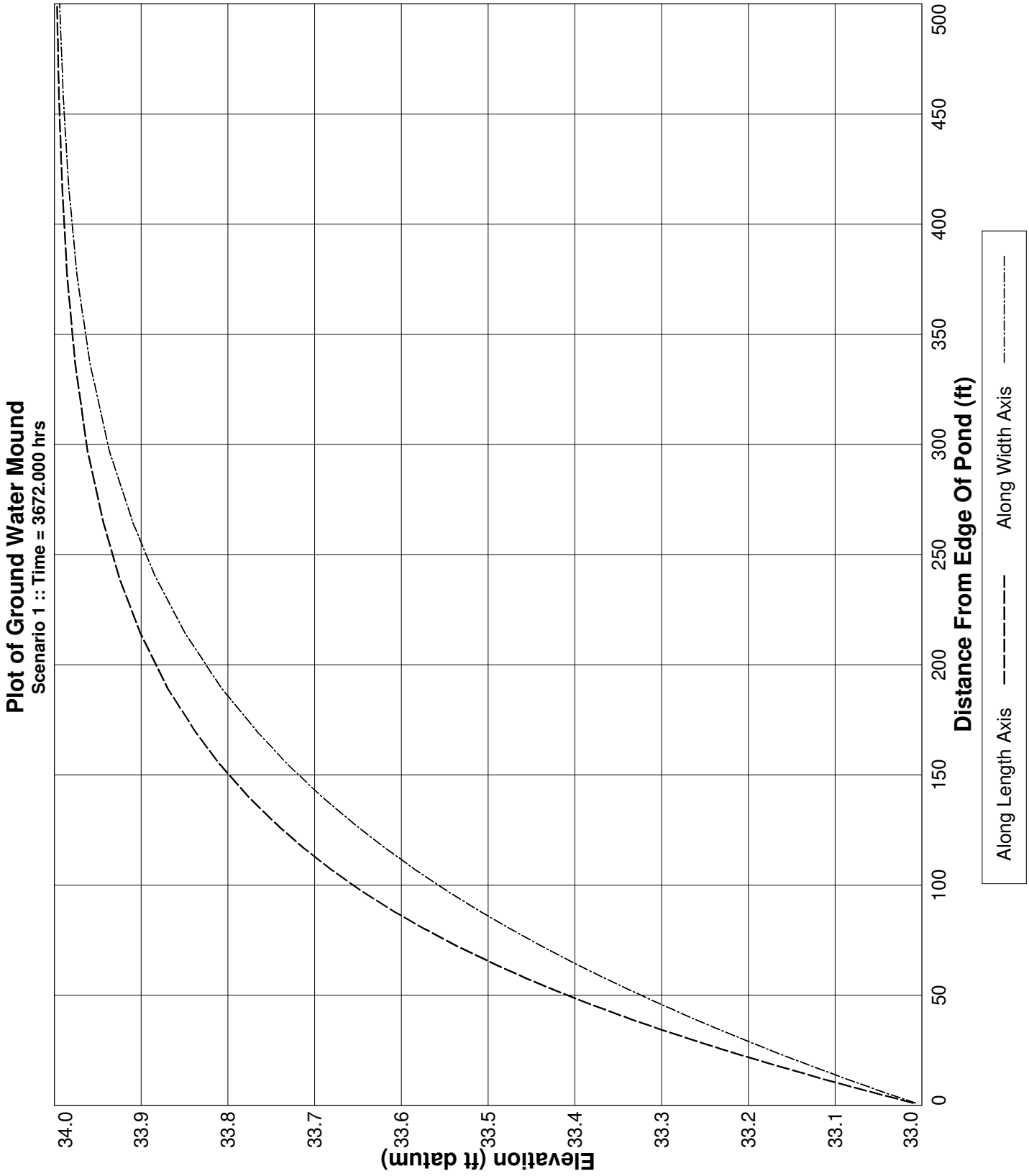
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No.31, South Wetland, with wall
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-24-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	2.00
Water Table Elevation, [WT] (ft datum):	34.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.01
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	363.0
Equivalent Pond Width, [W] (ft):	110.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft²)
-15.00	435.6
33.00	541015.2

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	33
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	33.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

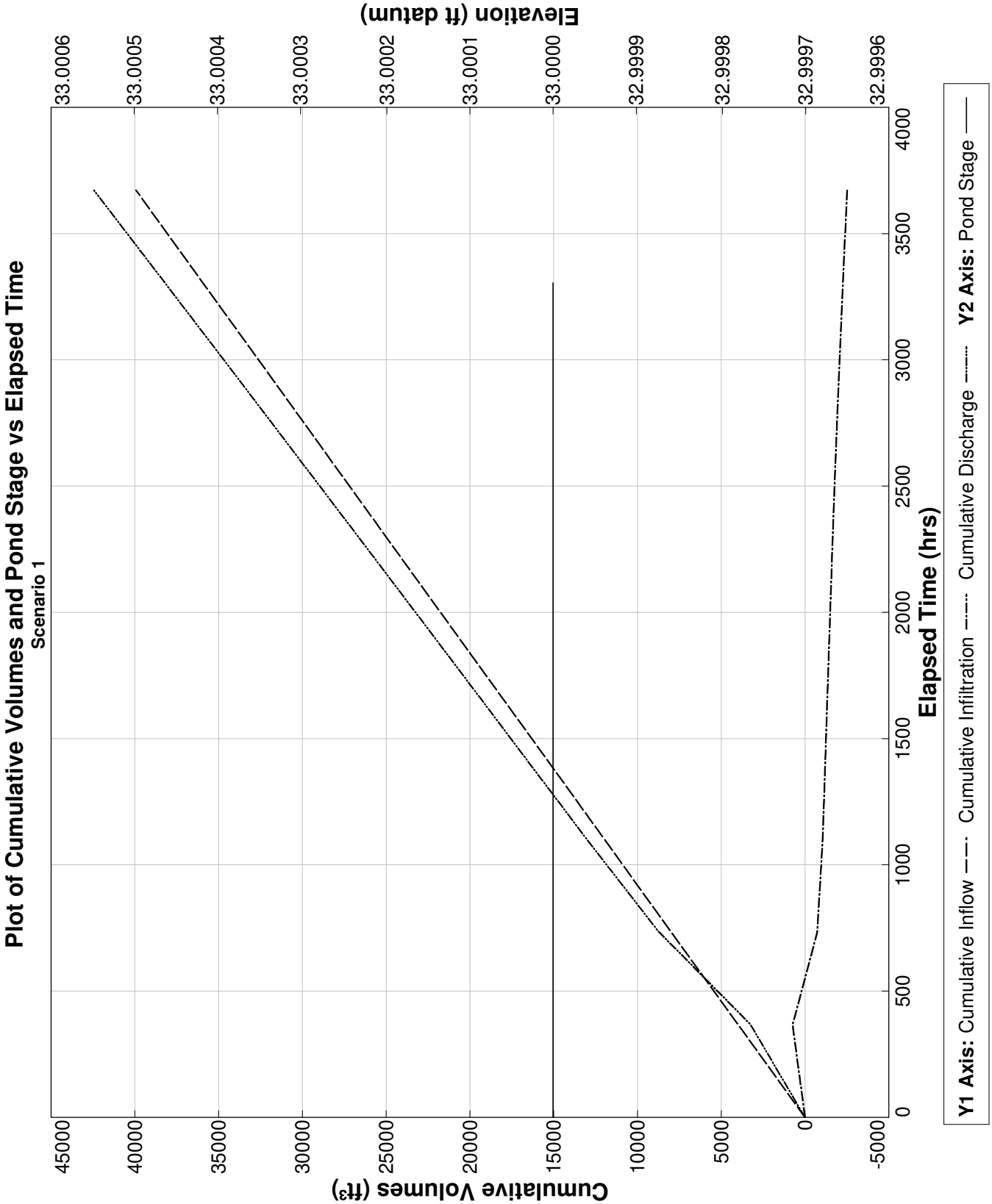
Begin Scenario 1 3/24/2023 9:48:6
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 33.0 ft.
#WARNING: The calculated water budget error exceeded the target water budget error for 2 of 10 saturated stress periods.
Maximum calculated water budget error is -1.89607762539623 percent, for saturated stress period 1.
If convergence is not a problem, it is recommended to reduce the Modflow convergence tolerences
to attempt to decrease the water budget error to within the target level.
End Scenario 1 3/24/2023 9:48:6

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

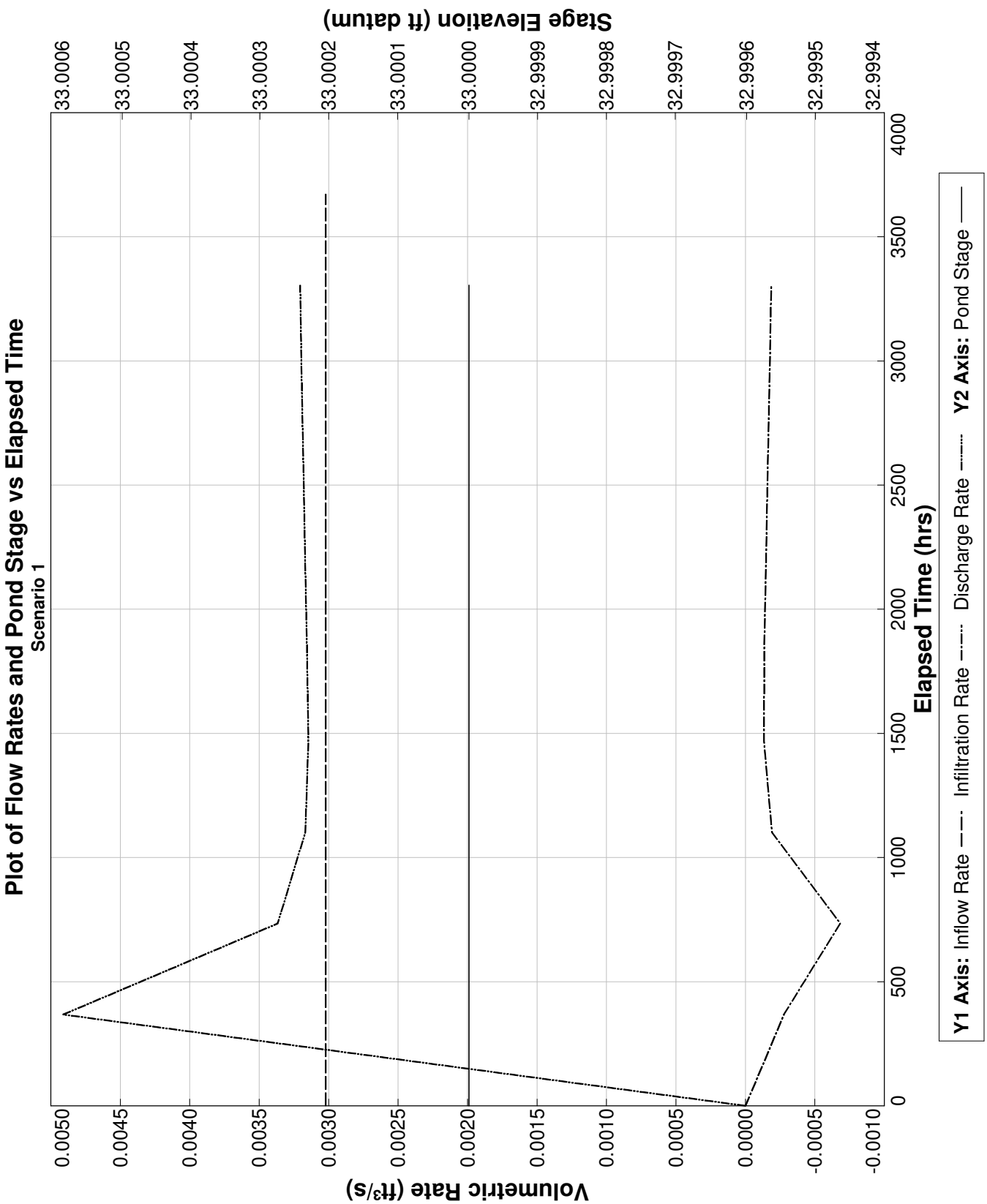
Detailed Results *:: Scenario 1 ::*

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0030	0.00163	33.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0030	0.00163	33.00000	-0.00028	4.911997E-03	3993.000	746.4	3246.634	S
734.400	0.0030	0.00163	33.00000	-0.00068	3.367567E-03	7986.000	-733.1	8719.095	S
1101.600	0.0030	0.00163	33.00000	-0.00019	3.167182E-03	11979.000	-1059.3	13038.3	S
1468.800	0.0030	0.00163	33.00000	-0.00013	3.146484E-03	15972.000	-1239.4	17211.38	S
1836.000	0.0030	0.00163	33.00000	-0.00014	3.155574E-03	19965.000	-1411.8	21376.79	S
2203.200	0.0030	0.00163	33.00000	-0.00015	3.168848E-03	23958.000	-1599.0	25556.98	S
2570.400	0.0030	0.00163	33.00000	-0.00016	3.18195E-03	27951.000	-1803.6	29754.61	S
2937.600	0.0030	0.00163	33.00000	-0.00017	3.194284E-03	31944.000	-2025.0	33969.04	S
3304.800	0.0030	0.00163	33.00000	-0.00019	3.205885E-03	35937.000	-2262.3	38199.3	S
3672.000	0.0030	0.00163	33.00000	----	----	39930.000	-2514.5	42444.48	N.A.

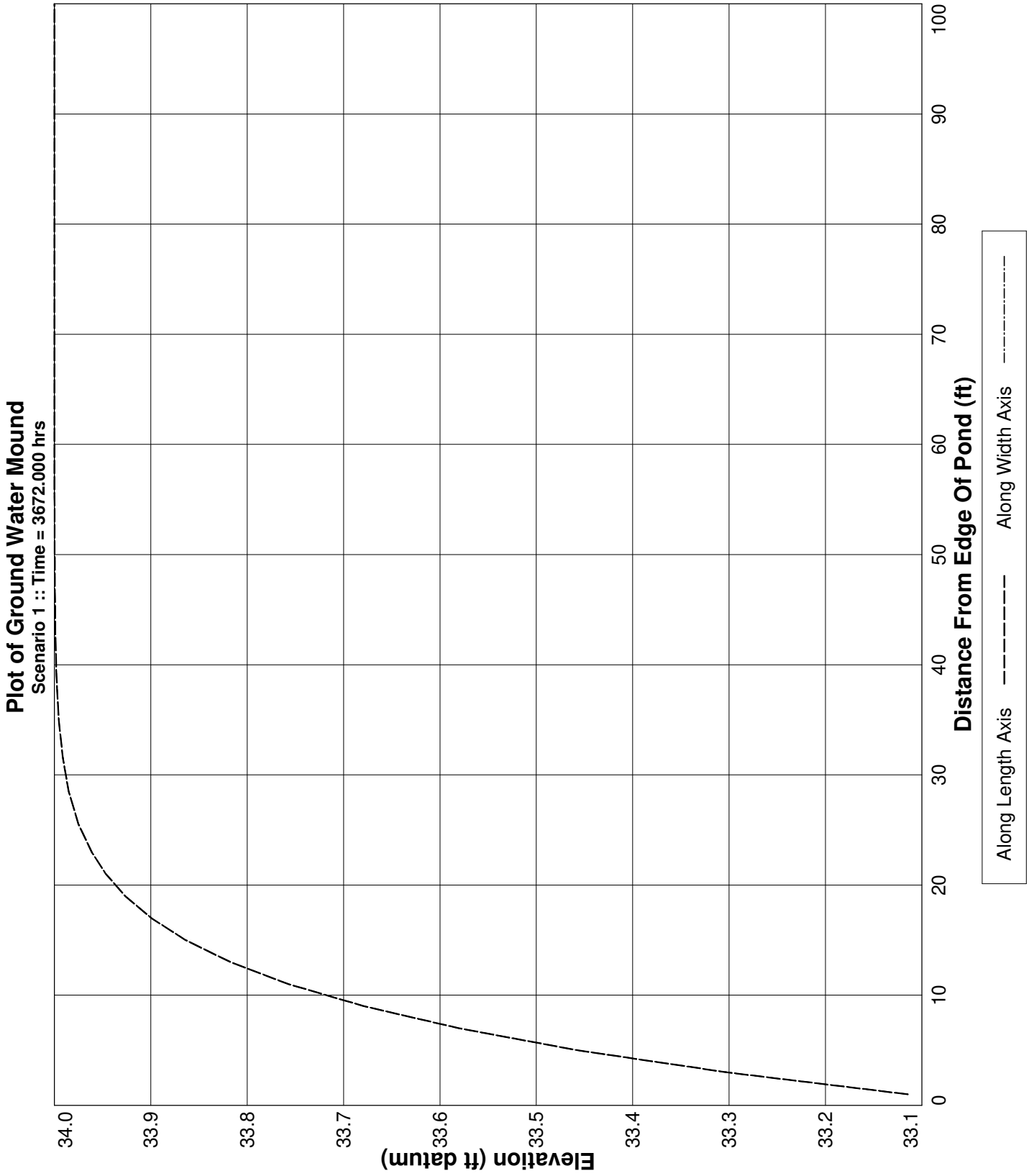
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No. 32, North Wetland, without wall
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-28-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	6.00
Water Table Elevation, [WT] (ft datum):	34.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.44
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	456.0
Equivalent Pond Width, [W] (ft):	119.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
11.00	435.6
33.00	54450.0

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	33
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	33.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

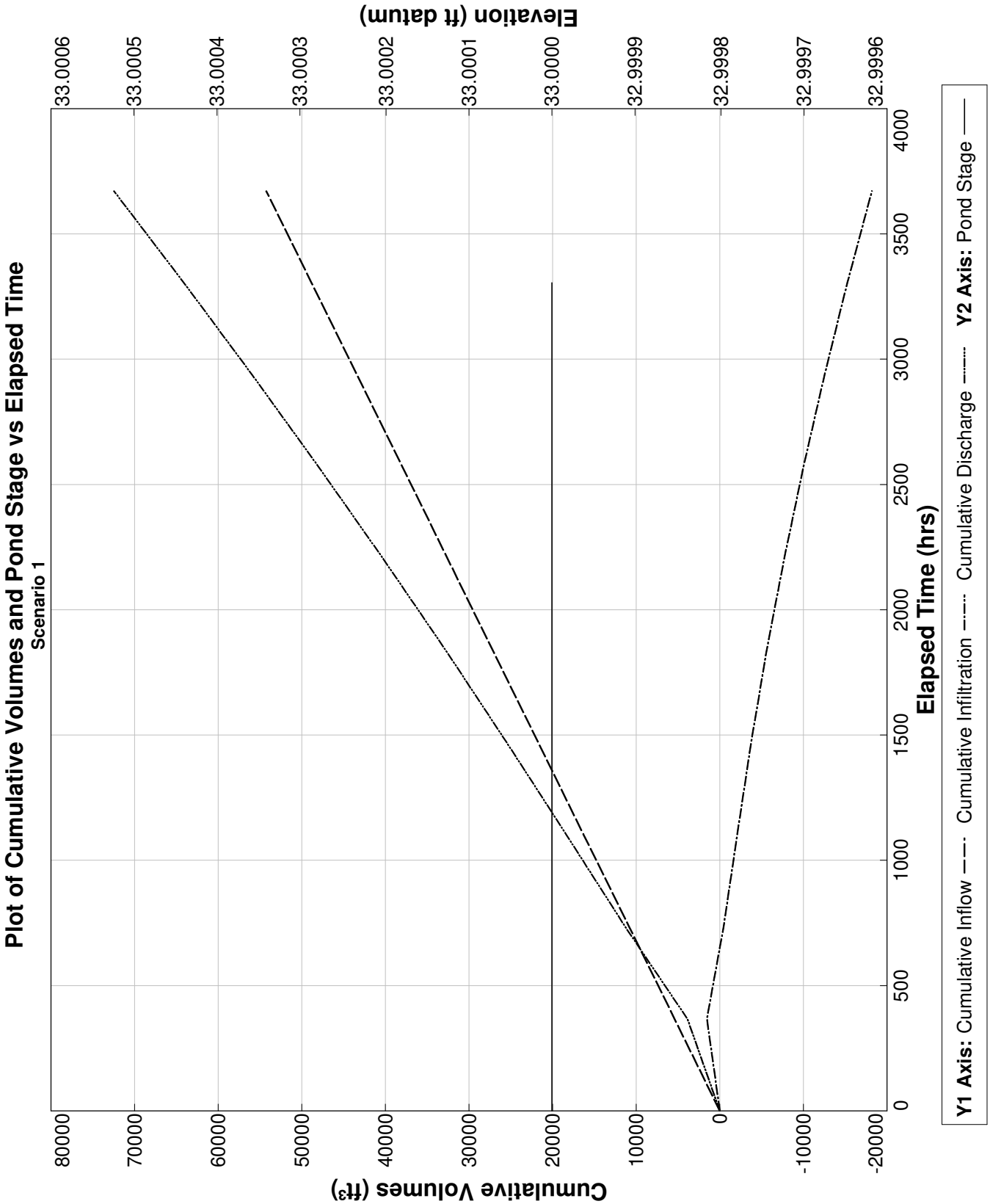
Begin Scenario 1 3/28/2023 9:14:20
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 33.0 ft.
#WARNING: The calculated water budget error exceeded the target water budget error for 1 of 10 saturated stress periods.
Maximum calculated water budget error is -1.12675274031798 percent, for saturated stress period 1.
If convergence is not a problem, it is recommended to reduce the Modflow convergence tolerences
to attempt to decrease the water budget error to within the target level.
End Scenario 1 3/28/2023 9:14:20

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

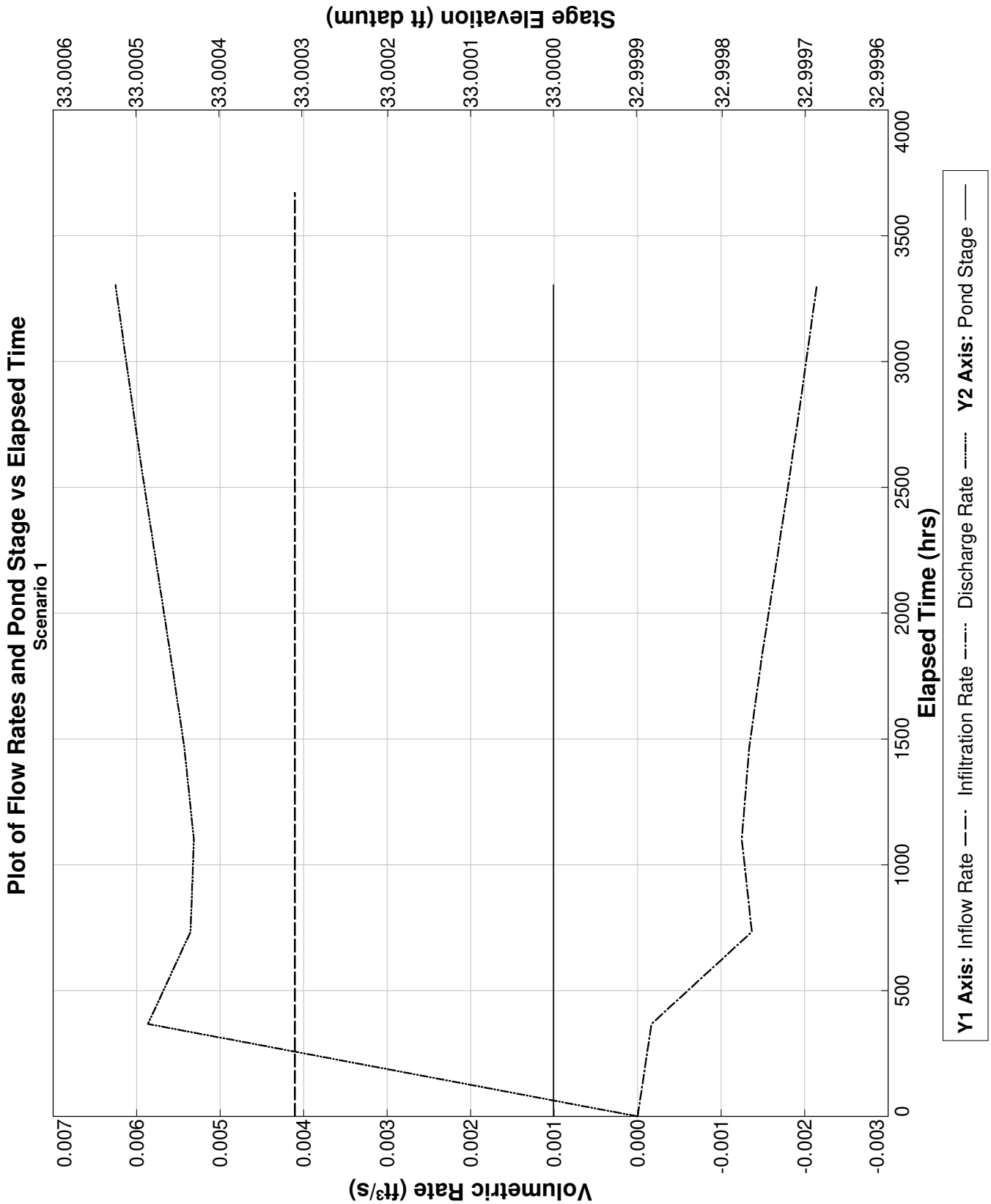
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0041	0.00163	33.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0041	0.00163	33.00000	-0.00017	5.865236E-03	5426.400	1549.7	3876.687	S
734.400	0.0041	0.00163	33.00000	-0.00137	5.355244E-03	10852.800	-440.2	11292.97	S
1101.600	0.0041	0.00163	33.00000	-0.00125	5.313811E-03	16279.200	-2065.6	18344.79	S
1468.800	0.0041	0.00163	33.00000	-0.00134	5.429359E-03	21705.600	-3740.0	25445.6	S
1836.000	0.0041	0.00163	33.00000	-0.00149	5.594548E-03	27132.000	-5600.0	32731.96	S
2203.200	0.0041	0.00163	33.00000	-0.00166	5.767871E-03	32558.400	-7683.7	40242.07	S
2570.400	0.0041	0.00163	33.00000	-0.00183	5.937036E-03	37984.800	-9993.7	47978.54	S
2937.600	0.0041	0.00163	33.00000	-0.00199	6.099064E-03	43411.200	-12522.7	55933.92	S
3304.800	0.0041	0.00163	33.00000	-0.00215	6.253129E-03	48837.600	-15260.6	64098.23	S
3672.000	0.0041	0.00163	33.00000	----	----	54264.000	-18198.2	72462.15	N.A.

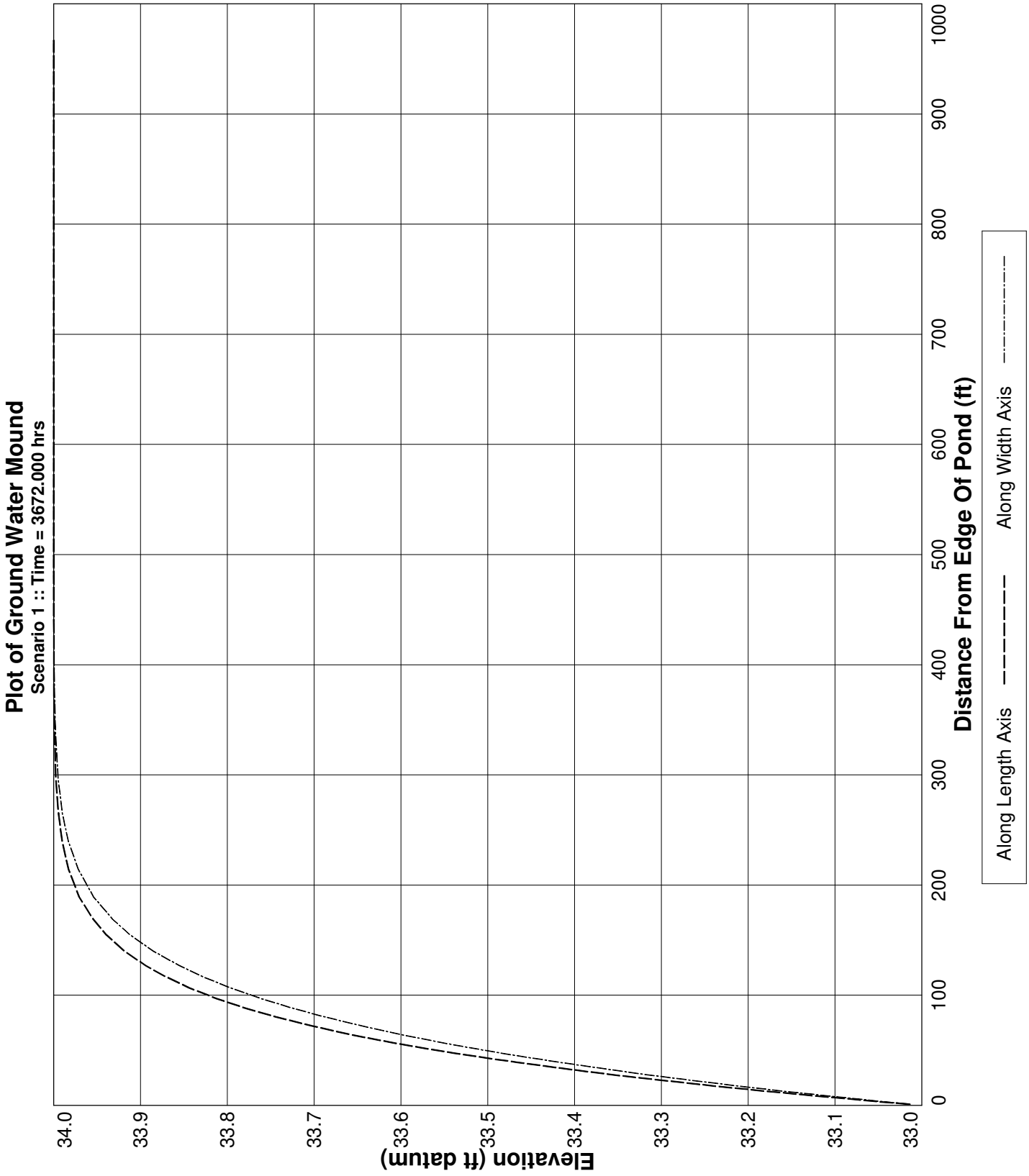
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No. 32, North Wetland, with wall
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-28-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	6.00
Water Table Elevation, [WT] (ft datum):	34.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.01
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	456.0
Equivalent Pond Width, [W] (ft):	119.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft²)
11.00	435.6
33.00	54450.0

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	33
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	33.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

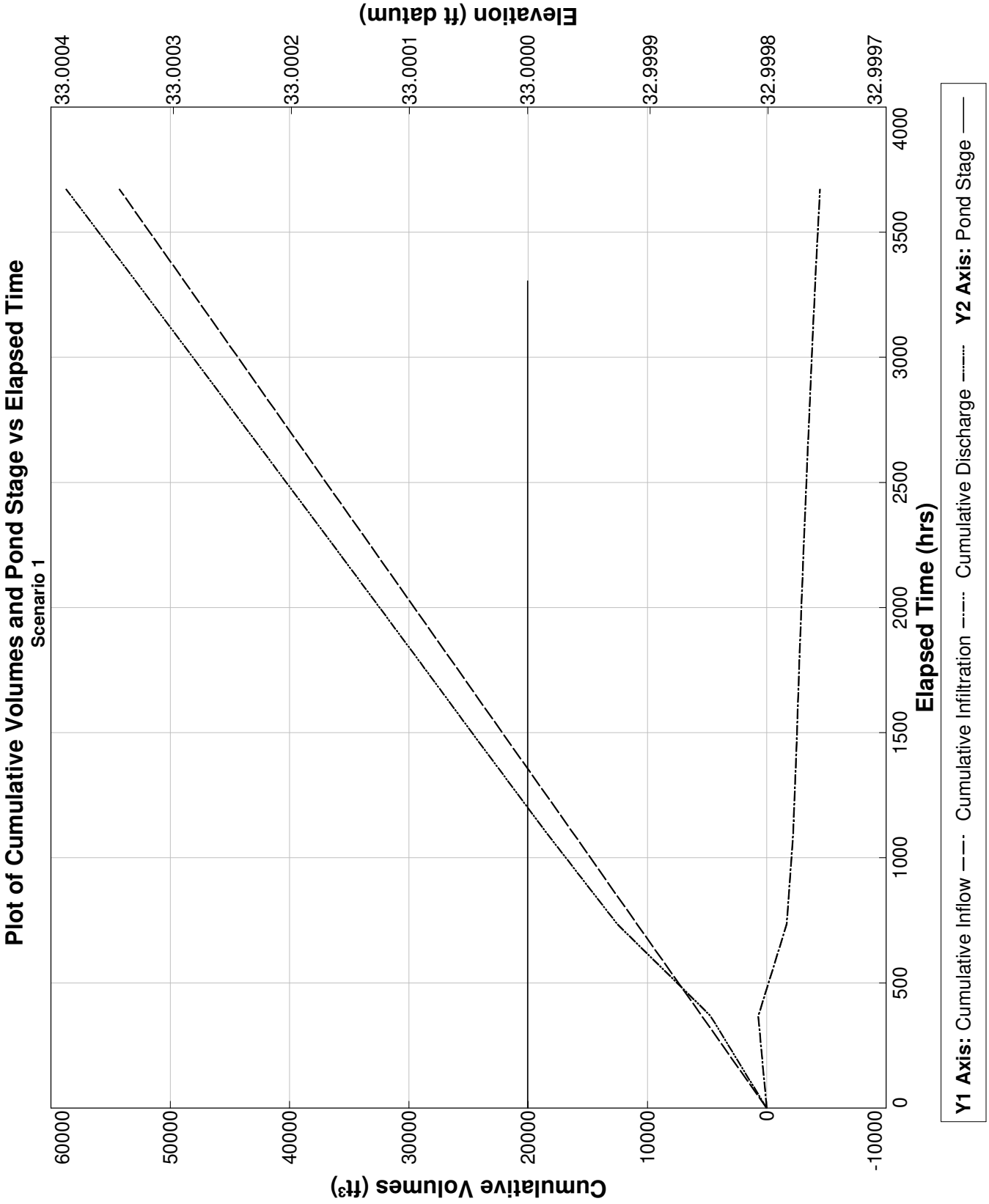
Begin Scenario 1 3/28/2023 9:20:38
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 33.0 ft.
#WARNING: The calculated water budget error exceeded the target water budget error for 3 of 10 saturated stress periods.
Maximum calculated water budget error is -2.85790076413589 percent, for saturated stress period 1.
If convergence is not a problem, it is recommended to reduce the Modflow convergence tolerences
to attempt to decrease the water budget error to within the target level.
End Scenario 1 3/28/2023 9:20:38

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

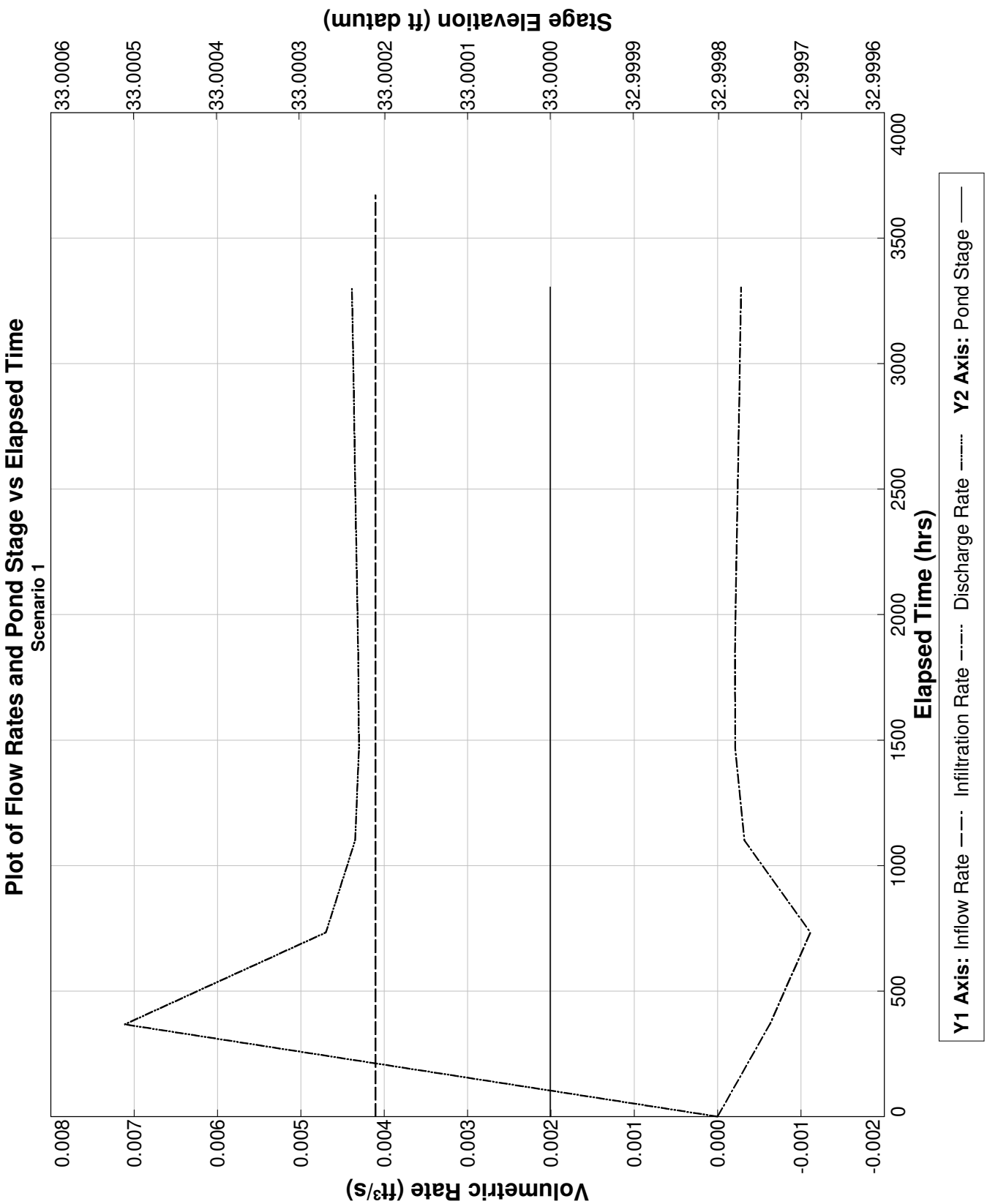
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0041	0.00163	33.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0041	0.00163	33.00000	-0.00063	7.114515E-03	5426.400	724.0	4702.41	S
734.400	0.0041	0.00163	33.00000	-0.00111	4.700172E-03	10852.800	-1658.6	12511.45	S
1101.600	0.0041	0.00163	33.00000	-0.00032	4.349123E-03	16279.200	-2213.5	18492.67	S
1468.800	0.0041	0.00163	33.00000	-0.00021	4.302193E-03	21705.600	-2505.2	24210.84	S
1836.000	0.0041	0.00163	33.00000	-0.00021	4.311694E-03	27132.000	-2772.3	29904.28	S
2203.200	0.0041	0.00163	33.00000	-0.00023	4.330833E-03	32558.400	-3058.2	35616.64	S
2570.400	0.0041	0.00163	33.00000	-0.00025	4.350571E-03	37984.800	-3369.9	41354.7	S
2937.600	0.0041	0.00163	33.00000	-0.00026	4.369354E-03	43411.200	-3707.0	47118.22	S
3304.800	0.0041	0.00163	33.00000	-0.00028	4.387078E-03	48837.600	-4068.3	52905.88	S
3672.000	0.0041	0.00163	33.00000	----	----	54264.000	-4452.3	58716.34	N.A.

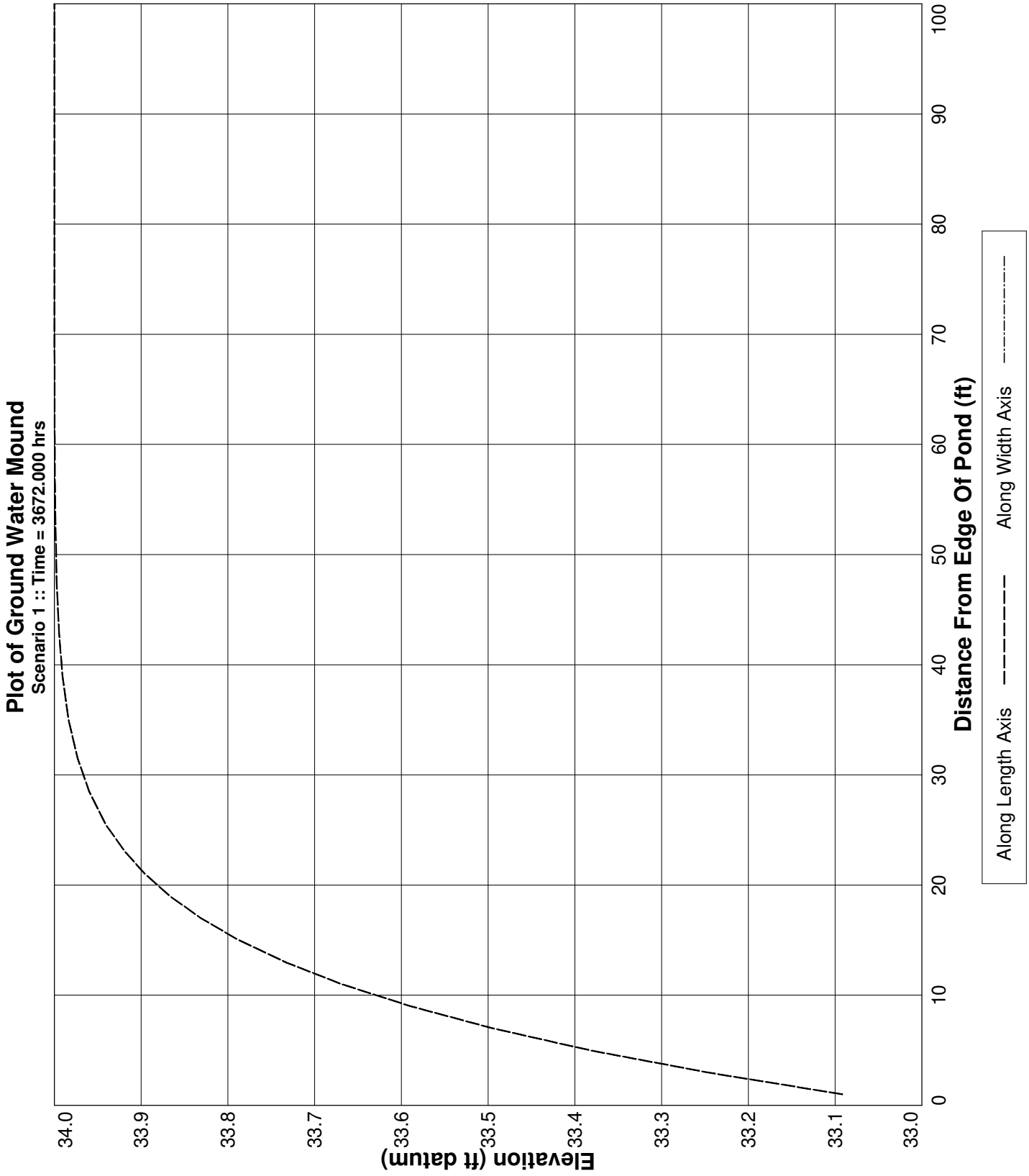
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No. 32, West Wetland, without wall
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-28-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	6.00
Water Table Elevation, [WT] (ft datum):	35.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.44
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	456.0
Equivalent Pond Width, [W] (ft):	119.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
11.00	435.6
33.00	54450.0

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	33
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	34.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

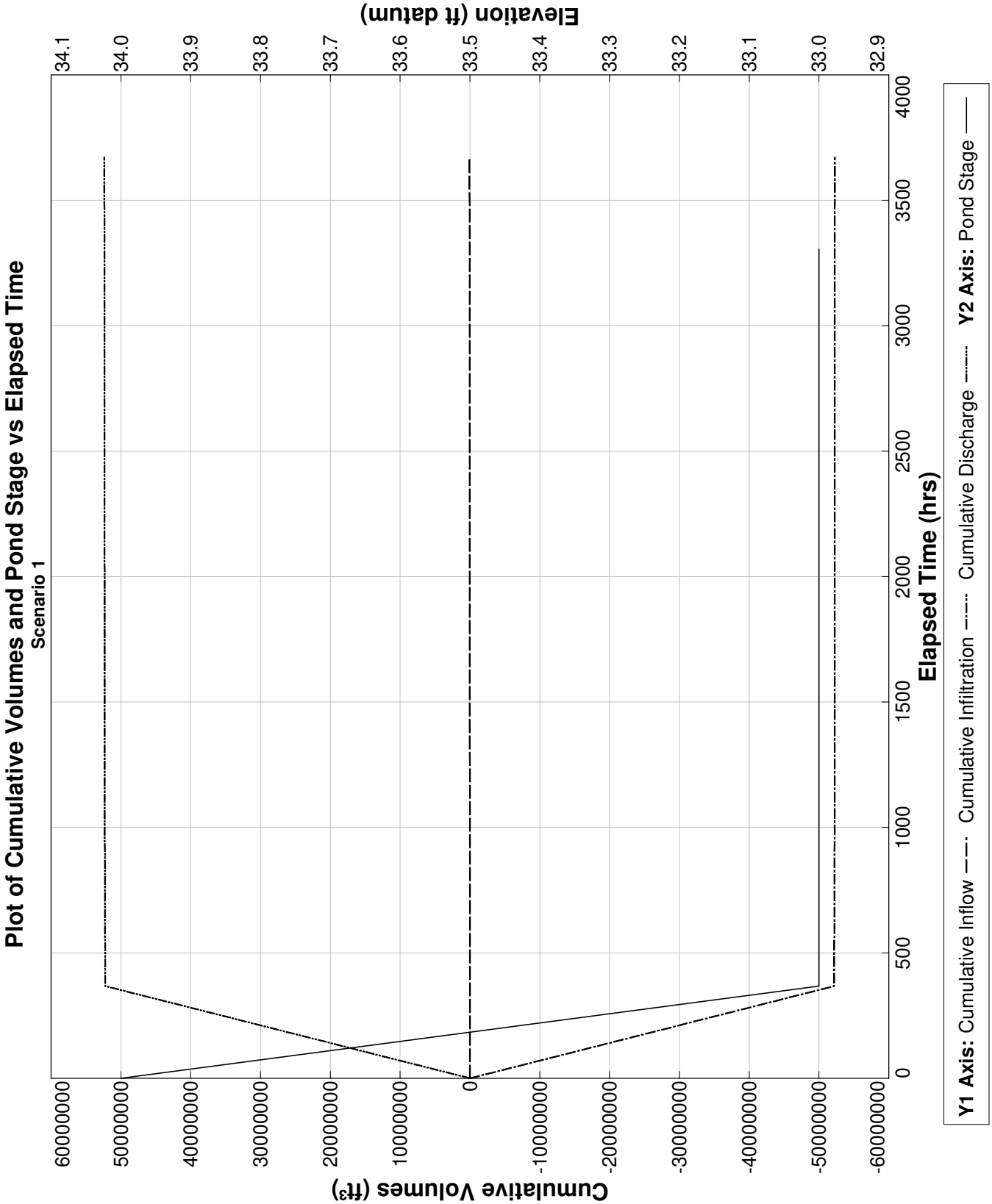
Begin Scenario 1 3/28/2023 9:23:2
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 34.0 ft.
End Scenario 1 3/28/2023 9:23:2

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

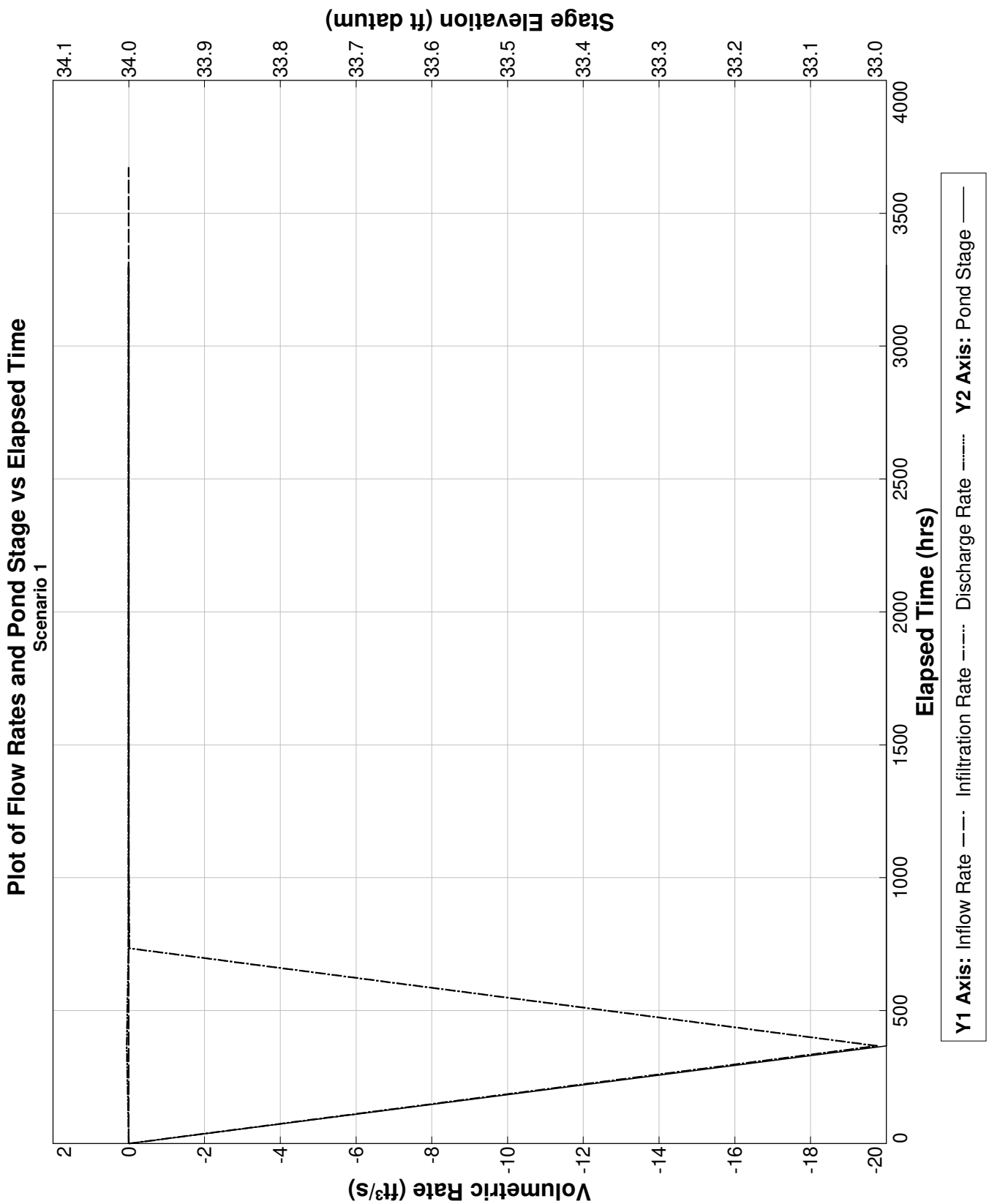
Detailed Results *:: Scenario 1 ::*

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0041	0.00163	34.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0041	0.00163	33.00000	-19.75394	5.279588E-02	5426.400	-52190860.0	5.225074E+07	S
734.400	0.0041	0.00163	33.00000	-0.01565	8.981509E-03	10852.800	-52226260.0	5.229157E+07	S
1101.600	0.0041	0.00163	33.00000	-0.00426	8.277752E-03	16279.200	-52232250.0	5.230298E+07	S
1468.800	0.0041	0.00163	33.00000	-0.00386	7.921159E-03	21705.600	-52237530.0	5.231368E+07	S
1836.000	0.0041	0.00163	33.00000	-0.00368	7.757494E-03	27132.000	-52242460.0	5.232404E+07	S
2203.200	0.0041	0.00163	33.00000	-0.00362	7.712131E-03	32558.400	-52247260.0	5.233427E+07	S
2570.400	0.0041	0.00163	33.00000	-0.00363	7.723187E-03	37984.800	-52252040.0	5.234447E+07	S
2937.600	0.0041	0.00163	33.00000	-0.00367	7.766151E-03	43411.200	-52256850.0	5.235471E+07	S
3304.800	0.0041	0.00163	33.00000	-0.00373	7.828619E-03	48837.600	-52261730.0	5.236502E+07	S
3672.000	0.0041	0.00163	33.00000	----	----	54264.000	-52266700.0	5.237542E+07	N.A.

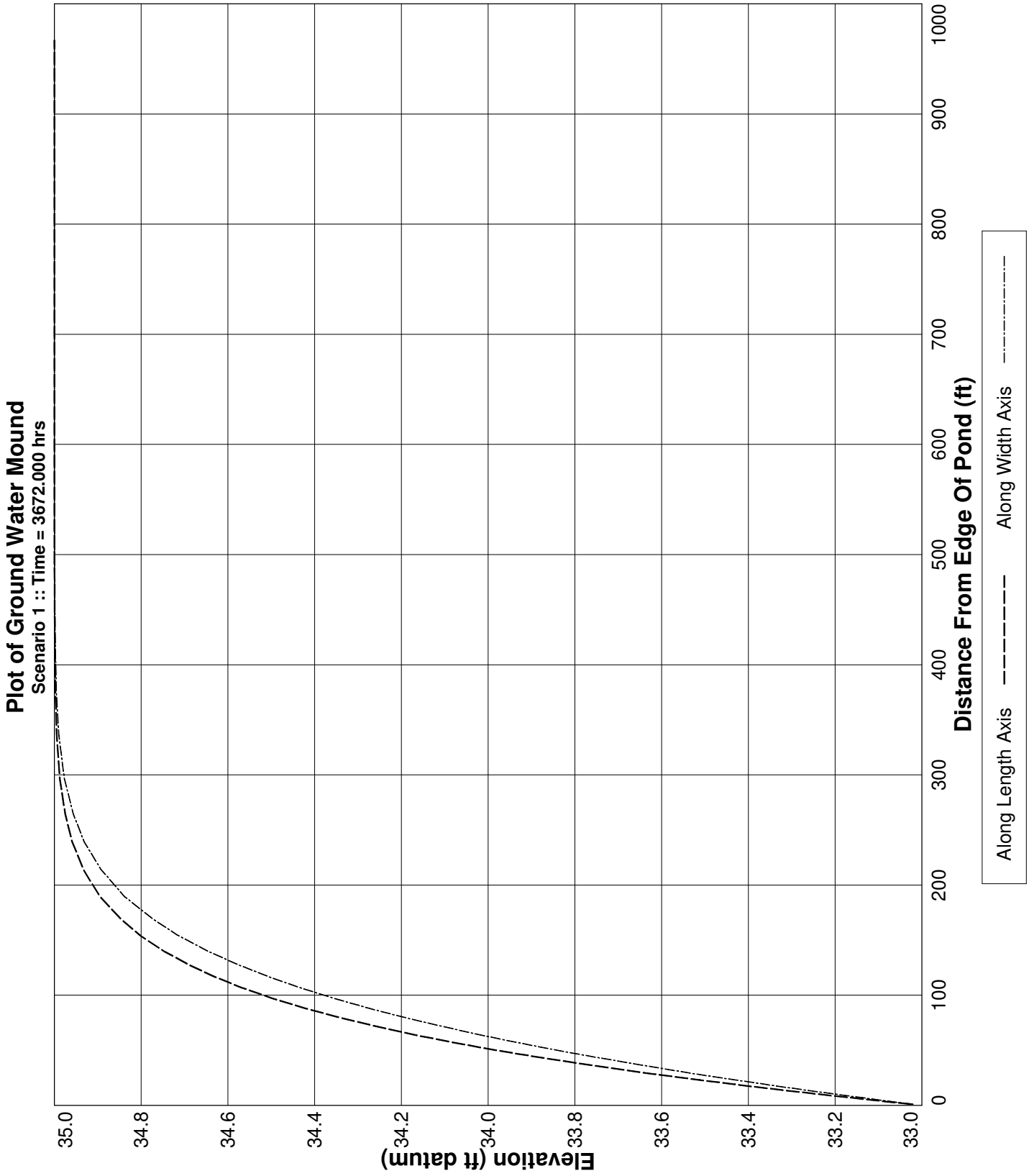
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No. 32, West Wetland, with wall
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-28-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	6.00
Water Table Elevation, [WT] (ft datum):	35.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.01
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	456.0
Equivalent Pond Width, [W] (ft):	119.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft²)
11.00	435.6
33.00	54450.0

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	33
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	34.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

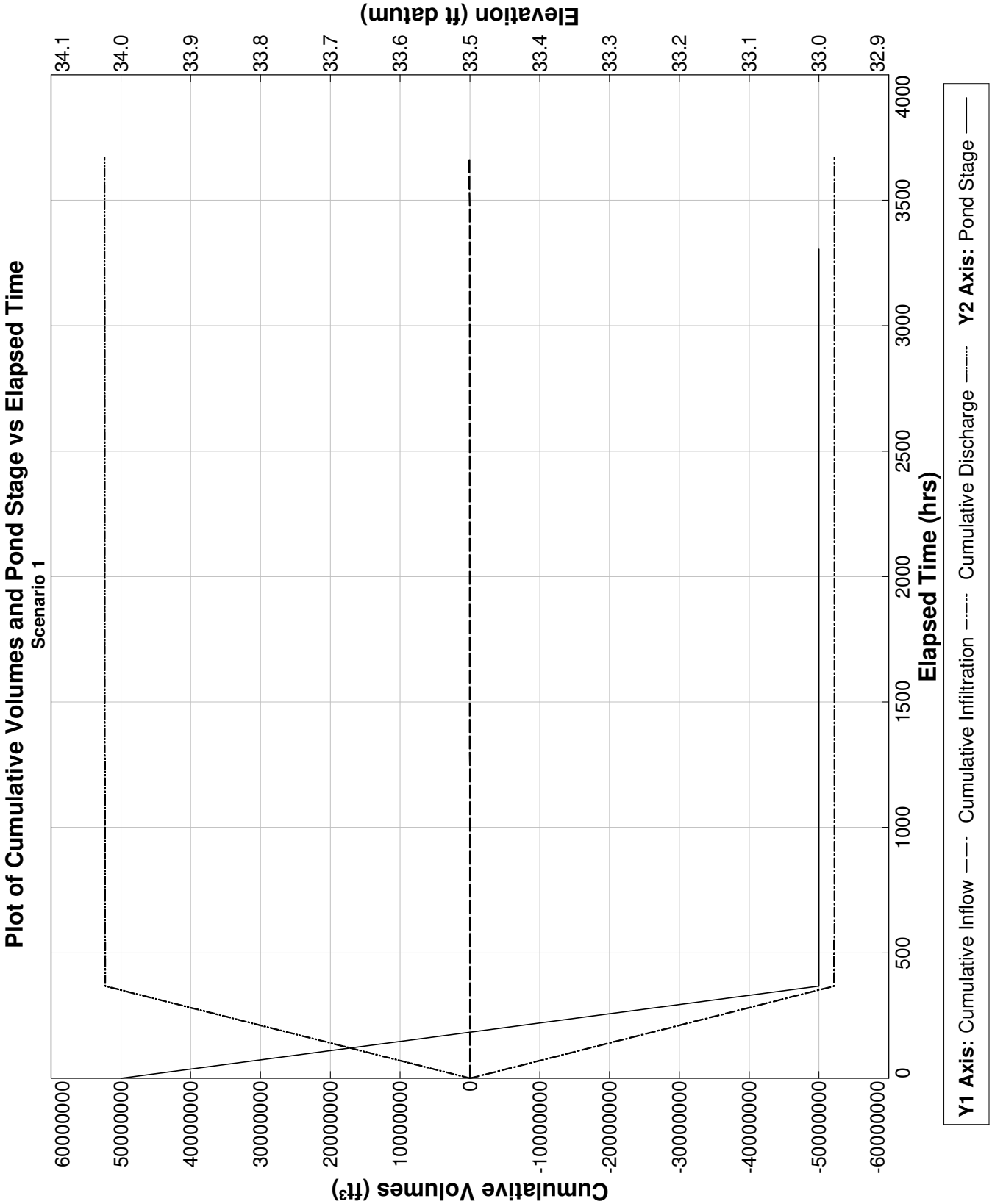
Begin Scenario 1 3/28/2023 11:3:19
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 34.0 ft.
#WARNING: The calculated water budget error exceeded the target water budget error for 7 of 10 saturated stress periods.
Maximum calculated water budget error is -3.79212104079059 percent, for saturated stress period 1.
If convergence is not a problem, it is recommended to reduce the Modflow convergence tolerences
to attempt to decrease the water budget error to within the target level.
End Scenario 1 3/28/2023 11:3:19

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

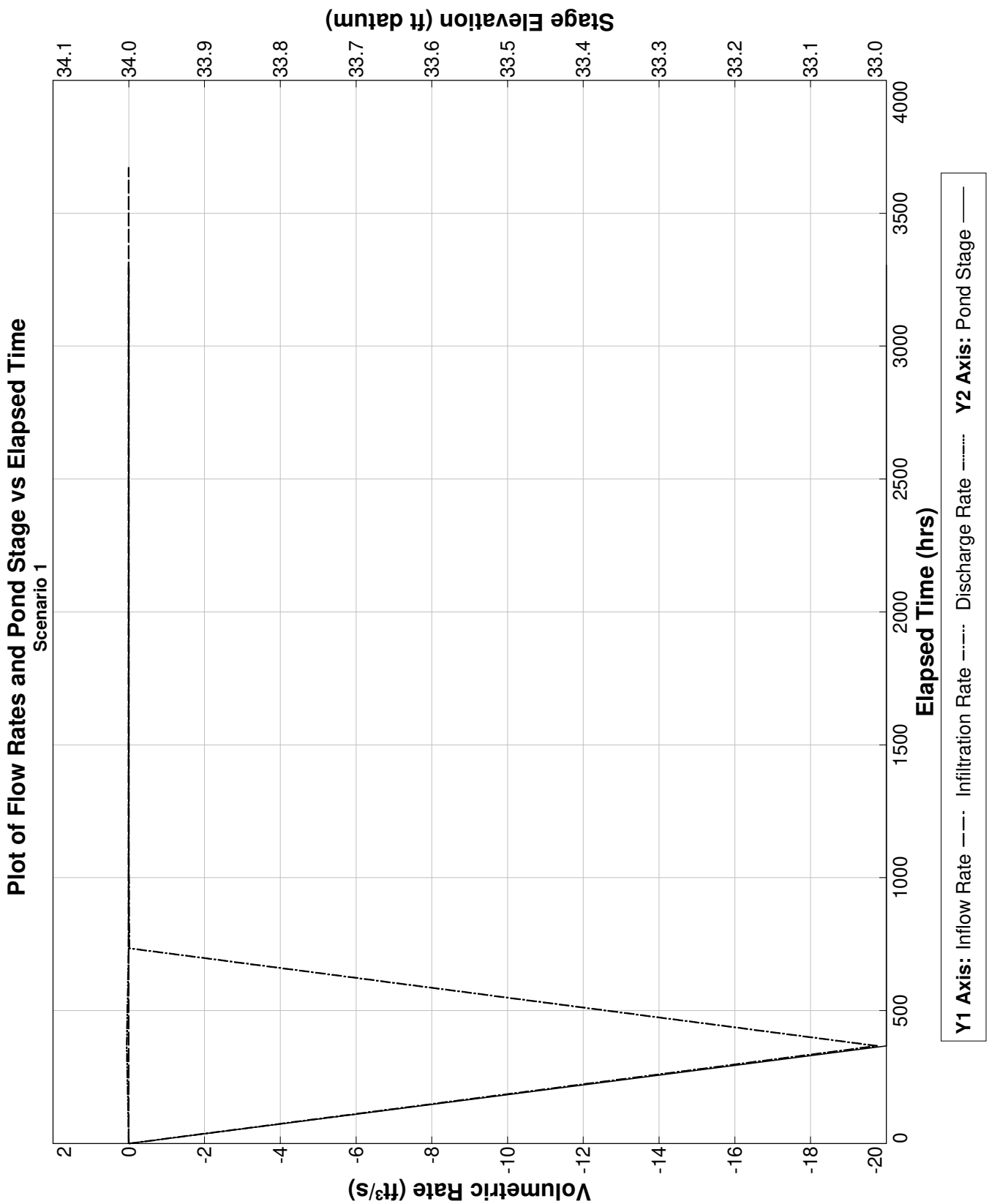
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0041	0.00163	34.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0041	0.00163	33.00000	-19.75276	5.153746E-02	5426.400	-52190030.0	5.22499E+07	S
734.400	0.0041	0.00163	33.00000	-0.01337	6.765052E-03	10852.800	-52223140.0	5.228844E+07	S
1101.600	0.0041	0.00163	33.00000	-0.00114	4.829682E-03	16279.200	-52225380.0	5.22961E+07	S
1468.800	0.0041	0.00163	33.00000	-0.00049	4.537245E-03	21705.600	-52226140.0	5.23023E+07	S
1836.000	0.0041	0.00163	33.00000	-0.00039	4.482262E-03	27132.000	-52226680.0	5.230826E+07	S
2203.200	0.0041	0.00163	33.00000	-0.00037	4.471636E-03	32558.400	-52227160.0	5.231418E+07	S
2570.400	0.0041	0.00163	33.00000	-0.00037	4.471398E-03	37984.800	-52227650.0	5.232008E+07	S
2937.600	0.0041	0.00163	33.00000	-0.00037	4.474607E-03	43411.200	-52228140.0	5.2326E+07	S
3304.800	0.0041	0.00163	33.00000	-0.00037	4.47943E-03	48837.600	-52228630.0	5.233192E+07	S
3672.000	0.0041	0.00163	33.00000	----	----	54264.000	-52229130.0	5.233784E+07	N.A.

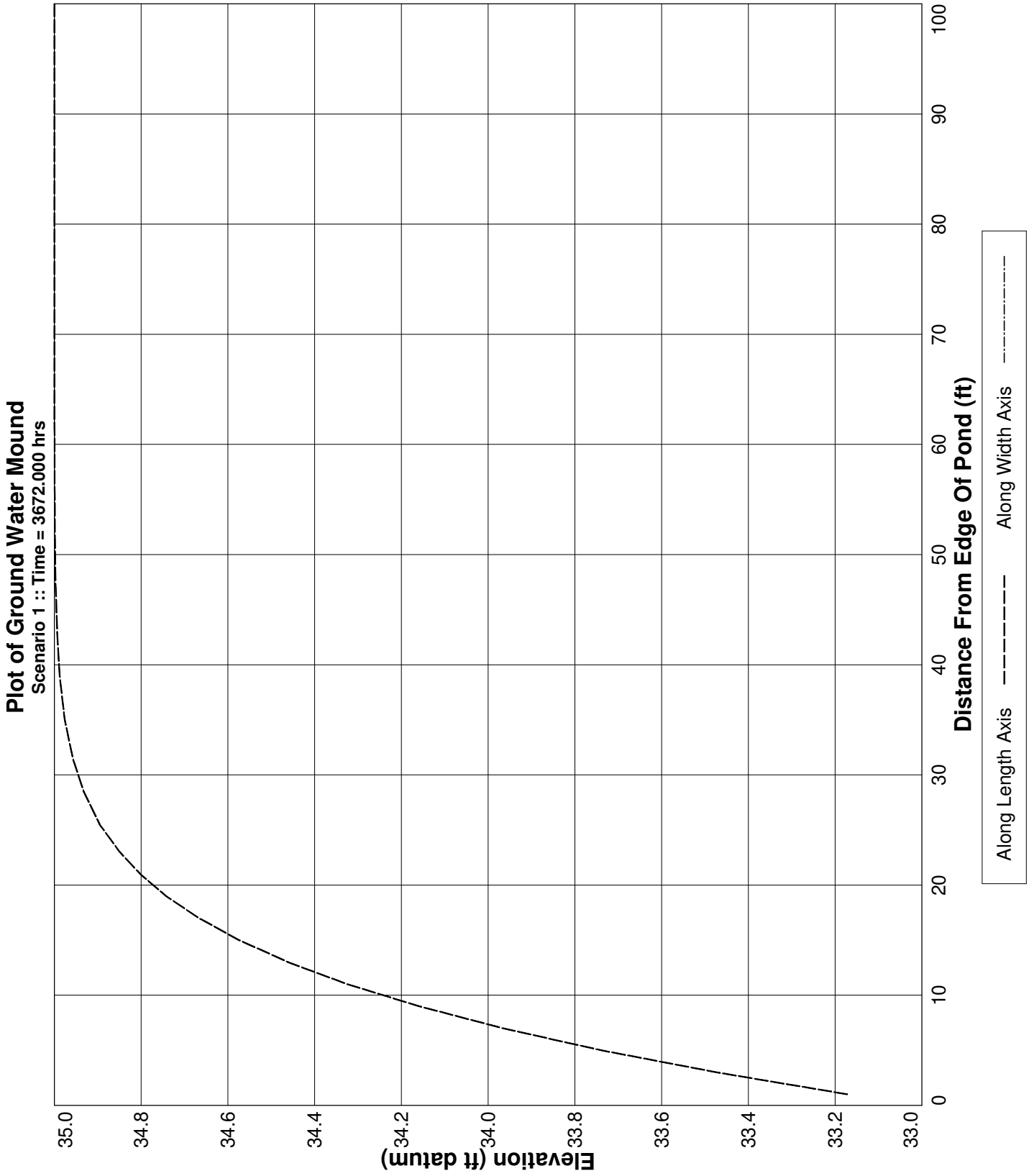
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No. 32, Southwest Wetland, without wall
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-28-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	6.00
Water Table Elevation, [WT] (ft datum):	36.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.44
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	456.0
Equivalent Pond Width, [W] (ft):	119.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
11.00	435.6
33.00	54450.0

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	33
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	35.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

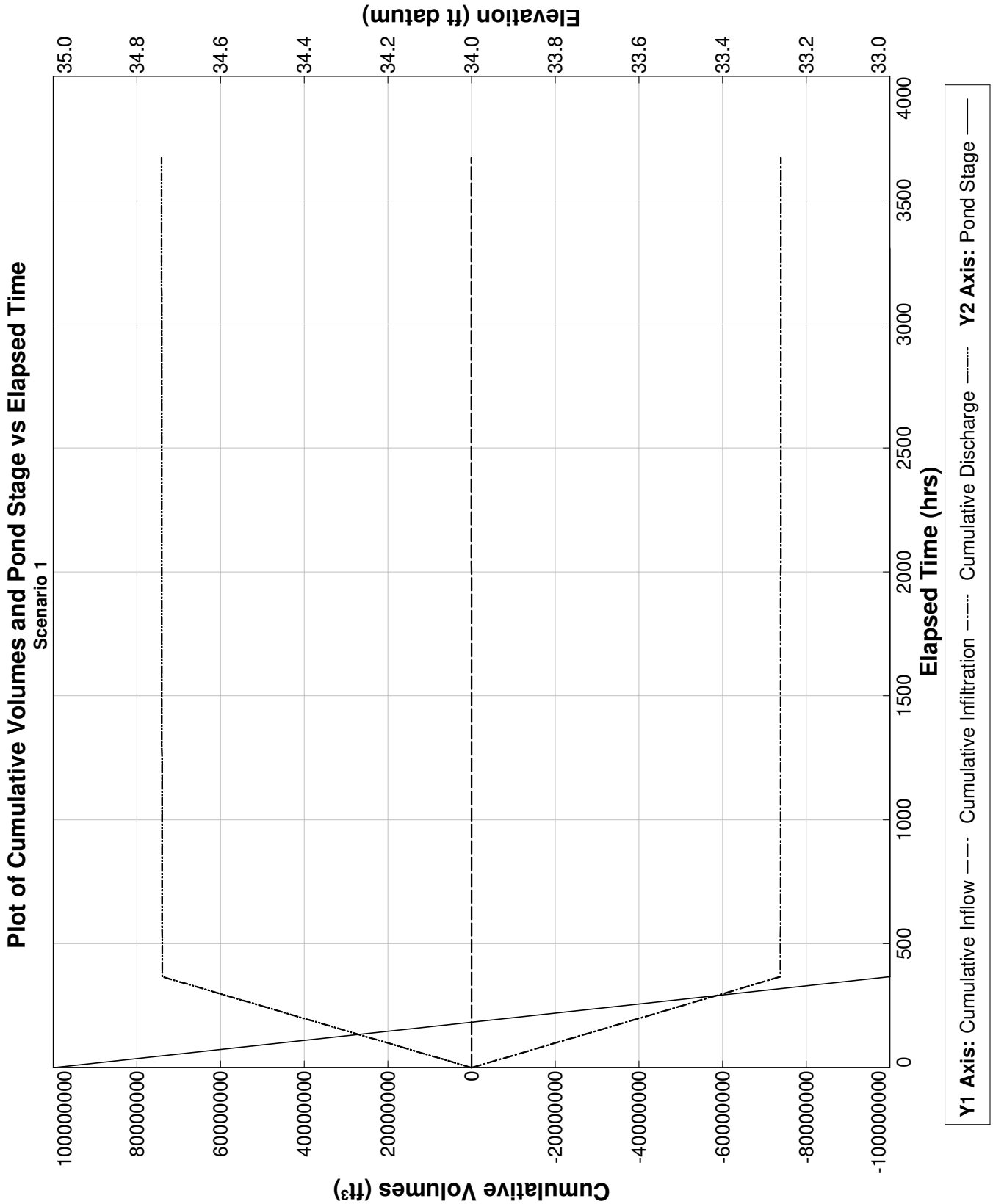
Begin Scenario 1 3/28/2023 10:30:55
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 35.0 ft.
#WARNING: The calculated water budget error exceeded the target water budget error for 6 of 10 saturated stress periods.
Maximum calculated water budget error is -2.98018746101624 percent, for saturated stress period 1.
If convergence is not a problem, it is recommended to reduce the Modflow convergence tolerences
to attempt to decrease the water budget error to within the target level.
End Scenario 1 3/28/2023 10:30:55

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

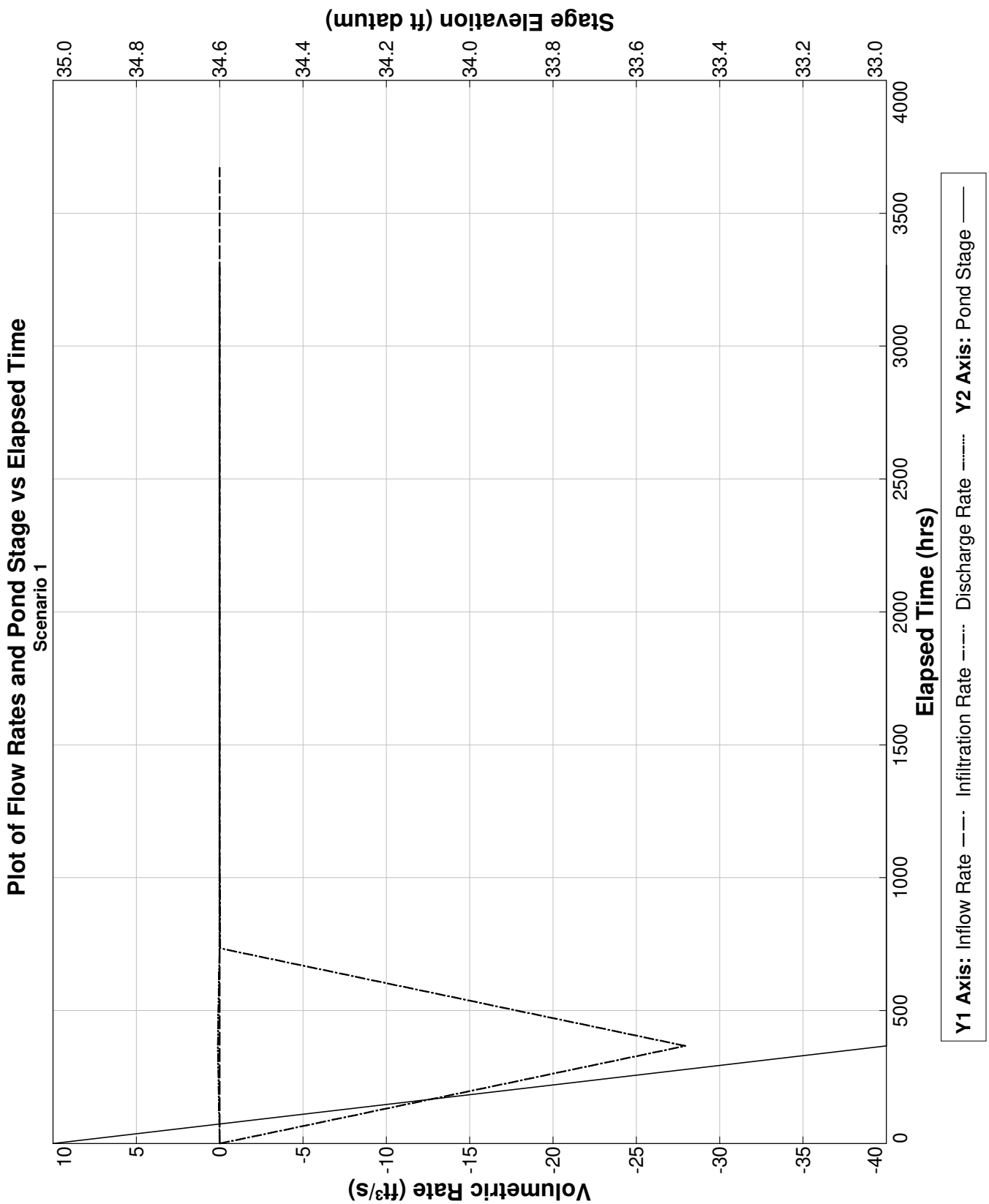
Detailed Results *:: Scenario 1 ::*

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0041	0.00163	35.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0041	0.00163	33.00000	-27.94123	.1054516	5426.400	-73799720.0	7.391405E+07	S
734.400	0.0041	0.00163	33.00000	-0.03115	1.231988E-02	10852.800	-73872140.0	7.399189E+07	S
1101.600	0.0041	0.00163	33.00000	-0.00701	1.092262E-02	16279.200	-73882070.0	7.400726E+07	S
1468.800	0.0041	0.00163	33.00000	-0.00625	1.030224E-02	21705.600	-73890680.0	7.402128E+07	S
1836.000	0.0041	0.00163	33.00000	-0.00584	9.907397E-03	27132.000	-73898610.0	7.403464E+07	S
2203.200	0.0041	0.00163	33.00000	-0.00559	9.66357E-03	32558.400	-73906120.0	7.404758E+07	S
2570.400	0.0041	0.00163	33.00000	-0.00544	9.527525E-03	37984.800	-73913380.0	7.406026E+07	S
2937.600	0.0041	0.00163	33.00000	-0.00536	9.452945E-03	43411.200	-73920500.0	7.407281E+07	S
3304.800	0.0041	0.00163	33.00000	-0.00533	9.425886E-03	48837.600	-73927540.0	7.408528E+07	S
3672.000	0.0041	0.00163	33.00000	----	----	54264.000	-73934580.0	7.409774E+07	N.A.

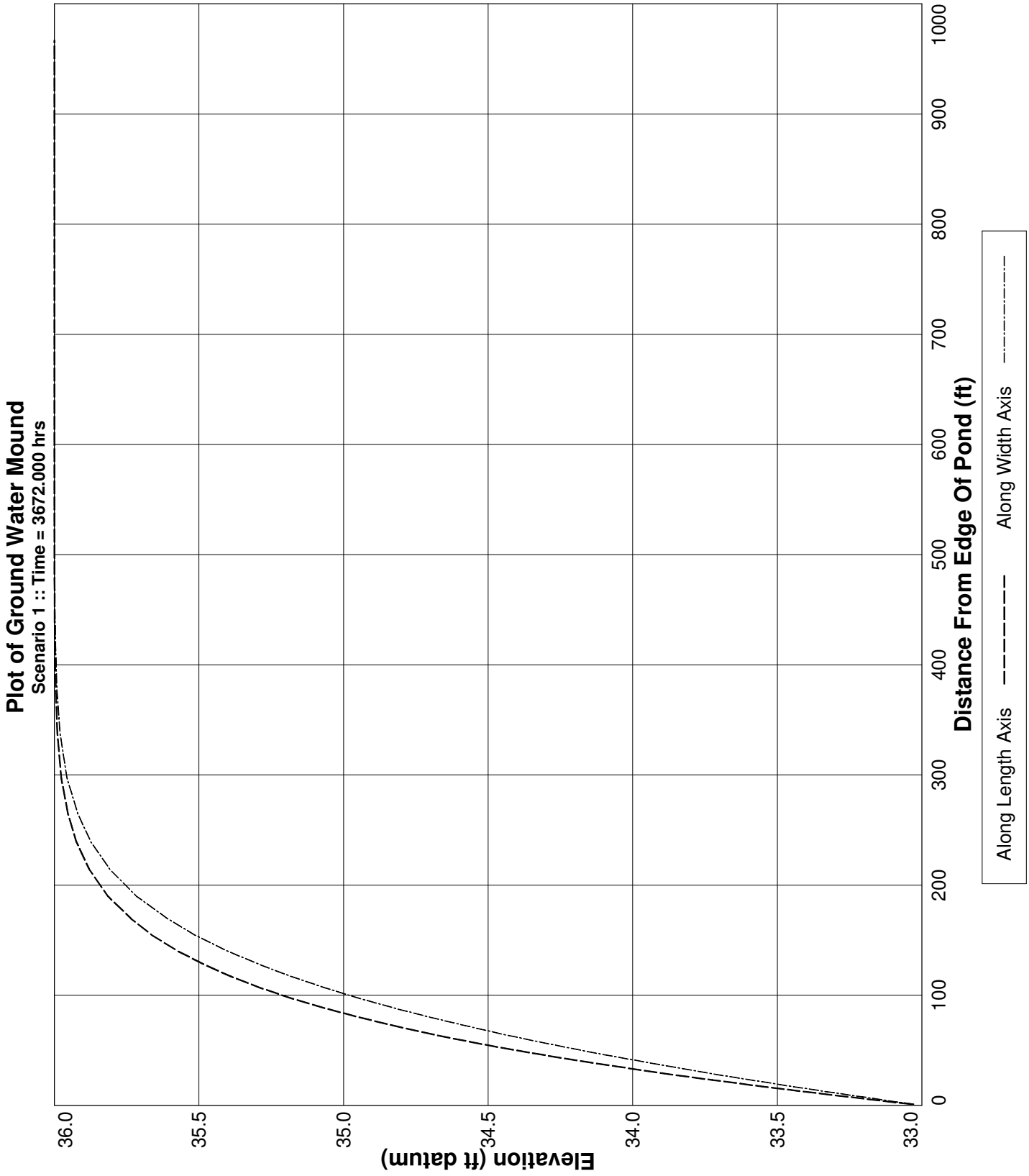
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No. 32, Southwest Wetland, with wall
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-28-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	6.00
Water Table Elevation, [WT] (ft datum):	36.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.01
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	456.0
Equivalent Pond Width, [W] (ft):	119.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
11.00	435.6
33.00	54450.0

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	33
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	35.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

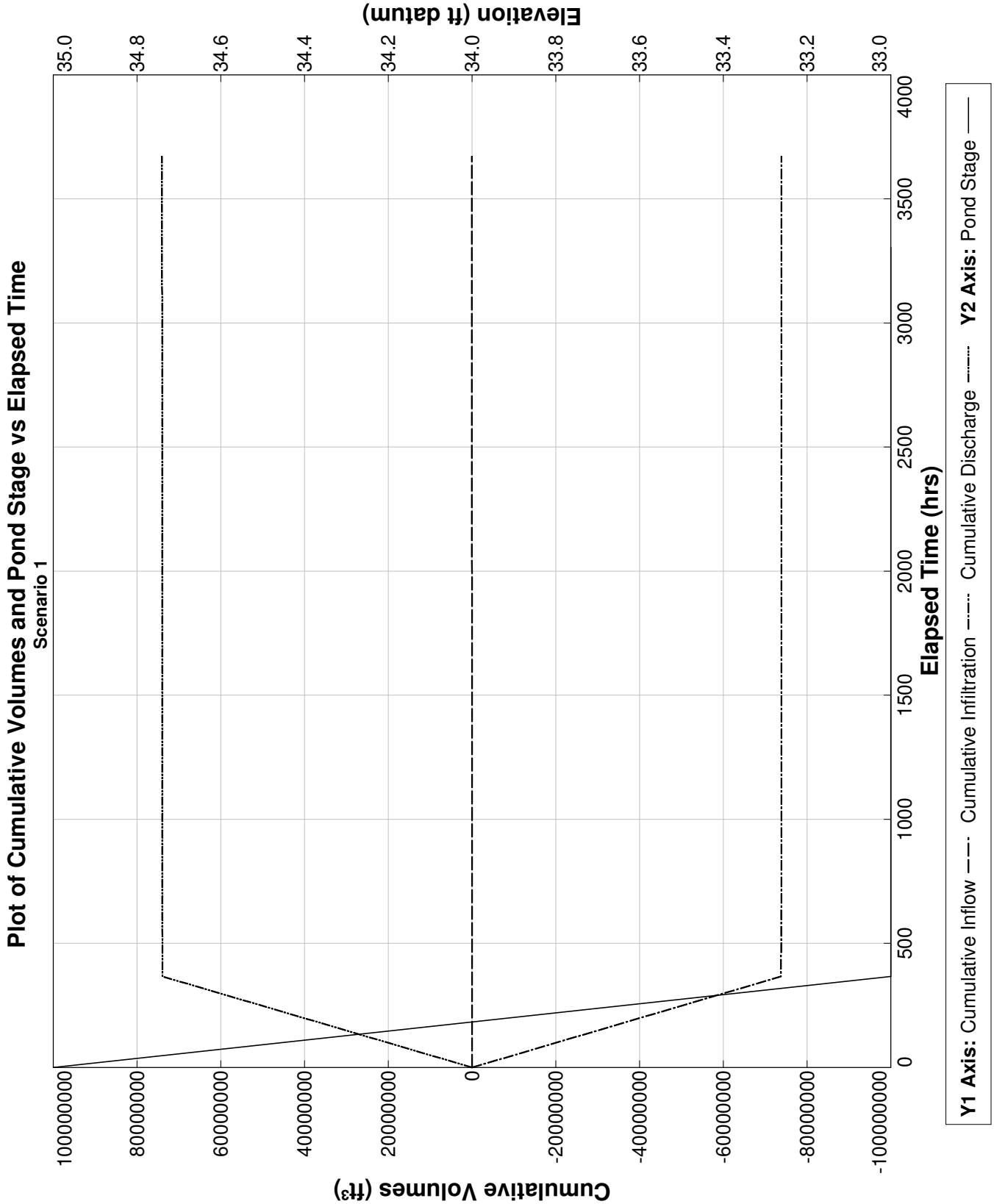
Begin Scenario 1 3/28/2023 10:36:9
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 35.0 ft.
#WARNING: The calculated water budget error exceeded the target water budget error for 6 of 10 saturated stress periods.
Maximum calculated water budget error is -2.63398628519534 percent, for saturated stress period 1.
If convergence is not a problem, it is recommended to reduce the Modflow convergence tolerences
to attempt to decrease the water budget error to within the target level.
End Scenario 1 3/28/2023 10:36:9

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

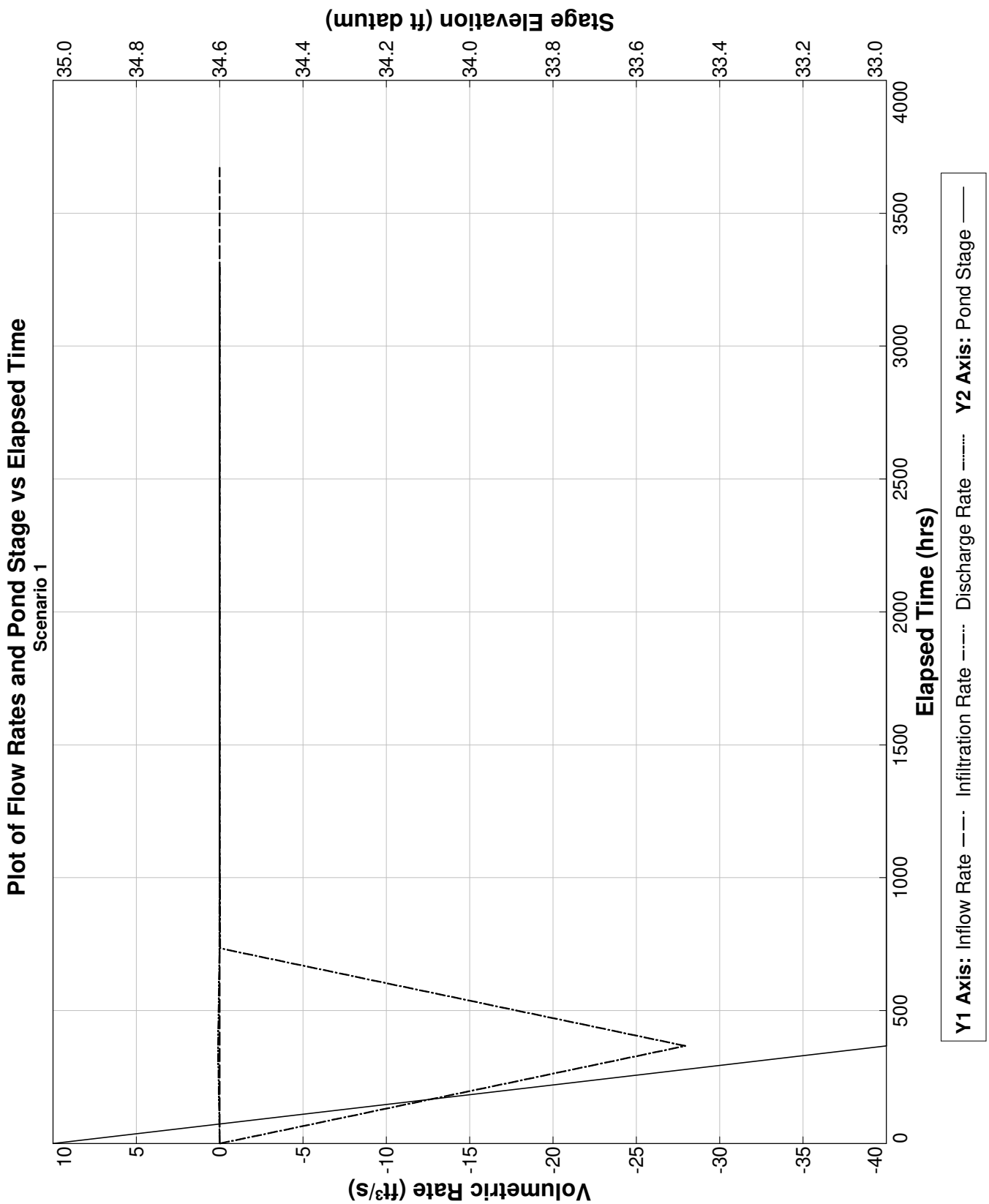
Detailed Results *:: Scenario 1 ::*

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0041	0.00163	35.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0041	0.00163	33.00000	-27.93365	9.281014E-02	5426.400	-73791370.0	7.39057E+07	S
734.400	0.0041	0.00163	33.00000	-0.02402	7.284111E-03	10852.800	-73852100.0	7.397185E+07	S
1101.600	0.0041	0.00163	33.00000	-0.00147	5.125309E-03	16279.200	-73854870.0	7.398006E+07	S
1468.800	0.0041	0.00163	33.00000	-0.00073	4.772652E-03	21705.600	-73855990.0	7.398659E+07	S
1836.000	0.0041	0.00163	33.00000	-0.00060	4.686614E-03	27132.000	-73856820.0	7.399285E+07	S
2203.200	0.0041	0.00163	33.00000	-0.00055	4.654986E-03	32558.400	-73857560.0	7.399902E+07	S
2570.400	0.0041	0.00163	33.00000	-0.00054	4.639319E-03	37984.800	-73858280.0	7.400517E+07	S
2937.600	0.0041	0.00163	33.00000	-0.00053	4.630611E-03	43411.200	-73858980.0	7.40113E+07	S
3304.800	0.0041	0.00163	33.00000	-0.00052	4.625884E-03	48837.600	-73859670.0	7.401741E+07	S
3672.000	0.0041	0.00163	33.00000	----	----	54264.000	-73860360.0	7.402353E+07	N.A.

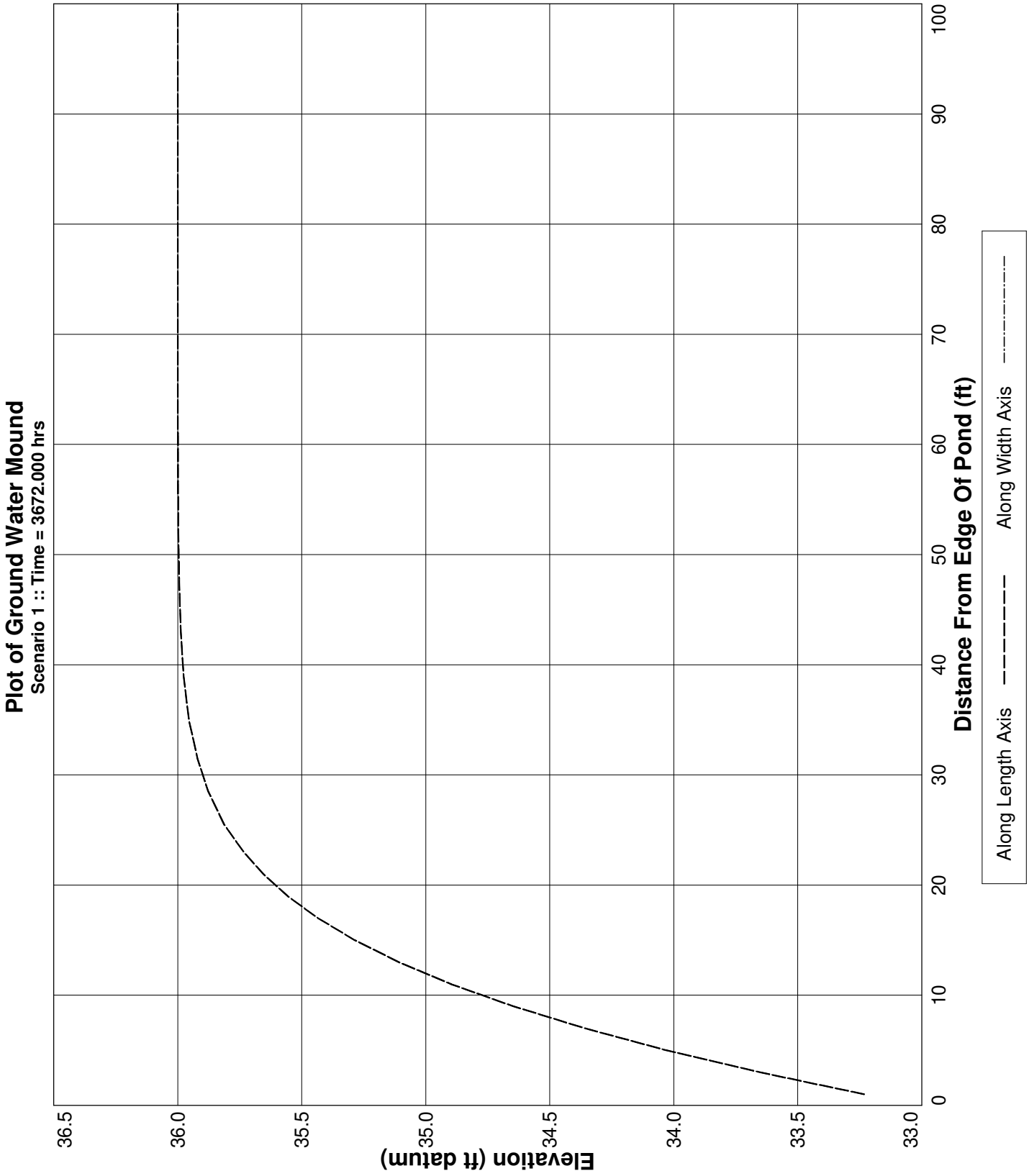
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No. 32, South-Southwest Wetland, without wall
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-28-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	6.00
Water Table Elevation, [WT] (ft datum):	37.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.44
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	456.0
Equivalent Pond Width, [W] (ft):	119.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft²)
11.00	435.6
33.00	54450.0

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	33
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	36.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

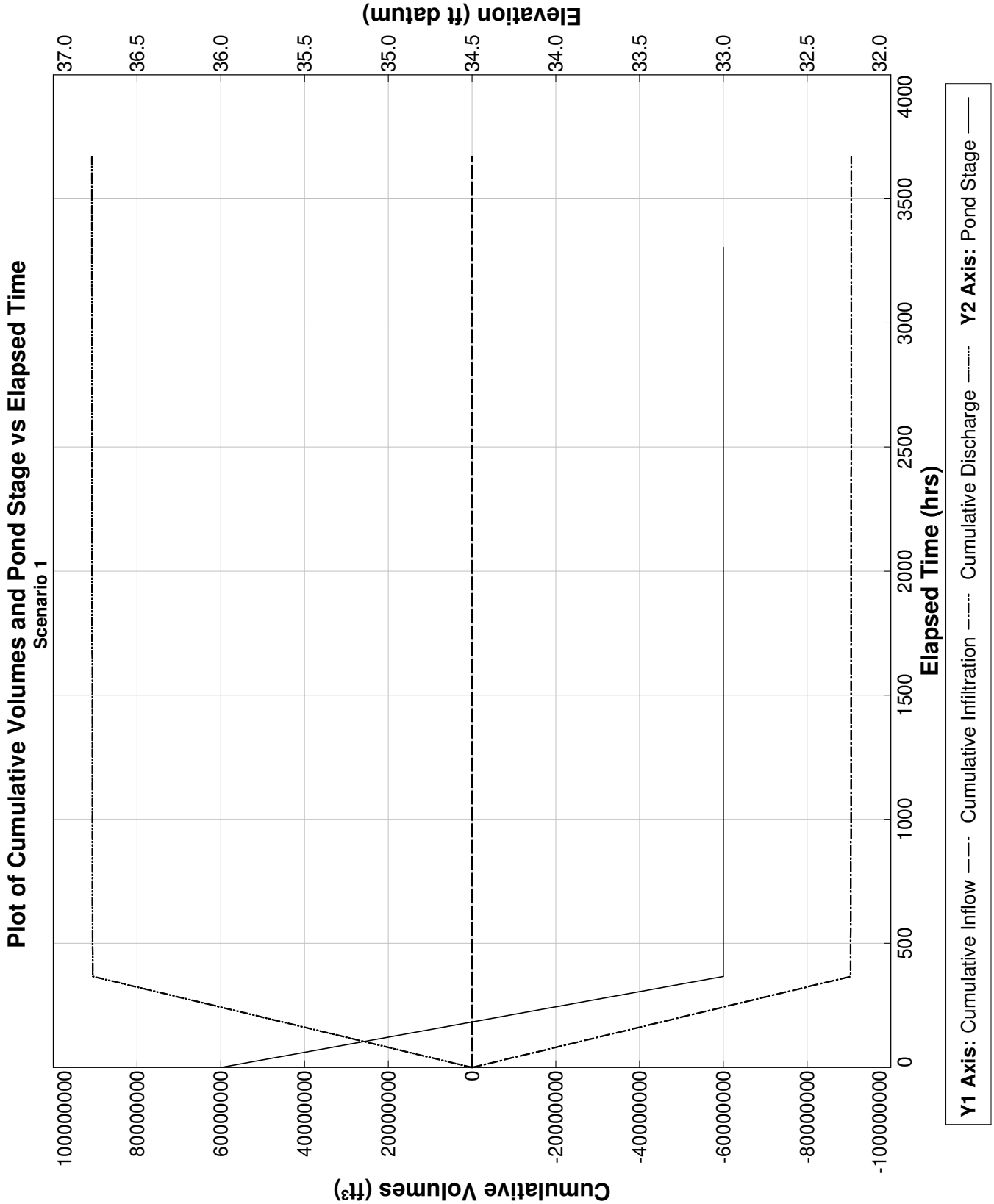
Begin Scenario 1 3/28/2023 10:38:48
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 36.0 ft.
#WARNING: The calculated water budget error exceeded the target water budget error for 4 of 10 saturated stress periods.
Maximum calculated water budget error is -1.80276582231360 percent, for saturated stress period 1.
If convergence is not a problem, it is recommended to reduce the Modflow convergence tolerences
to attempt to decrease the water budget error to within the target level.
End Scenario 1 3/28/2023 10:38:48

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

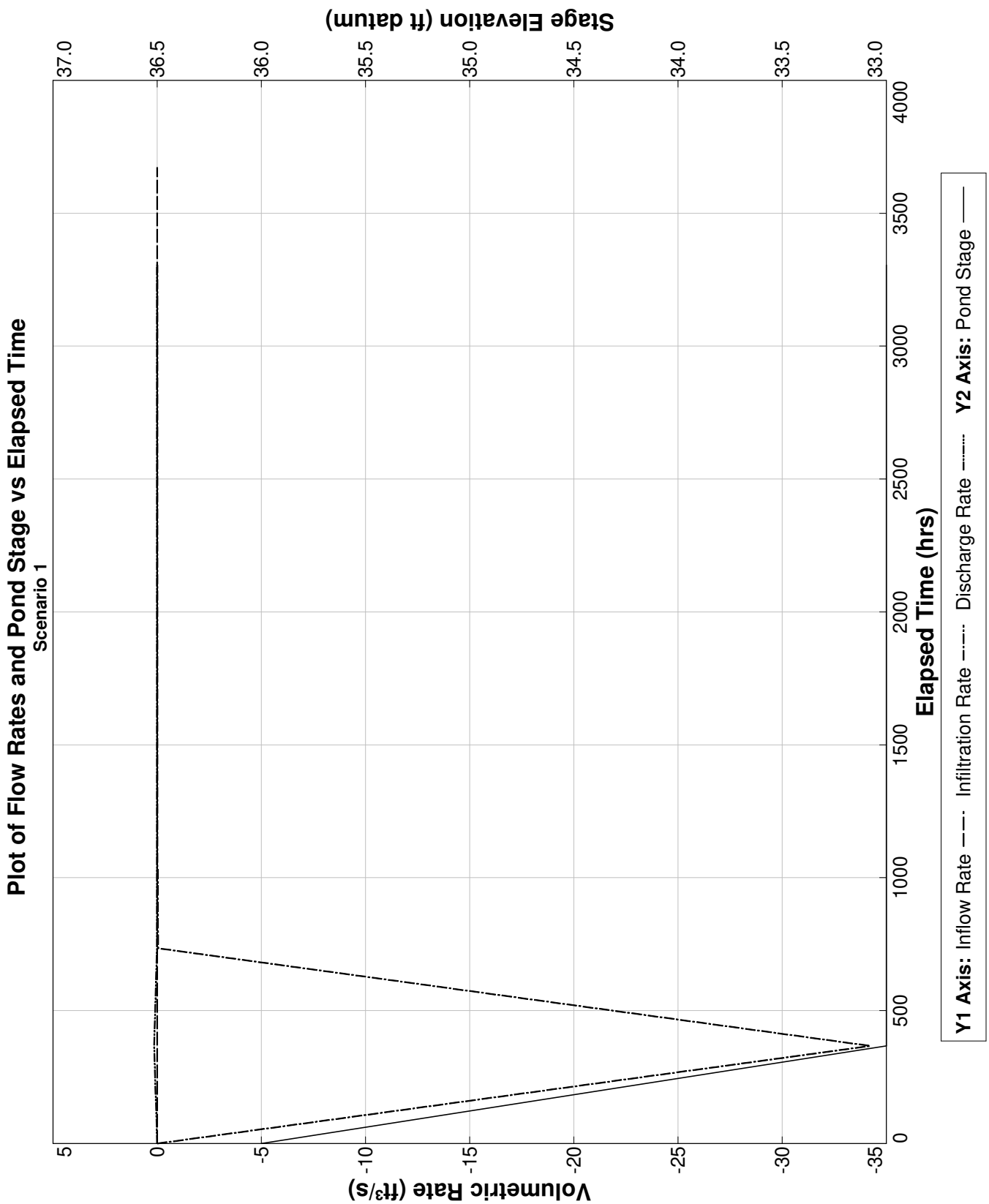
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0041	0.00163	36.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0041	0.00163	33.00000	-34.22189	.1515354	5426.400	-90371870.0	9.054065E+07	S
734.400	0.0041	0.00163	33.00000	-0.04518	.0160132	10852.800	-90477180.0	9.065139E+07	S
1101.600	0.0041	0.00163	33.00000	-0.00982	1.358145E-02	16279.200	-90491320.0	9.067095E+07	S
1468.800	0.0041	0.00163	33.00000	-0.00856	1.254146E-02	21705.600	-90503160.0	9.068822E+07	S
1836.000	0.0041	0.00163	33.00000	-0.00794	.0120125	27132.000	-90513960.0	9.070445E+07	S
2203.200	0.0041	0.00163	33.00000	-0.00755	1.162506E-02	32558.400	-90524160.0	9.072007E+07	S
2570.400	0.0041	0.00163	33.00000	-0.00727	1.134988E-02	37984.800	-90533920.0	9.073526E+07	S
2937.600	0.0041	0.00163	33.00000	-0.00708	1.116884E-02	43411.200	-90543380.0	9.075014E+07	S
3304.800	0.0041	0.00163	33.00000	-0.00695	1.104445E-02	48837.600	-90552630.0	9.076482E+07	S
3672.000	0.0041	0.00163	33.00000	----	----	54264.000	-90561760.0	9.077938E+07	N.A.

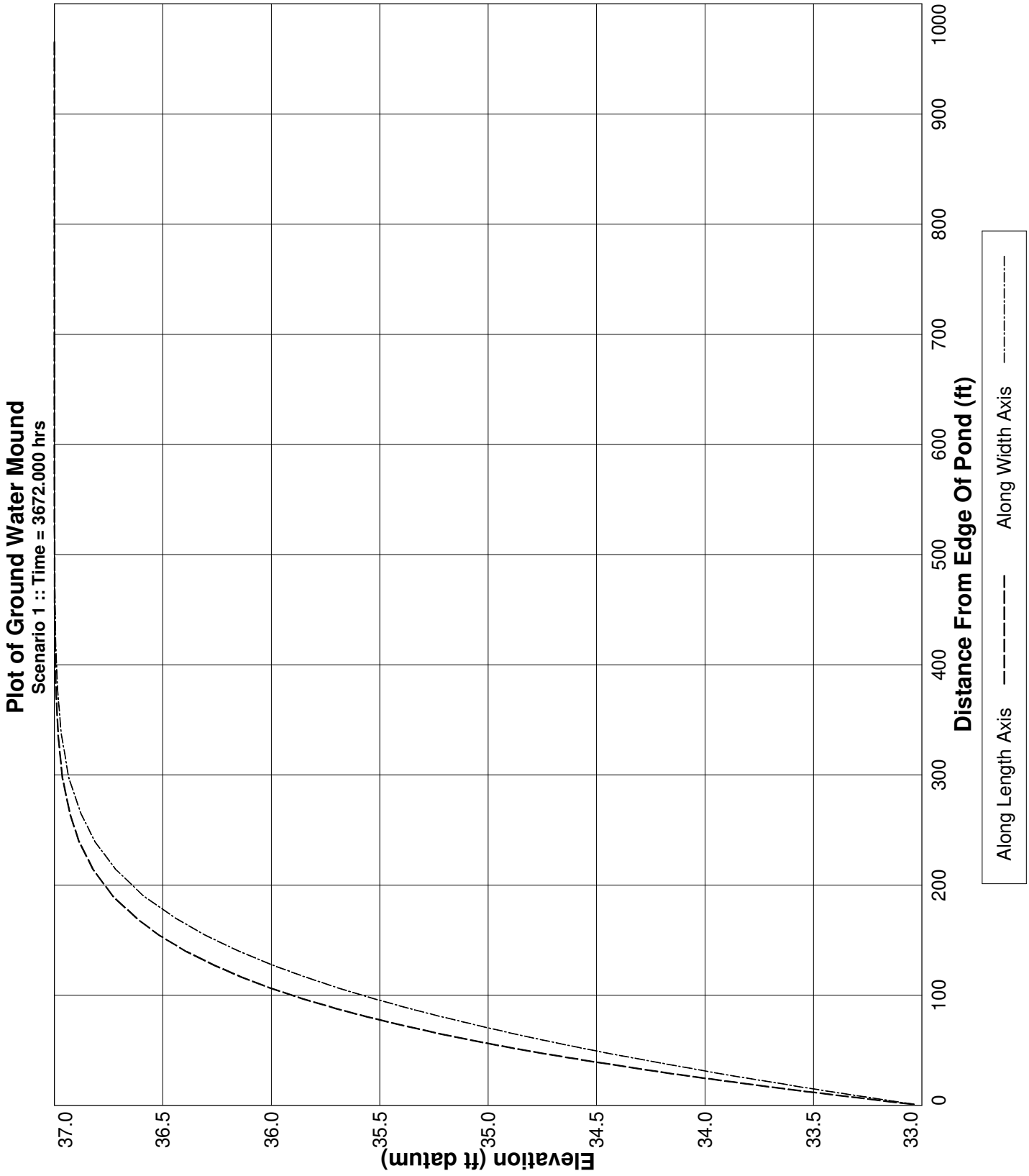
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No. 32, South-Southwest Wetland, with wall
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-28-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	6.00
Water Table Elevation, [WT] (ft datum):	37.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.01
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	456.0
Equivalent Pond Width, [W] (ft):	119.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft²)
11.00	435.6
33.00	54450.0

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	33
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	36.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

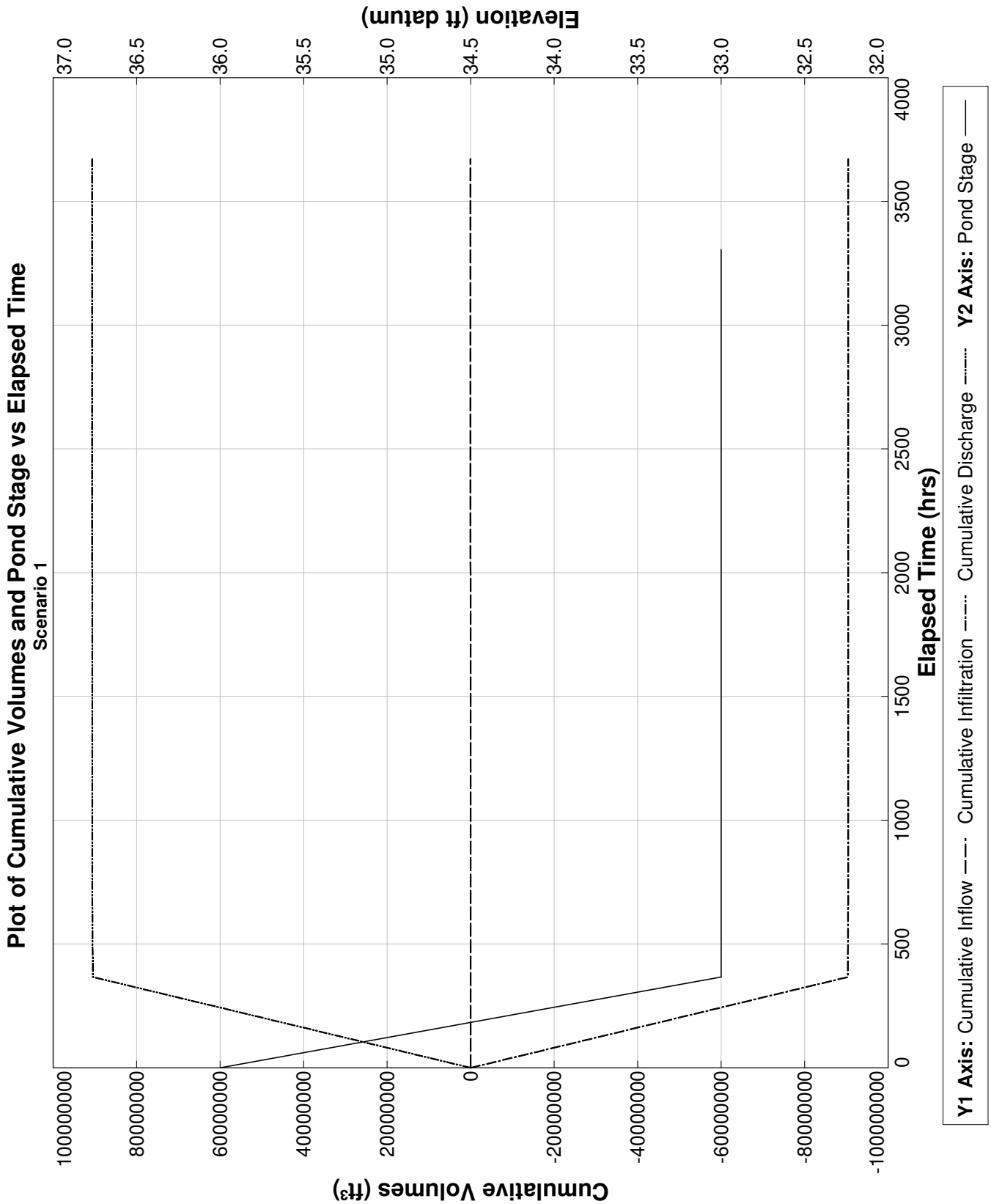
Begin Scenario 1 3/28/2023 10:40:20
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 36.0 ft.
#WARNING: The calculated water budget error exceeded the target water budget error for 2 of 10 saturated stress periods.
Maximum calculated water budget error is -1.53780024356589 percent, for saturated stress period 1.
If convergence is not a problem, it is recommended to reduce the Modflow convergence tolerences
to attempt to decrease the water budget error to within the target level.
End Scenario 1 3/28/2023 10:40:20

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

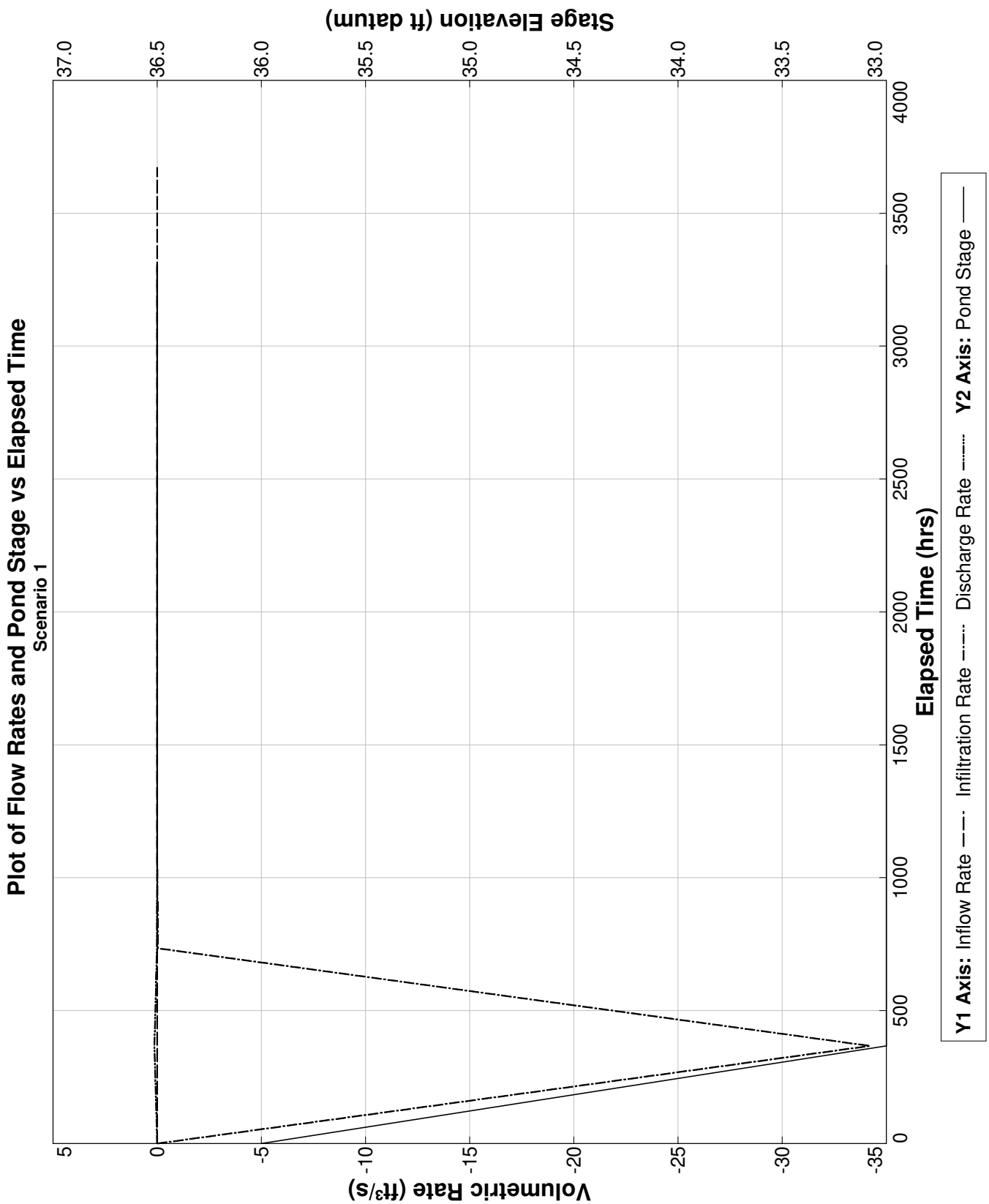
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0041	0.00163	36.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0041	0.00163	33.00000	-34.21055	.1337813	5426.400	-90360140.0	9.052891E+07	S
734.400	0.0041	0.00163	33.00000	-0.03378	6.177781E-03	10852.800	-90447220.0	9.062142E+07	S
1101.600	0.0041	0.00163	33.00000	-0.00144	5.412074E-03	16279.200	-90449450.0	9.062908E+07	S
1468.800	0.0041	0.00163	33.00000	-0.00110	5.17464E-03	21705.600	-90451020.0	9.063608E+07	S
1836.000	0.0041	0.00163	33.00000	-0.00098	5.069389E-03	27132.000	-90452370.0	9.064285E+07	S
2203.200	0.0041	0.00163	33.00000	-0.00091	5.010329E-03	32558.400	-90453600.0	9.064951E+07	S
2570.400	0.0041	0.00163	33.00000	-0.00087	4.972763E-03	37984.800	-90454780.0	9.065611E+07	S
2937.600	0.0041	0.00163	33.00000	-0.00084	4.947358E-03	43411.200	-90455900.0	9.066266E+07	S
3304.800	0.0041	0.00163	33.00000	-0.00083	4.929699E-03	48837.600	-90457010.0	9.066919E+07	S
3672.000	0.0041	0.00163	33.00000	----	----	54264.000	-90458090.0	9.06757E+07	N.A.

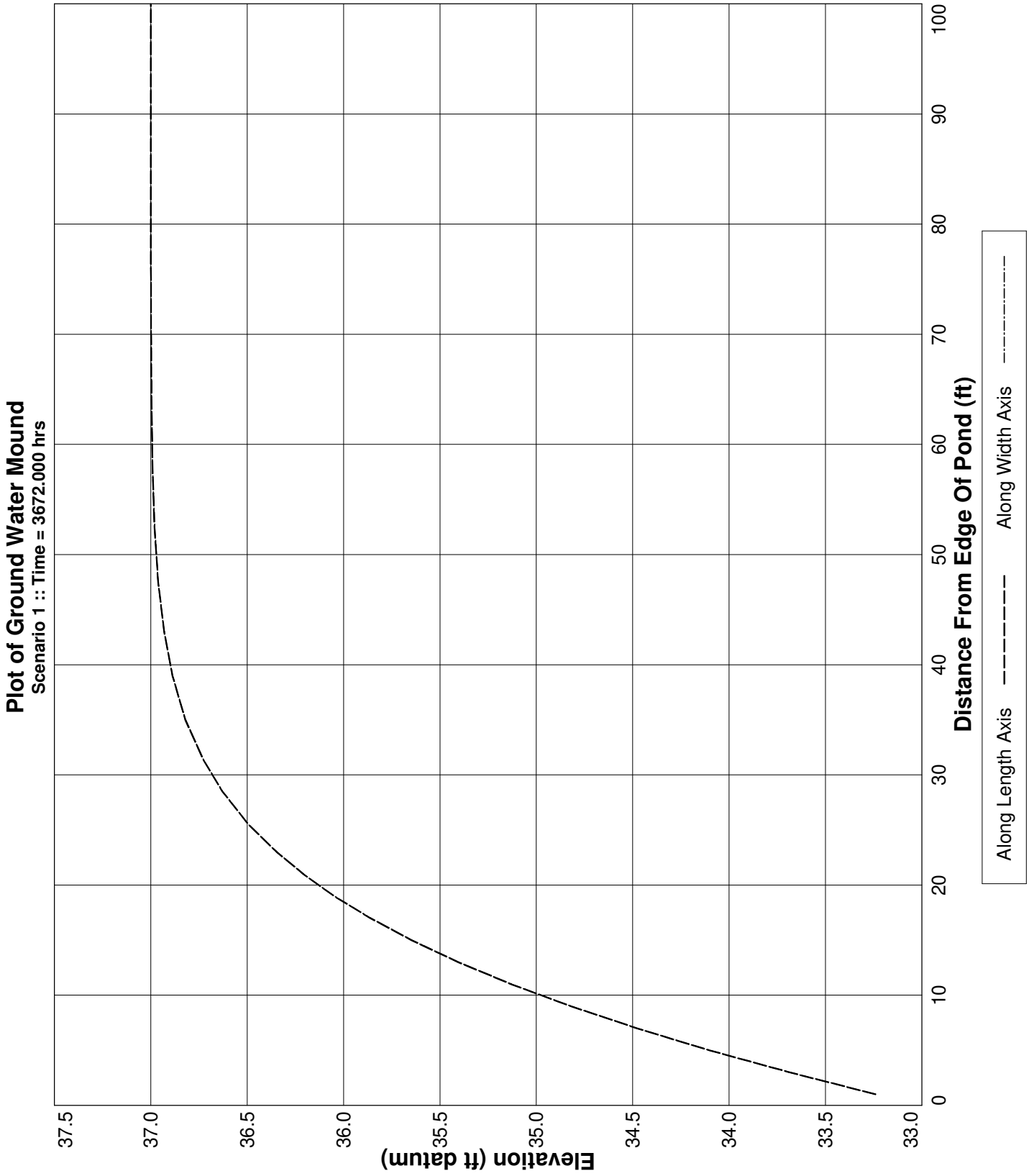
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No. 32, South Wetland, without wall
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-28-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	6.00
Water Table Elevation, [WT] (ft datum):	40.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.44
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	456.0
Equivalent Pond Width, [W] (ft):	119.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
11.00	435.6
33.00	54450.0

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	33
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	39.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

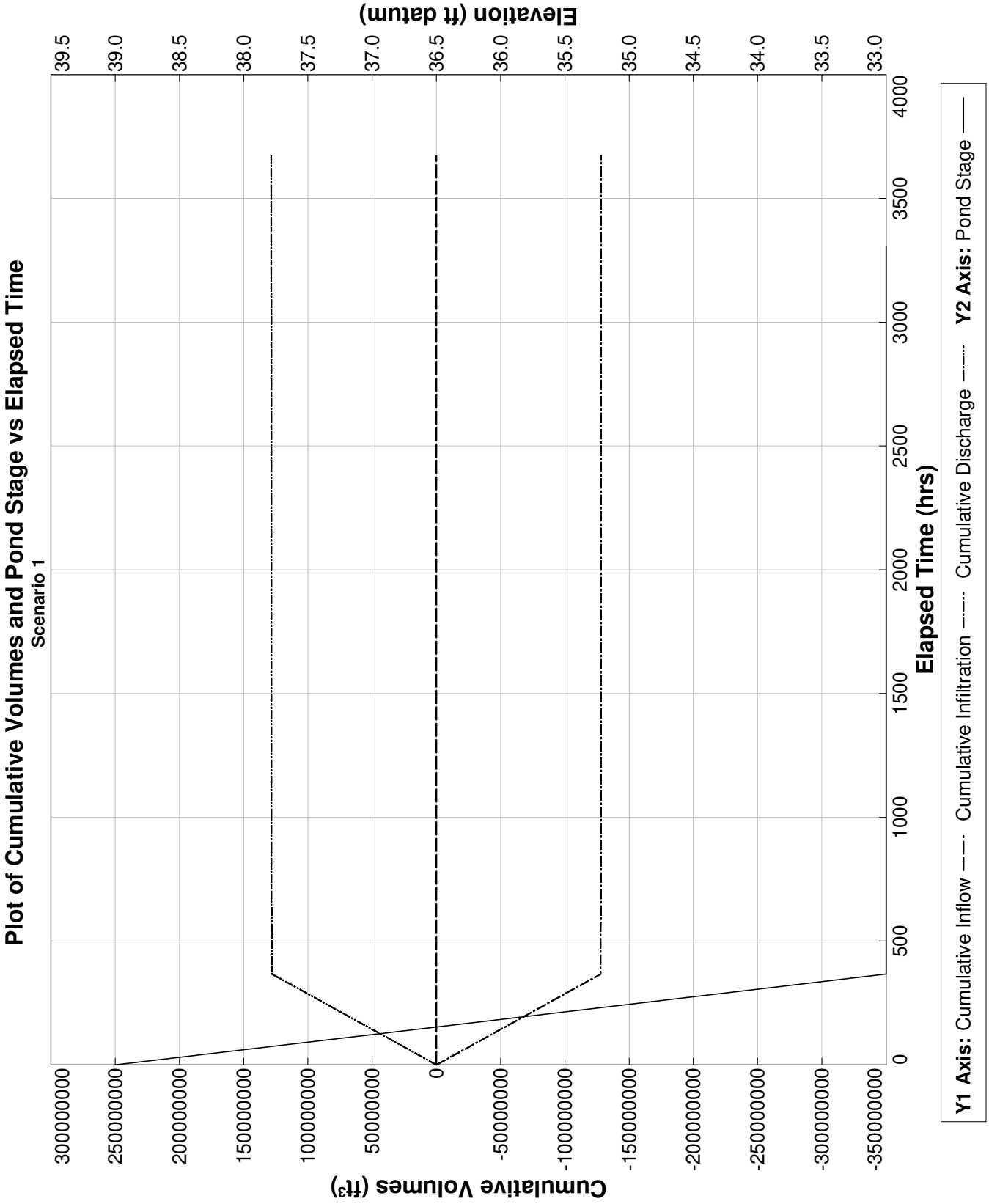
Begin Scenario 1 3/28/2023 10:48:24
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 39.0 ft.
#WARNING: The calculated water budget error exceeded the target water budget error for 1 of 10 saturated stress periods.
Maximum calculated water budget error is -1.05245588648235 percent, for saturated stress period 1.
If convergence is not a problem, it is recommended to reduce the Modflow convergence tolerences
to attempt to decrease the water budget error to within the target level.
End Scenario 1 3/28/2023 10:48:24

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

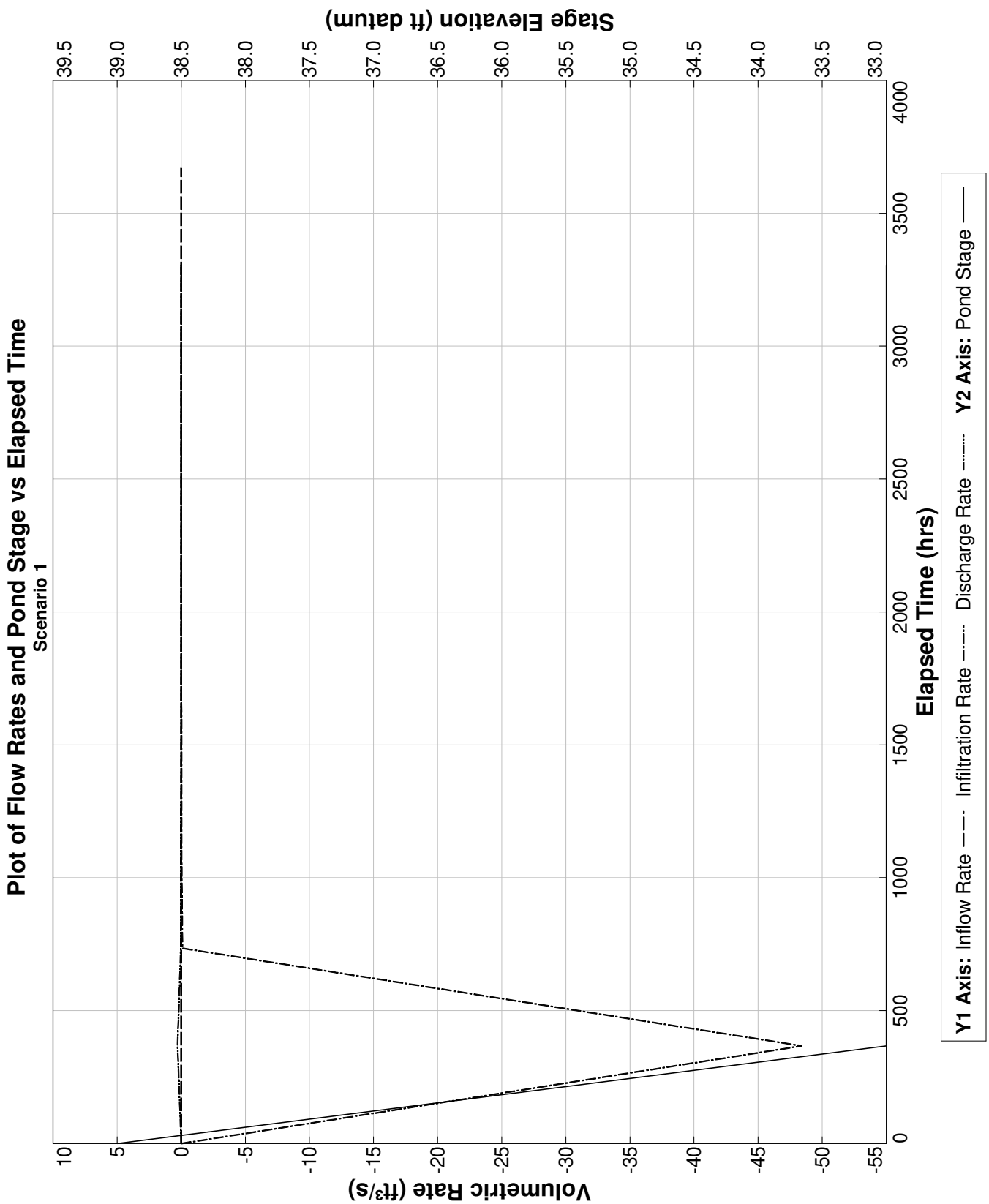
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0041	0.00163	39.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0041	0.00163	33.00002	-48.40351	.2943762	5426.400	-127764600.0	1.280967E+08	S
734.400	0.0041	0.00163	33.00000	-0.08808	2.628087E-02	10852.800	-127971100.0	1.283087E+08	S
1101.600	0.0041	0.00163	33.00000	-0.01828	2.181208E-02	16279.200	-127997500.0	1.283405E+08	S
1468.800	0.0041	0.00163	33.00000	-0.01575	1.962283E-02	21705.600	-128019400.0	1.283678E+08	S
1836.000	0.0041	0.00163	33.00000	-0.01439	1.836452E-02	27132.000	-128039100.0	1.28393E+08	S
2203.200	0.0041	0.00163	33.00000	-0.01354	1.761212E-02	32558.400	-128057500.0	1.284167E+08	S
2570.400	0.0041	0.00163	33.00000	-0.01290	.0169779	37984.800	-128074900.0	1.284396E+08	S
2937.600	0.0041	0.00163	33.00000	-0.01239	1.646093E-02	43411.200	-128091600.0	1.284617E+08	S
3304.800	0.0041	0.00163	33.00000	-0.01199	.0160746	48837.600	-128107700.0	1.284832E+08	S
3672.000	0.0041	0.00163	33.00000	----	----	54264.000	-128123300.0	1.285043E+08	N.A.

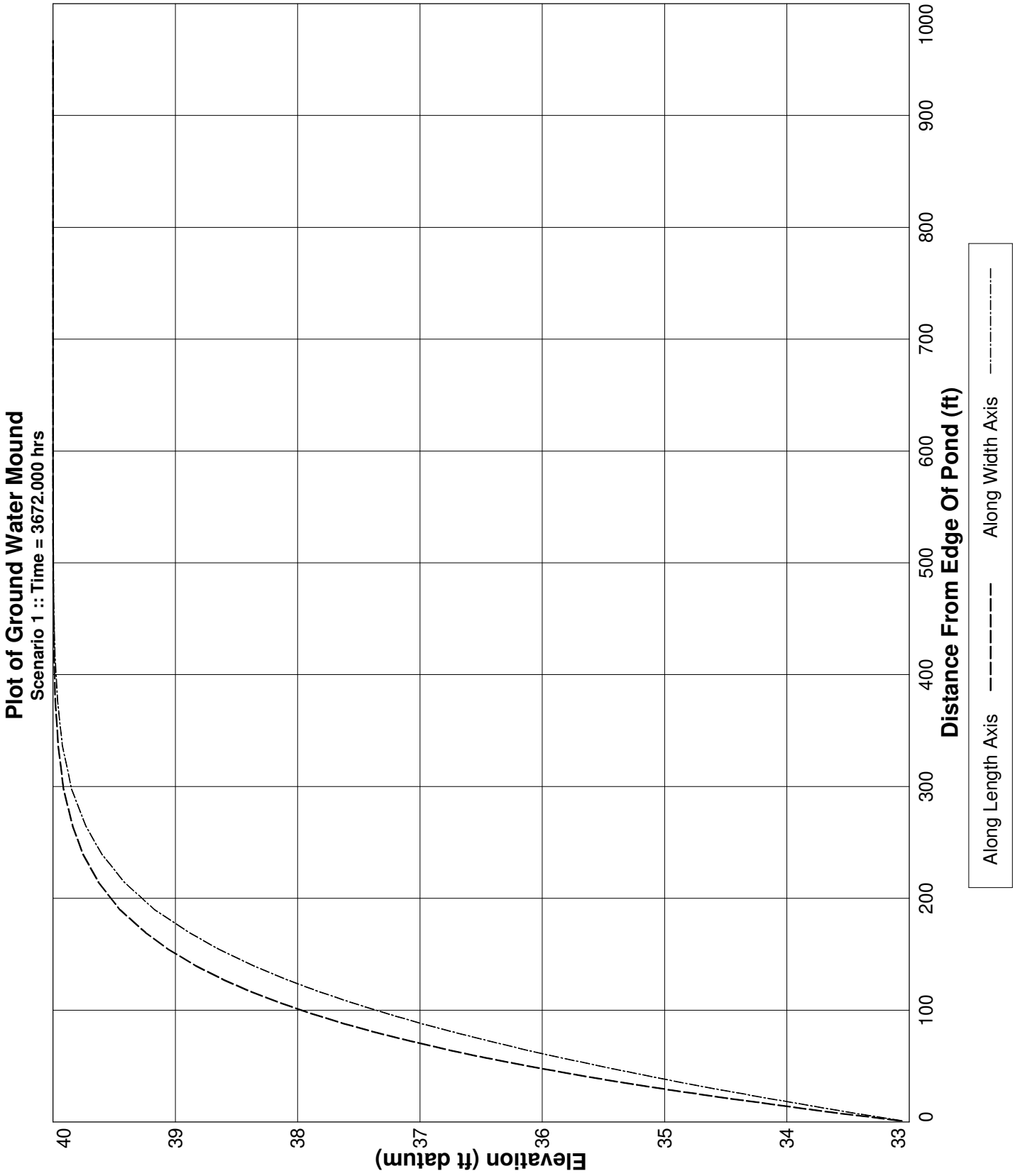
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No. 32, South Wetland, with wall
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-28-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	6.00
Water Table Elevation, [WT] (ft datum):	40.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.01
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	456.0
Equivalent Pond Width, [W] (ft):	119.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft²)
11.00	435.6
33.00	54450.0

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	33
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	39.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

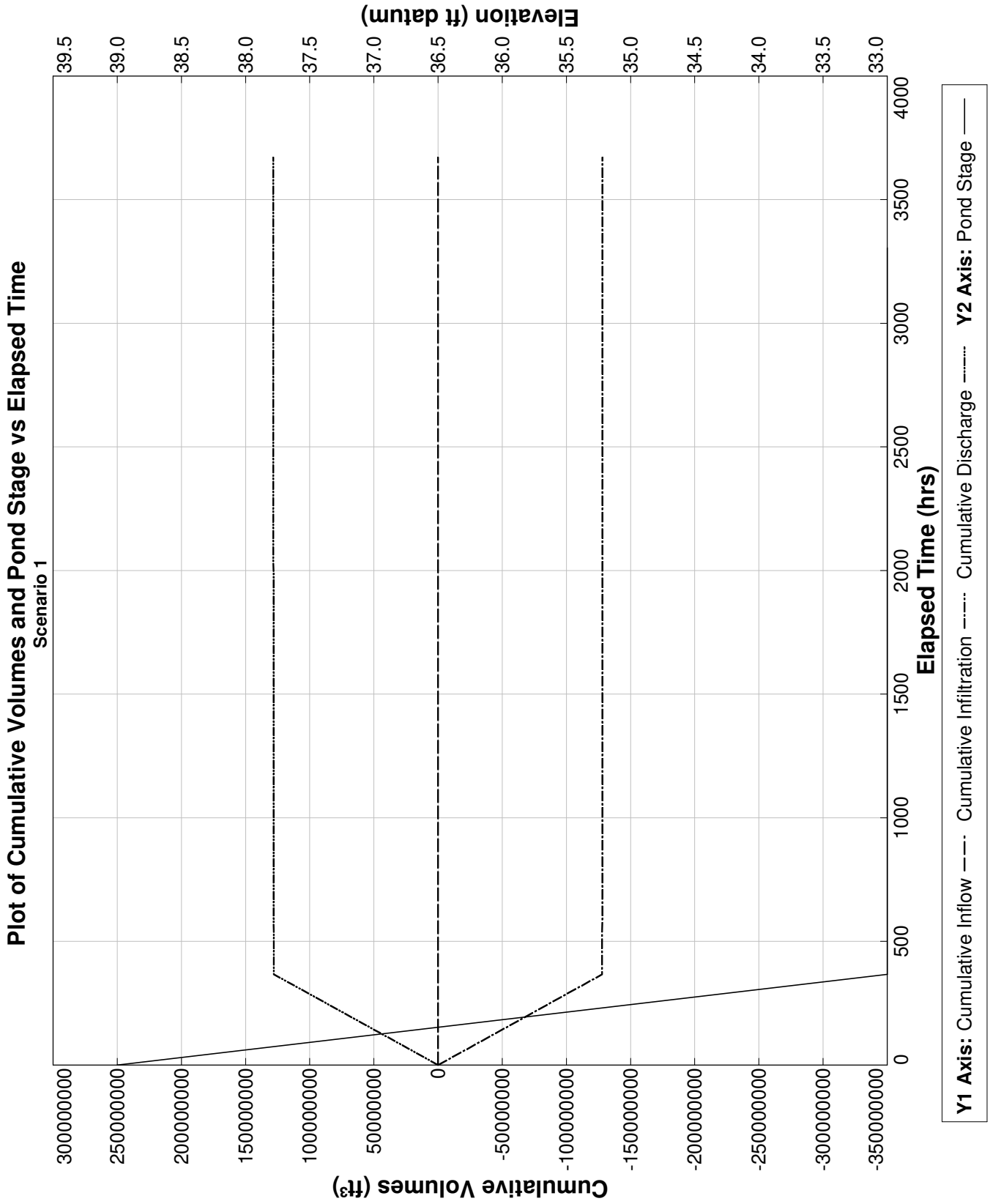
Begin Scenario 1 3/28/2023 10:50:9
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 39.0 ft.
End Scenario 1 3/28/2023 10:50:9

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

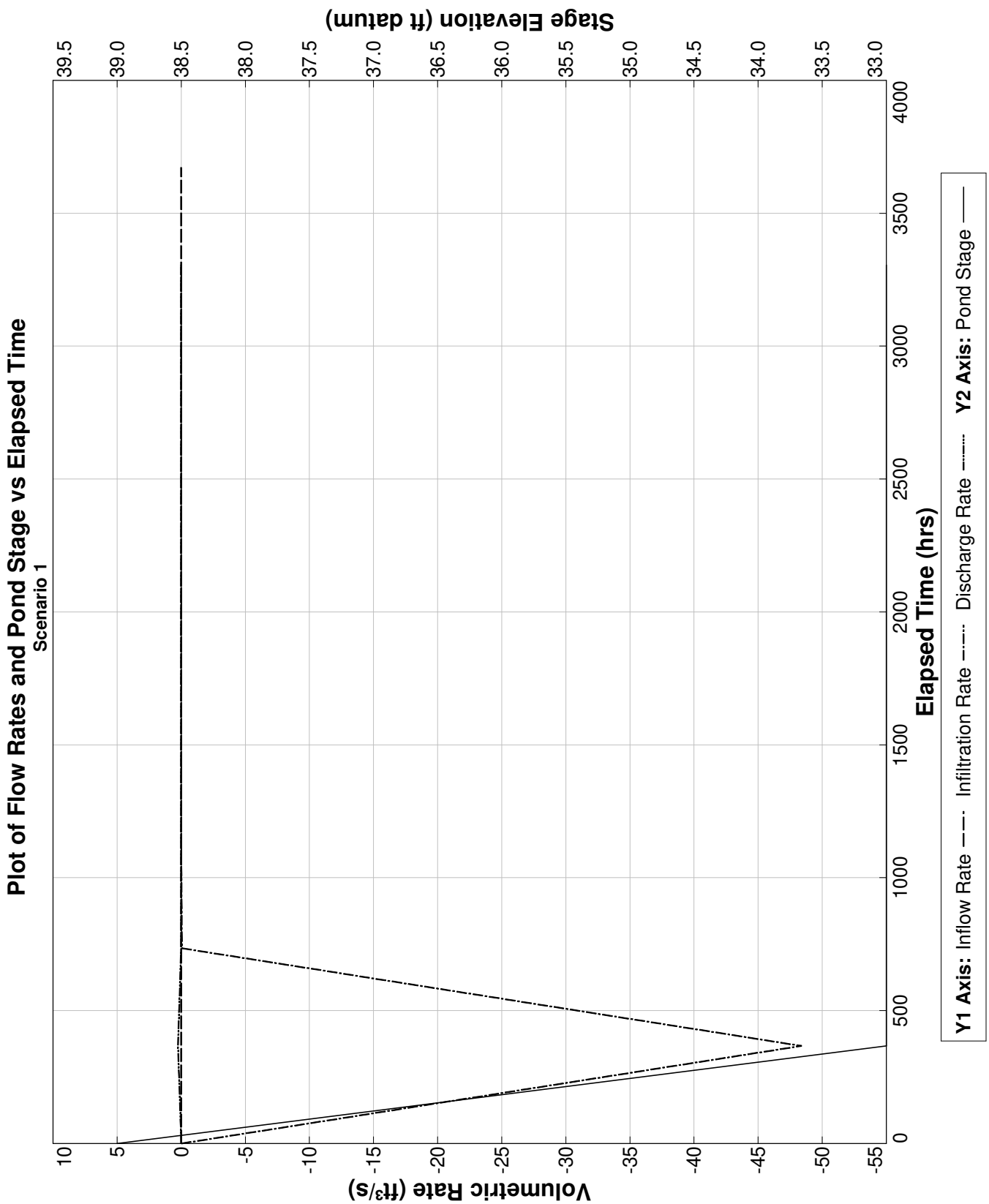
Detailed Results *:: Scenario 1 ::*

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0041	0.00163	39.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0041	0.00163	33.00001	-48.38107	.2580979	5426.400	-127740600.0	1.280728E+08	S
734.400	0.0041	0.00163	33.00000	-0.06664	9.087767E-03	10852.800	-127911800.0	1.282494E+08	S
1101.600	0.0041	0.00163	33.00000	-0.00305	6.712123E-03	16279.200	-127916800.0	1.282598E+08	S
1468.800	0.0041	0.00163	33.00000	-0.00209	6.110587E-03	21705.600	-127919900.0	1.282683E+08	S
1836.000	0.0041	0.00163	33.00000	-0.00178	5.858169E-03	27132.000	-127922400.0	1.282762E+08	S
2203.200	0.0041	0.00163	33.00000	-0.00162	5.713855E-03	32558.400	-127924600.0	1.282838E+08	S
2570.400	0.0041	0.00163	33.00000	-0.00152	5.618033E-03	37984.800	-127926600.0	1.282913E+08	S
2937.600	0.0041	0.00163	33.00000	-0.00145	5.547165E-03	43411.200	-127928600.0	1.282987E+08	S
3304.800	0.0041	0.00163	33.00000	-0.00139	5.492967E-03	48837.600	-127930500.0	1.28306E+08	S
3672.000	0.0041	0.00163	33.00000	----	----	54264.000	-127932300.0	1.283132E+08	N.A.

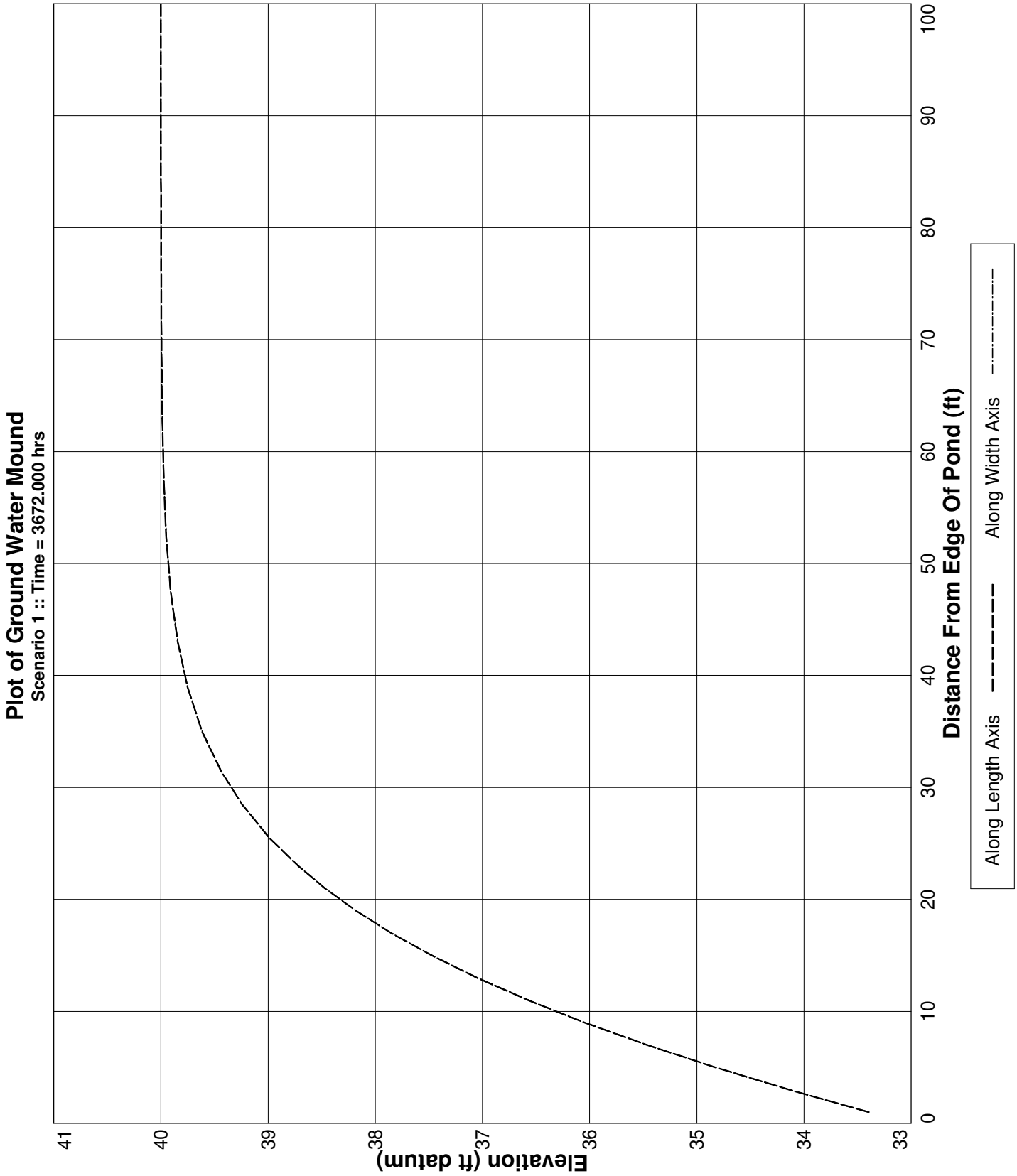
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No. 33, South1 Wetland, without wall
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-29-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	-2.00
Water Table Elevation, [WT] (ft datum):	34.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.29
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	353.0
Equivalent Pond Width, [W] (ft):	136.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
3.00	435.6
33.00	47916.0

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	33
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	33.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

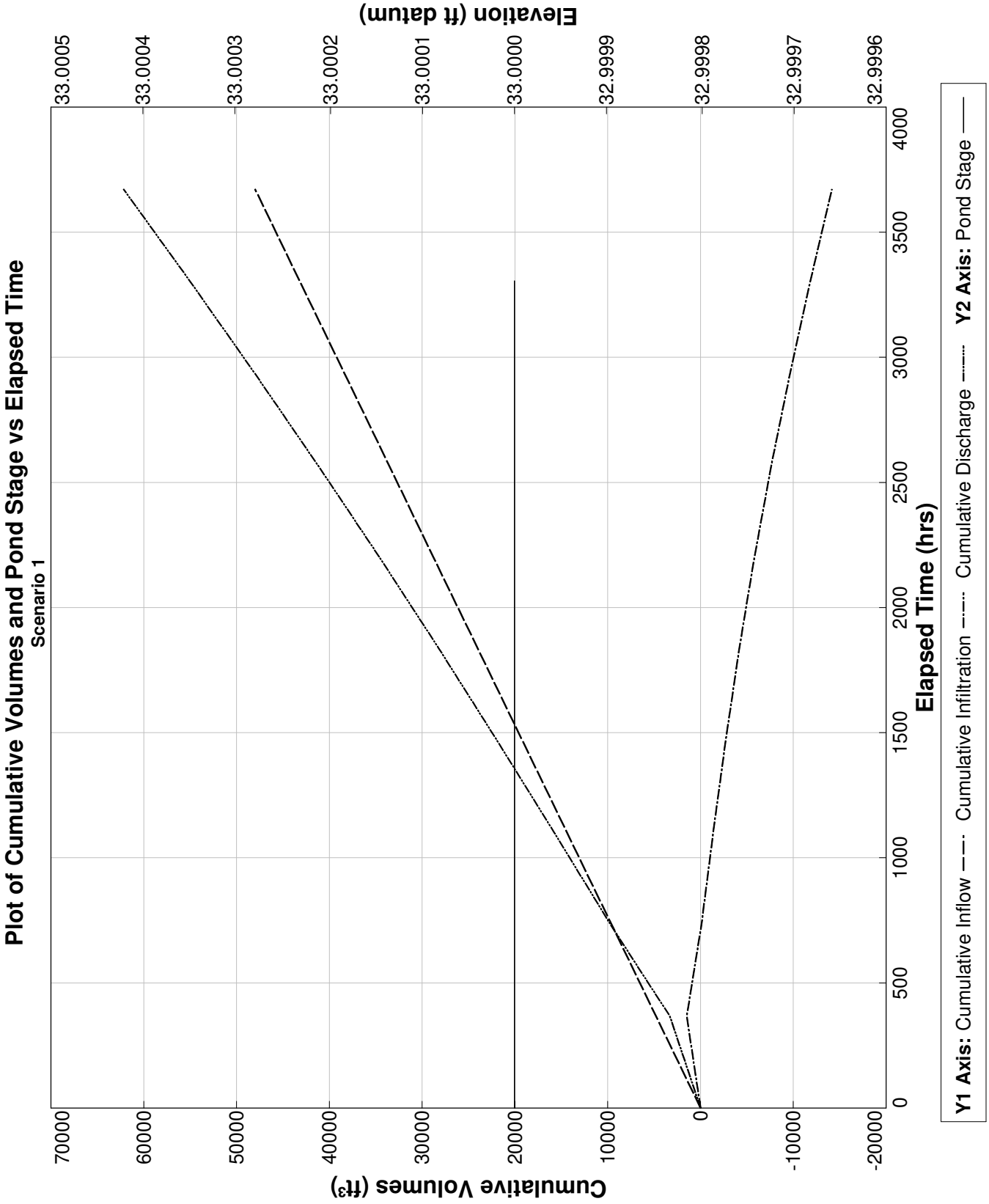
Begin Scenario 1 3/29/2023 9:55:36
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 33.0 ft.
End Scenario 1 3/29/2023 9:55:36

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

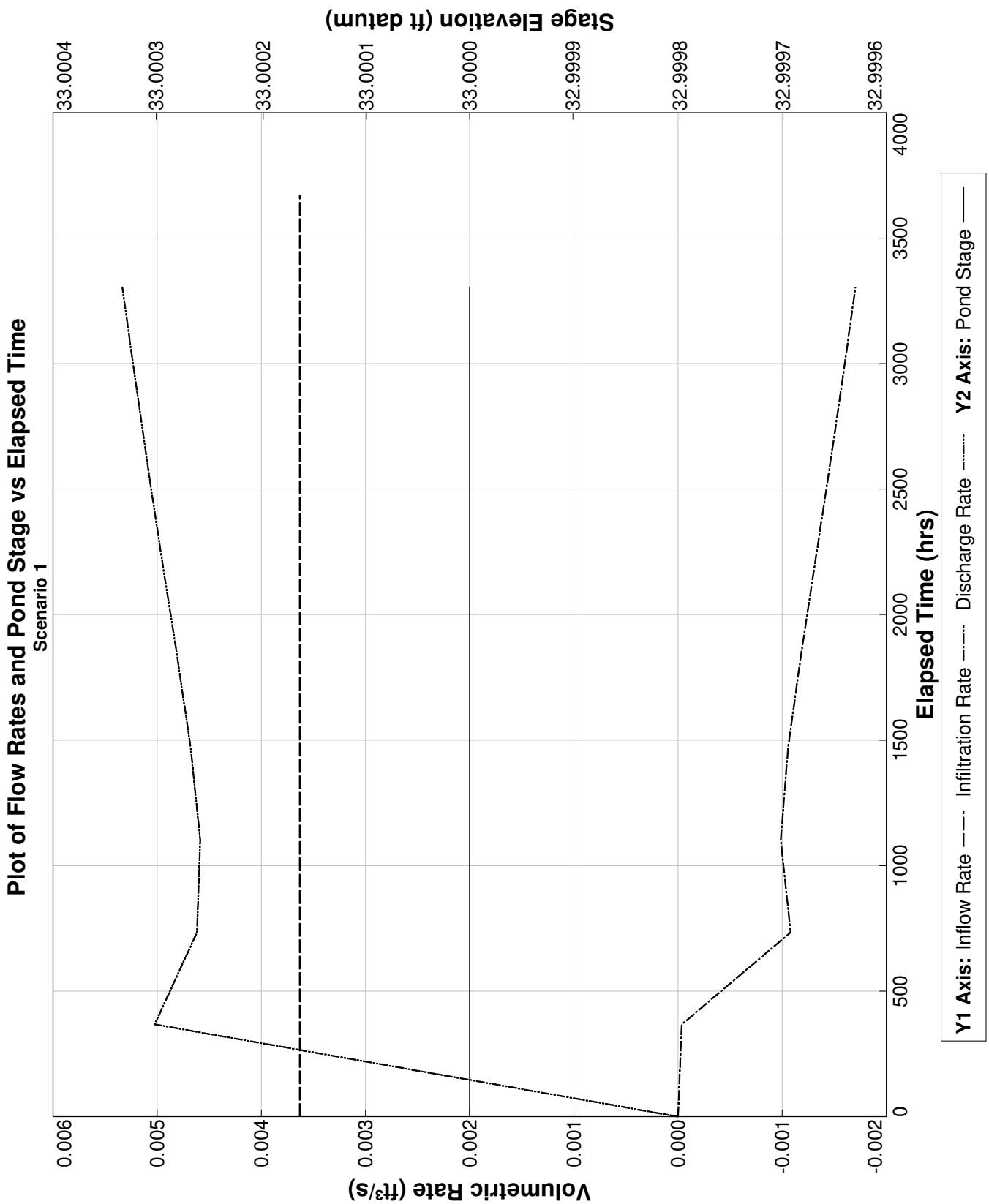
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0036	0.00163	33.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0036	0.00163	33.00000	-0.00004	5.025056E-03	4800.800	1479.4	3321.361	S
734.400	0.0036	0.00163	33.00000	-0.00108	4.618254E-03	9601.600	-93.6	9695.204	S
1101.600	0.0036	0.00163	33.00000	-0.00099	4.586328E-03	14402.400	-1376.7	15779.07	S
1468.800	0.0036	0.00163	33.00000	-0.00106	4.679671E-03	19203.200	-2700.3	21903.52	S
1836.000	0.0036	0.00163	33.00000	-0.00118	4.80955E-03	24004.000	-4171.5	28175.52	S
2203.200	0.0036	0.00163	33.00000	-0.00131	4.947248E-03	28804.800	-5819.6	34624.37	S
2570.400	0.0036	0.00163	33.00000	-0.00145	5.08241E-03	33605.600	-7648.0	41253.57	S
2937.600	0.0036	0.00163	33.00000	-0.00158	5.212074E-03	38406.400	-9651.4	48057.81	S
3304.800	0.0036	0.00163	33.00000	-0.00170	5.335898E-03	43207.200	-11822.4	55029.6	S
3672.000	0.0036	0.00163	33.00000	----	----	48008.000	-14153.6	62161.55	N.A.

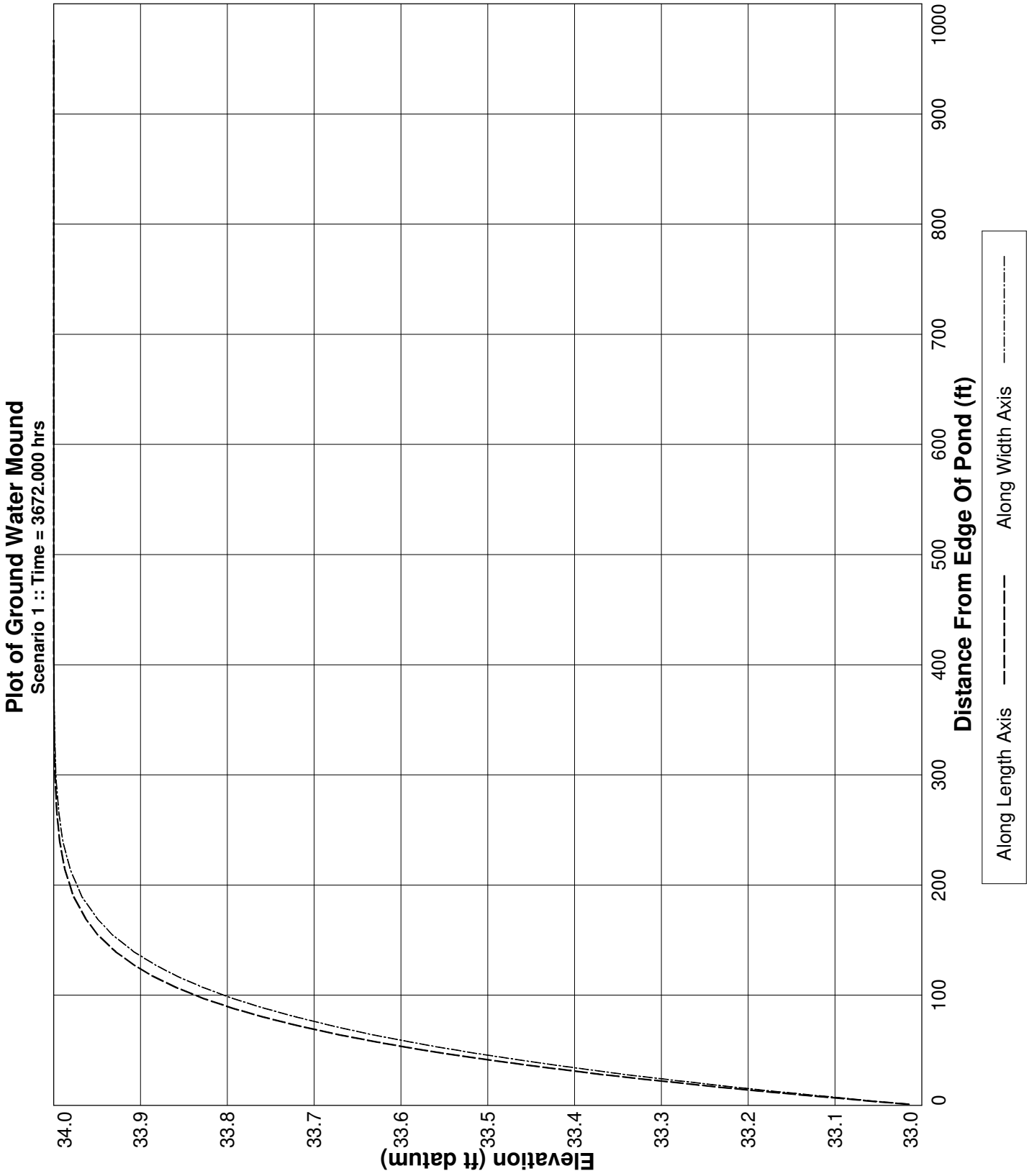
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No. 33, South1 Wetland, with wall
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-29-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	-2.00
Water Table Elevation, [WT] (ft datum):	34.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.01
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	353.0
Equivalent Pond Width, [W] (ft):	136.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft²)
3.00	435.6
33.00	47916.0

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	33
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	33.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

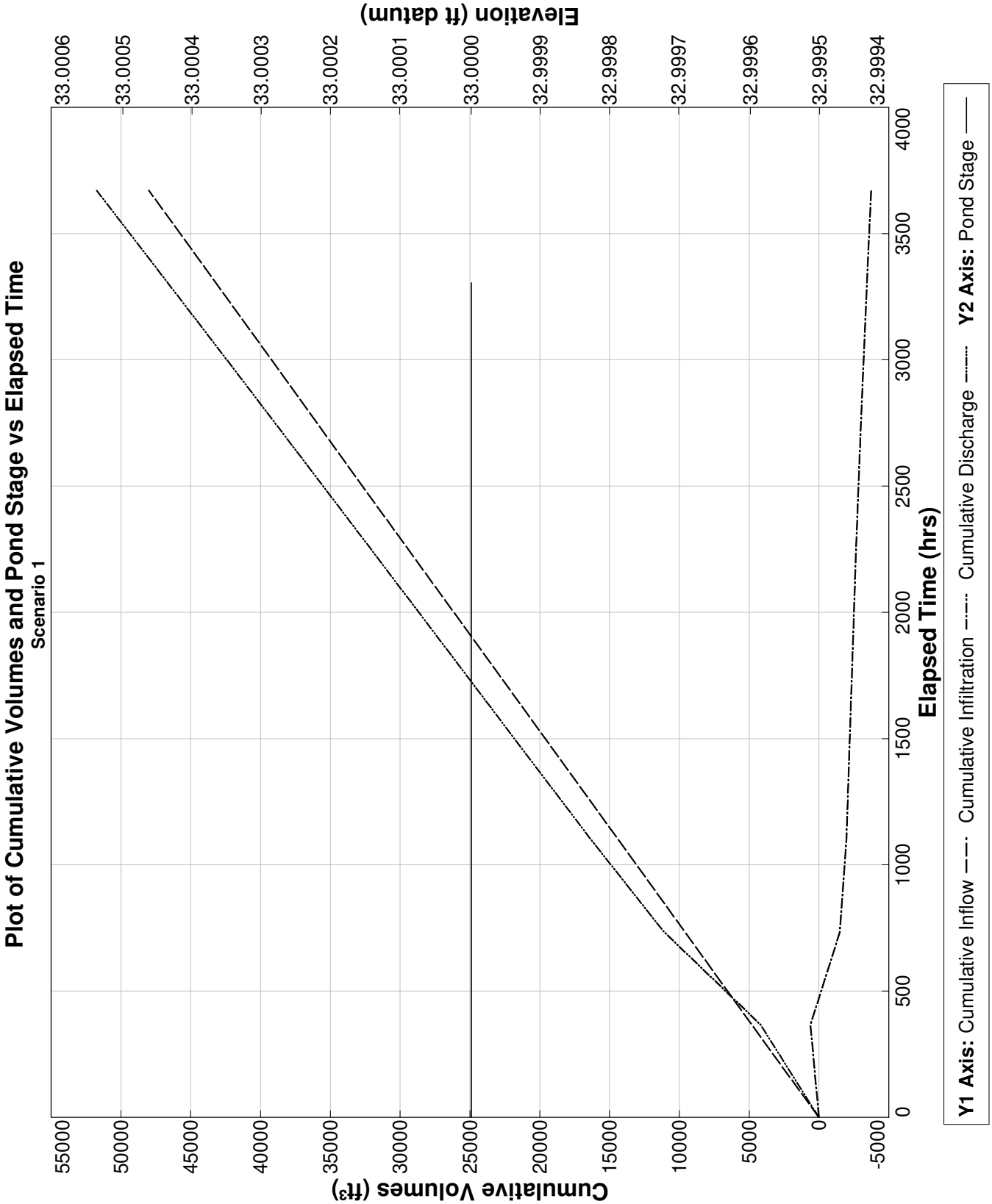
Begin Scenario 1 3/29/2023 9:57:31
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 33.0 ft.
#WARNING: The calculated water budget error exceeded the target water budget error for 3 of 10 saturated stress periods.
Maximum calculated water budget error is -2.67323896121806 percent, for saturated stress period 1.
If convergence is not a problem, it is recommended to reduce the Modflow convergence tolerences
to attempt to decrease the water budget error to within the target level.
End Scenario 1 3/29/2023 9:57:31

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

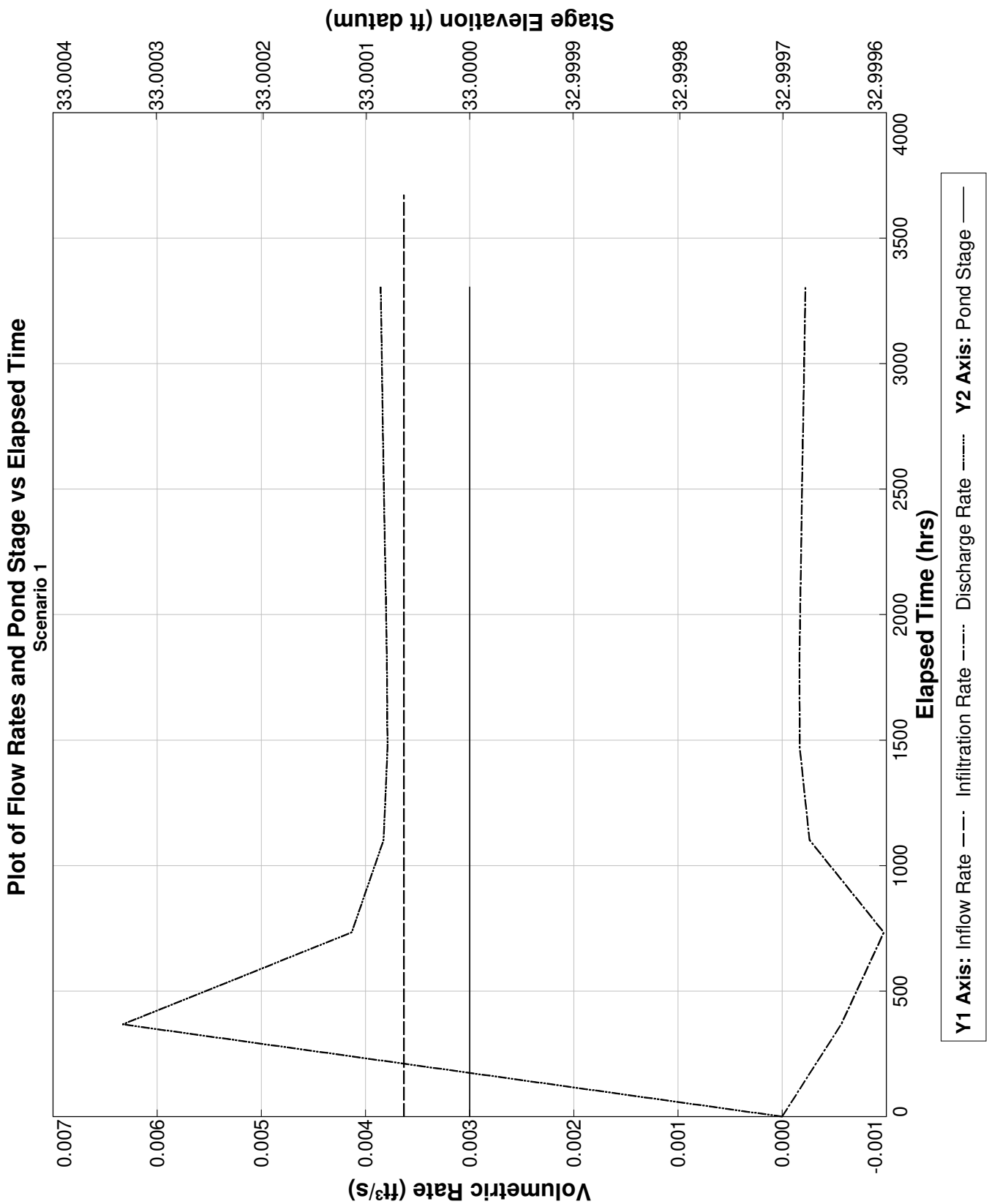
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0036	0.00163	33.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0036	0.00163	33.00000	-0.00057	6.331408E-03	4800.800	616.0	4184.808	S
734.400	0.0036	0.00163	33.00000	-0.00097	4.132154E-03	9601.600	-1499.2	11100.8	S
1101.600	0.0036	0.00163	33.00000	-0.00026	3.828082E-03	14402.400	-1959.8	16362.2	S
1468.800	0.0036	0.00163	33.00000	-0.00017	3.78795E-03	19203.200	-2192.9	21396.09	S
1836.000	0.0036	0.00163	33.00000	-0.00017	3.795247E-03	24004.000	-2404.3	26408.28	S
2203.200	0.0036	0.00163	33.00000	-0.00018	3.810406E-03	28804.800	-2630.5	31435.32	S
2570.400	0.0036	0.00163	33.00000	-0.00019	3.826022E-03	33605.600	-2877.1	36482.69	S
2937.600	0.0036	0.00163	33.00000	-0.00021	3.840875E-03	38406.400	-3143.8	41550.2	S
3304.800	0.0036	0.00163	33.00000	-0.00022	3.854877E-03	43207.200	-3429.6	46636.79	S
3672.000	0.0036	0.00163	33.00000	----	----	48008.000	-3733.4	51741.39	N.A.

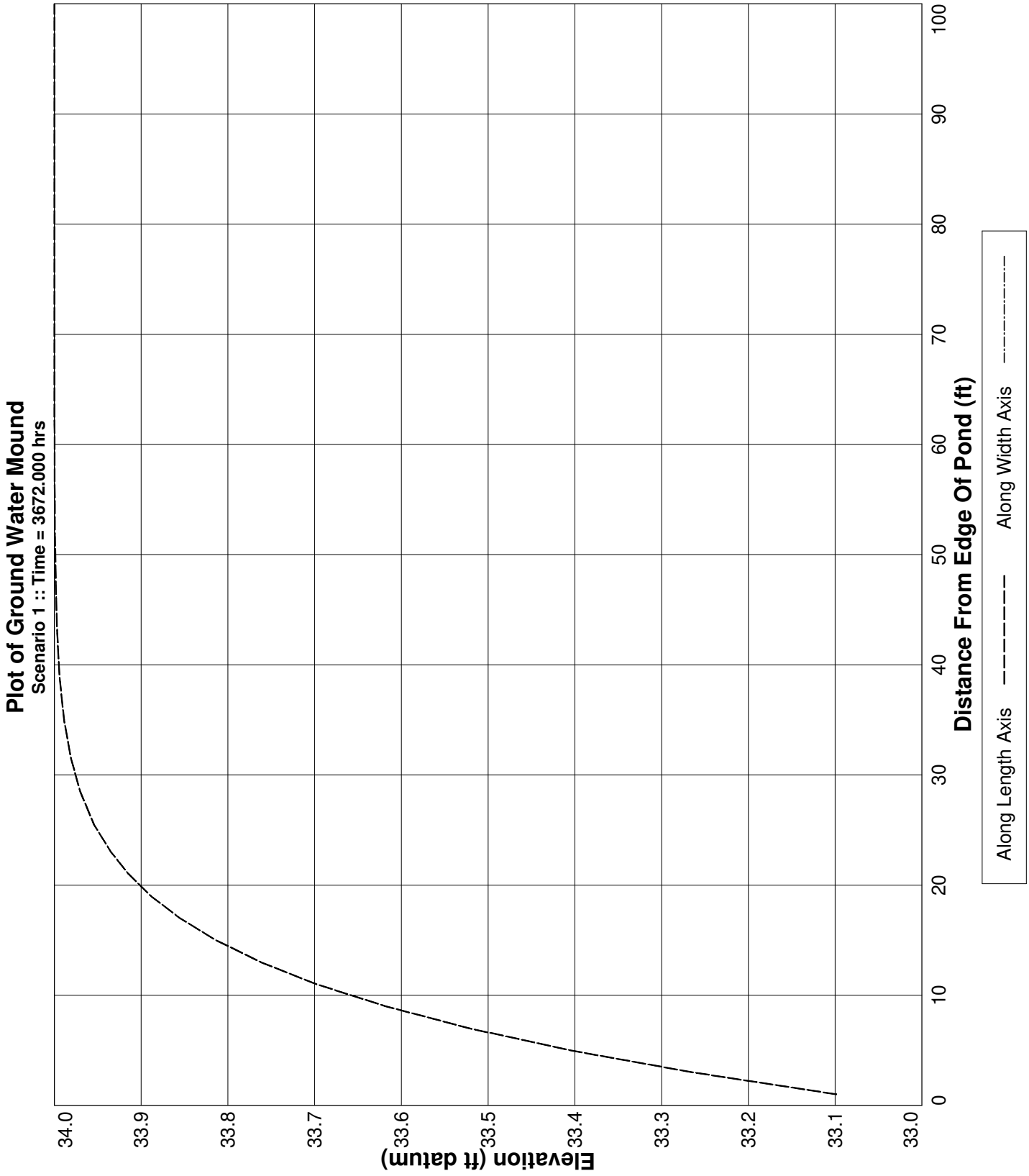
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No. 33, South2 Wetland, without wall
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-29-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	-2.00
Water Table Elevation, [WT] (ft datum):	35.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.29
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	353.0
Equivalent Pond Width, [W] (ft):	136.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
3.00	435.6
33.00	47916.0

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	33
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	34.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

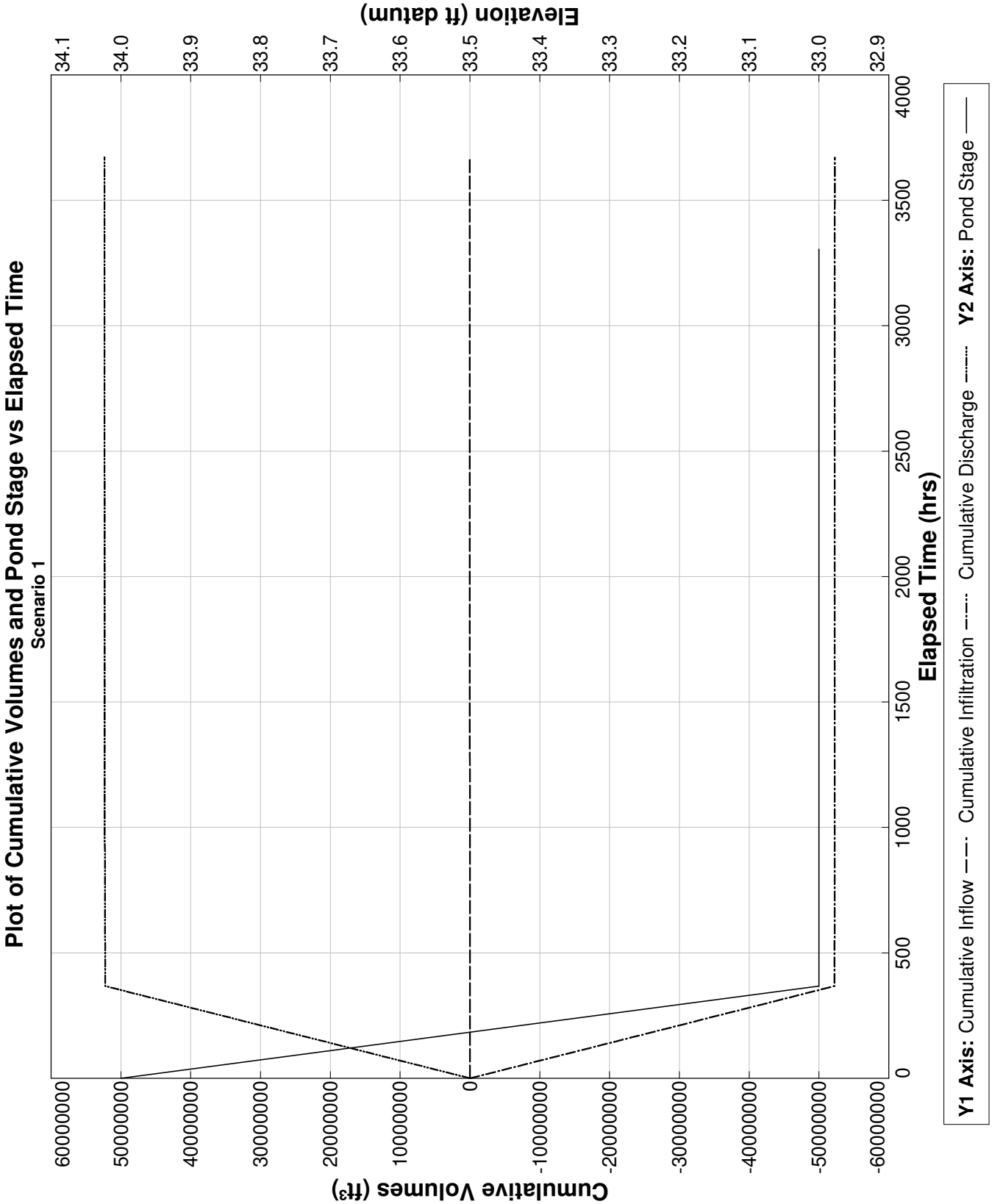
Begin Scenario 1 3/29/2023 9:58:54
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 34.0 ft.
#WARNING: The calculated water budget error exceeded the target water budget error for 7 of 10 saturated stress periods.
Maximum calculated water budget error is -4.25255377325517 percent, for saturated stress period 1.
If convergence is not a problem, it is recommended to reduce the Modflow convergence tolerences
to attempt to decrease the water budget error to within the target level.
End Scenario 1 3/29/2023 9:58:54

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

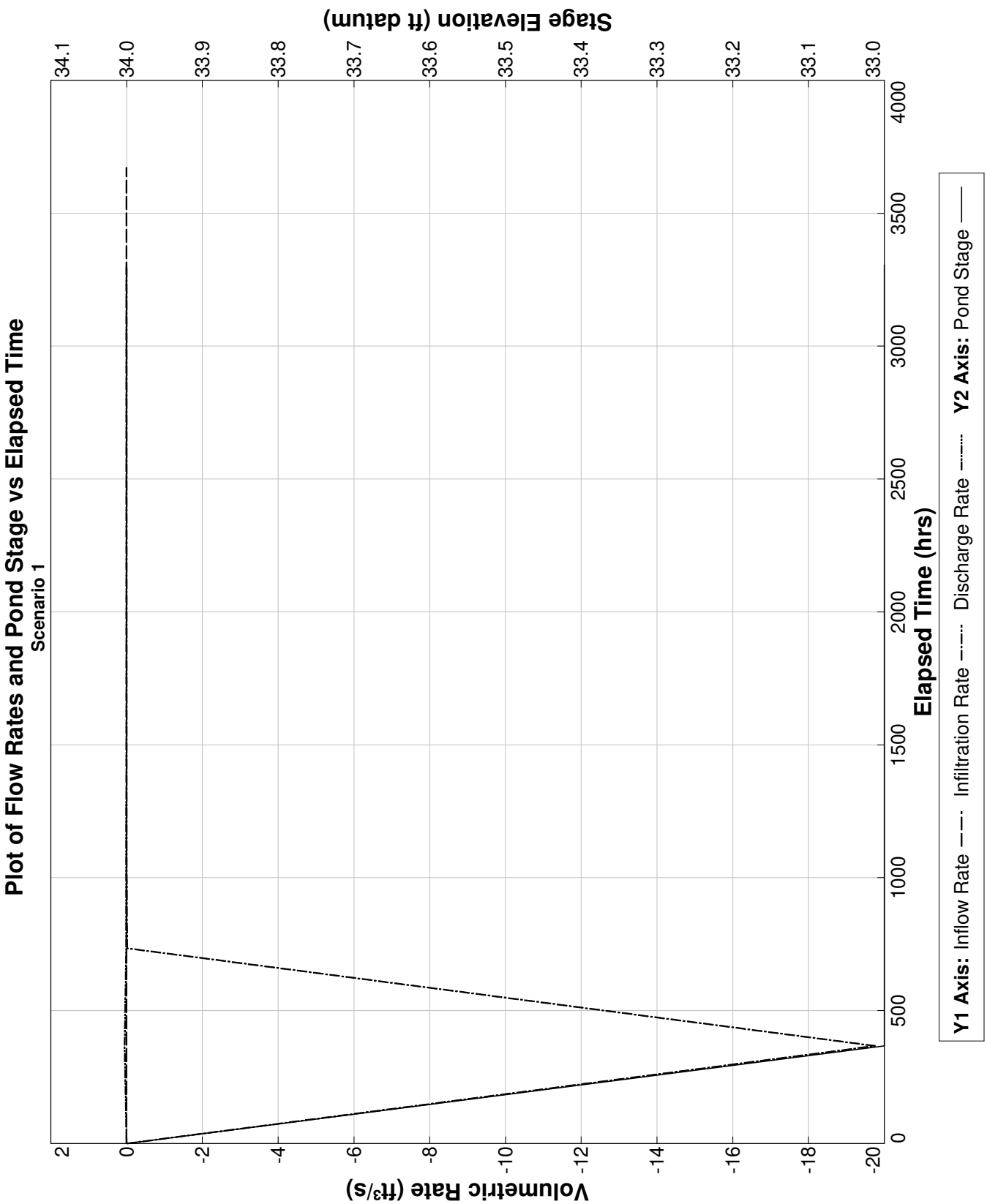
Detailed Results *:: Scenario 1 ::*

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0036	0.00163	34.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0036	0.00163	33.00000	-19.75586	5.120443E-02	4800.800	-52196970.0	5.224968E+07	S
734.400	0.0036	0.00163	33.00000	-0.01498	8.057119E-03	9601.600	-52231340.0	5.228885E+07	S
1101.600	0.0036	0.00163	33.00000	-0.00363	7.132507E-03	14402.400	-52236580.0	5.229889E+07	S
1468.800	0.0036	0.00163	33.00000	-0.00315	6.723204E-03	19203.200	-52240930.0	5.230805E+07	S
1836.000	0.0036	0.00163	33.00000	-0.00295	6.552208E-03	24004.000	-52244900.0	5.231682E+07	S
2203.200	0.0036	0.00163	33.00000	-0.00288	6.50198E-03	28804.800	-52248730.0	5.232546E+07	S
2570.400	0.0036	0.00163	33.00000	-0.00288	6.506438E-03	33605.600	-52252530.0	5.233405E+07	S
2937.600	0.0036	0.00163	33.00000	-0.00291	6.539988E-03	38406.400	-52256350.0	5.234268E+07	S
3304.800	0.0036	0.00163	33.00000	-0.00296	6.590115E-03	43207.200	-52260230.0	5.235135E+07	S
3672.000	0.0036	0.00163	33.00000	----	----	48008.000	-52264180.0	5.23601E+07	N.A.

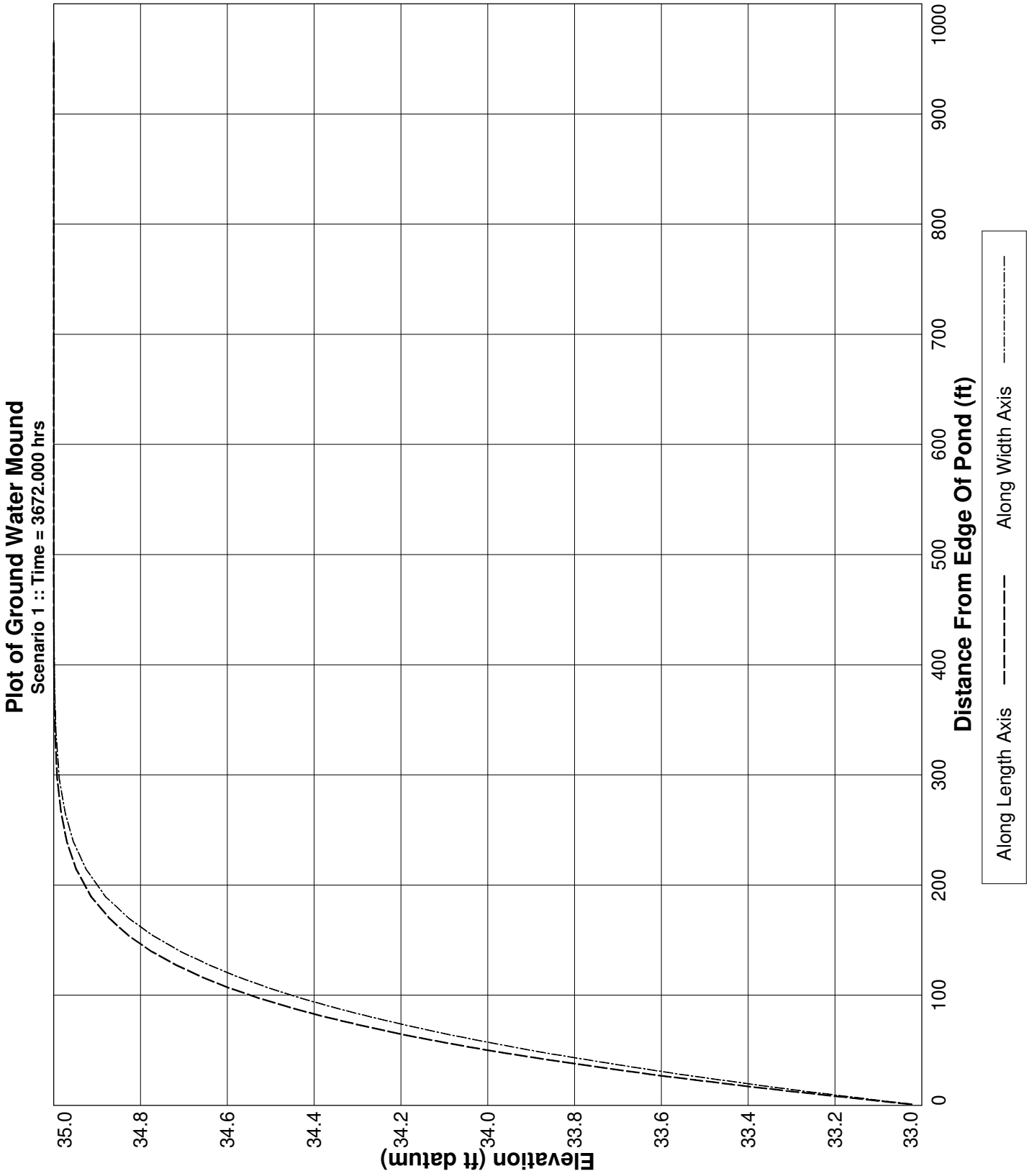
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No. 33, South2 Wetland, with wall
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-29-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	-2.00
Water Table Elevation, [WT] (ft datum):	35.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.01
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	353.0
Equivalent Pond Width, [W] (ft):	136.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
3.00	435.6
33.00	47916.0

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	33
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	34.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

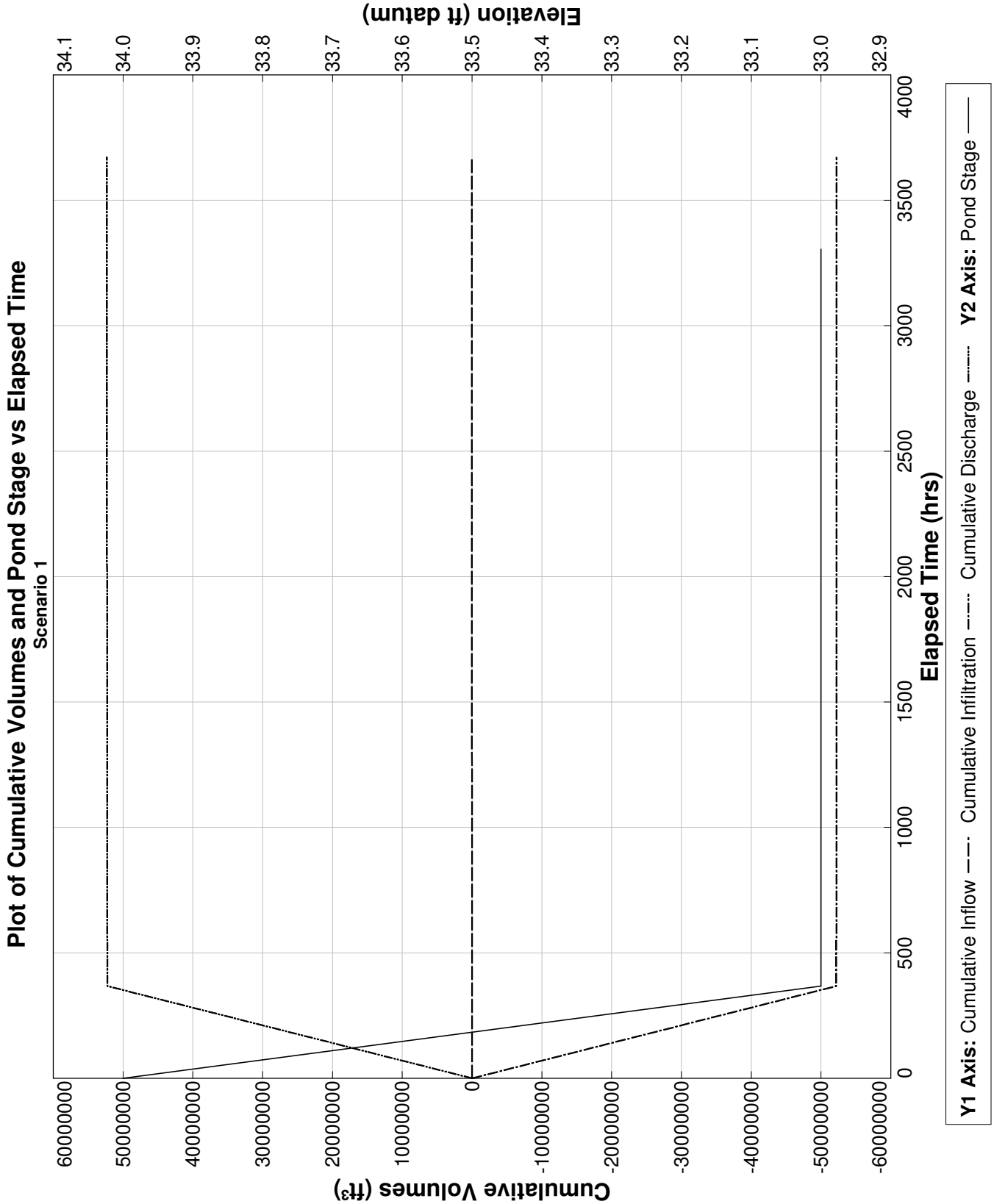
Begin Scenario 1 3/29/2023 10:0:30
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 34.0 ft.
#WARNING: The calculated water budget error exceeded the target water budget error for 5 of 10 saturated stress periods.
Maximum calculated water budget error is -3.64920326206818 percent, for saturated stress period 1.
If convergence is not a problem, it is recommended to reduce the Modflow convergence tolerences
to attempt to decrease the water budget error to within the target level.
End Scenario 1 3/29/2023 10:0:30

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

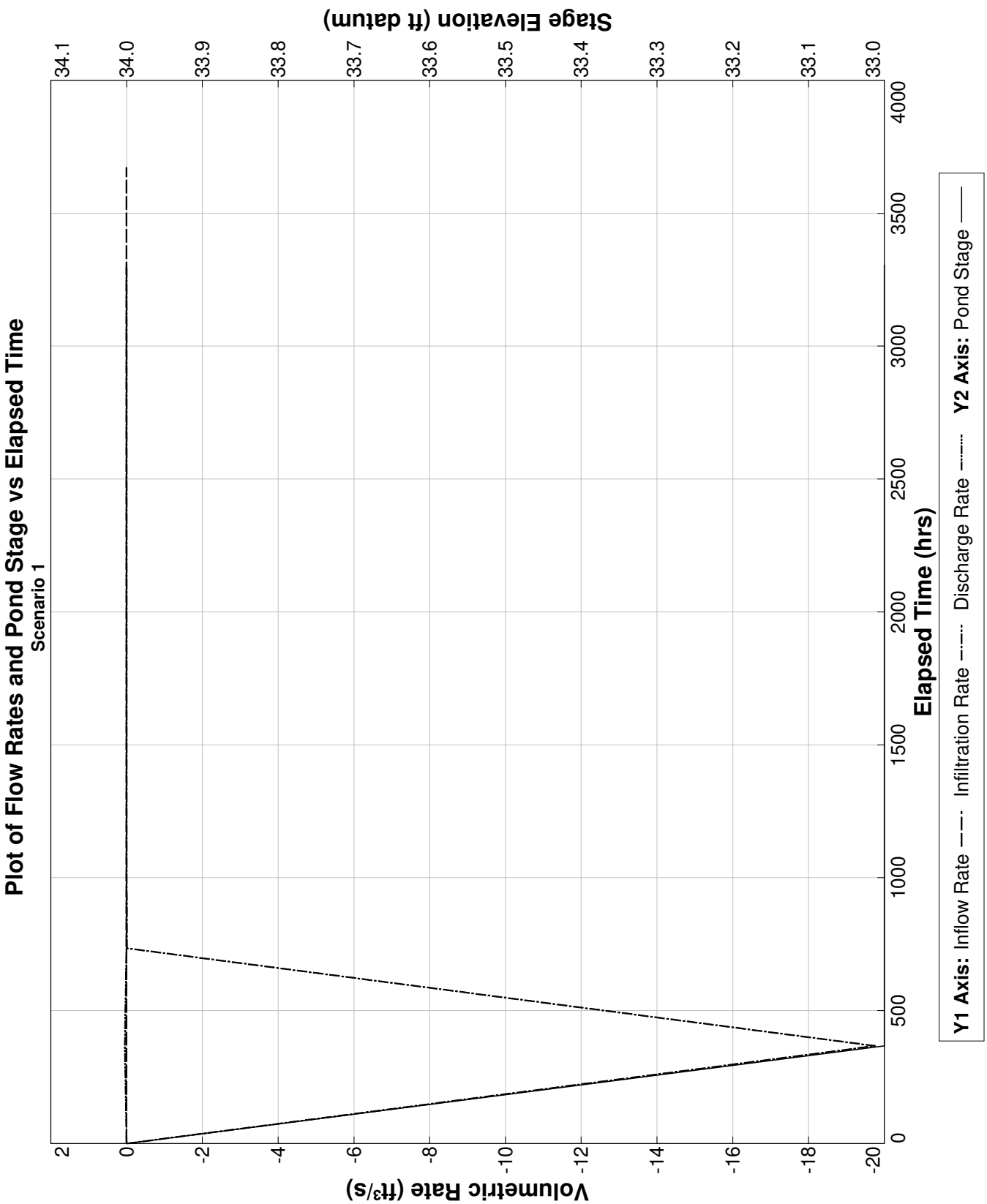
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0036	0.00163	34.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0036	0.00163	33.00000	-19.75214	4.557149E-02	4800.800	-52193240.0	5.224596E+07	S
734.400	0.0036	0.00163	33.00000	-0.01101	4.446375E-03	9601.600	-52221500.0	5.227902E+07	S
1101.600	0.0036	0.00163	33.00000	-0.00053	4.091781E-03	14402.400	-52222340.0	5.228466E+07	S
1468.800	0.0036	0.00163	33.00000	-0.00040	4.012174E-03	19203.200	-52222900.0	5.229002E+07	S
1836.000	0.0036	0.00163	33.00000	-0.00036	3.991759E-03	24004.000	-52223390.0	5.229531E+07	S
2203.200	0.0036	0.00163	33.00000	-0.00036	3.987002E-03	28804.800	-52223860.0	5.230058E+07	S
2570.400	0.0036	0.00163	33.00000	-0.00036	3.987743E-03	33605.600	-52224330.0	5.230586E+07	S
2937.600	0.0036	0.00163	33.00000	-0.00036	3.991058E-03	38406.400	-52224810.0	5.231113E+07	S
3304.800	0.0036	0.00163	33.00000	-0.00036	3.995808E-03	43207.200	-52225280.0	5.231641E+07	S
3672.000	0.0036	0.00163	33.00000	----	----	48008.000	-52225770.0	5.232169E+07	N.A.

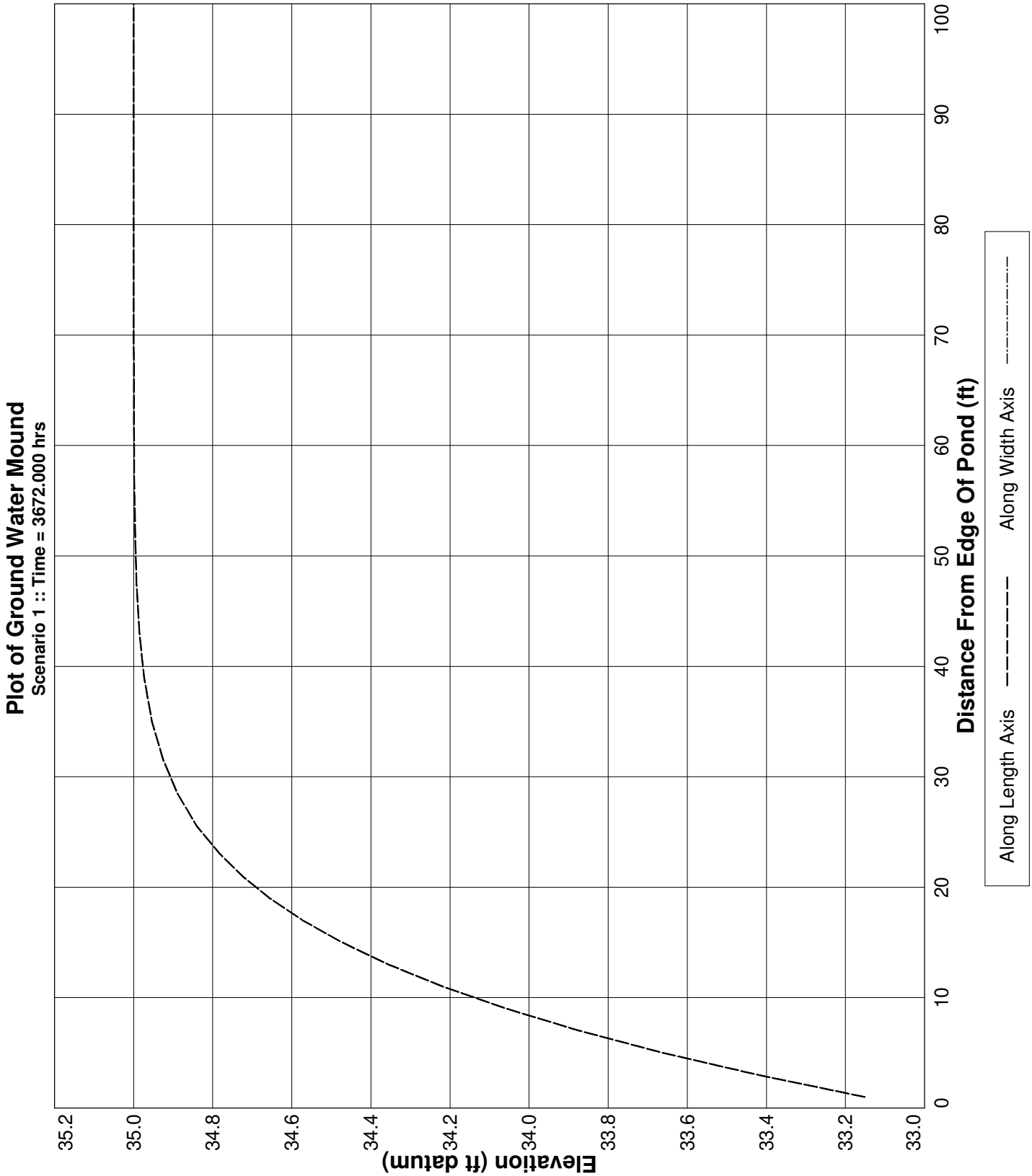
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No. 33, South3 Wetland, without wall
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-29-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	-2.00
Water Table Elevation, [WT] (ft datum):	36.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.29
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	353.0
Equivalent Pond Width, [W] (ft):	136.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
3.00	435.6
33.00	47916.0

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	33
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	35.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

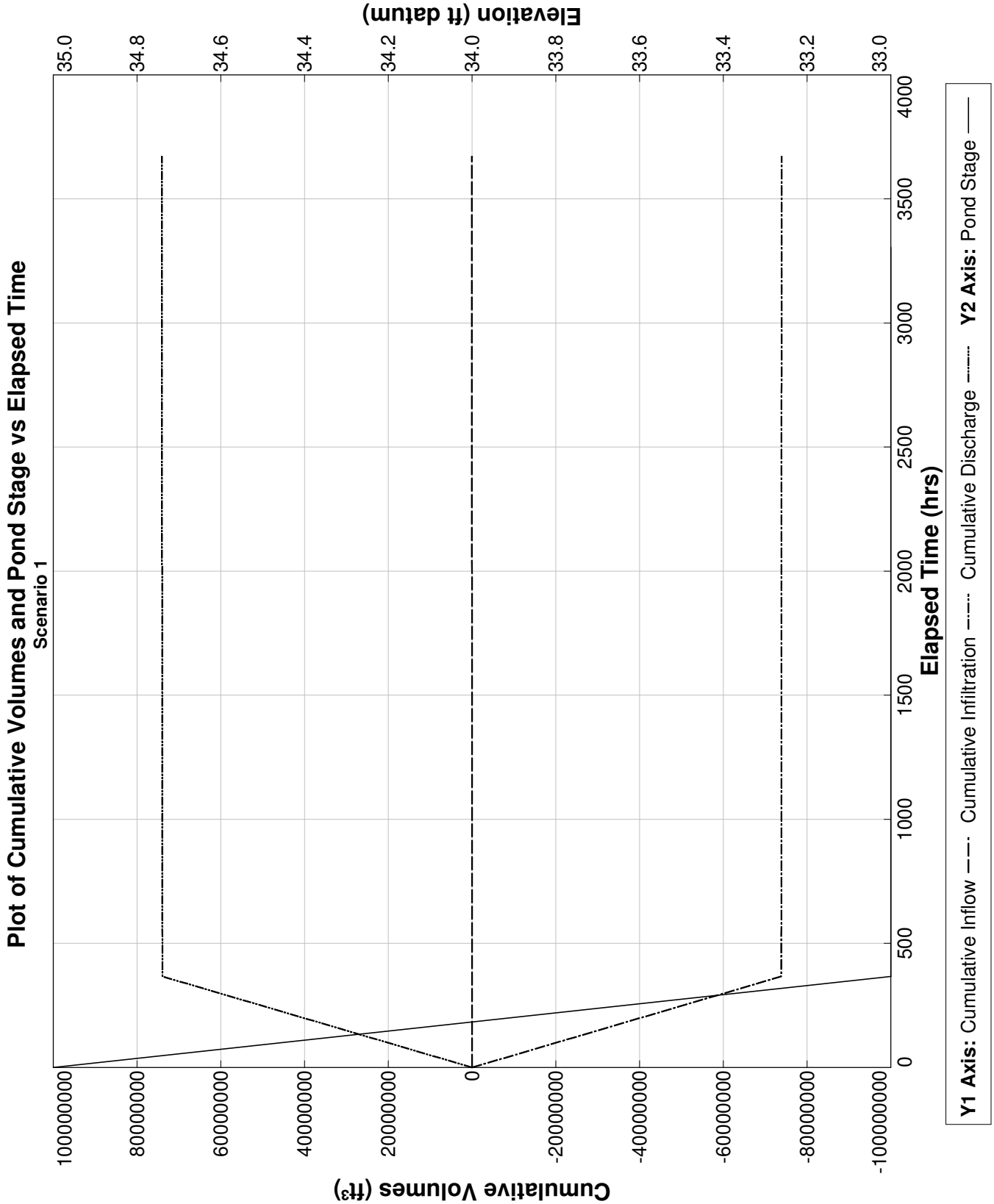
Begin Scenario 1 3/29/2023 10:18:4
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 35.0 ft.
#WARNING: The calculated water budget error exceeded the target water budget error for 6 of 10 saturated stress periods.
Maximum calculated water budget error is -2.95208508494048 percent, for saturated stress period 1.
If convergence is not a problem, it is recommended to reduce the Modflow convergence tolerences
to attempt to decrease the water budget error to within the target level.
End Scenario 1 3/29/2023 10:18:4

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

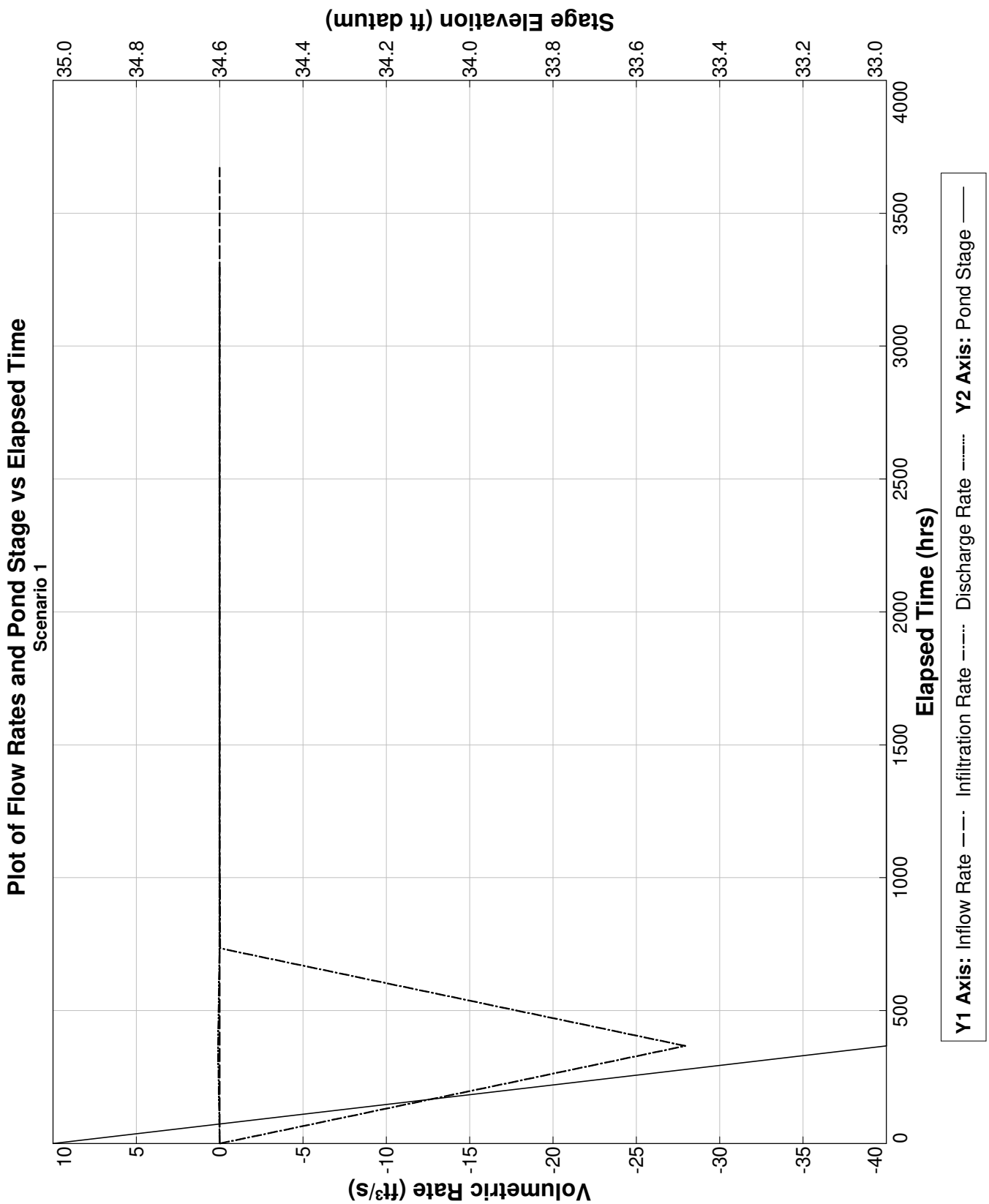
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0036	0.00163	35.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0036	0.00163	33.00000	-27.93932	.0917597	4800.800	-73804370.0	7.3905E+07	S
734.400	0.0036	0.00163	33.00000	-0.02678	1.040914E-02	9601.600	-73867100.0	7.397253E+07	S
1101.600	0.0036	0.00163	33.00000	-0.00565	9.079081E-03	14402.400	-73875180.0	7.398541E+07	S
1468.800	0.0036	0.00163	33.00000	-0.00497	8.550795E-03	19203.200	-73882020.0	7.399706E+07	S
1836.000	0.0036	0.00163	33.00000	-0.00463	8.227891E-03	24004.000	-73888310.0	7.400815E+07	S
2203.200	0.0036	0.00163	33.00000	-0.00442	8.031721E-03	28804.800	-73894260.0	7.40189E+07	S
2570.400	0.0036	0.00163	33.00000	-0.00431	7.929358E-03	33605.600	-73900010.0	7.402945E+07	S
2937.600	0.0036	0.00163	33.00000	-0.00425	7.873986E-03	38406.400	-73905660.0	7.40399E+07	S
3304.800	0.0036	0.00163	33.00000	-0.00423	7.854899E-03	43207.200	-73911250.0	7.405029E+07	S
3672.000	0.0036	0.00163	33.00000	----	----	48008.000	-73916830.0	7.406067E+07	N.A.

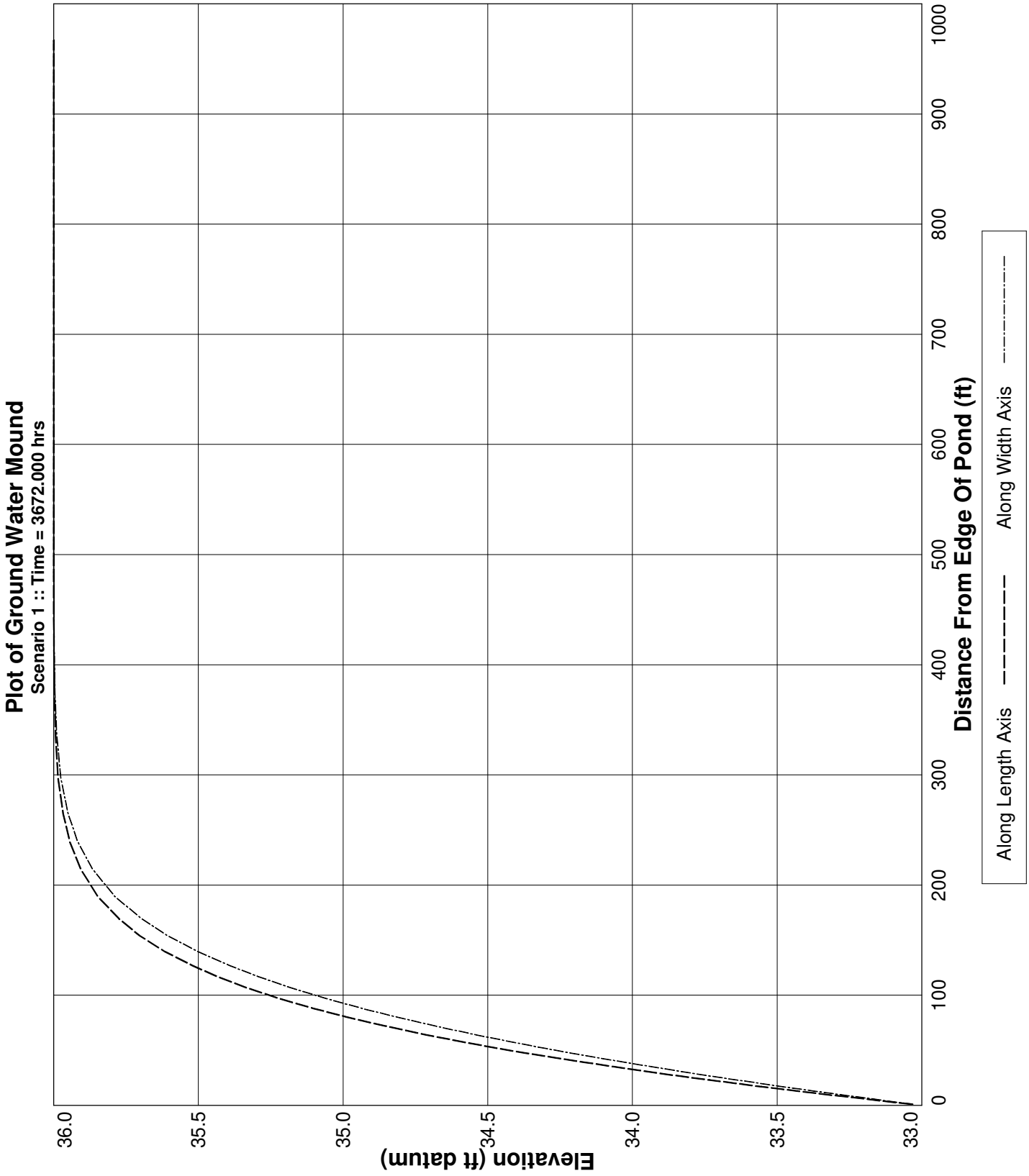
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No. 33, South3 Wetland, with wall
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-29-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	-2.00
Water Table Elevation, [WT] (ft datum):	36.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.01
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	353.0
Equivalent Pond Width, [W] (ft):	136.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
3.00	435.6
33.00	47916.0

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	33
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	35.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

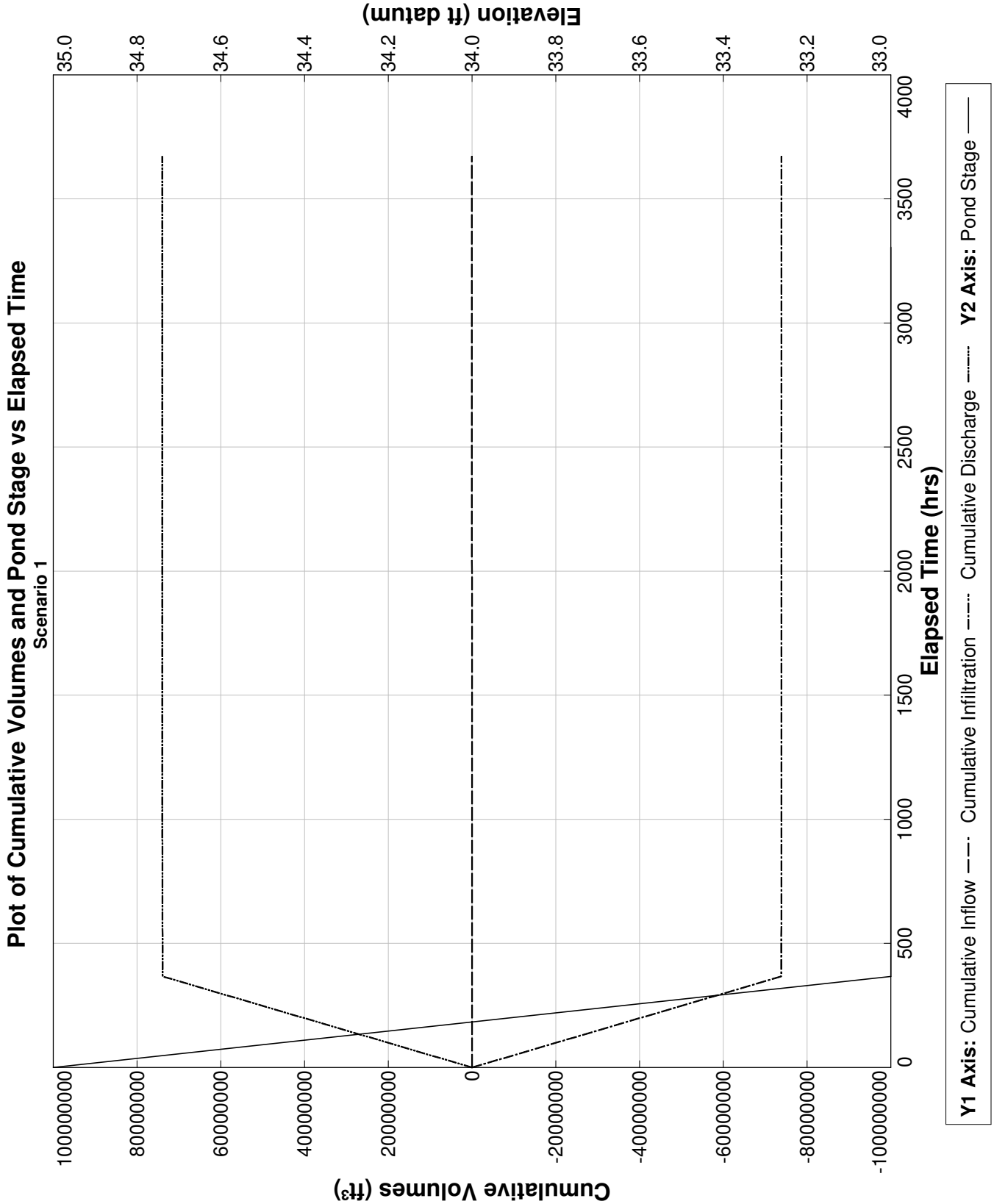
Begin Scenario 1 3/29/2023 10:20:32
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 35.0 ft.
#WARNING: The calculated water budget error exceeded the target water budget error for 6 of 10 saturated stress periods.
Maximum calculated water budget error is -2.56855887746159 percent, for saturated stress period 1.
If convergence is not a problem, it is recommended to reduce the Modflow convergence tolerences
to attempt to decrease the water budget error to within the target level.
End Scenario 1 3/29/2023 10:20:32

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

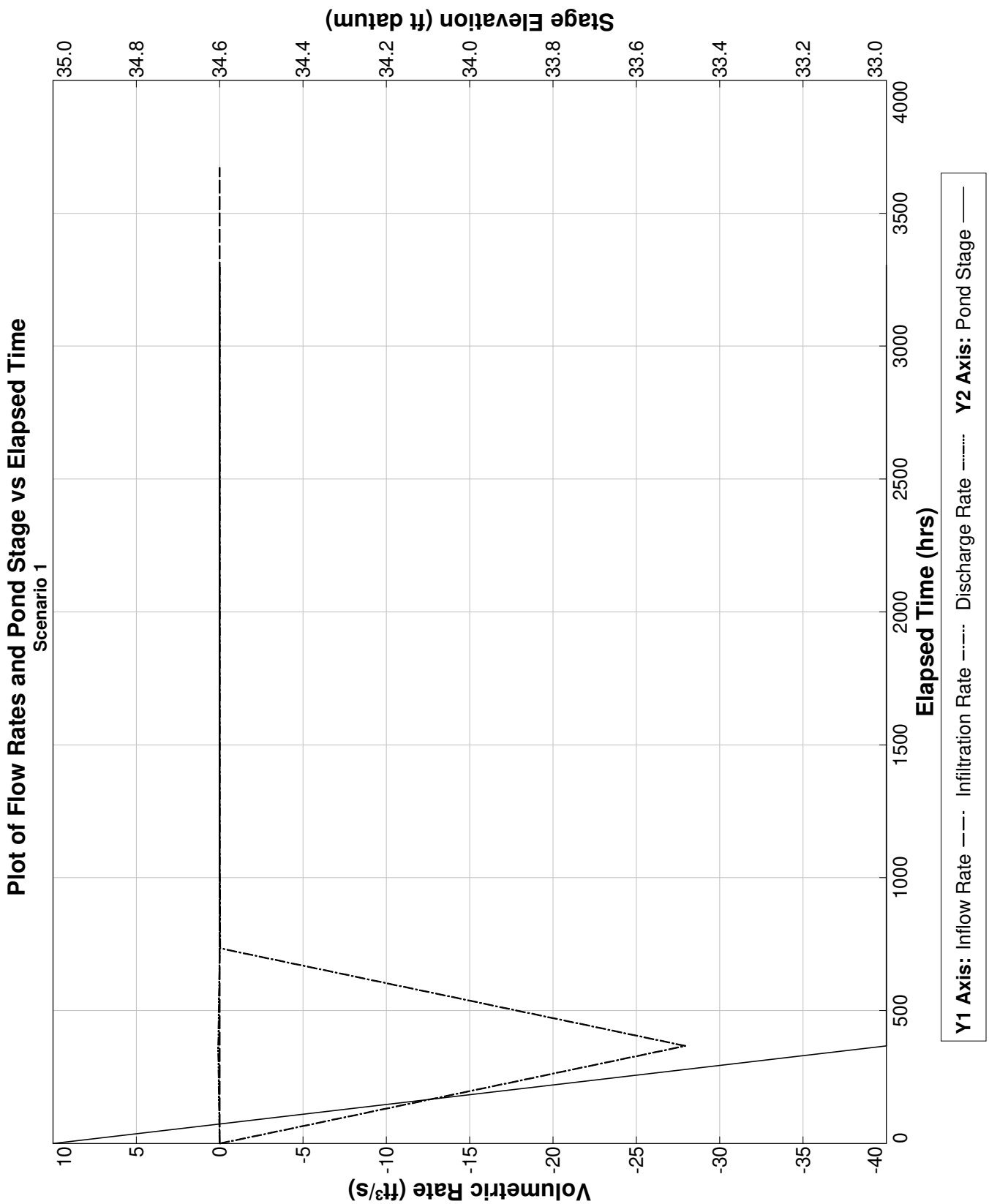
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0036	0.00163	35.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0036	0.00163	33.00000	-27.93353	8.193903E-02	4800.800	-73797870.0	7.38985E+07	S
734.400	0.0036	0.00163	33.00000	-0.02145	6.872972E-03	9601.600	-73851780.0	7.395721E+07	S
1101.600	0.0036	0.00163	33.00000	-0.00148	4.64939E-03	14402.400	-73854590.0	7.396482E+07	S
1468.800	0.0036	0.00163	33.00000	-0.00072	4.287737E-03	19203.200	-73855700.0	7.397073E+07	S
1836.000	0.0036	0.00163	33.00000	-0.00058	4.198724E-03	24004.000	-73856500.0	7.397634E+07	S
2203.200	0.0036	0.00163	33.00000	-0.00054	4.166571E-03	28804.800	-73857230.0	7.398187E+07	S
2570.400	0.0036	0.00163	33.00000	-0.00052	4.151054E-03	33605.600	-73857930.0	7.398737E+07	S
2937.600	0.0036	0.00163	33.00000	-0.00051	4.142582E-03	38406.400	-73858610.0	7.399285E+07	S
3304.800	0.0036	0.00163	33.00000	-0.00051	4.13804E-03	43207.200	-73859280.0	7.399832E+07	S
3672.000	0.0036	0.00163	33.00000	----	----	48008.000	-73859950.0	7.400379E+07	N.A.

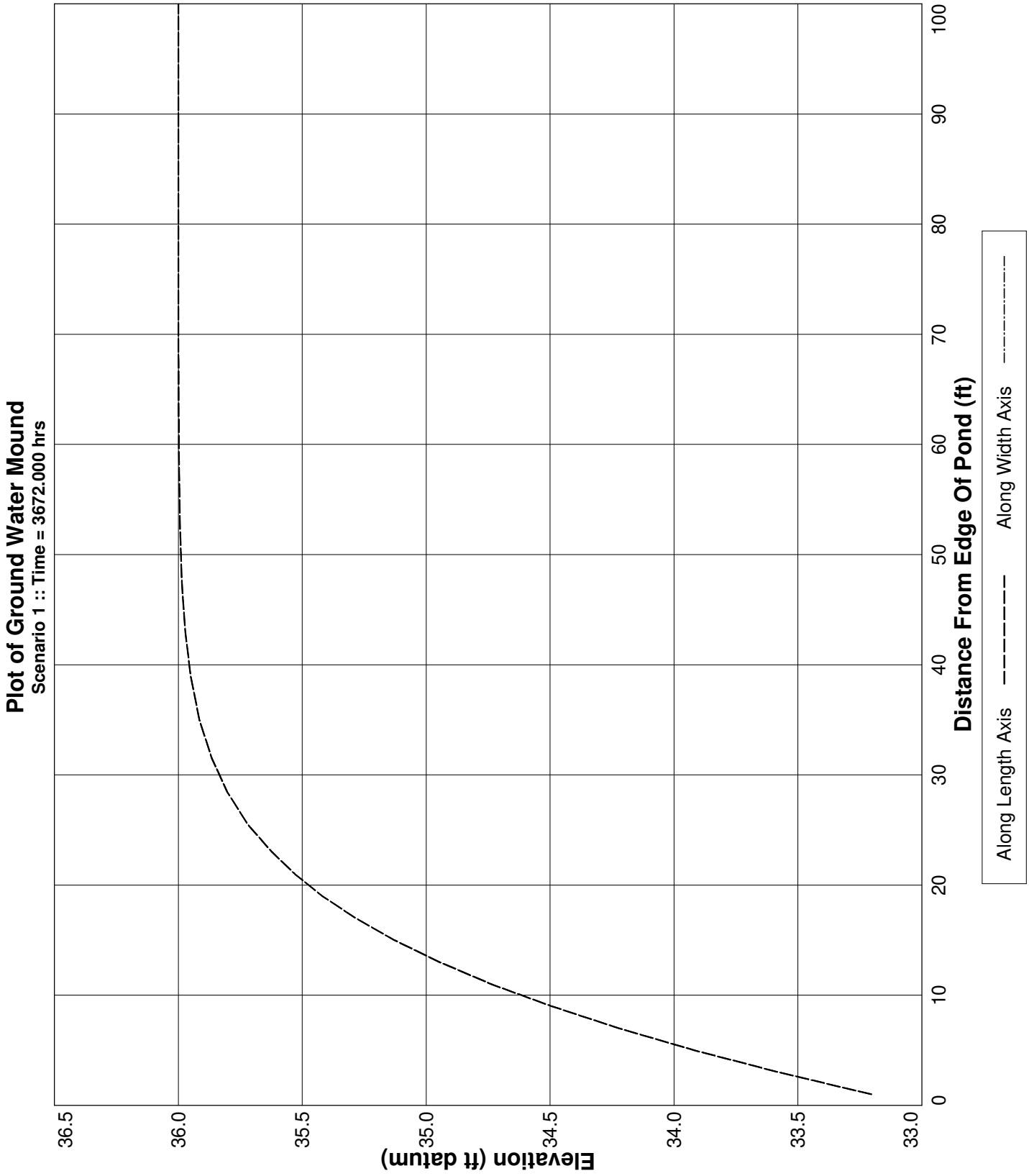
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No. 33, South4 Wetland, without wall
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-29-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	-2.00
Water Table Elevation, [WT] (ft datum):	37.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.29
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	353.0
Equivalent Pond Width, [W] (ft):	136.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
3.00	435.6
33.00	47916.0

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	33
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	36.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

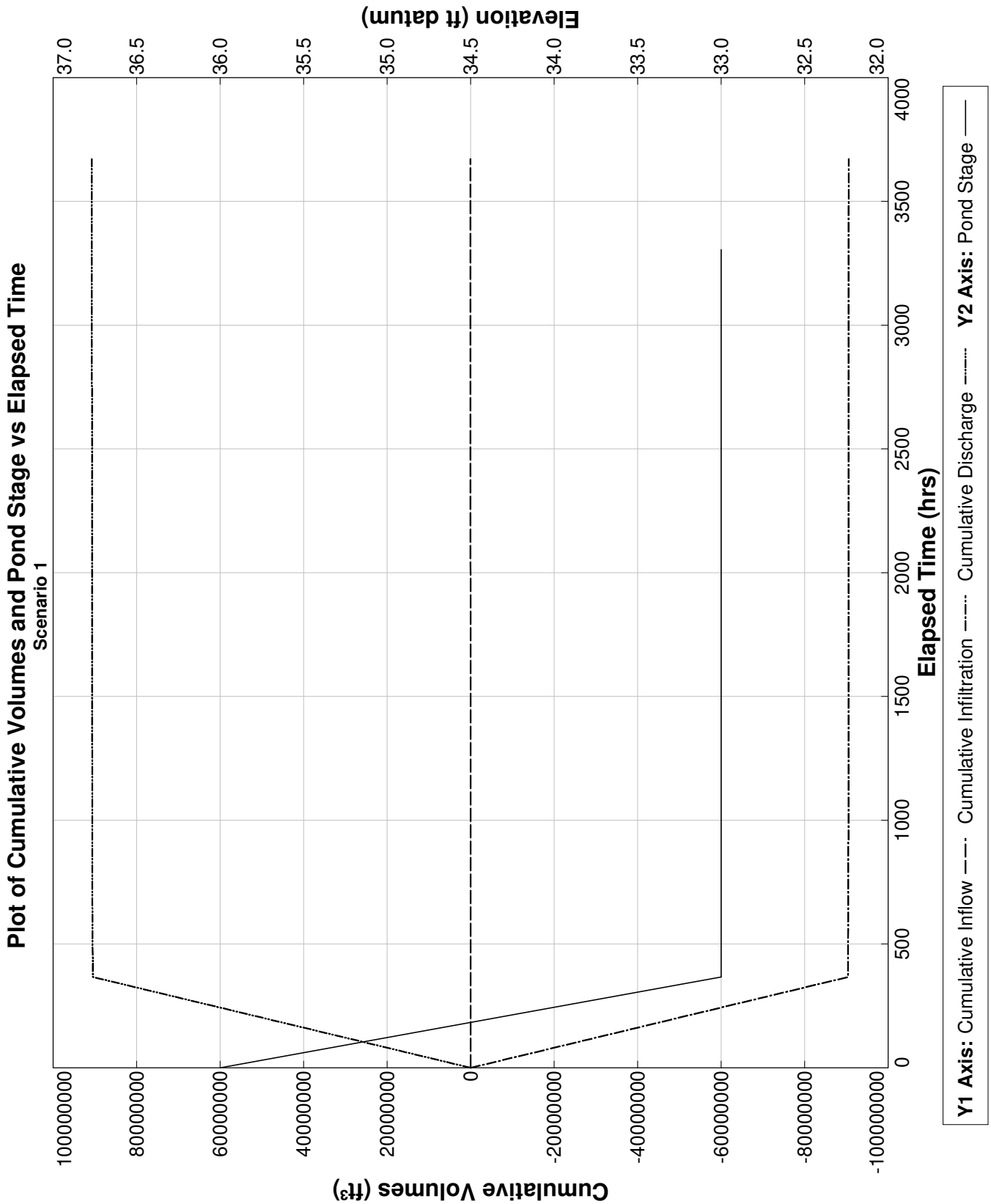
Begin Scenario 1 3/29/2023 10:26:32
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 36.0 ft.
#WARNING: The calculated water budget error exceeded the target water budget error for 4 of 10 saturated stress periods.
Maximum calculated water budget error is -1.70563707915584 percent, for saturated stress period 1.
If convergence is not a problem, it is recommended to reduce the Modflow convergence tolerences
to attempt to decrease the water budget error to within the target level.
End Scenario 1 3/29/2023 10:26:32

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

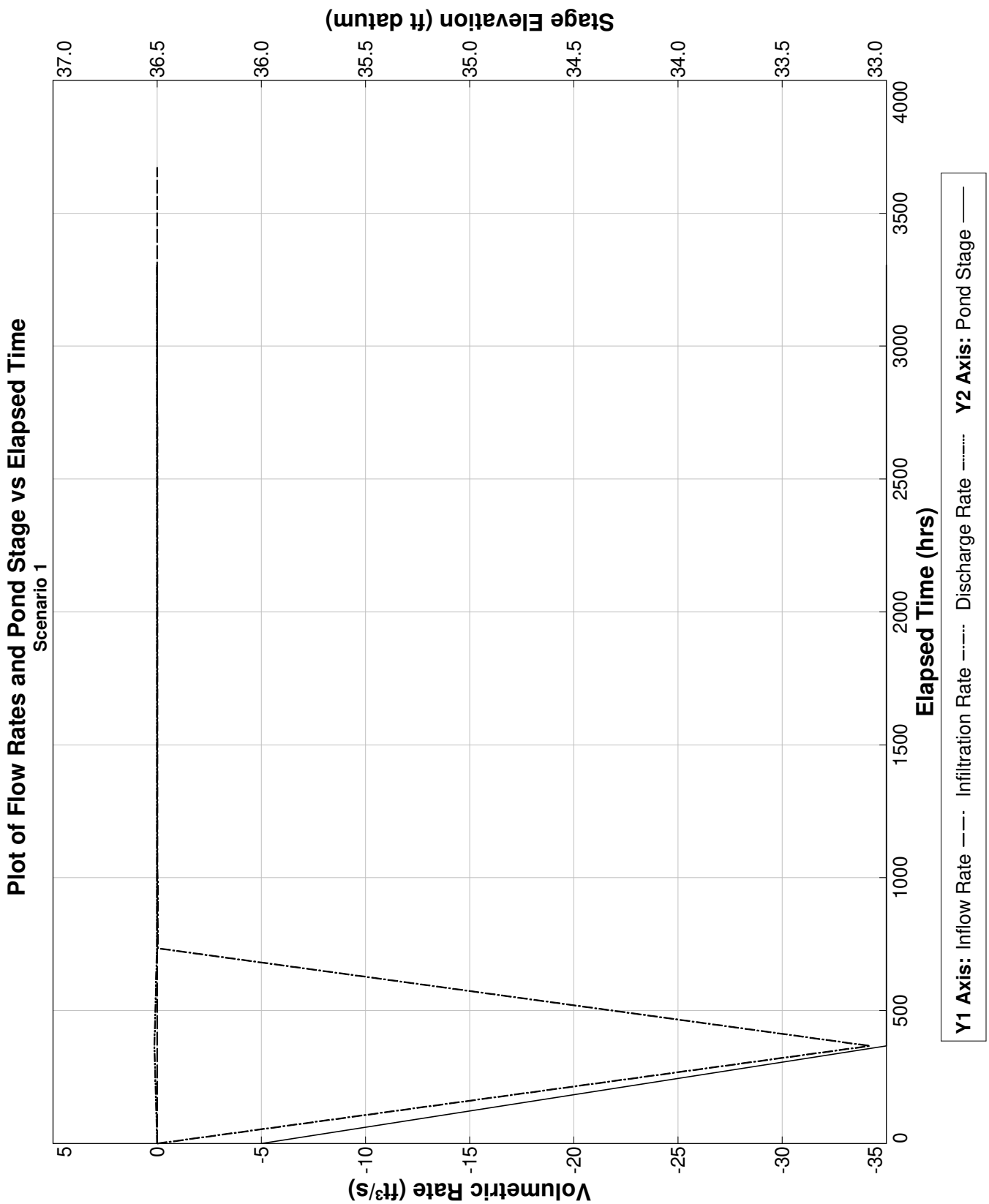
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0036	0.00163	36.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0036	0.00163	33.00000	-34.21902	.131429	4800.800	-90378810.0	9.052736E+07	S
734.400	0.0036	0.00163	33.00000	-0.03862	1.322206E-02	9601.600	-90469620.0	9.062297E+07	S
1101.600	0.0036	0.00163	33.00000	-0.00784	1.112875E-02	14402.400	-90480910.0	9.063906E+07	S
1468.800	0.0036	0.00163	33.00000	-0.00684	1.042445E-02	19203.200	-90490350.0	9.06533E+07	S
1836.000	0.0036	0.00163	33.00000	-0.00633	9.921722E-03	24004.000	-90499000.0	9.066675E+07	S
2203.200	0.0036	0.00163	33.00000	-0.00599	9.593583E-03	28804.800	-90507100.0	9.067966E+07	S
2570.400	0.0036	0.00163	33.00000	-0.00576	9.371595E-03	33605.600	-90514830.0	9.069219E+07	S
2937.600	0.0036	0.00163	33.00000	-0.00561	9.23023E-03	38406.400	-90522330.0	9.070448E+07	S
3304.800	0.0036	0.00163	33.00000	-0.00551	9.13437E-03	43207.200	-90529660.0	9.071662E+07	S
3672.000	0.0036	0.00163	33.00000	----	----	48008.000	-90536900.0	9.072866E+07	N.A.

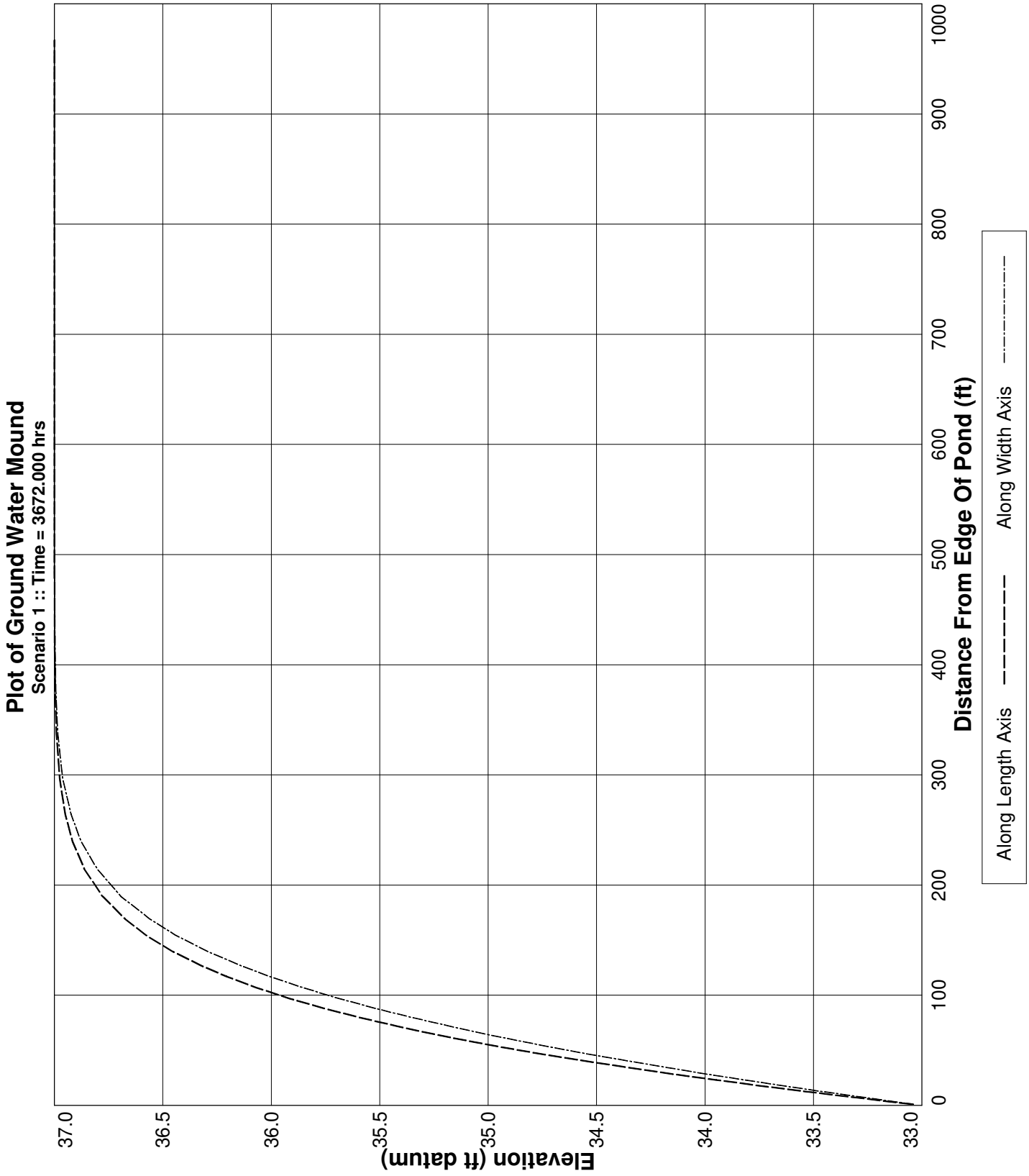
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No. 33, EL 32 Baseflow, without wall
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-30-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	-2.00
Water Table Elevation, [WT] (ft datum):	32.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.29
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	353.0
Equivalent Pond Width, [W] (ft):	136.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
3.00	435.6
33.00	47916.0

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	33
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	31.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

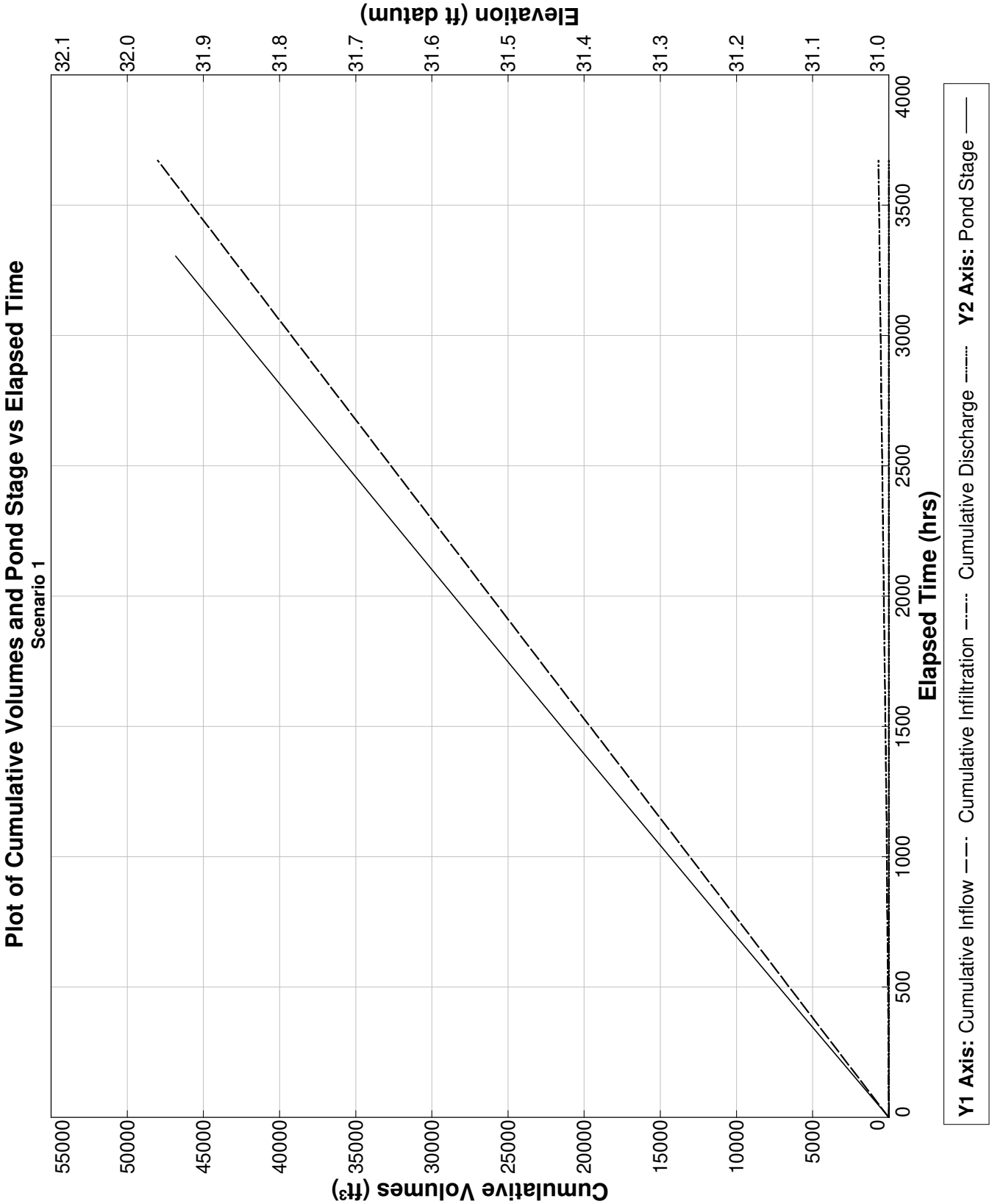
Begin Scenario 1 3/30/2023 15:6:53
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 31.0 ft.
End Scenario 1 3/30/2023 15:6:53

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

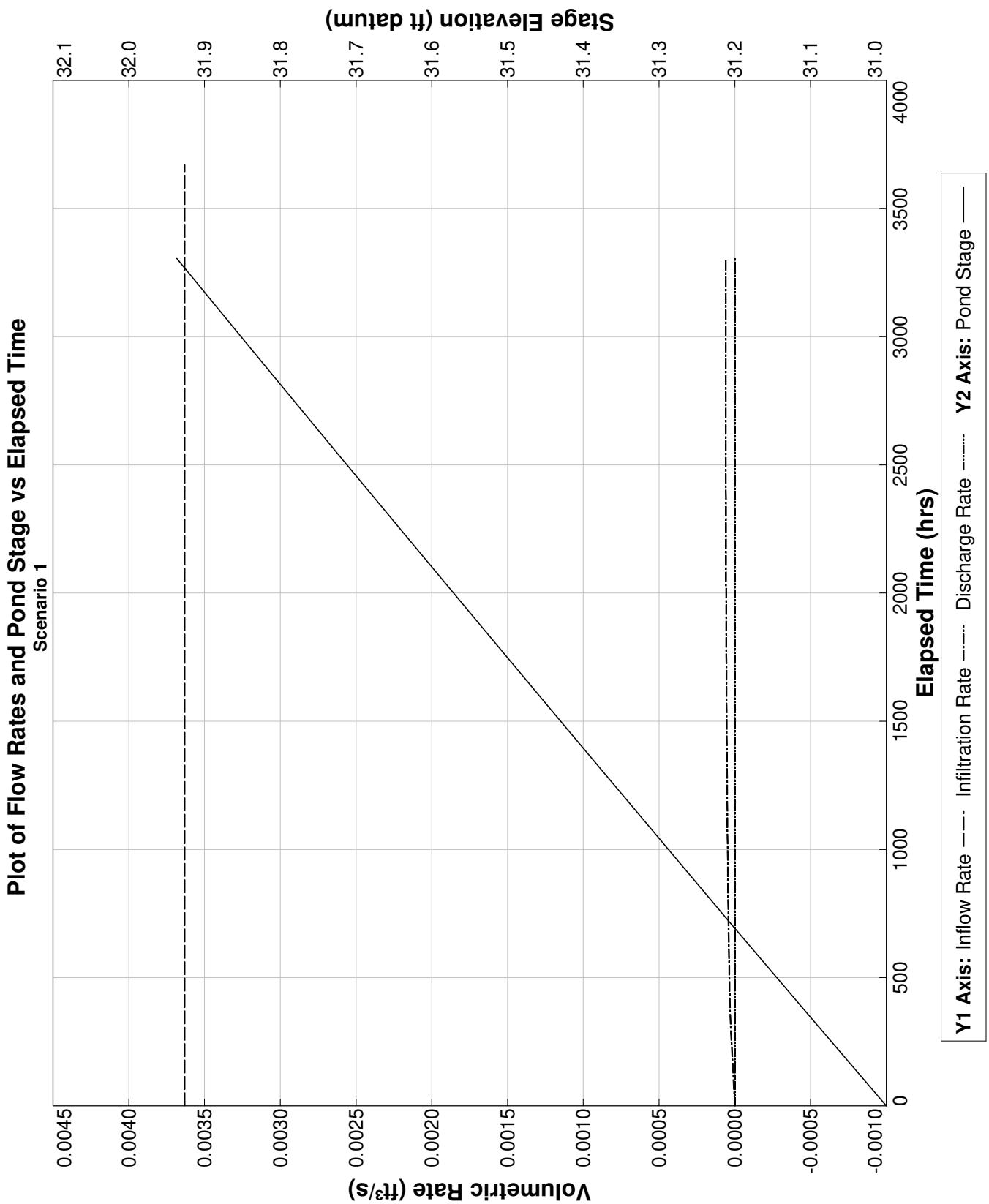
Detailed Results *:: Scenario 1 ::*

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0036	0.00163	31.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0036	0.00163	31.10631	0.00003	0	4800.800	34.4	0	S
734.400	0.0036	0.00163	31.21185	0.00004	0	9601.600	85.5	0	S
1101.600	0.0036	0.00163	31.31679	0.00005	0	14402.400	146.5	0	S
1468.800	0.0036	0.00163	31.42118	0.00005	0	19203.200	214.6	0	S
1836.000	0.0036	0.00163	31.52510	0.00006	0	24004.000	287.4	0	S
2203.200	0.0036	0.00163	31.62857	0.00006	0	28804.800	363.4	0	S
2570.400	0.0036	0.00163	31.73162	0.00006	0	33605.600	441.5	0	S
2937.600	0.0036	0.00163	31.83429	0.00006	0	38406.400	520.6	0	S
3304.800	0.0036	0.00163	31.93659	0.00006	0	43207.200	599.9	0	S
3672.000	0.0036	0.00163	32.03855	----	----	48008.000	678.8	0	N.A.

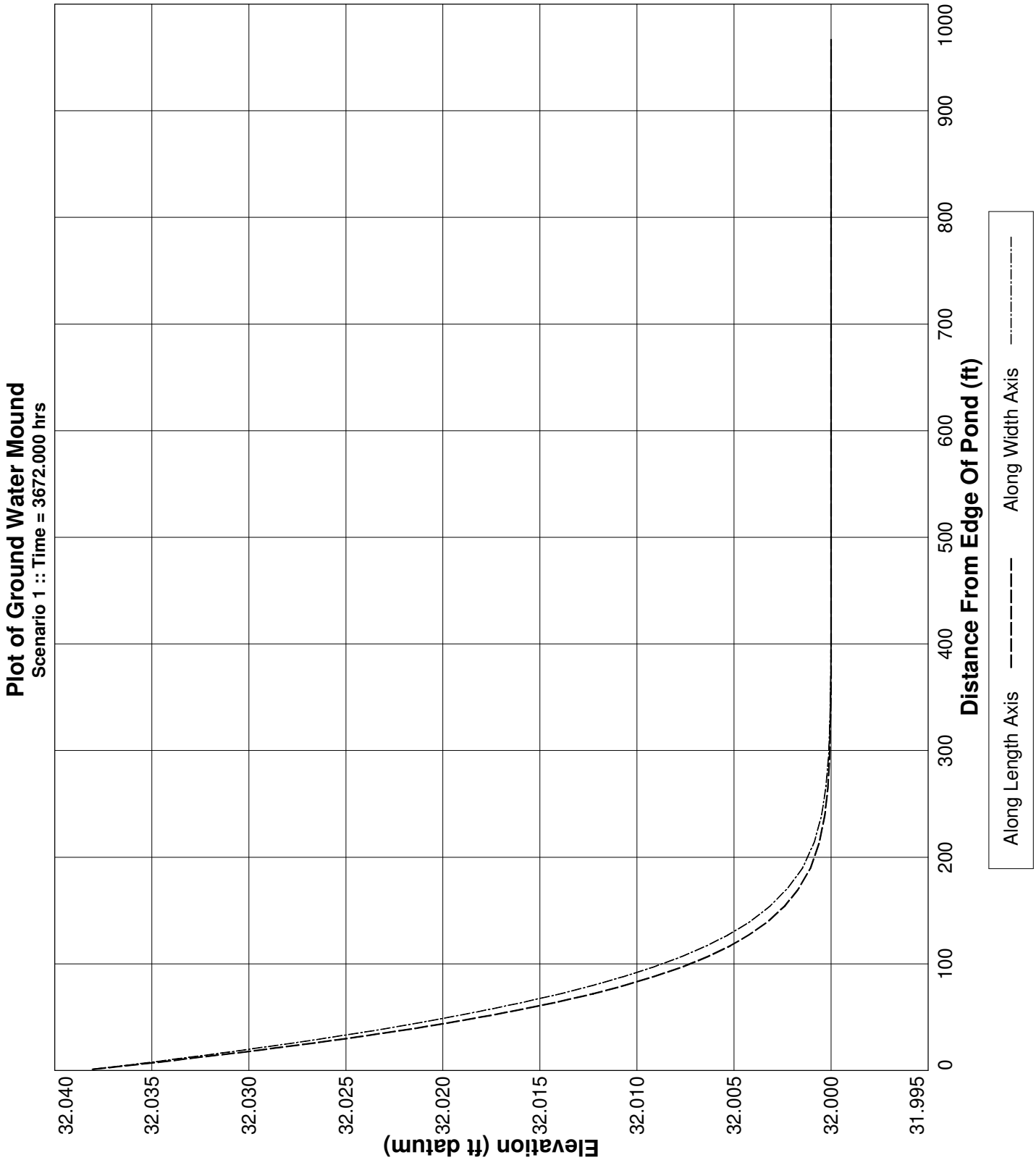
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	The Rookery Phase 1, SWMF No. 33, EL 32 Baseflow, without wall
Simulation Description:	background seepage
Project Number:	35:31217-E
Engineer :	Nathan Hildreth, E.I.
Supervising Engineer:	Chris Egan, P.E.
Date:	03-30-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	-2.00
Water Table Elevation, [WT] (ft datum):	32.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	0.01
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	353.0
Equivalent Pond Width, [W] (ft):	136.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
3.00	435.6
33.00	47916.0

Discharge Structures

Discharge Structure #1 is active as weir

Structure Parameters

Description: MES

Weir elevation, (ft datum):	33
Weir coefficient:	7.9
Weir length, (ft):	10
Weir exponent:	0.5

Tailwater - disabled, free discharge

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.0
Initial (seasonal low) ground water level (ft datum)	31.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: all stress periods

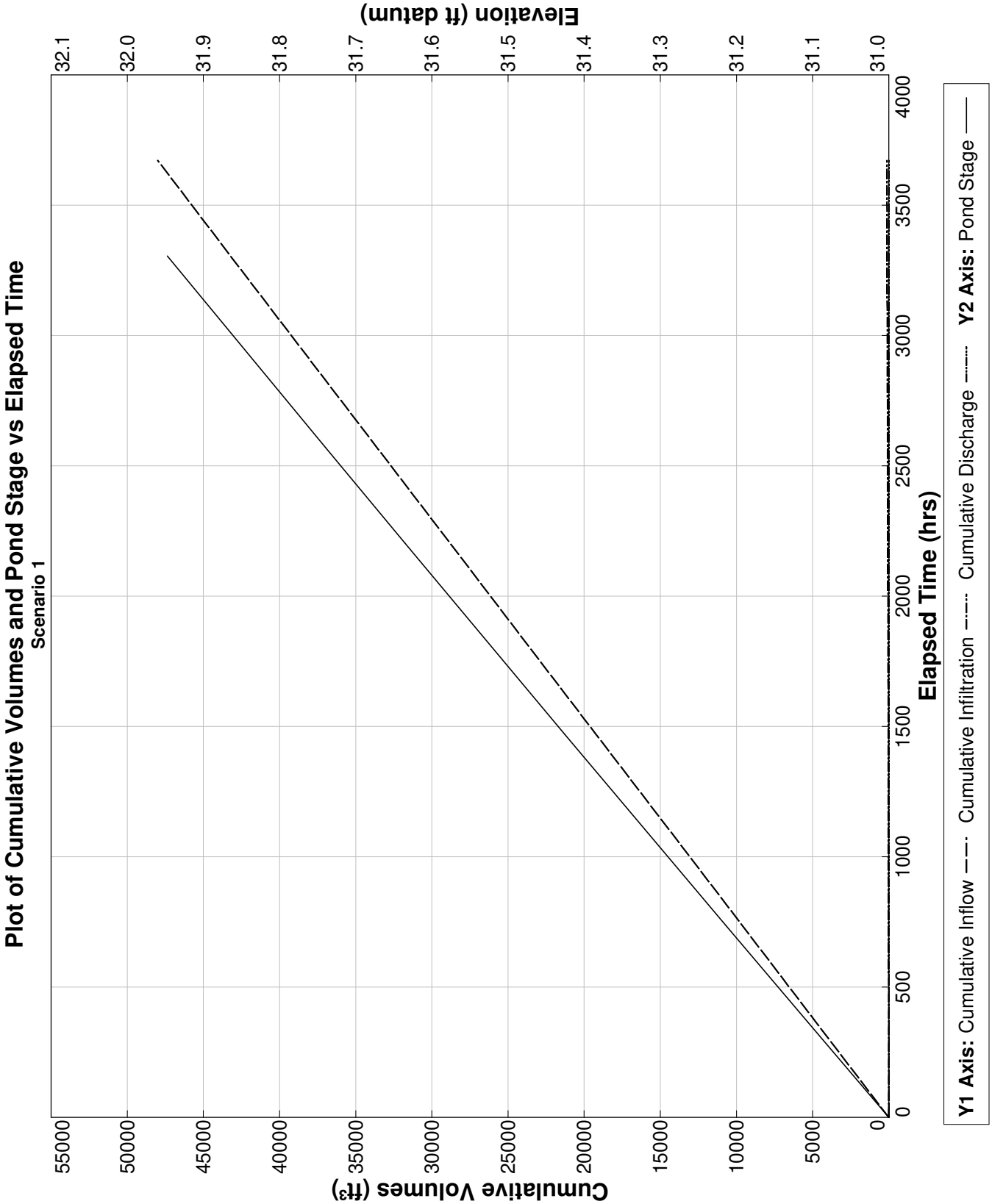
Begin Scenario 1 3/30/2023 15:9:12
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 31.0 ft.
End Scenario 1 3/30/2023 15:9:12

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

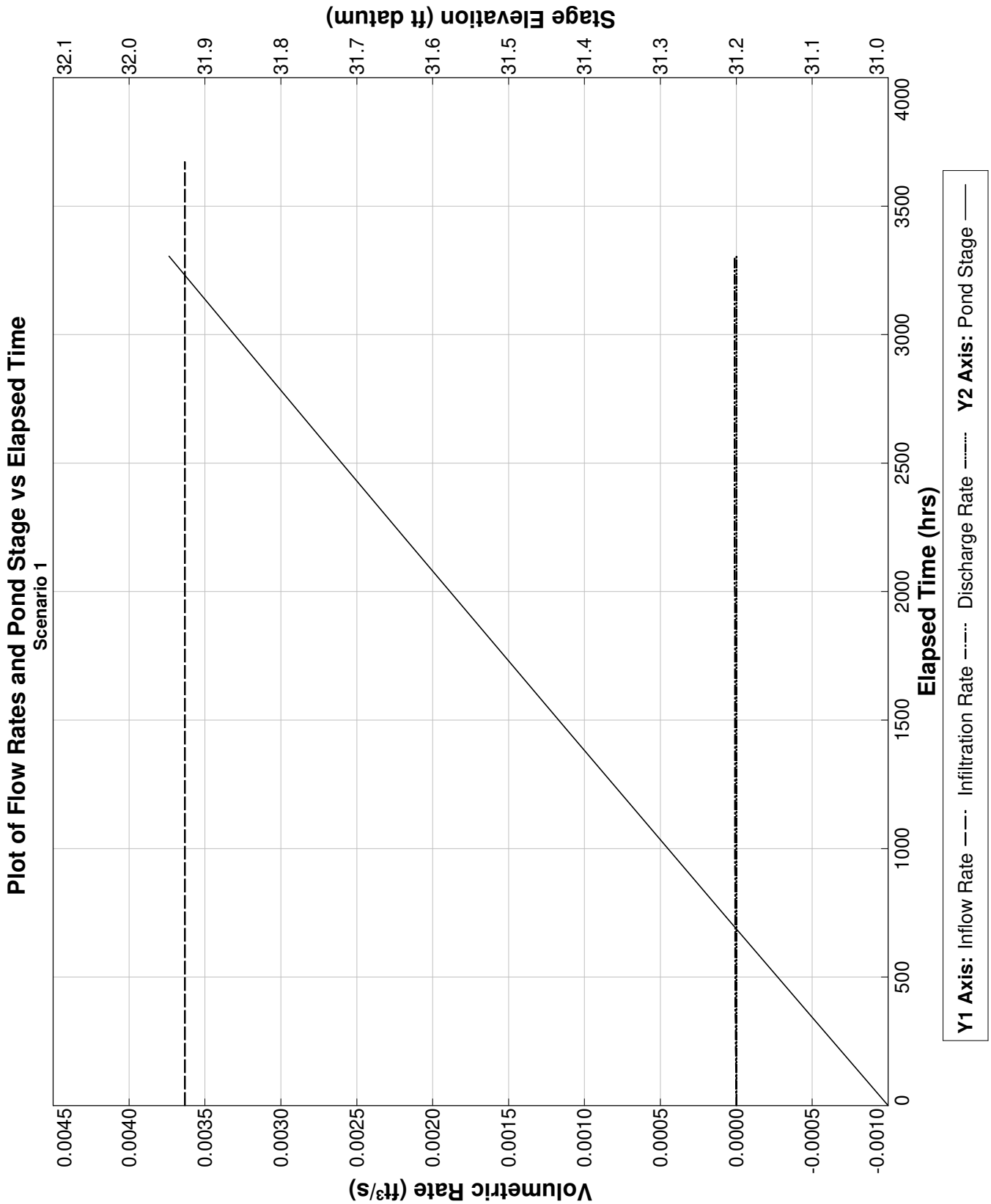
Detailed Results *:: Scenario 1 ::*

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0036	0.00163	31.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0036	0.00163	31.10695	0.00001	0	4800.800	5.7	0	S
734.400	0.0036	0.00163	31.21343	0.00001	0	9601.600	14.2	0	S
1101.600	0.0036	0.00163	31.31948	0.00001	0	14402.400	24.4	0	S
1468.800	0.0036	0.00163	31.42512	0.00001	0	19203.200	35.9	0	S
1836.000	0.0036	0.00163	31.53034	0.00001	0	24004.000	48.2	0	S
2203.200	0.0036	0.00163	31.63517	0.00001	0	28804.800	61.2	0	S
2570.400	0.0036	0.00163	31.73961	0.00001	0	33605.600	74.7	0	S
2937.600	0.0036	0.00163	31.84367	0.00001	0	38406.400	88.4	0	S
3304.800	0.0036	0.00163	31.94735	0.00001	0	43207.200	102.4	0	S
3672.000	0.0036	0.00163	32.05067	----	----	48008.000	116.4	0	N.A.

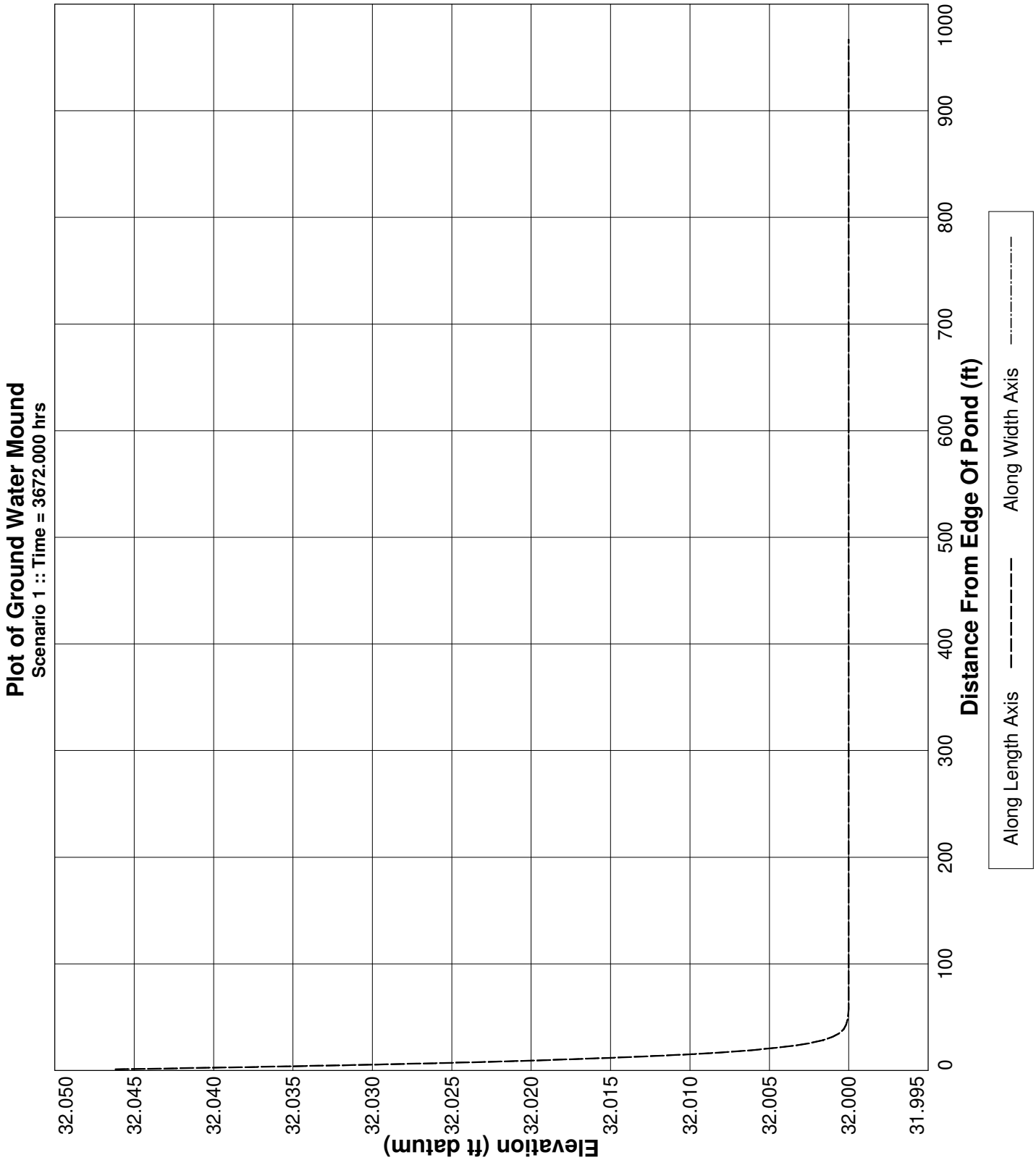
PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name: The Rookery Phase 1, Underdrain Baseflow, White Ibis Lane, 13+50 to 15+50

Simulation Description:
Project Number: 35:31217-E

Engineer : Nathan D. Hildreth, E.I.

Supervising Engineer: Chris M. Egan, P.E.

Date: 04-03-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum): 25.75

Water Table Elevation, [WT] (ft datum): 32.25

Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day): 15.90

Fillable Porosity, [n] (%): 25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft): 500.0

Equivalent Pond Width, [W] (ft): 2.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft²)
30.00	400.0
31.00	550.0
32.00	400.0

Discharge Structures

Discharge Structure #1 is active as orifice

Structure Parameters

Description:

Orifice elevation, (ft datum): 30.5
Orifice coefficient: 7.9
Orifice area, (ft²): 0.196
Orifice exponent: 0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.5
Initial (seasonal low) ground water level (ft datum)	30.75
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
  Perimeter boundary condition: constant head
  Maximum iterations of outer loop: 150
  Maximum iterations of inner loop: 60
  Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
  Instantanerous storage coefficient: Volumetric balance
  Default head closure tolerance: .01
  Default residual closure tolerance: .5
  Target water budget error: 1
  On failure to converge: Rerun limiting inner loop to one iteration
    > Maximum number of iterations of outer loop: 500
  Running Average Porosity is active
    > Starting on pass: 2
    > When outer iteration reaches: 50
    > Number of data points: 4
  Running Average Pond Stage (for discharge structures with tailwater) is active
    > Starting on pass: 2
    > When outer iteration reaches: 50
    > Number of data points: 4
  Grid size: 1000 ft (from pond centerline)
  Mound Output: none

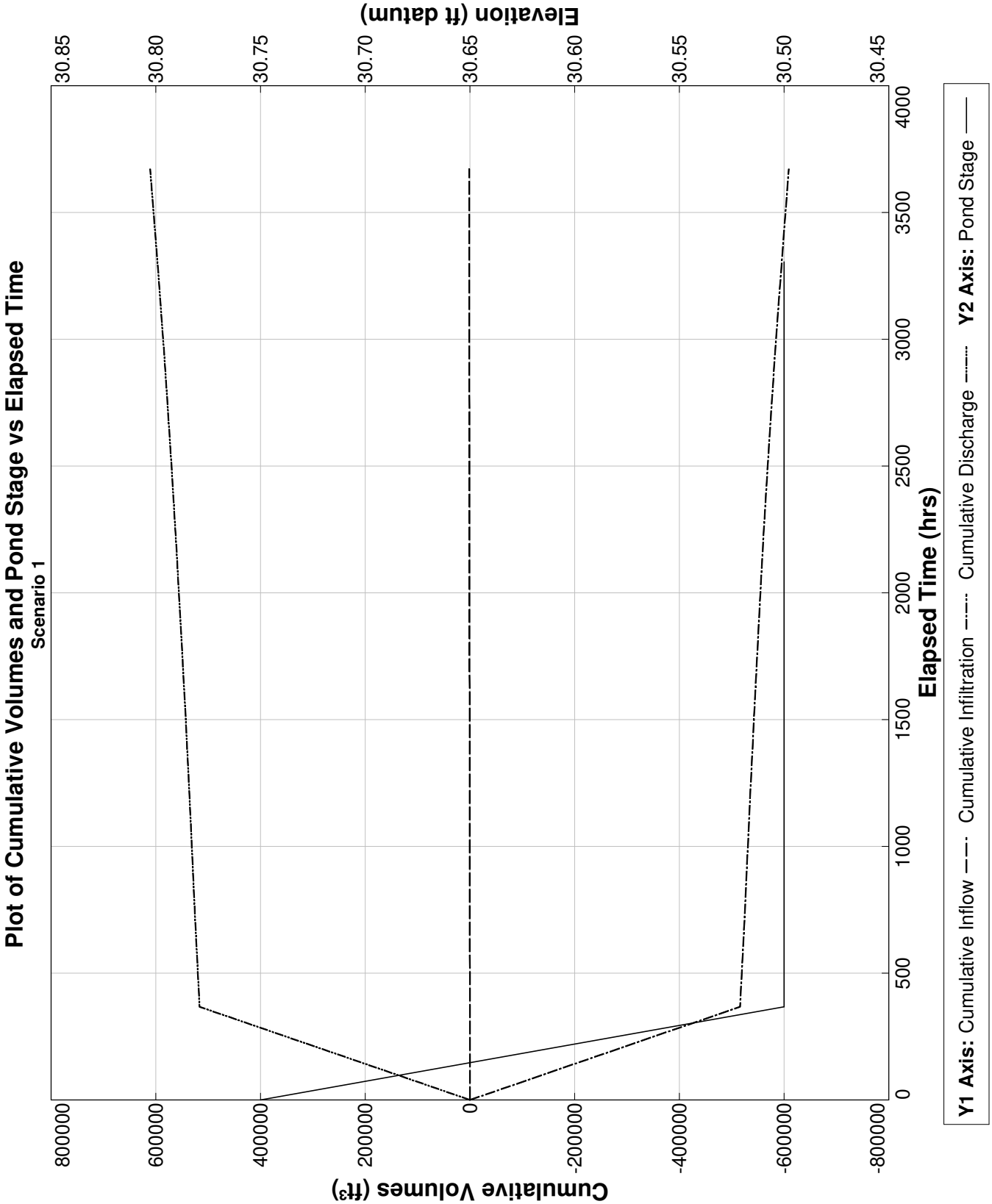
Begin Scenario 1 4/3/2023 9:12:35
  Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
  Baseflow hydrograph: Initial GWT (seasonal low) is 30.75 ft.
End Scenario 1 4/3/2023 9:12:35

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

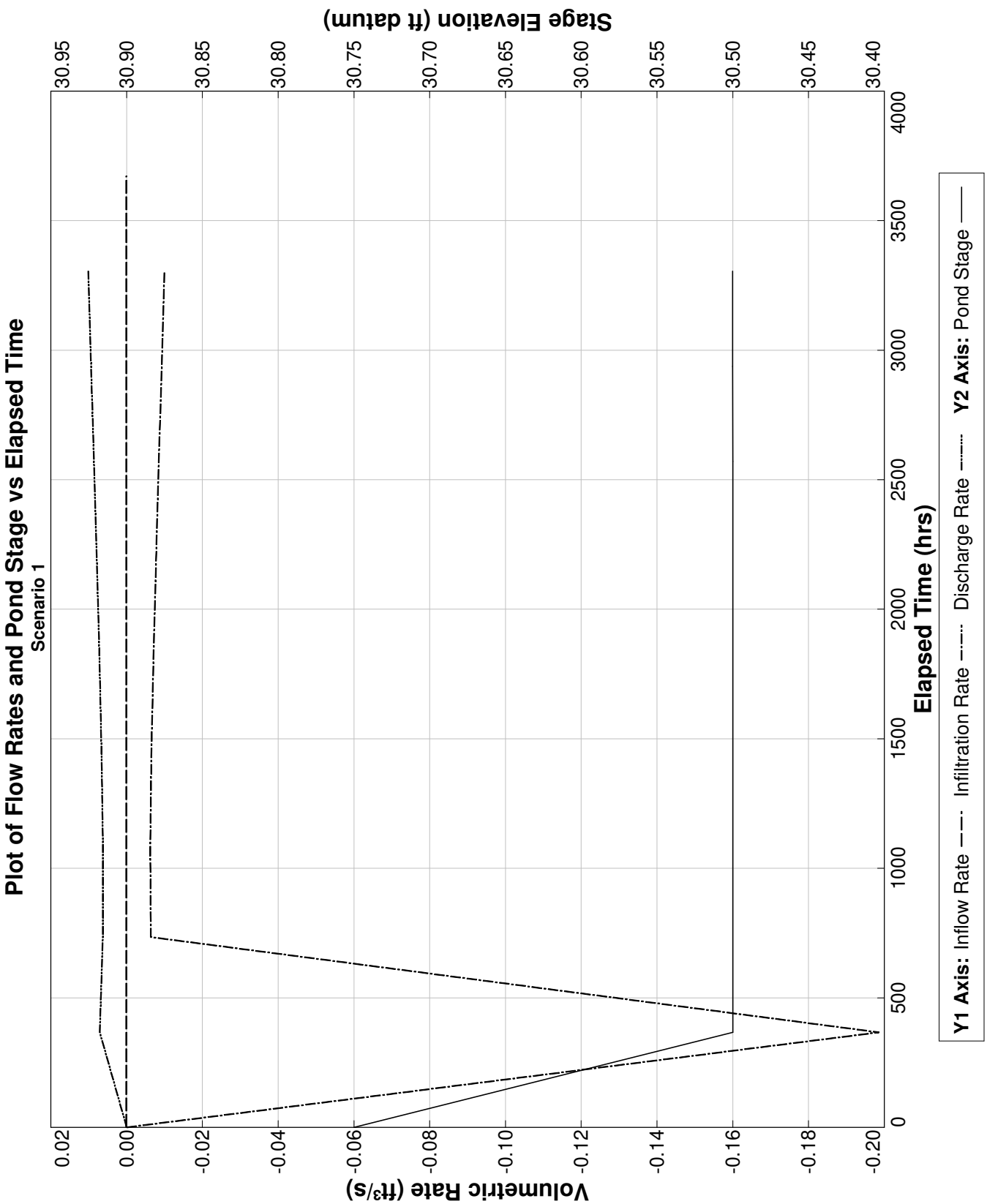
Detailed Results *:: Scenario 1 ::*

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0001	0.00245	30.75000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0001	0.00245	30.50002	-0.19850	7.076213E-03	150.000	-516118.9	516392.3	S
734.400	0.0001	0.00245	30.50002	-0.00637	6.284151E-03	300.000	-524799.6	525223	S
1101.600	0.0001	0.00245	30.50002	-0.00626	6.281816E-03	450.000	-532955.2	533528.6	S
1468.800	0.0001	0.00245	30.50002	-0.00659	6.651563E-03	600.000	-541353.6	542077.1	S
1836.000	0.0001	0.00245	30.50002	-0.00712	7.211088E-03	750.000	-550366.3	551239.7	S
2203.200	0.0001	0.00245	30.50003	-0.00778	7.860122E-03	900.000	-560177.8	561201.2	S
2570.400	0.0001	0.00245	30.50003	-0.00851	8.635697E-03	1050.000	-570930.8	572104.3	S
2937.600	0.0001	0.00245	30.50004	-0.00926	9.380862E-03	1200.000	-582689.1	584012.4	S
3304.800	0.0001	0.00245	30.50005	-0.00998	1.011396E-02	1350.000	-595424.4	596897.8	S
3672.000	0.0001	0.00245	30.50005	----	----	1500.000	-609083.4	610706.8	N.A.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name: The Rookery Phase 1, Underdrain Baseflow, White Ibis Lane, 17+50 to 20+00

Simulation Description:
Project Number: 35:31217-E

Engineer : Nathan D. Hildreth, E.I.

Supervising Engineer: Chris M. Egan, P.E.

Date: 04-03-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	25.75
Water Table Elevation, [WT] (ft datum):	32.25
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	8.40
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	500.0
Equivalent Pond Width, [W] (ft):	2.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft²)
30.00	400.0
31.00	550.0
32.00	400.0

Discharge Structures

Discharge Structure #1 is active as orifice

Structure Parameters

Description:

Orifice elevation, (ft datum):	30.5
Orifice coefficient:	7.9
Orifice area, (ft²):	0.196
Orifice exponent:	0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.5
Initial (seasonal low) ground water level (ft datum)	30.75
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: none

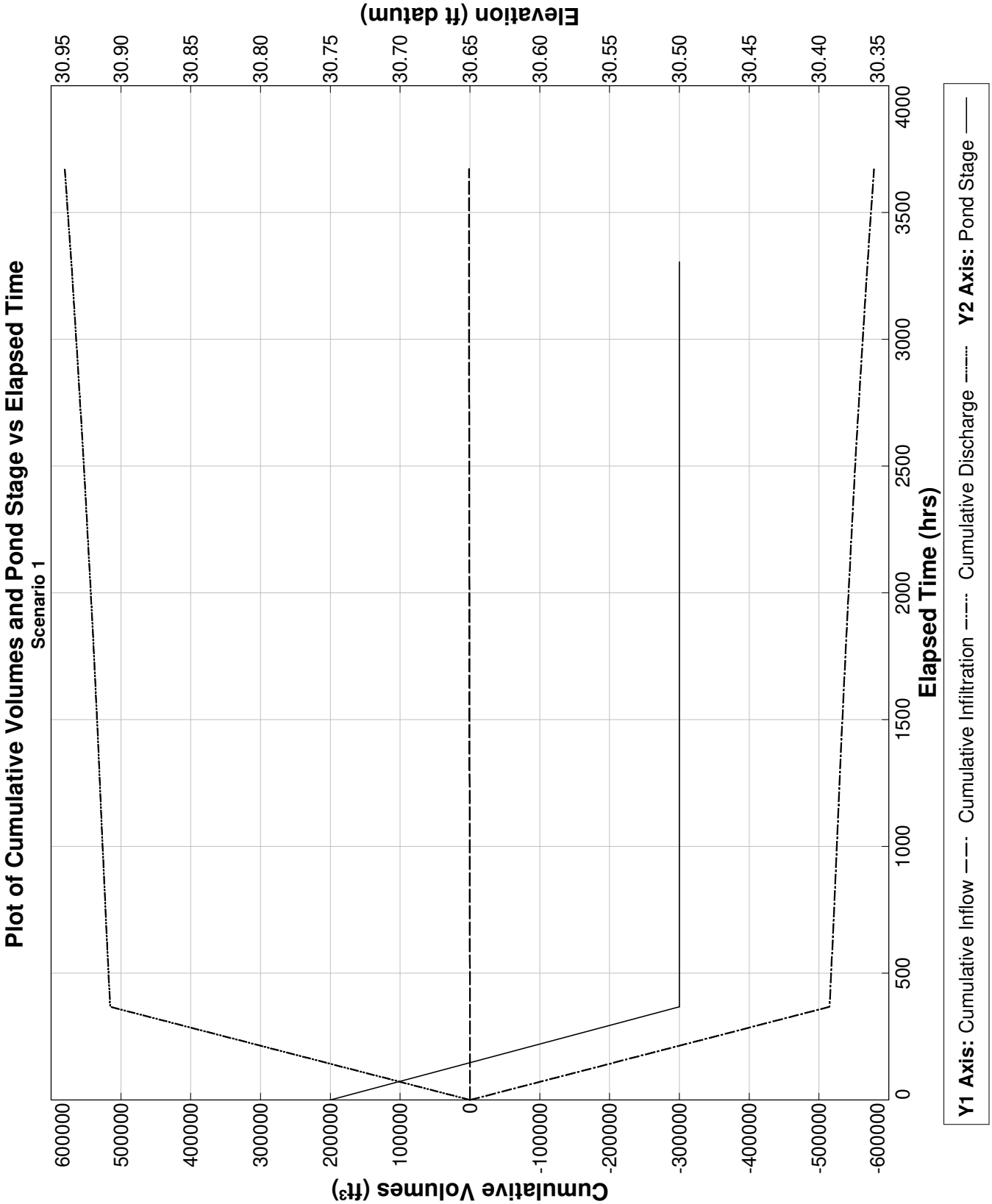
Begin Scenario 1 4/3/2023 9:14:17
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 30.75 ft.
End Scenario 1 4/3/2023 9:14:17

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

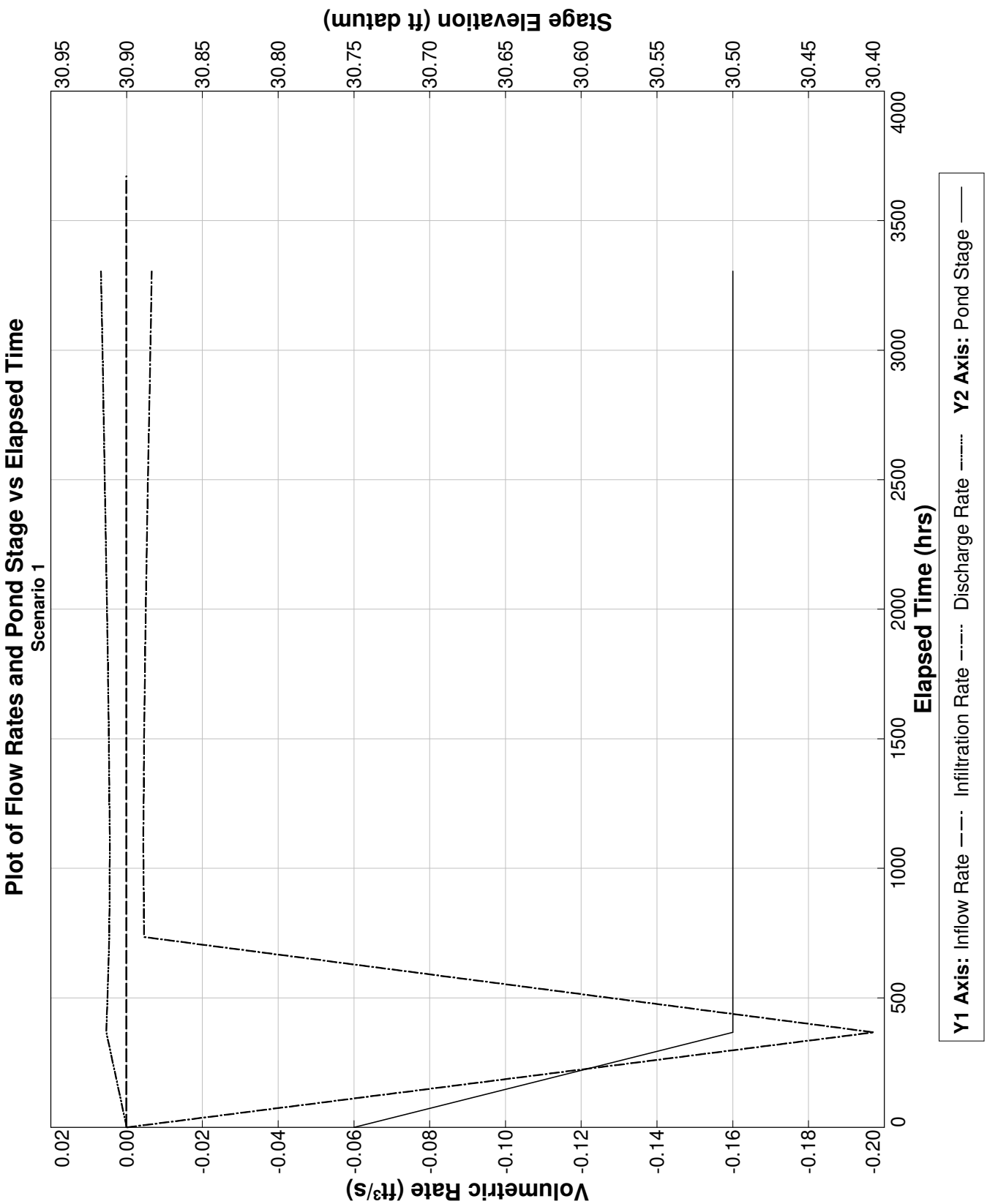
Detailed Results *:: Scenario 1 ::*

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0001	0.00245	30.75000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0001	0.00245	30.50001	-0.19720	5.338122E-03	150.000	-514970.1	515243.5	S
734.400	0.0001	0.00245	30.50001	-0.00461	4.550872E-03	300.000	-521356.3	521779.8	S
1101.600	0.0001	0.00245	30.50001	-0.00441	4.442844E-03	450.000	-527150.8	527724.3	S
1468.800	0.0001	0.00245	30.50001	-0.00457	4.643731E-03	600.000	-533006.7	533730.1	S
1836.000	0.0001	0.00245	30.50001	-0.00489	4.989509E-03	750.000	-539223.9	540097.3	S
2203.200	0.0001	0.00245	30.50001	-0.00530	5.402388E-03	900.000	-545942.5	546965.9	S
2570.400	0.0001	0.00245	30.50002	-0.00574	5.846986E-03	1050.000	-553227.9	554401.3	S
2937.600	0.0001	0.00245	30.50002	-0.00619	6.303002E-03	1200.000	-561108.5	562431.9	S
3304.800	0.0001	0.00245	30.50002	-0.00665	6.763057E-03	1350.000	-569594.7	571068.1	S
3672.000	0.0001	0.00245	30.50002	----	----	1500.000	-578688.3	580311.8	N.A.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name: The Rookery Phase 1, Underdrain Baseflow, Lark Sparrow Street, 3+00 to 6+25

Simulation Description:
Project Number: 35:31217-E

Engineer : Nathan D. Hildreth, E.I.

Supervising Engineer: Chris M. Egan, P.E.

Date: 04-03-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum): 30.95

Water Table Elevation, [WT] (ft datum): 35.95

Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day): 23.40

Fillable Porosity, [n] (%): 25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft): 500.0

Equivalent Pond Width, [W] (ft): 2.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft²)
31.75	400.0
32.75	550.0
33.75	400.0

Discharge Structures

Discharge Structure #1 is active as orifice

Structure Parameters

Description:

Orifice elevation, (ft datum): 32.25
Orifice coefficient: 7.9
Orifice area, (ft²): 0.196
Orifice exponent: 0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.5
Initial (seasonal low) ground water level (ft datum)	34.45
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: none

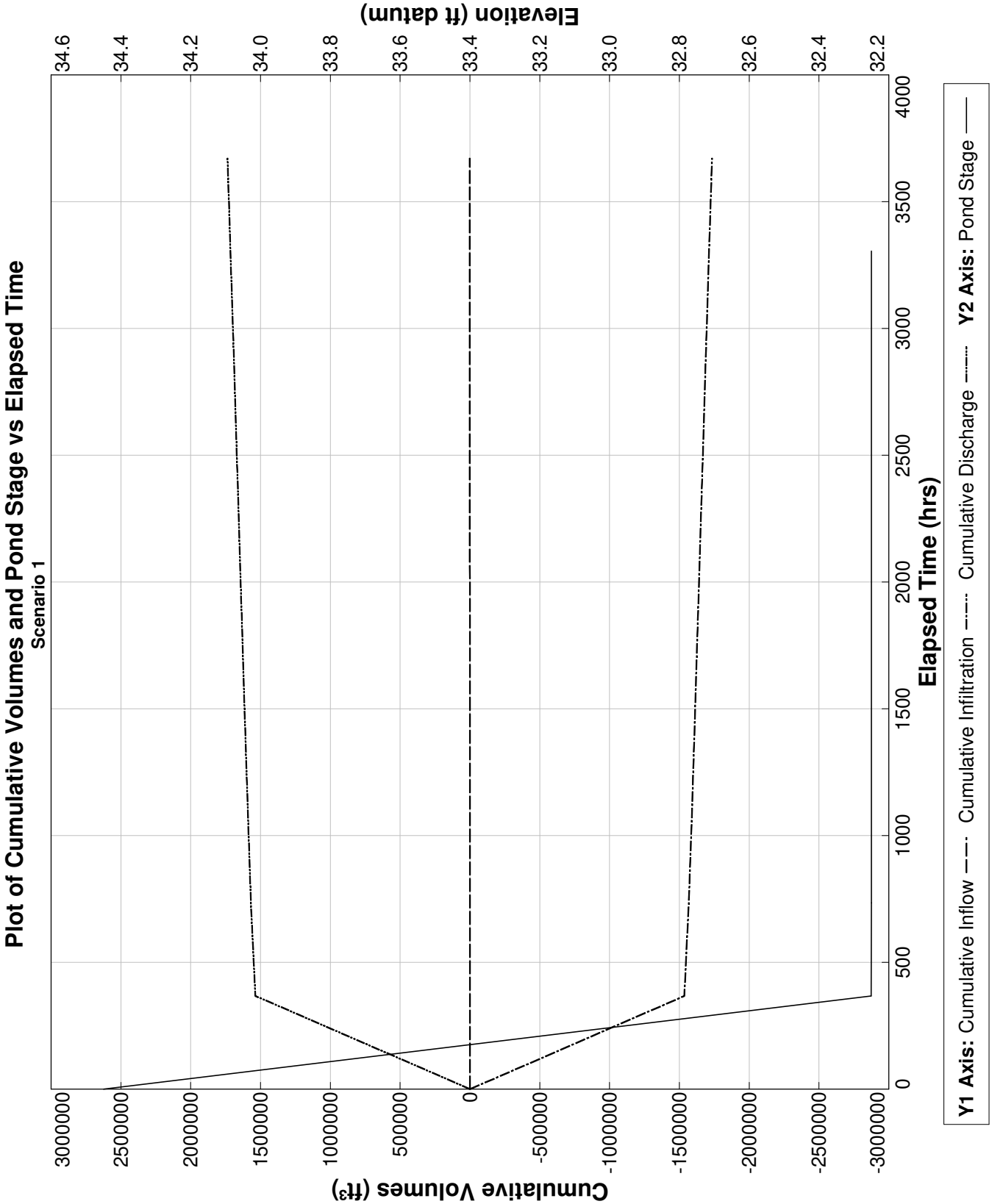
Begin Scenario 1 4/3/2023 9:20:49
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 34.45 ft.
End Scenario 1 4/3/2023 9:20:49

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

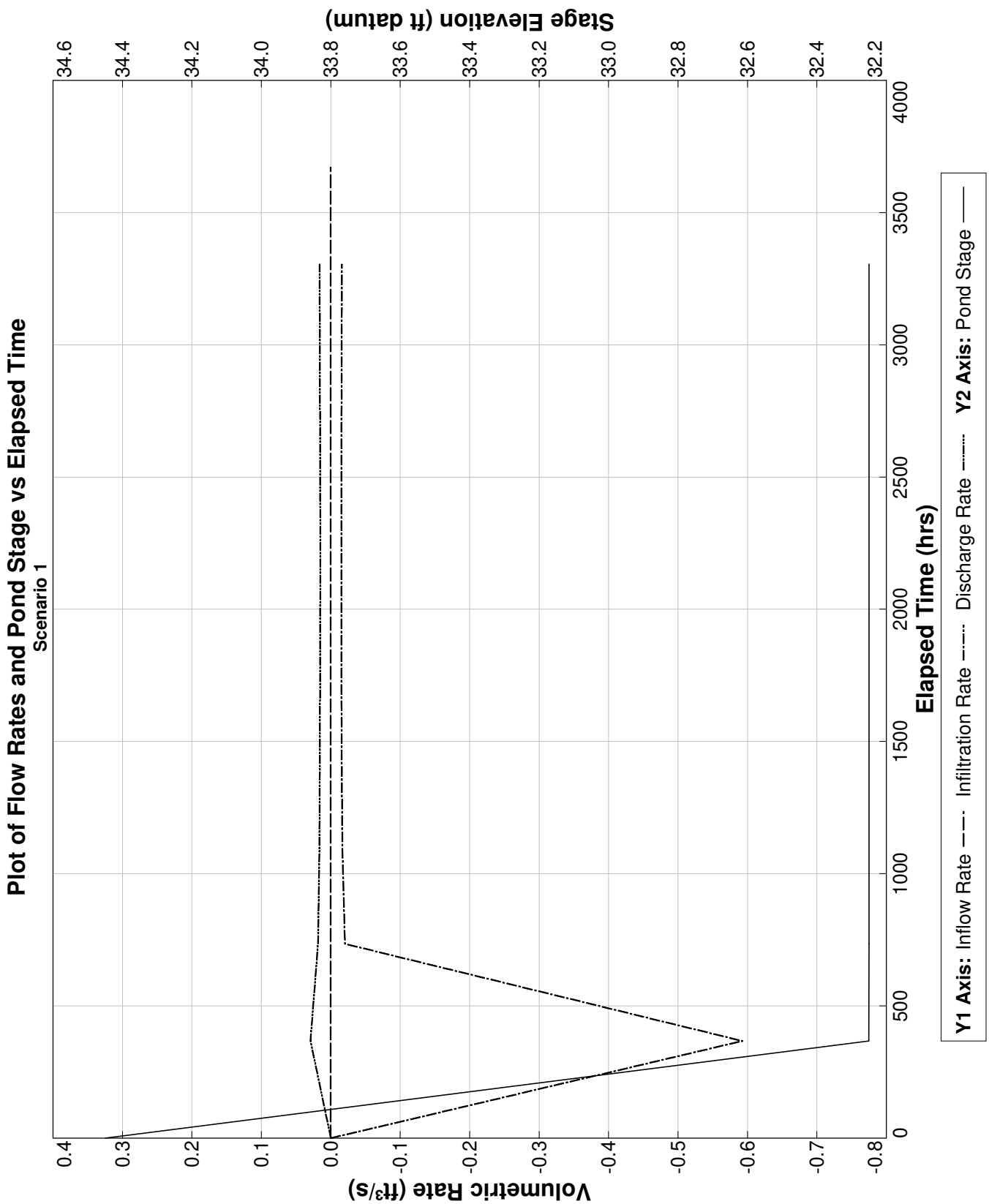
Detailed Results *:: Scenario 1 ::*

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0001	0.00245	34.45000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0001	0.00245	32.25039	-0.59282	2.909864E-02	150.000	-1536065.0	1537226	S
734.400	0.0001	0.00245	32.25015	-0.02048	1.841487E-02	300.000	-1567319.0	1568630	S
1101.600	0.0001	0.00245	32.25012	-0.01664	1.643117E-02	450.000	-1590201.0	1591662	S
1468.800	0.0001	0.00245	32.25011	-0.01568	1.571849E-02	600.000	-1611301.0	1612912	S
1836.000	0.0001	0.00245	32.25011	-0.01528	1.531819E-02	750.000	-1631665.0	1633426	S
2203.200	0.0001	0.00245	32.25010	-0.01515	1.520409E-02	900.000	-1651689.0	1653600	S
2570.400	0.0001	0.00245	32.25011	-0.01524	1.530951E-02	1050.000	-1671707.0	1673768	S
2937.600	0.0001	0.00245	32.25011	-0.01549	1.557228E-02	1200.000	-1691968.0	1694180	S
3304.800	0.0001	0.00245	32.25011	-0.01586	1.594811E-02	1350.000	-1712652.0	1715013	S
3672.000	0.0001	0.00245	32.25012	----	----	1500.000	-1733892.0	1736403	N.A.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name: The Rookery Phase 1, Underdrain Baseflow, Lark Sparrow Street, 9+00 to 9+75

Simulation Description:
Project Number: 35:31217-E

Engineer : Nathan D. Hildreth, E.I.

Supervising Engineer: Chris M. Egan, P.E.

Date: 04-03-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum): 27.50

Water Table Elevation, [WT] (ft datum): 32.50

Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day): 23.40

Fillable Porosity, [n] (%): 25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft): 500.0

Equivalent Pond Width, [W] (ft): 2.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft²)
30.30	400.0
31.30	550.0
32.30	400.0

Discharge Structures

Discharge Structure #1 is active as orifice

Structure Parameters

Description:

Orifice elevation, (ft datum): 30.8
Orifice coefficient: 7.9
Orifice area, (ft²): 0.196
Orifice exponent: 0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.5
Initial (seasonal low) ground water level (ft datum)	31.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: none

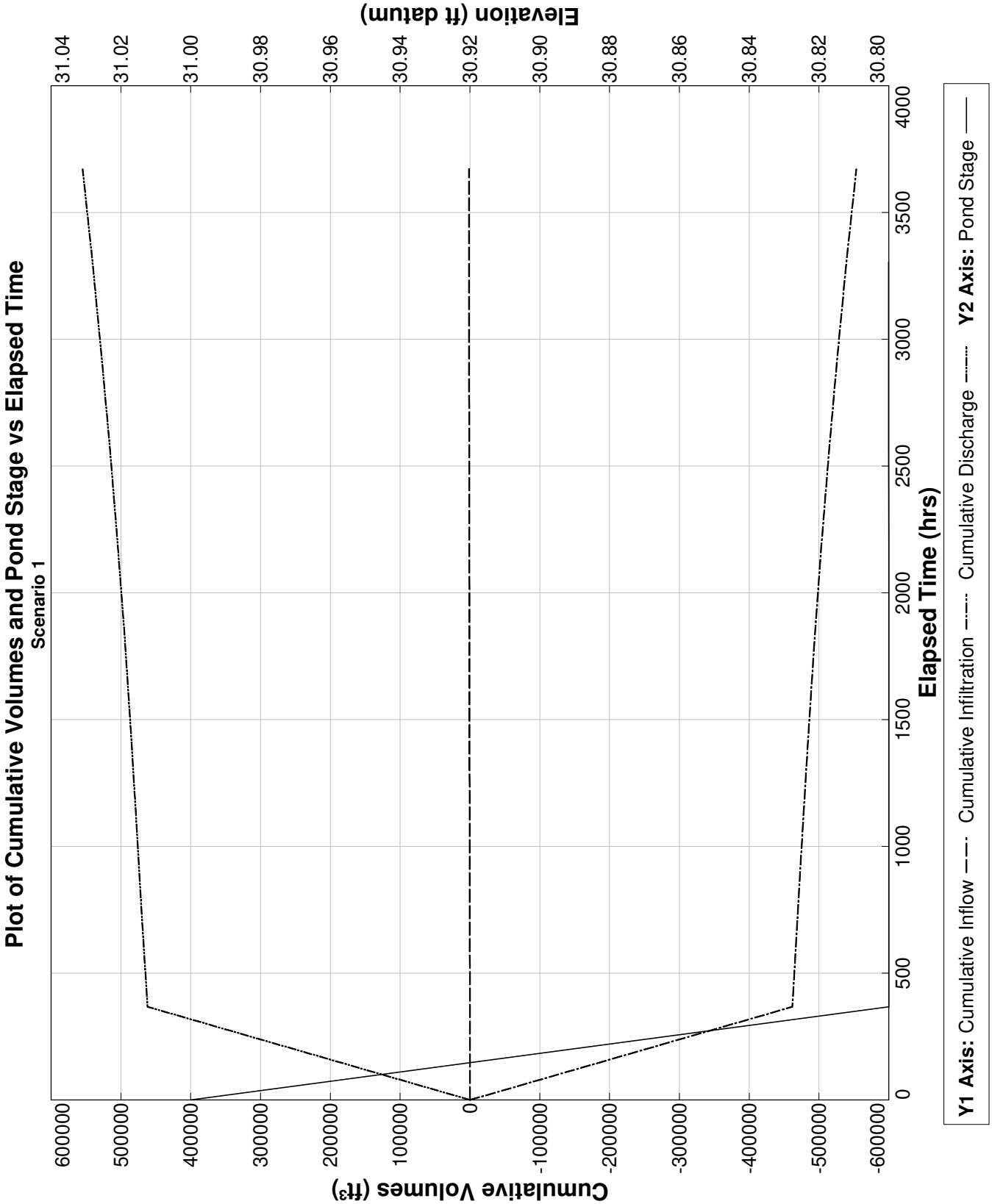
Begin Scenario 1 4/3/2023 9:23:26
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 31.0 ft.
End Scenario 1 4/3/2023 9:23:26

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

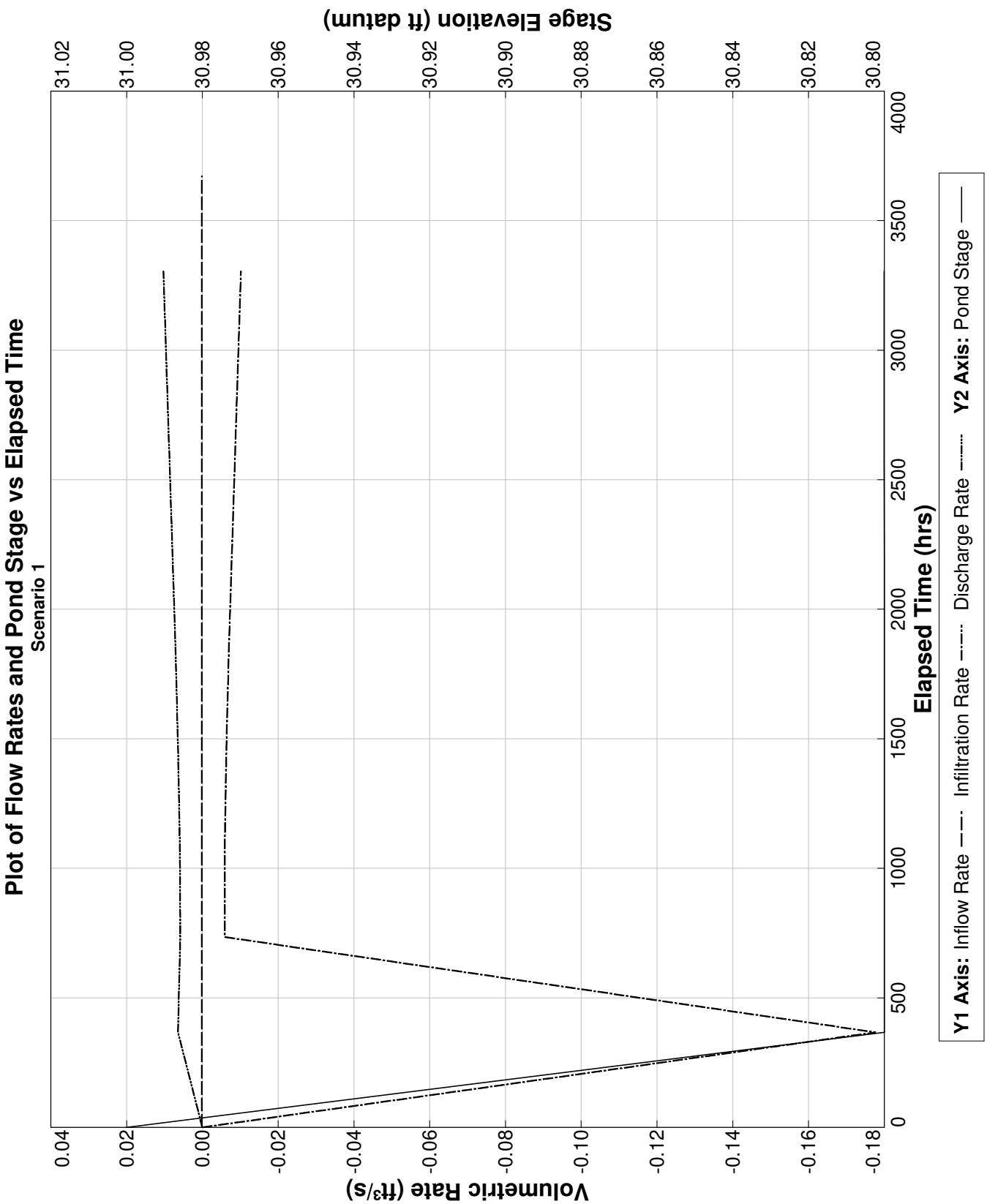
Detailed Results :: *Scenario 1* ::

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0001	0.00245	31.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0001	0.00245	30.80002	-0.17765	6.458915E-03	150.000	-461713.1	461961.1	S
734.400	0.0001	0.00245	30.80002	-0.00591	5.835381E-03	300.000	-469689.2	470087.1	S
1101.600	0.0001	0.00245	30.80002	-0.00593	5.953063E-03	450.000	-477330.8	477878.8	S
1468.800	0.0001	0.00245	30.80002	-0.00635	6.420363E-03	600.000	-485359.2	486057.2	S
1836.000	0.0001	0.00245	30.80002	-0.00699	7.062843E-03	750.000	-494121.0	494969	S
2203.200	0.0001	0.00245	30.80003	-0.00775	7.868098E-03	900.000	-503839.8	504837.8	S
2570.400	0.0001	0.00245	30.80003	-0.00856	8.674745E-03	1050.000	-514624.0	515771.9	S
2937.600	0.0001	0.00245	30.80004	-0.00936	9.471245E-03	1200.000	-526467.8	527765.7	S
3304.800	0.0001	0.00245	30.80005	-0.01016	1.027533E-02	1350.000	-539369.4	540817.4	S
3672.000	0.0001	0.00245	30.80005	----	----	1500.000	-553330.9	554928.8	N.A.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name: The Rookery Phase 1, Underdrain Baseflow, Audubon Avenue, 15+50 to 16+50

Simulation Description:
Project Number: 35:31217-E

Engineer : Nathan D. Hildreth, E.I.

Supervising Engineer: Chris M. Egan, P.E.

Date: 04-03-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum): 27.50

Water Table Elevation, [WT] (ft datum): 32.50

Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day): 23.40

Fillable Porosity, [n] (%): 25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft): 500.0

Equivalent Pond Width, [W] (ft): 2.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft²)
30.30	400.0
31.30	550.0
32.30	400.0

Discharge Structures

Discharge Structure #1 is active as orifice

Structure Parameters

Description:

Orifice elevation, (ft datum): 30.8
Orifice coefficient: 7.9
Orifice area, (ft²): 0.196
Orifice exponent: 0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.5
Initial (seasonal low) ground water level (ft datum)	31.0
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: none

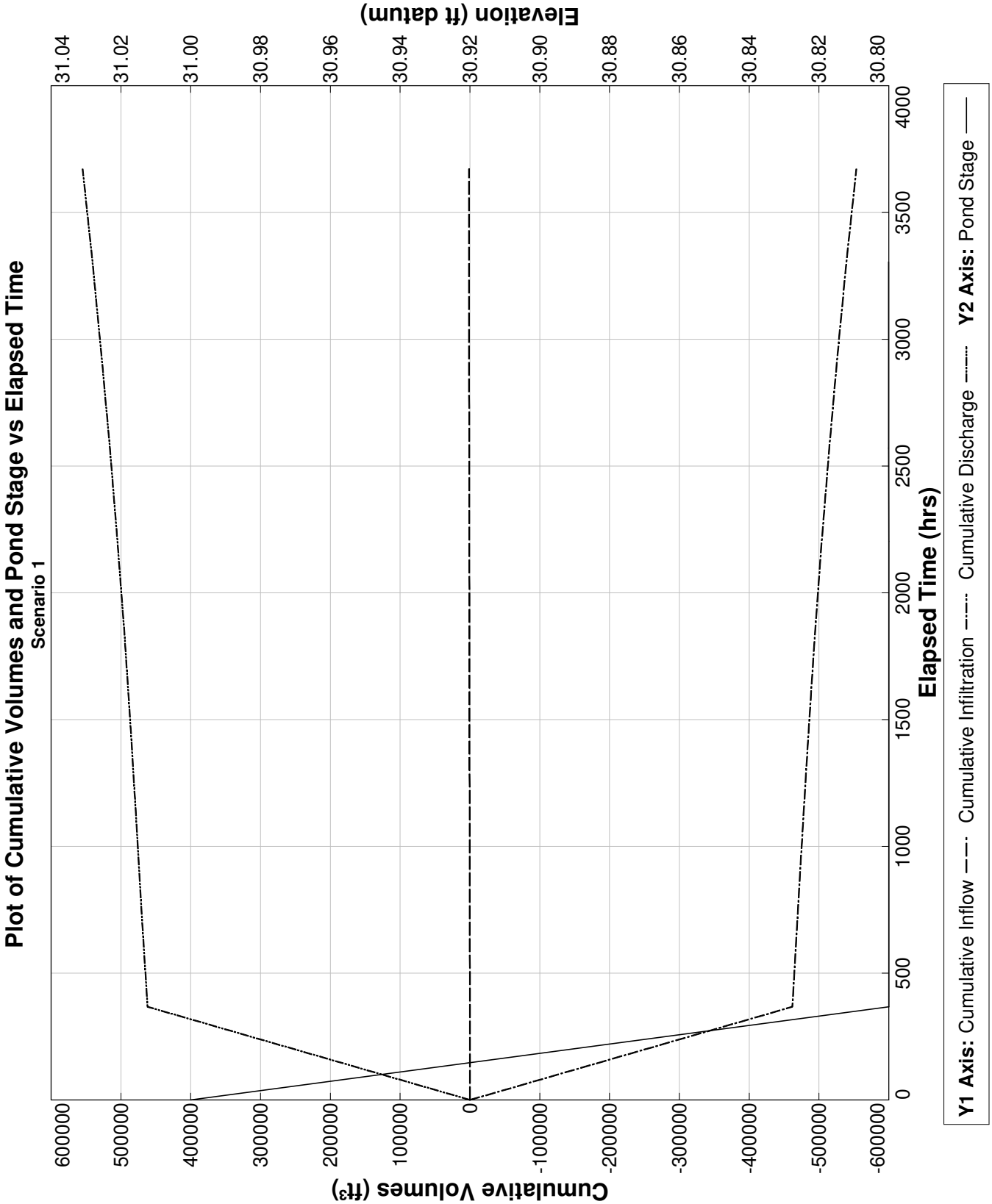
Begin Scenario 1 4/3/2023 9:25:25
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 31.0 ft.
End Scenario 1 4/3/2023 9:25:25

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

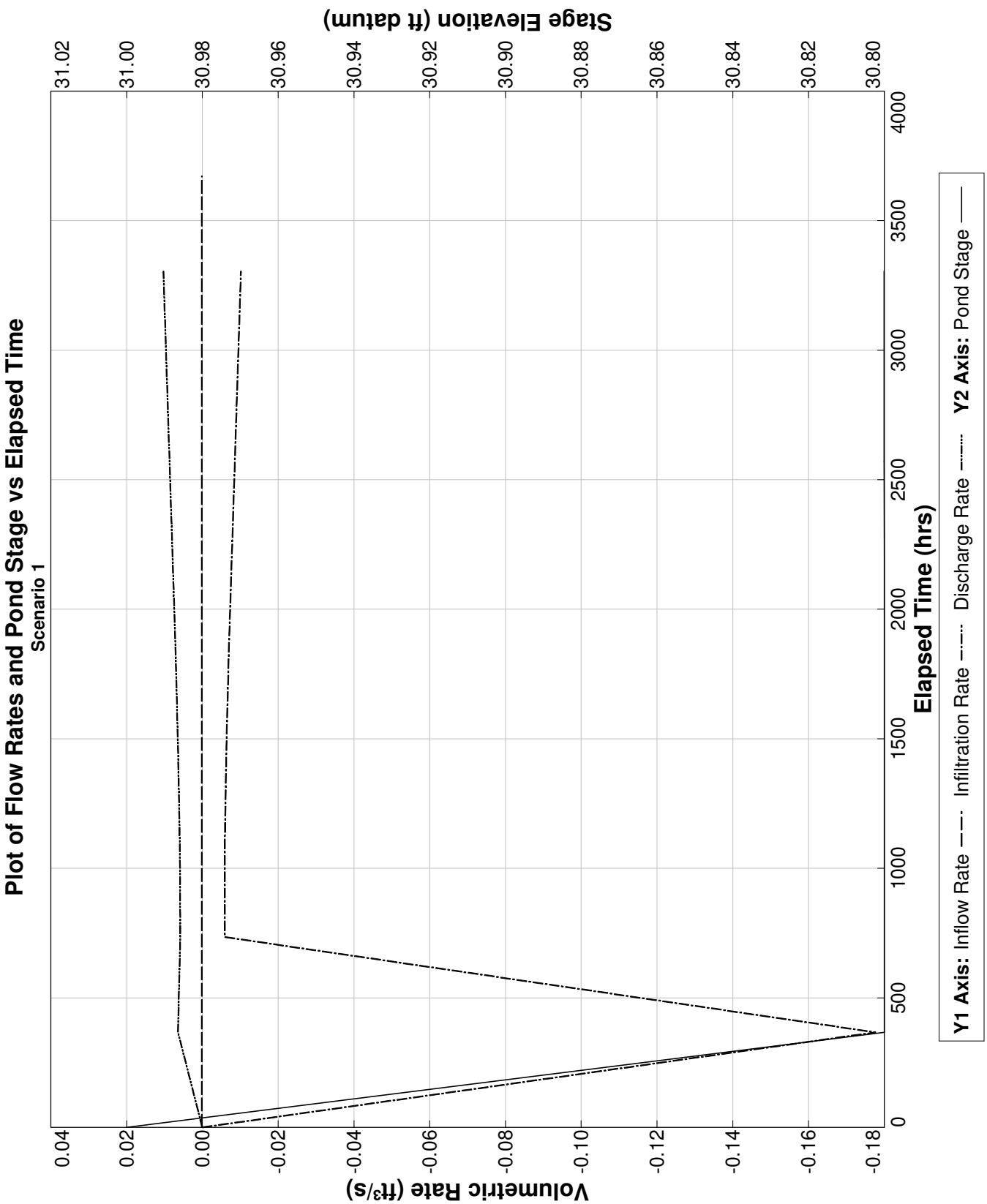
Detailed Results *:: Scenario 1 ::*

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0001	0.00245	31.00000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0001	0.00245	30.80002	-0.17765	6.458915E-03	150.000	-461713.1	461961.1	S
734.400	0.0001	0.00245	30.80002	-0.00591	5.835381E-03	300.000	-469689.2	470087.1	S
1101.600	0.0001	0.00245	30.80002	-0.00593	5.953063E-03	450.000	-477330.8	477878.8	S
1468.800	0.0001	0.00245	30.80002	-0.00635	6.420363E-03	600.000	-485359.2	486057.2	S
1836.000	0.0001	0.00245	30.80002	-0.00699	7.062843E-03	750.000	-494121.0	494969	S
2203.200	0.0001	0.00245	30.80003	-0.00775	7.868098E-03	900.000	-503839.8	504837.8	S
2570.400	0.0001	0.00245	30.80003	-0.00856	8.674745E-03	1050.000	-514624.0	515771.9	S
2937.600	0.0001	0.00245	30.80004	-0.00936	9.471245E-03	1200.000	-526467.8	527765.7	S
3304.800	0.0001	0.00245	30.80005	-0.01016	1.027533E-02	1350.000	-539369.4	540817.4	S
3672.000	0.0001	0.00245	30.80005	----	----	1500.000	-553330.9	554928.8	N.A.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name: The Rookery Phase 1, Underdrain Baseflow, Little Heron Place, 3+00 to 9+75

Simulation Description:
Project Number: 35:31217-E

Engineer : Nathan D. Hildreth, E.I.

Supervising Engineer: Chris M. Egan, P.E.

Date: 04-03-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum): 30.75

Water Table Elevation, [WT] (ft datum): 35.75

Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day): 23.40

Fillable Porosity, [n] (%): 25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft): 500.0

Equivalent Pond Width, [W] (ft): 2.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft²)
31.40	400.0
32.40	550.0
33.40	400.0

Discharge Structures

Discharge Structure #1 is active as orifice

Structure Parameters

Description:

Orifice elevation, (ft datum): 31.9
Orifice coefficient: 7.9
Orifice area, (ft²): 0.196
Orifice exponent: 0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.5
Initial (seasonal low) ground water level (ft datum)	34.25
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: none

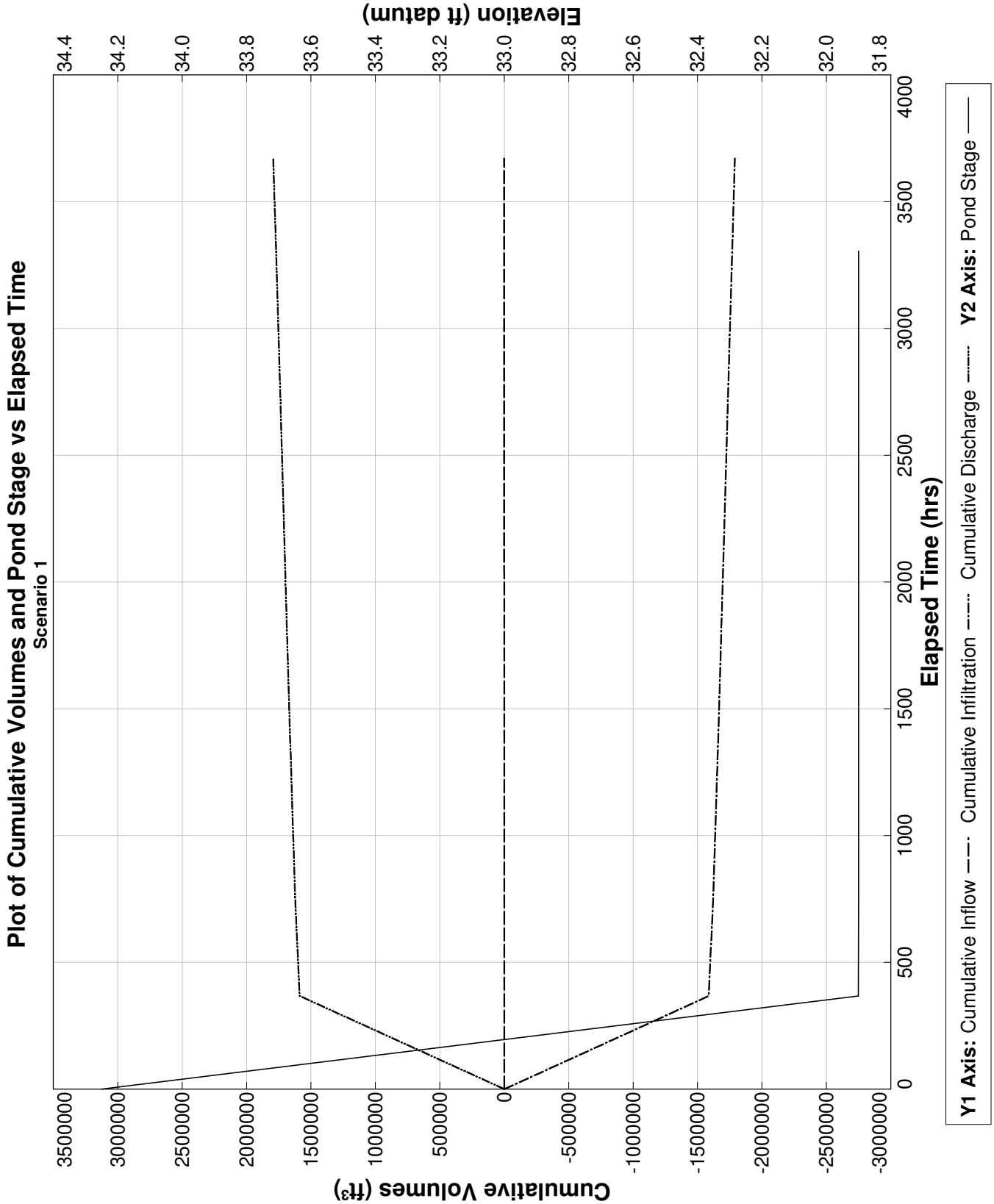
Begin Scenario 1 4/3/2023 9:8:18
Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
Baseflow hydrograph: Initial GWT (seasonal low) is 34.25 ft.
End Scenario 1 4/3/2023 9:8:18

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

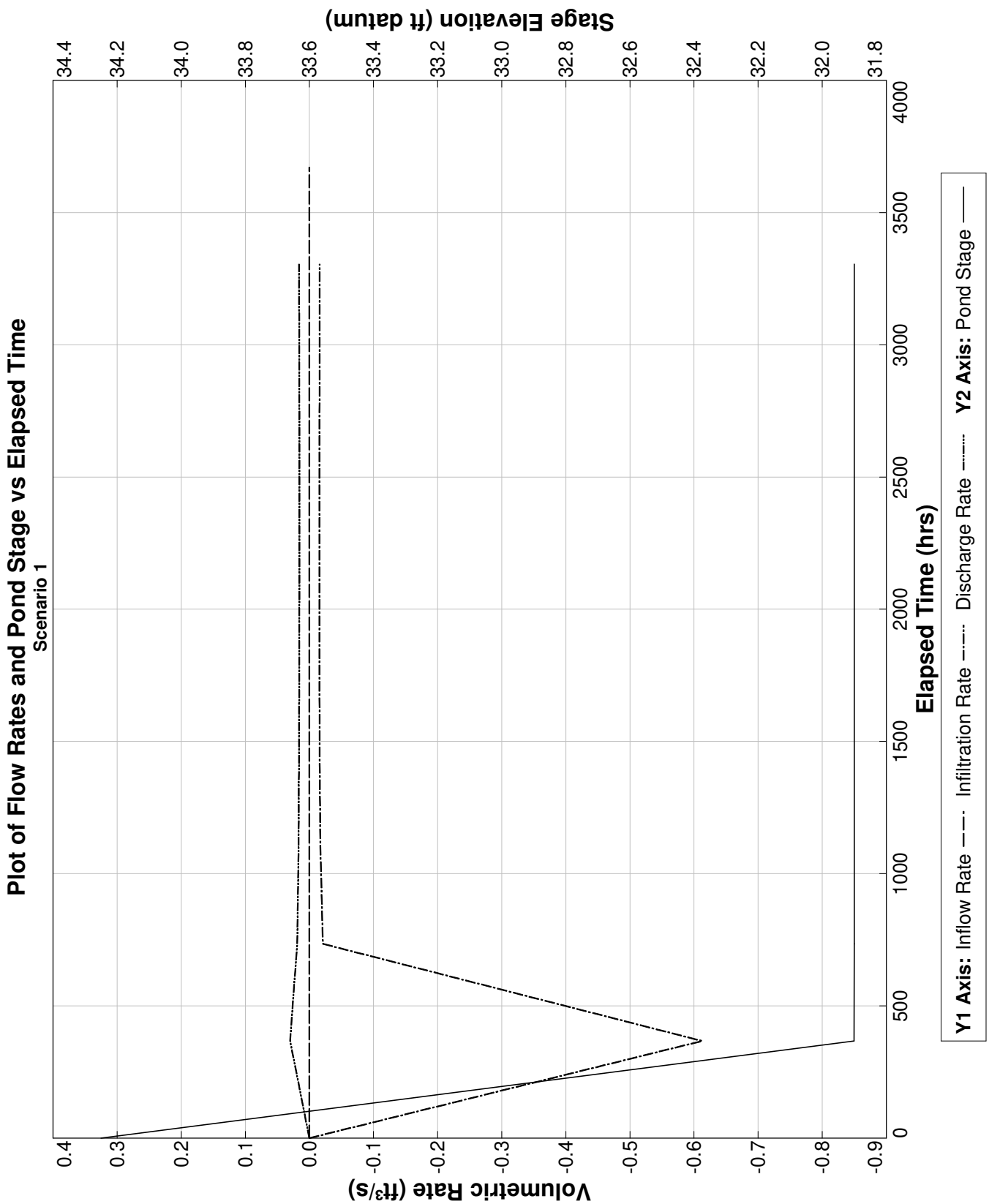
Detailed Results *:: Scenario 1 ::*

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0001	0.00245	34.25000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0001	0.00245	31.90042	-0.61276	3.021623E-02	150.000	-1587640.0	1588861	S
734.400	0.0001	0.00245	31.90016	-0.02116	1.902423E-02	300.000	-1620036.0	1621407	S
1101.600	0.0001	0.00245	31.90013	-0.01709	1.684401E-02	450.000	-1643593.0	1645114	S
1468.800	0.0001	0.00245	31.90012	-0.01608	1.611945E-02	600.000	-1665231.0	1666902	S
1836.000	0.0001	0.00245	31.90011	-0.01563	1.567237E-02	750.000	-1686094.0	1687915	S
2203.200	0.0001	0.00245	31.90011	-0.01546	1.552075E-02	900.000	-1706561.0	1708532	S
2570.400	0.0001	0.00245	31.90011	-0.01552	1.559442E-02	1050.000	-1726977.0	1729098	S
2937.600	0.0001	0.00245	31.90011	-0.01575	1.583401E-02	1200.000	-1747600.0	1749871	S
3304.800	0.0001	0.00245	31.90012	-0.01609	.0161853	1350.000	-1768614.0	1771035	S
3672.000	0.0001	0.00245	31.90012	----	----	1500.000	-1790152.0	1792723	N.A.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name: The Rookery Phase 1, Underdrain Baseflow, Pearce Boulevard, 62+25 to 65+00

Simulation Description:
Project Number: 35:31217-E

Engineer : Nathan D. Hildreth, E.I.

Supervising Engineer: Chris M. Egan, P.E.

Date: 04-03-2023

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum): 28.00

Water Table Elevation, [WT] (ft datum): 33.00

Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day): 23.40

Fillable Porosity, [n] (%): 25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft): 500.0

Equivalent Pond Width, [W] (ft): 2.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft²)
29.40	400.0
30.40	550.0
31.40	400.0

Discharge Structures

Discharge Structure #1 is active as orifice

Structure Parameters

Description:

Orifice elevation, (ft datum): 29.9
Orifice coefficient: 7.9
Orifice area, (ft²): 0.196
Orifice exponent: 0.5

Tailwater - disabled, free discharge

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Discharge Structures (cont'd.)

Discharge Structure #2 is inactive

Discharge Structure #3 is inactive

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 ::

Hydrograph Type:	Baseflow
Modflow Routing:	Routed with infiltration

Analysis Type	Wet Season Water Table Rise
Duration of Wet Season Water Table Rise (days)	153.0
Total Number of Time Increments In Simulation	10
Seasonal Water Table Fluctuation (ft)	1.5
Initial (seasonal low) ground water level (ft datum)	31.5
Recharge is applied inside pond (in addition to outside pond)?	Yes

Note: when this option is selected, water will be added to the pond to synchronize the rise in the pond level with the rise in the groundwater. Otherwise, no water will be added directly to the pond, and the pond water level will rise as a result of infiltration only.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Modflow Log

MODFLOW CONTROL PARAMETERS
  Perimeter boundary condition: constant head
  Maximum iterations of outer loop: 150
  Maximum iterations of inner loop: 60
  Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
  Instantanerous storage coefficient: Volumetric balance
  Default head closure tolerance: .01
  Default residual closure tolerance: .5
  Target water budget error: 1
  On failure to converge: Rerun limiting inner loop to one iteration
    > Maximum number of iterations of outer loop: 500
  Running Average Porosity is active
    > Starting on pass: 2
    > When outer iteration reaches: 50
    > Number of data points: 4
  Running Average Pond Stage (for discharge structures with tailwater) is active
    > Starting on pass: 2
    > When outer iteration reaches: 50
    > Number of data points: 4
  Grid size: 1000 ft (from pond centerline)
  Mound Output: none

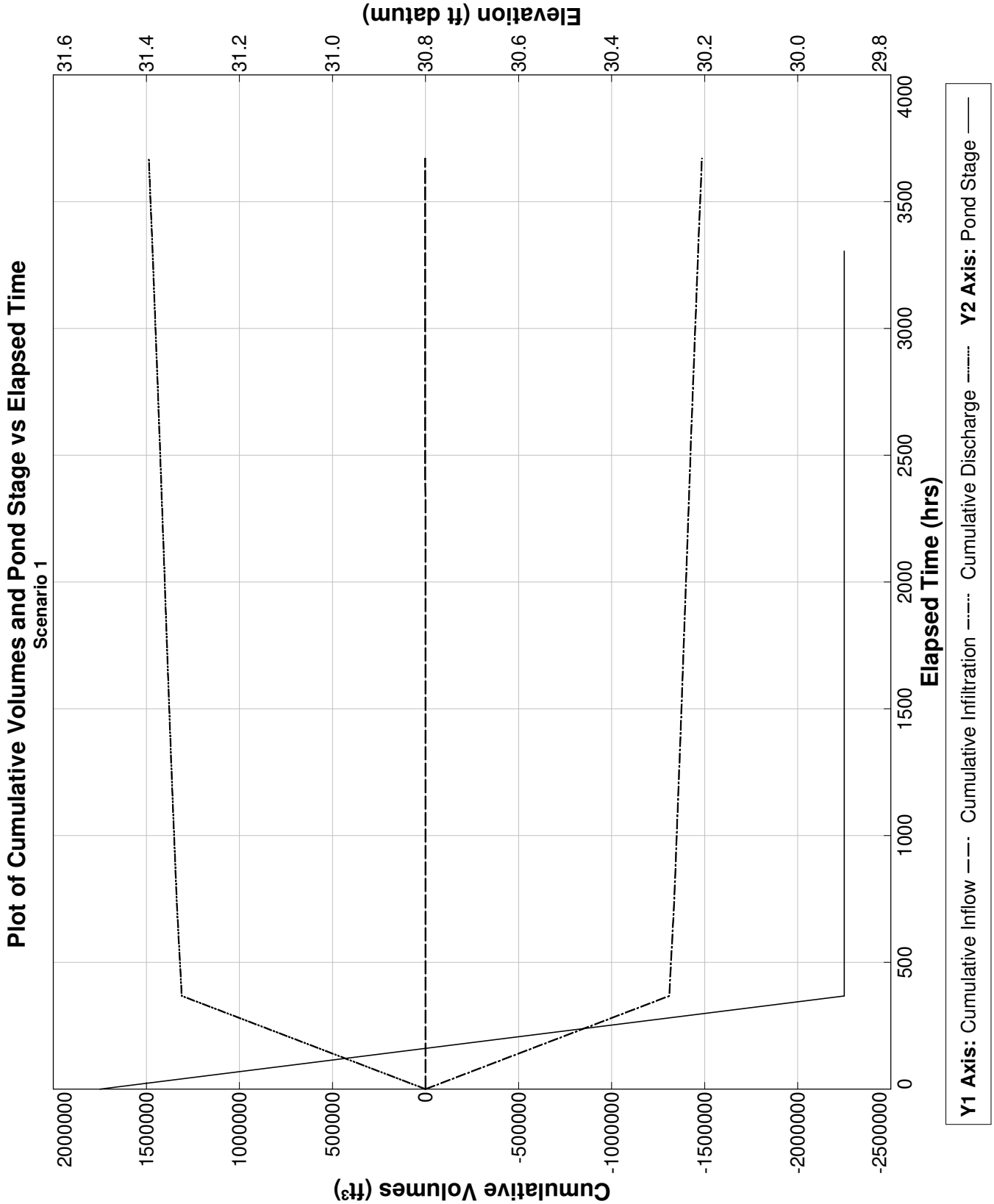
Begin Scenario 1 4/3/2023 9:32:54
  Baseflow hydrograph: Default perimeter boundary condition has been overridden. Using no-flow.
  Baseflow hydrograph: Initial GWT (seasonal low) is 31.5 ft.
End Scenario 1 4/3/2023 9:32:54

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

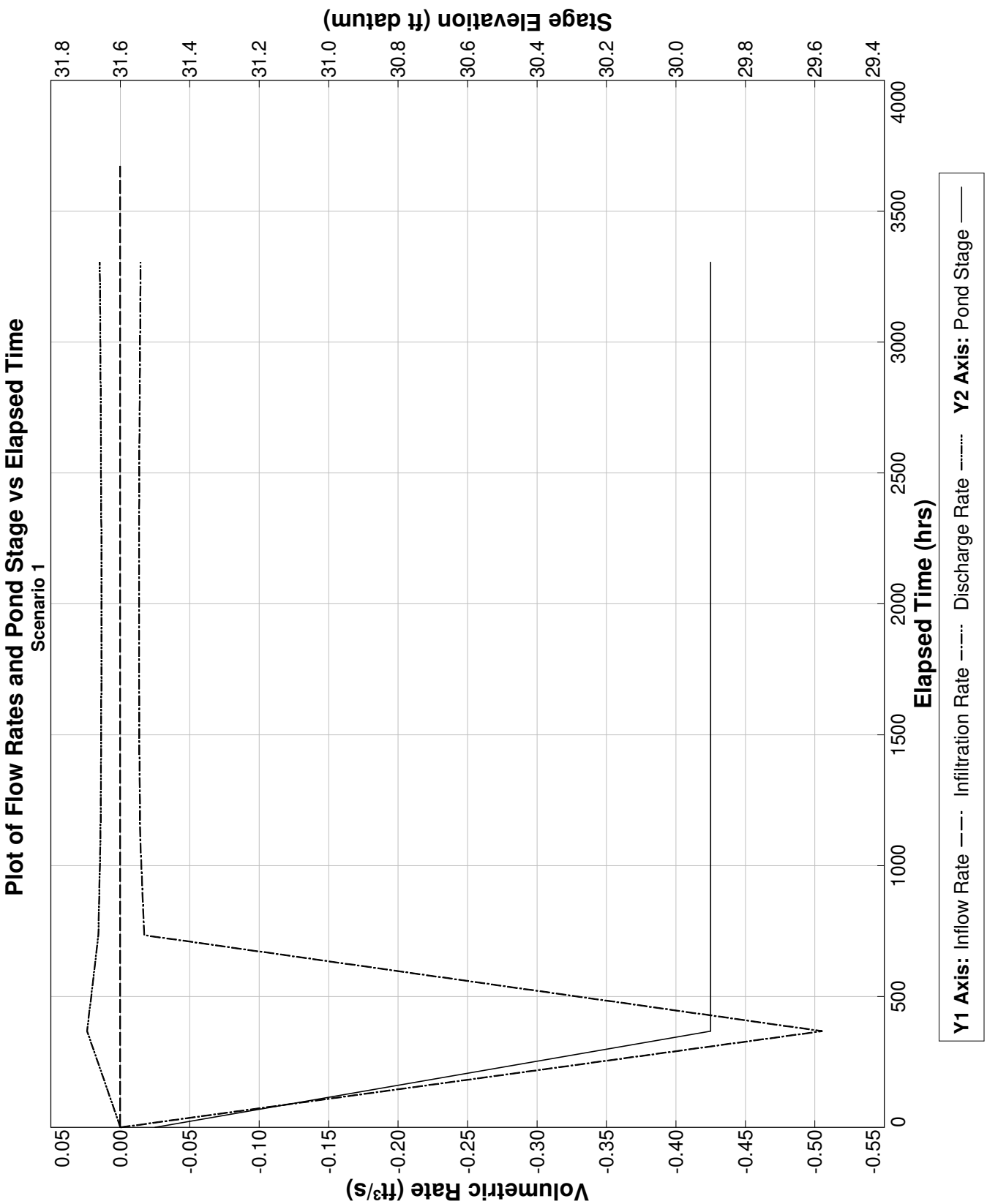
Detailed Results *:: Scenario 1 ::*

Elapsed Time (hours)	Instantaneous Inflow Rate (ft^3/s)	Outside Recharge (ft/day)	Stage Elevation (ft datum)	Infiltration Rate (ft^3/s)	Combined Instantaneous Discharge Rate (ft^3/s)	Cumulative Inflow Volume (ft^3)	Cumulative Infiltration Volume (ft^3)	Combined Cumulative Discharge (ft^3)	Flow Type
0.000	0.0001	0.00245	31.50000	0.00000	0	0.000	0.0	0	N.A.
367.200	0.0001	0.00245	29.90026	-0.50512	2.390026E-02	150.000	-1309425.0	1310346	S
734.400	0.0001	0.00245	29.90011	-0.01731	1.572921E-02	300.000	-1335468.0	1336539	S
1101.600	0.0001	0.00245	29.90009	-0.01444	1.435087E-02	450.000	-1355200.0	1356421	S
1468.800	0.0001	0.00245	29.90009	-0.01374	1.376296E-02	600.000	-1373632.0	1375003	S
1836.000	0.0001	0.00245	29.90008	-0.01350	1.354516E-02	750.000	-1391531.0	1393053	S
2203.200	0.0001	0.00245	29.90008	-0.01354	1.360271E-02	900.000	-1409325.0	1410996	S
2570.400	0.0001	0.00245	29.90009	-0.01378	1.385722E-02	1050.000	-1427325.0	1429146	S
2937.600	0.0001	0.00245	29.90009	-0.01415	1.424274E-02	1200.000	-1445748.0	1447719	S
3304.800	0.0001	0.00245	29.90010	-0.01462	1.471795E-02	1350.000	-1464740.0	1466861	S
3672.000	0.0001	0.00245	29.90010	----	----	1500.000	-1484398.0	1486669	N.A.

PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



PONDS Version 3.3.0278
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.



DECLARATION OF COVENANTS AND RESTRICTIONS

FOR

THE ROOKERY

DRAFT

THIS DOCUMENT PREPARED BY:
Mark C. Dearing, Esq.
4220 Race Track Road
St. Johns, FL 32259

ARTICLE II DEFINITIONS 1

SECTION 1. **ACT**. 1
SECTION 2. **ASSESSMENTS**. 1
SECTION 3. **ASSOCIATION**. 1
SECTION 4. **BOARD**. 1
SECTION 5. ***{CDD.*** 1
SECTION 6. **COMMON AREA**. 1
SECTION 7. **COMMUNITY SYSTEMS**. 2
SECTION 8. **CONSERVATION EASEMENT.** 2
SECTION 9. **COUNTY**. 2
SECTION 10. **DECLARATION**. 2
SECTION 11. **DECLARANT**. 2
SECTION 12. **FDEP**. 2
SECTION 13. **HOME**. 2
SECTION 14. **IMPROVEMENTS**. 2
SECTION 15. **INSTITUTIONAL MORTGAGE**. 2
SECTION 16. **INSTITUTIONAL MORTGAGEE OR INSTITUTIONAL LENDER**. 2
SECTION 17. **INTEREST.** 3
SECTION 18. **LEGAL FEES.** 3
SECTION 19. **LOT**. 3
SECTION 20. **LOT IMPROVEMENTS**. 3
SECTION 21. **MEMBER.** 3
SECTION 22. **OPERATING EXPENSES.** 3
SECTION 23. **INTENTIONALLY DELETED** 3
SECTION 24. **OWNER**. 3
SECTION 25. **PLAT**. 3
SECTION 26. **PROPERTY OR SUBDIVISION PARCEL**. 3
SECTION 27. **RULES AND REGULATIONS**. 3
SECTION 28. **SPECIAL ASSESSMENTS.** 3
SECTION 29. **SUBDIVISION**. 3
SECTION 30. **SUBDIVISION DOCUMENTS**. 3
SECTION 31. **SUPPLEMENTARY DECLARATION**. 3
SECTION 32. **SURFACE WATER OR STORMWATER MANAGEMENT SYSTEM.** 4
SECTION 33. **TENANT**. 4
SECTION 34. **TURNOVER DATE**. 4
SECTION 35. **ZONING CODE**. 4

ARTICLE III DESCRIPTION OF SUBDIVISION: 4

SECTION 1. **GENERAL PLAN OF DEVELOPMENT**. 4
SECTION 2. **COMMON AREA**. 5
SECTION 3. **COMMUNITY SYSTEMS**. 5

ARTICLE IV PROPERTY SUBJECT TO THIS DECLARATION: 5

SECTION 1. **NO IMPLIED EXTENSION OF COVENANTS**. 6
SECTION 2. **ADDITIONAL LANDS**. 6
SECTION 3. **WITHDRAWAL OF LANDS**. 6

ARTICLE V COMMON AREA RIGHTS; EASEMENTS 6

SECTION 1. **CONVEYANCE OF COMMON AREA**. 6
SECTION 2. **GRANT AND RESERVATION OF EASEMENTS**. 7
SECTION 3. **DELEGATION OF USE**. 11
SECTION 4. **RECOGNITION OF EASEMENTS**. 11
SECTION 5. **ASSIGNMENTS; ADDITIONAL EASEMENTS**. 11

ARTICLE VI MEMBERSHIP AND VOTING RIGHTS IN THE ASSOCIATION: BOARD; DURATION OF THE ASSOCIATION 11

DRAFT

SECTION 1. **MEMBERSHIP AND VOTING RIGHTS**. 12
SECTION 2. **BOARD**. 12
SECTION 3. **DURATION OF THE ASSOCIATION**. 12

ARTICLE VII COVENANT TO PAY ASSESSMENTS; ESTABLISHMENT OF LIENS; COLLECTION OF ASSESSMENTS; COLLECTION BY DECLARANT; CERTAIN RIGHTS OF DECLARANT AND INSTITUTIONAL MORTGAGEES 12

SECTION 1. **AFFIRMATIVE COVENANT TO PAY ASSESSMENTS AND SPECIAL ASSESSMENTS**. 12
SECTION 2. **OPERATING EXPENSES; RESERVES; SPECIAL ASSESSMENTS**..... 12
SECTION 3. **ESTABLISHMENT OF LIENS**. 13
SECTION 4. **COLLECTION OF ASSESSMENTS**. 13
SECTION 5. **RIGHTS OF DECLARANT AND INSTITUTIONAL MORTGAGEES TO PAY ASSESSMENTS AND RECEIVE REIMBURSEMENT**. 14
SECTION 6. **COLLECTION BY ASSOCIATION**. 14

ARTICLE VIII METHOD OF DETERMINING ASSESSMENTS AND ALLOCATION OF ASSESSMENTS 14

SECTION 1. **DETERMINING AMOUNT OF ASSESSMENTS**. 14
SECTION 2. **ASSESSMENT PAYMENTS**. 14
SECTION 3. **SPECIAL ASSESSMENTS**. 14
SECTION 4. **LIABILITY OF OWNERS FOR LOT ASSESSMENTS.** 15
SECTION 5. **DECLARANT'S OBLIGATION FOR ASSESSMENTS AND OPTIONAL DECLARANT DEFICIT FUNDING**. 15
SECTION 6. **WORKING FUND CONTRIBUTION**. 15
SECTION 7. **DECLARANT SUBSIDIES**. 15
SECTION 8. **WAIVER OF USE.** 16

ARTICLE IX ARCHITECTURAL CONTROL 16

SECTION 1. **DECLARANT EXEMPT**. 16
SECTION 2. **ARCHITECTURAL REVIEW COMMITTEE**. 16
SECTION 3. **POWERS AND DUTIES OF THE ARC**. 16
SECTION 4. **COMPENSATION OF ARC**. 16
SECTION 5. **ARCHITECTURAL REVIEW AND APPROVAL**. 16
SECTION 6. **SECURITY DEPOSIT FOR IMPROVEMENTS**. 17
SECTION 7. **MEETINGS OF THE ARC**. 17
SECTION 8. **NO WAIVER OF FUTURE APPROVALS**. 17
SECTION 9. **INSPECTION OF THE WORK**. : 17
SECTION 10. **LIMITATION ON LIABILITY.**. 18
SECTION 11. **VARIANCE**. 18

ARTICLE X MAINTENANCE AND REPAIR OBLIGATIONS 19

SECTION 1. **BY THE ASSOCIATION**..... 19
SECTION 2. **BY THE OWNERS**. 20
SECTION 3. **DAMAGE TO IMPROVEMENTS ON A LOT**. 22

ARTICLE XI DAMAGE OR DESTRUCTION TO COMMON AREA 22

SECTION 1. **DETERMINATION TO REPAIR OR REBUILD**. 22
SECTION 2. **OWNER RESPONSIBILITY.** 22
SECTION 3. **EXCESS FUNDS.** 23

ARTICLE XII INSURANCE AND CONDEMNATION 23

SECTION 1. **CASUALTY INSURANCE**. 23
SECTION 2. **PUBLIC LIABILITY INSURANCE**..... 23
SECTION 3. **FIDELITY COVERAGE**. 23
SECTION 4. **DIRECTORS' COVERAGE**. ADEQUATE DIRECTORS' AND OFFICERS' LIABILITY COVERAGE WHICH COVERAGE SHALL BE EFFECTIVE FROM AND AFTER THE DATE THE ASSOCIATION IS CREATED. 23

DRAFT

SECTION 5. **OTHER INSURANCE**. 23
SECTION 6. **CANCELLATION OR MODIFICATION**. 23
SECTION 7. **FLOOD INSURANCE**. 23
SECTION 8. **WAIVER OF SUBROGATION.** 24
SECTION 9. **CONDEMNATION**. 24

ARTICLE XIII USE RESTRICTIONS AND RIGHTS AND EASEMENTS RESERVED BY DECLARANT..... 24

SECTION 1. **ENFORCEMENT**. 24
SECTION 2. **RESIDENTIAL USE**. 25
SECTION 3. **OCCUPANCY OF HOME**. 25
SECTION 4. **LEASES**. 25
SECTION 5. **INCREASE IN INSURANCE RATES**. 25
SECTION 6. **LOT COVERAGE AND LIVING AREA**. 25
SECTION 7. **NO DETACHED BUILDINGS**. 26
SECTION 8. **SETBACKS**. 26
SECTION 9. **EASEMENT AREAS**. 26
SECTION 10. **PARKING AND VEHICULAR RESTRICTIONS**. 26
SECTION 11. **NUISANCES**. 26
SECTION 12. **ANTENNAE**. 26
SECTION 13. **SIGNS**. 26
SECTION 14. **ANIMALS**. 27
SECTION 15. **TRASH AND OTHER MATERIALS**. 27
SECTION 16. **FENCES**. 27
SECTION 17. **OIL AND MINING OPERATIONS**. 28
SECTION 18. **SEWAGE DISPOSAL**. 28
SECTION 19. **WATER SUPPLY**. 28
SECTION 20. **COMPLIANCE WITH LAWS**. 28
SECTION 21. **RESERVATION OF RIGHT TO RELEASE RESTRICTIONS**. 28
SECTION 22. **DECLARANT EXEMPTION AND GENERAL EASEMENT RESERVATION**.
SECTION 23. **SIDEWALKS.** 29

ARTICLE XIV GENERAL PROVISIONS..... 29

SECTION 1. **ASSIGNMENT OF PERMIT RESPONSIBILITIES AND INDEMNIFICATION**. 29
SECTION 2. **USAGE**. 29
SECTION 3. **CONFLICT WITH OTHER SUBDIVISION DOCUMENTS**. 29
SECTION 4. **NOTICES**. 29
SECTION 5. **ENFORCEMENT**. 29
SECTION 6. **INTERPRETATION**. 30
SECTION 7. **SEVERABILITY**. 30
SECTION 8. **CERTAIN RIGHTS OF DECLARANT**. 30
SECTION 9. **DISPUTES AS TO USE**. 31
SECTION 10. **AMENDMENT AND MODIFICATION**. 31
SECTION 11. **DELEGATION**. 32
SECTION 12. **TERM**. 32
SECTION 13. **RIGHTS OF MORTGAGEES**..... 32
SECTION 14. **APPROVAL OF ASSOCIATION LAWSUITS BY OWNERS**. 33
SECTION 15. **COMPLIANCE WITH PROVISIONS**. 33
SECTION 16. **SECURITY**. 33
SECTION 17. **COVENANT RUNNING WITH THE LAND**. 34
SECTION 18. **NO PUBLIC RIGHT OR DEDICATION**. 34
SECTION 19. **NO REPRESENTATIONS OR WARRANTIES**. 34
SECTION 20. **CERTAIN RESERVED RIGHTS OF DECLARANT WITH RESPECT TO COMMUNITY SYSTEMS**. 34
SECTION 21. **ASSOCIATION AND DECLARANT AS ATTORNEY-IN-FACT**. 35

DRAFT

DECLARATION OF COVENANTS AND RESTRICTIONS

FOR

THE ROOKERY

THIS DECLARATION OF COVENANTS AND RESTRICTIONS FOR THE ROOKERY is made this _____ day of _____, 202___, by **D.R. HORTON, INC. – JACKSONVILLE,** a Delaware corporation, which declares that the real property described on **Exhibit "A"** attached hereto and made a part hereof, which is owned by Declarant, shall be held, transferred, sold, conveyed and occupied subject to the covenants, restrictions, easements, charges, liens and all other matters set forth in this Declaration which shall be deemed to be covenants running with the title to the Property and shall be binding upon Declarant and all parties having or acquiring any right, title or interest in the Property or any part thereof.

ARTICLE I

MUTUALITY OF BENEFIT AND OBLIGATION

Section 1. **Mutuality**. The covenants, restrictions and agreements set forth in this Declaration are made for the mutual and reciprocal benefit of every parcel within the Property, and are intended to create mutual equitable servitudes upon each such parcel in favor of the other parcels, to create reciprocal rights among the respective Owners, and to create privity of contract and an estate between the grantees of each and every parcel within the Property, their heirs, successors and assigns.

Section 2. **Benefits and Burdens**. Every person who is an Owner does by reason of taking title to land located within the Property agree to all the terms and provisions of this Declaration and shall be entitled to its benefits and subject to its burdens.

ARTICLE II

DEFINITIONS

A number of terms are defined within the body of this Declaration, and such terms, when used within this Declaration, shall have the meanings specified where defined herein. The following words, when used in this Declaration shall have the following meanings:

Section 1. **Act**. Section 720, Florida Statutes, as amended and supplemented from time to time.

Section 2. **Assessments**. All assessments which may be levied and assessed by the Association according to the provisions of Articles VII and VIII of this Declaration.

Section 3. **Association**. The Rookery Owners Association, Inc., a Florida corporation not-for-profit. This is the Declaration to which the Articles of Incorporation (the "Articles") and Bylaws (the "Bylaws") of the Association make reference. Copies of the Articles and Bylaws are attached as **Exhibits "B"** and **"C"**, respectively.

Section 4. **Board**. The Board of Directors or other legally recognized governing body of the Association.

Section 5. ***{CDD. The _____ Community Development District, a unit of special-purpose local government created pursuant to and existing under the provisions of Chapter 190, Florida Statutes.}***

Section 6. **Common Area**. All real property (including easements, licenses and rights to use real property) that is more particularly described in Article III, Section 2 of this Declaration, together with all personal property located within or appurtenant to any Common Area. All of the Common Area shall be owned initially by Declarant until conveyed and transferred to the Association as provided in this Declaration; thereafter, the Common Area shall be owned by the Association and not by the Owners. Notwithstanding the foregoing, upon recordation of

DRAFT

the Plat, the Association shall be responsible for all maintenance of the Common Area regardless of ownership, as more particularly provided in Article V, Section 1 below.

Section 7. **Community Systems**. Any and all television (cable, satellite or otherwise), telecommunication, internet access, alarm/monitoring, utility or other lines, conduits, wires, satellites, amplifiers, towers, antennae, equipment, materials, installations and fixtures (including those based on, containing or serving future technological advances not now known) installed by Declarant, an affiliate of Declarant, any other entity in which Declarant or an affiliate of Declarant may have an interest (financial or otherwise) or any third party expressly granted the rights by Declarant to provide Community Systems within the Property or pursuant to any grant of easement or authority by Declarant and serving the Common Area and/or more than one Lot.

Section 8. **Conservation Easement.** That certain Conservation Easement granted by the Declarant to the SJRWMD (defined in Article V, Section 2.6.B.) and recorded in the public records of the County, as the same may be amended from time to time. The Conservation Easement encumbers the lands as more particularly described and shown on the Plat or as otherwise subsequently approved by SJRWMD and recorded in the public records of the County in accordance with the District Permit (defined in Section 31 below). The Owner's use of any portion of the Property encumbered by the Conservation Easement shall be governed and regulated by the provisions of the Conservation Easement and Article V, Section 2.9 of this Declaration.

Section 9. **County**. Clay County, Florida, being the county in which the Property is located.

Section 10. **Declaration**. This Declaration of Covenants and Restrictions for The Rookery as amended from time to time, together with any Supplementary Declarations or amendments hereto, which may be recorded among the public records of the County.

Section 11. **Declarant**. D.R. Horton, Inc. – Jacksonville, and its successors and such of its assigns as to which the rights of Declarant hereunder are specifically assigned. Declarant may assign all or only a portion of such rights in connection with portions of the Property. In the event of such a partial assignment, the assignee may exercise such rights of Declarant as are specifically assigned to it. Any such assignment may be made on a non-exclusive basis. Reference in this Declaration to D.R. Horton, Inc. - Jacksonville as Declarant of the Property is not intended and shall not be construed to impose upon D.R. Horton, Inc. - Jacksonville any obligations, legal or otherwise, for the acts or omissions of third parties who purchase lots or parcels within the Property from D.R. Horton, Inc. – Jacksonville and develop and resell the same.

Section 12. **FDEP**. The State if Florida Department of Environmental Protection, or any agency or department that is the successor thereto.

Section 13. **Home**. Any improved portion of the Property located within a Lot and intended for use as a residential dwelling, including without limitation, any detached residential dwellings, condominium units, townhouse units, apartment units, duplexes or other attached residential dwellings.

Section 14. **Improvements**. All structures or artificially created conditions and appurtenances thereto of every type and kind located within the Property, including, but not limited to, as and if applicable, buildings and all support and ancillary structures thereto, walkways, paths, recreation areas and facilities and ancillary structures, berms, fountains, sprinkler systems, streets and roadways, driveways and parking areas, fences, walls, landscaping, poles, signs, mailboxes, street lights and signs and any alterations, repair or replacement of any of the foregoing.

Section 15. **Institutional Mortgage**. Any mortgage held by an Institutional Mortgagee on any property within the Subdivision.

Section 16. **Institutional Mortgagee or Institutional Lender**. Any lending institution owning a first mortgage encumbering any Lot within the Property, which owner and holder of said mortgage shall either be a bank, life insurance company, federal or state savings and loan association, real estate or mortgage investment trust, building and loan association, mortgage banking company or any subsidiary thereof licensed to do business in the State of Florida or qualified to make mortgage loans in the State of Florida, national banking association chartered under the laws of the United States of America, or any "secondary mortgage market institution," including the Federal National Mortgage Association ("FNMA"), Government National Mortgage Association ("GNMA"), Federal Home Loan Mortgage Corporation ("FHLMC") and such other secondary mortgage market institutions as the Board shall hereafter approve in

DRAFT

writing; any and all lenders, and the successors and assigns of such lenders, which have loaned money to Declarant and which hold a mortgage on any portion of the Property securing any such loan; any pension or profit-sharing funds qualified under the Internal Revenue Code; the Veterans Administration, the Federal Housing Administration or the Department of Housing and Urban Development or such other lender as is generally recognized in the community as an institutional lender; or Declarant, its successors and assigns.

Section 17. **Interest.** The maximum non-usurious interest rate allowed by law on the subject debt or obligation; if no such rate is designated by law, then eighteen percent (18%) per annum.

Section 18. **Legal Fees.** All fees for attorney and paralegal services incurred in connection with negotiations, mediation, arbitration, litigation or preparation for same (whether or not such an action is commenced) through and including all trial and appellate levels and post-judgment or collection proceedings, and all costs incurred with respect to the matters set forth above.

Section 19. **Lot**. Each platted lot located within the Property which is designated by Declarant by recorded covenant or deed restriction for single family residential use. No Lot shall include any portion of the Common Area owned in fee simple by the Association ***{or the CDD}***.

Section 20. **Lot Improvements**. Any Improvement addressed in Article IX, Section 5 that requires ARC review and approval.

Section 21. **Member.** Any member of the Association which shall be each Owner of the fee simple title to a Lot within the Property.

Section 22. **Operating Expenses.** All operating expenses of the Association as defined and described in Article VII, Section 2 of this Declaration.

Section 23. **INTENTIONALLY DELETED**

Section 24. **Owner**. The record fee simple owner or owners of any Lot***{; provided, however, that Owner shall not include a homebuilder acquiring Lots from the Declarant for initial construction of a single family residence thereon.}***

Section 25. **Plat**. The subdivision plat for The Rookery, recorded in Map/Plat Book _, pages _____ through _____, inclusive, of the public records of the County, and such additional subdivision plats as may be recorded with respect to any additional Property as may be added in accordance with the provisions of Article IV, Sections 2 and 3 of this Declaration.

Section 26. **Property or Subdivision Parcel**. The real property described on the attached **Exhibit "A"** and such additions and deletions thereto as may be made in accordance with the provisions of Article IV, Sections 2 and 3 of this Declaration.

Section 27. **Rules and Regulations**. The rules and regulations promulgated from time to time by the Board in accordance with the terms of this Declaration.

Section 28. **Special Assessments.** Assessments defined in Article VII, Section 2.3, of this Declaration.

Section 29. **Subdivision**. The Rookery community, as more particularly described in Article III of this Declaration.

Section 30. **Subdivision Documents**. In the aggregate, this Declaration, the Articles, the Bylaws, the Plat, any Rules and Regulations promulgated by the Association and any and all amendments and Supplementary Declarations, all as may be further amended and/or supplemented from time to time.

Section 31. **Supplementary Declaration**. Any instrument executed by Declarant which, when recorded in the official records of the County, shall: (a) commit additional property, if any, to the provisions of this Declaration, and shall be the only method of committing such additional property to the provisions of this Declaration, (b) withdraw any portion(s) of the Property from the effect of this Declaration, (c) designate portion(s) of the Property

DRAFT

or additional property as Common Area hereunder, or withdraw lands from the Common Areas within the Property, and/or (d) be for such other purposes as are provided in this Declaration. A Supplementary Declaration may also be used to add additional covenants, restrictions, reservations, regulations, burdens, liens and easements upon the Property or any portion thereof, remove any existing covenant, restriction, reservation, regulation, burden, lien or easements from the Property or any portion thereof and/or declare certain properties to be or not to be Common Area. The Association shall join in the execution of any Supplementary Declaration at the request of Declarant but such joinder shall not be required to make any such Supplementary Declaration effective. The Owners shall not be required to join in the execution of any Supplementary Declaration but shall nevertheless be bound thereby.

Section 32. **Surface Water or Stormwater Management System.** A system which is designed and constructed or implemented within the Property to control discharges which are necessitated by rainfall events, incorporating methods to collect, convey, store, absorb, inhibit, treat, use or reuse water to prevent or reduce flooding, overdrainage, environmental degradation and water pollution or otherwise affect the quantity and quality of discharges from the system, as permitted pursuant to SJRWMD permit number _____ (as amended, modified or extended, the "District Permit"), and pursuant to Chapter 62-330, F.A.C. or regulations of similar import. For purposes of this Declaration, the Surface Water or Stormwater Management System shall be deemed to be a part of the Common Area.

Section 33. **Tenant**. Any person other than an Owner who has possessory rights in or to any Lot or who is otherwise in possession of a Lot or any portion thereof.

Section 34. **Turnover Date**. The date on which control of the Association shall be transitioned from Declarant to the Owners, which date shall be determined by Declarant at its election but not later than that date required by Section 720.307, Florida Statutes.

Section 35. **Zoning Code**. The applicable zoning, land development or land use law, ordinance or code adopted by the City of _____, _____ County, Florida.

ARTICLE III

DESCRIPTION OF SUBDIVISION:

Section 1. **General Plan of Development**. The Subdivision comprises the Property encompassing, or which will encompass, Lots and Common Area, as more particularly defined by this Declaration and, in addition, lands which Declarant may add, but shall in no way be obligated to add, by one or more Supplementary Declaration(s). The Property initially declared hereunder is described in **Exhibit "A"** attached hereto. The Subdivision is intended to comprise _____ (_____**)** Homes, each Home located on a single Lot, together with the Common Area, all in accordance with, but subject to, the terms of the Subdivision Documents. Notwithstanding the foregoing, Declarant hereby reserves the right to modify its plan of development of the Subdivision (including, without limitation, the right to modify the site plan and the right to change the recreational facilities, amenities, product types and number of Homes to be constructed) and/or the right to add land to or to withdraw land from the Subdivision. Therefore, in the event Declarant modifies its plan of development of the Subdivision and/or adds land to or withdraws land from the Subdivision, it is hereby acknowledged by each Owner that the number of Lots, the layout of Lots and/or the size of Lots within the Subdivision may change. Declarant's general plan of development further contemplates that the Homes to be constructed within the Subdivision shall be whatever types of structures Declarant may choose which and which shall be deemed in conformance with this Declaration. Declarant's general plan of development may also include whatever facilities and amenities Declarant considers in its sole judgment to be appropriate, as well as any changes thereto.

Additional Property will become a part of the Subdivision if, and only if, Declarant in its sole discretion adds Additional Property to the Subdivision by recording a Supplementary Declaration to such effect. Declarant hereby reserves an easement for ingress and egress and for utilities and drainage over, under and across the Common Area for the benefit of any Additional Property; provided however, no such easement may be granted upon any portion of the Property that lies directly beneath a Home.

Declarant expressly reserves the right as to the Property to (i) commence construction and development of the Property if and when Declarant desires; (ii) develop the Property upon such timetable as Declarant, in its sole discretion, chooses; and (iii) modify the plan of development of the Property (including, without limitation, the right to

modify the site plan and master plan of the Subdivision, the right to change the recreational facilities and amenities, and the right to change the product types and number of Homes to be constructed within the Subdivision) in such manner as Declarant in its sole discretion, chooses. Nothing contained herein shall be construed as obligating Declarant to construct the Subdivision according to the present plan of development nor as obligating Declarant to declare any Additional Property to be Property.

Section 2. **Common Area**. The Common Area shall consist of: (a) the property indicated on the Plat and supplementary Plat(s), if any, as Common Area or as property or easements reserved for, dedicated or granted to the Association or reserved by the Declarant and to eventually be conveyed to the Association, and all Improvements constructed thereon whether by Declarant or the Association, but not owned or maintained by a public or private utility company or other entity; (b) any easements assigned or granted by Declarant to the Association or property or facilities conveyed by Declarant to the Association, including without limitation the Conservation Easement; and (c) any other property designated as Common Area in this Declaration or any Supplementary Declaration. ***{Notwithstanding the foregoing or anything else in this Declaration or any supplementary Declaration to the contrary, the Common Area specifically and expressly does not include any areas dedicated, to be dedicated, conveyed or to be conveyed to the CDD or other governmental authority or to the public by the Plat, any supplementary Plat or by any deed or other instrument of conveyance.}*** The Common Area shall be used for those purposes as set forth in this Declaration or the Plat and supplementary Plat(s), if any, and include, as applicable, landscaping, irrigation, signage, lakes, drainage, preserves, conservation areas, open space, buffer, storm water management, irrigation, recreational and roadways (if private) as well as other proper purposes by the Association and the Owners and their family members, guests, invitees and Tenants in accordance with the Subdivision Documents. Common Area may not be altered, modified, removed or replaced by Owners or their family members, guests, invitees or Tenants.

Such portions of the Common Area upon which Declarant and/or the Association has constructed or hereafter constructs Improvements shall be kept and maintained for use in a manner consistent with the nature of such Improvements located, or to be located, thereon. Declarant and the Association reserve the right, but shall not be obligated, to construct additional facilities upon the Common Area. Declarant's decision as to whether to construct additional facilities and the construction thereof shall be in the sole discretion of Declarant. The Association's decision as to whether to construct additional facilities and the construction thereof shall be in the sole discretion of the Association.

In the event of any doubt, conflict or dispute as to whether any portion of the Property is or is not Common Area under this Declaration, Declarant may, without the consent of the Association or then existing Owners, record in the public records of the County, a Supplementary Declaration resolving such issue and such Supplementary Declaration shall be dispositive and binding. After Declarant no longer owns any portion of the Property, the Association may, without the consent of the existing Owners, record the aforesaid Supplementary Declaration, which shall have the same dispositive and binding effect.

Section 3. **Community Systems**. Declarant or the Association shall have the right to enter into one or more agreement(s) ("Bundled Service Agreements") for receipt of television (via cable, satellite or otherwise), entertainment, telecommunication, internet monitored alarm and/or other services (collectively, "Bundled Services") for Homes in the Subdivision. Any and all costs and expenses incurred by the Association under or pursuant to any Bundled Service Agreements entered into by Declarant or the Association for Bundled Services will be assessed against all Lot Owners. It is contemplated that there may be features and services that are or will be available in addition to and not part of the Bundled Services (each, an "Optional Service"). Notwithstanding anything to the contrary contained in this Declaration, the costs and expenses charged to the Association under the Bundled Services Agreements shall be apportioned equally, but only amongst those Homes with respect to which the Association is being charged under or pursuant to the Bundled Services Agreement except to the extent, if any, that any Owner elects to receive an Optional Service (being a service not automatically received by all Owners entitled to receive Bundled Services pursuant to the Bundled Services Agreements). Each Owner who receives an Optional Service, if any, shall be responsible for paying for the costs thereof. The foregoing shall in no way obligate Declarant or the Association to enter into any Bundled Services Agreement.

ARTICLE IV

PROPERTY SUBJECT TO THIS DECLARATION:

Section 1. **No Implied Extension of Covenants**. Each Owner and each Tenant, by becoming an Owner or Tenant, shall be deemed to have agreed that (a) the Property described on Exhibit A and such additional property as may be annexed pursuant to Section 2 below shall be the only Property subject to this Declaration, (b) that nothing contained in this Declaration or in any recorded or unrecorded plat, map, picture, drawing, brochure or other representation of a scheme of development, shall be construed as subjecting or requiring Declarant to subject any other property now or hereafter owned by Declarant to this Declaration, and (c) that the only manner in which additional land may be subjected to this Declaration is by the procedure set forth in Section 2 below.

Section 2. **Additional Lands**. Declarant may, but shall not be obligated to, subject additional land to this Declaration (or to the assessment provisions of this Declaration) from time to time, provided only that (a) any additional land subjected to this Declaration (or its assessment provisions) shall be contiguous to the Property then subject to this Declaration (for purposes of this Article IV, Section 2, property separated only by public or private roads, water bodies, golf courses, or open space shall be deemed contiguous), and (b) the Owners of property within additional lands made subject to this Declaration (or its assessment provisions) shall be and become subject to this Declaration (or its assessment provisions), and shall be responsible for their pro rata share of common expenses for which assessments may be levied pursuant to the terms of Article VII of this Declaration. Addition of lands to this Declaration shall be made and evidenced by filing in the public records of the County, a Supplementary Declaration executed by Declarant with respect to the lands to be added. Declarant reserves the right to supplement this Declaration to add land to the scheme of this Declaration (or its assessment provisions) pursuant to the foregoing provisions without the consent or joinder of any Owner or mortgagee of land within the Property.

Section 3. **Withdrawal of Lands**. With the consent and joinder of Owners holding a majority of the votes in the Association, Declarant may, but shall have no obligation to, withdraw at any time, or from time to time, portions of the Property from the terms and effect of this Declaration. Upon Declarant's request, the consent and joinder of each and every Owner to such withdrawal shall not be unreasonably withheld. The withdrawal of lands as aforesaid shall be made and evidenced by filing in the public records of the County a Supplementary Declaration executed by Declarant with respect to the lands to be withdrawn.

ARTICLE V

COMMON AREA RIGHTS; EASEMENTS

Section 1. **Conveyance of Common Area**. Upon recordation of the Plat, the Association shall be deemed to have accepted responsibility for the Common Areas dedicated thereby. Declarant agrees that fee simple title to all of the Common Area owned by Declarant shall be conveyed or assigned to the Association, subject to covenants, easements, restrictions and other matters of record, and such conveyance or assignment shall be deemed accepted by the Association. Upon the recordation of any deed or deeds conveying Common Area to the Association, the Association shall be conclusively deemed to have accepted the conveyance evidenced by such deed or deeds. Any such conveyance shall not however, impair in any way Declarant's rights and easements as set forth in this Declaration.

At the time of conveyance of the Common Area or any portion thereof, the Association shall be deemed to have accepted fee simple title to the Common Area, together with the personal property and Improvements appurtenant thereto, if any. The Association has accepted the Common Area and the personal property and Improvements appurtenant thereto in "AS IS" "WHERE IS" condition, without any representation or warranty, expressed or implied, in fact or by law, as to the condition or fitness of the Common Area and the personal property and Improvements appurtenant already dedicated to the Association and to be conveyed to the Association hereafter. IN THAT REGARD, THE ASSOCIATION AND EACH OWNER KNOWINGLY AND VOLUNTARILY RELINQUISHES AND WAIVES, AND DECLARANT EXPRESSLY DISCLAIMS, ANY AND ALL WARRANTIES (EXPRESS OR IMPLIED) AS TO THE COMMON AREA AND PERSONAL PROPERTY AND IMPROVEMENTS WHETHER ARISING FROM CUSTOM, USAGE OR TRADE, COURSE OF CONDUCT, COURSE OF DEALING, CASE LAW OR OTHERWISE, INCLUDING WITHOUT LIMITATION, ANY IMPLIED WARRANTY OF HABITABILITY, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR ANY IMPLIED WARRANTY OF FITNESS FOR ANY INTENDED OR PARTICULAR PURPOSE. TO THE EXTENT THAT BY LAW OR OTHERWISE ANY OF THE WARRANTIES RELINQUISHED, WAIVED OR DISCLAIMED CANNOT BE RELINQUISHED, WAIVED OR DISCLAIMED, IN WHOLE OR IN PART, ALL SECONDARY, INCIDENTAL AND CONSEQUENTIAL DAMAGES ARE SPECIFICALLY EXCLUDED AND DISCLAIMED (INCLUDING, WITHOUT LIMITATION, DAMAGES RESULTING FROM CLAIMS OF PROPERTY DAMAGE, LOSS OF USE, PERSONAL INJURY OR EMOTIONAL DISTRESS).

Commencing upon the date this Declaration is recorded, and notwithstanding that title thereto has not yet been conveyed to the Association, the Association shall be responsible for the maintenance of the Common Area in a

continuous and satisfactory manner without cost to the general taxpayers of the County. The Association shall be responsible for the payment of real estate taxes, if any, against the Common Area including taxes accruing on any Improvements and any personal property thereon from and after the date this Declaration is recorded.

The Owners (including Declarant as to Lots owned by it) shall have no personal liability for any damages: (i) for which the Association is legally liable, or (ii) arising out of, relating to or in connection with the existence or use of any Common Area or any other property required to be maintained by the Association.

Subject to the foregoing, Declarant may mortgage any or all portions of the Common Area or finance construction and development expenses provided that the mortgagee recognizes the rights of Owners under this Declaration and neither the Association nor any Owner is personally liable for paying the mortgage. In such event, neither the Association nor the Owners shall be required to join in or be entitled to consent to such mortgage. The Common Area shall be released from any such mortgage no later than the date same is conveyed to the Association.

Section 2. **Grant and Reservation of Easements**. Declarant hereby reserves and grants the following perpetual, nonexclusive easements over and across the Property as covenants running with the Property for the benefit of the Owners, the Association and Declarant as hereinafter specified for the following purposes:

2.1. Utility and Services Easements. All of the Property shall be subject to an easement or easements to provide for: (i) installation, service, repair and maintenance of the equipment required to provide utility services other than Community Systems to the Common Area and the Lots, including, but not limited to, power, lights, telephone, gas, water, sewer, irrigation and drainage, and (ii) governmental services, including, but not limited to, police, fire, mail, health, sanitation and other public service personnel, including reasonable rights of access for persons and equipment necessary for such purposes for the benefit of the appropriate utility companies, agencies, franchises or governmental agencies, provided however, that no such easements may be granted or created on any portion of a Lot on which a Home has then been constructed.

2.2. Easement for Encroachment. All of the Property shall be subject to an easement or easements for encroachment in favor of each Owner in the event any portion of such Owner's Home or appurtenant Improvements installed by Declarant such as stucco, a fence or underground footer now or hereafter encroaches upon any of the Lots as a result of minor inaccuracies in survey or construction, by design, or due to settlement or movement. Such encroaching Improvements installed by Declarant shall remain undisturbed for so long as the encroachment exists. Any easement for encroachment shall include an easement for the maintenance and use of the encroaching Improvements in favor of the Owner thereof or such Owner's designees.

2.3. Easement to Enter Upon Lots. An easement or easements for ingress and egress in favor of the Association, including the Board or the designee of the Board, to enter upon the Lots for the purposes of fulfilling its duties and responsibilities of ownership, maintenance and/or repair in accordance with the Subdivision Documents, including, by way of example, the making of such repairs, maintenance or reconstruction as are necessary for the Common Area and to maintain any Lot in the event the Owner thereof fails to do so.

2.4. Easement over Common Area. An easement of enjoyment in favor of all Owners, their family members, guests, invitees and Tenants in and to the Common Area which shall be appurtenant to and shall pass with a deed or title to every Lot in the Property, subject to the following:

A. the right of the Association to suspend the right to use the Common Area of any Owner and such Owner's family members, guests, invitees and Tenants for any period during which Assessments against such Owner's Lot remain unpaid, subject to the notice and hearing provisions in Article XIII, Section 1 herein;

B. the right of the Association to grant permits, licenses and easements over the Common Area for utilities and other purposes reasonably necessary or useful for the proper maintenance or operation of the Property;

C. compliance by every person who uses any of the Common Area subject to the provisions of the District Permit and the Conservation Easement; and

D. all provisions set forth in the Subdivision Documents.

DRAFT

2.5. Easement for Roof Overhang. An easement or easements to provide for the roof overhang of a Home in favor of the Owner thereof, including rights of access for persons or equipment necessary to maintain, repair and replace such roof overhang.

2.6. Surface Water or Stormwater Management System Easement.

A. Blanket Surface Water or Stormwater Management System Easement. The plan for the development of the Property includes the construction of a Surface Water or Stormwater Management System, which may include, without limitation, retention lakes, swales, conduits, weirs, pipes and/or berms and access easements to the Surface Water or Stormwater Management System as may be shown on the Plat or otherwise dedicated. Declarant hereby reserves for itself, its successors and assigns, and grants to the Association and its designees, a perpetual, nonexclusive easement over and across all areas of the Surface Water or Stormwater Management System for the drainage of stormwater from the Property. Portions of the Surface Water or Stormwater Management System may be located entirely within Lots.

B. Surface Water or Stormwater Management System Maintenance. Except as specifically set forth herein to the contrary, the Association shall be responsible for the maintenance, operation and repair of the Surface Water or Stormwater Management System. Such maintenance shall include the exercise of practices which allow the Surface Water or Stormwater Management System to provide drainage, water storage, conveyance or other stormwater management capabilities in accordance with all the permits, statutes, rules and regulations pertaining to surface water management, drainage and water quality promulgated by the United States Army Corps of Engineers ("ACOE"), FDEP, St. Johns River Water Management District ("SJRWMD") and all other local, state and federal authorities having jurisdiction.

The Association shall maintain and control the water level and quality of the Surface Water or Stormwater Management System and the bottoms of any retention lakes or drainage easements which retain or hold stormwater on a regular basis. The Association shall have the power, as may be required by any applicable governmental entity, to control and eradicate plants, fowl, reptiles, animals, fish and fungi in and on any portion of the retention lakes or drainage easement. **The Owners of Lots adjacent to or containing any portion of the Surface Water or Stormwater Management System shall (i) maintain all shoreline vegetation and the grade and contour of all embankments to the water's edge (as it may rise and fall from time to time) irrespective of ownership of such land, (ii) keep the grass, plantings and other lateral support of the embankments in a clean and safe manner, and (iii) prevent erosion and shall remove trash and debris as it may accumulate in the system, from time to time.** In order to provide adequate assurance that the Surface Water or Stormwater Management System will adequately function, appropriate maintenance procedures, including but not limited to the following, shall be followed:

(1) The Association shall inspect or cause to be inspected all inlets and control structures for vandalism, deterioration or accumulation of sand and debris.

(2) The Association shall assure that all debris or sand shall be removed from the inlets and control structures and any orifice system.

(3) The Association shall inspect and repair or cause to be inspected and repaired all skimmer boards around control structures as necessary.

C. Surface Water or Stormwater Management System Maintenance Easement. The Association is granted a perpetual, nonexclusive easement for ingress and egress, at all reasonable times and in a reasonable manner, over and across the Surface Water or Stormwater Management System and over and across any portion of a Lot which is a part of the Surface Water or Stormwater Management System or upon which a portion of the Surface Water or Stormwater Management System is located, to operate, maintain and repair the Surface Water or Stormwater Management System as required by the District Permit. Such right expressly includes the right to cut any trees, bushes or shrubbery, to make any gradings of soil, construct or modify any berms placed along the rear of any Lots as part of the Surface Water or Stormwater Management System or take any other action reasonably necessary, following which Declarant or the Association shall restore the affected property to its original condition as nearly as practicable; provided, however, that Declarant or the Association shall not be required to replace or repair fences, walks, structures, landscaping or other improvements which are removed or damaged. Declarant or the Association shall give reasonable notice of its intent to take such action to all affected Owners, unless, in the opinion

DRAFT

of Declarant or the Association, an emergency exists which precludes such notice. The right granted herein may be exercised at the sole option of Declarant or the Association and shall not be construed to obligate Declarant or the Association to take any affirmative action in connection therewith. The Owners of Lots adjacent to or containing a portion of the retention areas are granted a perpetual, nonexclusive easement for ingress and egress over and across the Surface Water or Stormwater Management System for the purpose of providing maintenance and erosion control to the embankments of such retention areas.

D. Improvements. No docks, bulkheads or other structures, permanent or temporary, shall be constructed on, over or under any portion of the Surface Water or Stormwater Management System without the prior written consent of the Association and the approval of the ARC or Declarant, which consent or approval may be withheld for any reason. Any improvements to the Surface Water or Stormwater Management System permitted by the Association and installed by the Owner shall be maintained by such Owner in accordance with the maintenance provisions of this Declaration. All improvements to the Surface Water or Stormwater Management System may also require the prior written approval of the SJRWMD. After receiving the approval of the Association, Owner shall be solely liable for obtaining all governmental permits necessary or convenient to construct such Improvement.

E. Use and Access. Declarant and the Association shall have the right to adopt reasonable Rules and Regulations from time to time in connection with the use of the surface waters of any portion of the Surface Water or Stormwater Management System, and shall have the right to deny such use to any person who, in the opinion of Declarant or the Association, may create or participate in a disturbance or nuisance on any part of the Surface Water or Stormwater Management System. The use of such surface waters by the Owners shall be subject to and limited by the Rules and Regulations of Declarant and the Association, all permits issued by governmental authorities and any rights granted to other persons pursuant to the Rules and Regulations of Declarant and the Association. No gas or diesel driven watercraft shall be operated on any portion of the Surface Water or Stormwater Management System, including retention lakes. Swimming is strictly prohibited in the retention lakes.

F. LIABILITY. NEITHER DECLARANT NOR THE ASSOCIATION SHALL HAVE ANY LIABILITY WHATSOEVER TO OWNERS, GUESTS, TENANTS OR INVITEES IN CONNECTION WITH THE RETENTION LAKES AND DRAINAGE FACILITIES OR ANY PART OF THE SURFACE WATER OR STORMWATER MANAGEMENT SYSTEM. EACH OWNER, FOR ITSELF AND ITS GUESTS, TENANTS OR INVITEES, RELEASES DECLARANT AND THE ASSOCIATION FROM ANY LIABILITY IN CONNECTION THEREWITH.

DECLARANT AND THE ASSOCIATION SHALL NOT BE OBLIGATED TO PROVIDE SUPERVISORY PERSONNEL, INCLUDING BUT NOT LIMITED TO LIFEGUARDS, FOR THE RETENTION LAKES AND/OR ANY PORTIONS OF THE COMMON AREA. ANY INDIVIDUAL USING THE RETENTION LAKES AND/OR ANY PORTIONS OF THE COMMON AREA SHALL DO SO AT HIS OR HER OWN RISK AND HEREBY HOLDS DECLARANT AND THE ASSOCIATION HARMLESS FROM AND AGAINST ANY CLAIM OR LOSS (INCLUDING, WITHOUT LIMITATION, THOSE FROM PROPERTY DAMAGE, INJURY AND/OR DEATH) ARISING FROM SUCH USE.

NEITHER DECLARANT, THE ASSOCIATION NOR ANY OF THEIR SUCCESSORS, ASSIGNS, OFFICERS, DIRECTORS, EMPLOYEES, MANAGEMENT AGENTS, CONTRACTORS OR SUBCONTRACTORS (COLLECTIVELY, THE "LISTED PARTIES") SHALL BE LIABLE OR RESPONSIBLE FOR MAINTAINING OR ASSURING THE WATER QUALITY OR LEVEL IN ANY LAKE, POND, RETENTION AREA, CANAL, CREEK, MARSH AREA, STREAM OR OTHER WATER BODY WITHIN OR ADJACENT TO THE PROPERTY, EXCEPT AS SUCH RESPONSIBILITY MAY BE SPECIFICALLY IMPOSED BY AN APPLICABLE GOVERNMENTAL OR QUASI-GOVERNMENTAL AGENCY OR ENTITY AS REFERENCED HEREIN. FURTHER, ALL OWNERS AND USERS OF ANY PORTION OF THE PROPERTY LOCATED ADJACENT TO OR HAVING A VIEW OF ANY OF THE AFORESAID AREAS SHALL BE DEEMED, BY VIRTUE OF THEIR ACCEPTANCE OF A DEED TO, OR USE OF, SUCH PROPERTY, TO HAVE AGREED TO HOLD HARMLESS THE LISTED PARTIES FROM ALL LIABILITY RELATED TO ANY CHANGES IN THE QUALITY AND LEVEL OF THE WATER IN SUCH BODIES.

ALL PERSONS ARE HEREBY NOTIFIED THAT FROM TIME TO TIME ALLIGATORS, POISONOUS SNAKES AND OTHER WILDLIFE MAY INHABIT OR ENTER INTO WATER BODIES CONTAINED WITHIN OR ADJACENT TO THE PROPERTY AND MAY POSE A THREAT TO PERSONS, PETS AND PROPERTY, BUT THAT THE LISTED PARTIES ARE UNDER NO DUTY TO PROTECT AGAINST, AND DO NOT IN ANY MANNER WARRANT AGAINST, ANY DEATH, INJURY OR DAMAGE CAUSED BY SUCH WILDLIFE.

DRAFT

ALL PERSONS ARE HEREBY NOTIFIED THAT BANKS AND SLOPES ASSOCIATED WITH THE SURFACE WATER AND STORMWATER MANAGEMENT SYSTEM OR OTHER WATERBODIES WITHIN CERTAIN AREAS OF THE PROPERTY MAY BE STEEP AND THAT DEPTHS NEAR SHORE MAY DROP OFF SHARPLY. BY THEIR ACCEPTANCE OF A DEED TO, OR USE OF, ANY LOT WITHIN THE PROPERTY, ALL OWNERS OR USERS OF SUCH PROPERTY SHALL BE DEEMED TO HAVE AGREED TO HOLD HARMLESS THE LISTED PARTIES FROM ALL LIABILITY OR DAMAGES ARISING FROM THE DESIGN, CONSTRUCTION OR TOPOGRAPHY OF ANY BANKS, SLOPES OR BOTTOMS ASSOCIATED WITH THE SURFACE WATER AND STORMWATER MANAGEMENT SYSTEM OR OTHER WATERBODIES WITHIN OR NEAR THE PROPERTY.

THE PROPERTY HAS BEEN OR WILL BE DEVELOPED IN ACCORDANCE WITH REQUIREMENTS OF THE DISTRICT PERMIT OR ANY PERMIT ISSUED BY THE ACOE. THE ACOE AND DISTRICT PERMITS ARE OR WILL BE OWNED BY THE ASSOCIATION AND THE ASSOCIATION HAS THE OBLIGATION TO ASSURE THAT ALL TERMS AND CONDITIONS THEREOF ARE ENFORCED. THE ASSOCIATION SHALL HAVE THE RIGHT TO BRING AN ACTION, AT LAW OR IN EQUITY, AGAINST ANY OWNER VIOLATING ANY PROVISION OF THE PERMITS.

FURTHER, ANY OWNER OWNING A LOT WHICH CONTAINS OR IS ADJACENT TO JURISDICTIONAL WETLANDS OR CONSERVATION AREAS AS ESTABLISHED BY THE ACOE OR SJRWMD OR BY THE CONSERVATION EASEMENT SHALL BY ACCEPTANCE OF TITLE TO THE LOT BE DEEMED TO HAVE ASSUMED THE OBLIGATION TO COMPLY WITH THE REQUIREMENTS OF THE APPLICABLE PERMITS AS THE SAME RELATE TO SUCH OWNER'S LOT AND SHALL AGREE TO MAINTAIN SUCH JURISDICTIONAL WETLANDS AND CONSERVATION AREAS IN THE CONDITION REQUIRED UNDER THE APPLICABLE PERMITS. IN THE EVENT THAT AN OWNER VIOLATES THE TERMS AND CONDITIONS OF THE APPLICABLE PERMITS AND FOR ANY REASON DECLARANT OR THE ASSOCIATION IS CITED THEREFORE, THE OWNER AGREES TO INDEMNIFY AND HOLD DECLARANT AND THE ASSOCIATION HARMLESS FROM ALL COSTS ARISING IN CONNECTION THEREWITH, INCLUDING WITHOUT LIMITATION ALL COST AND ATTORNEYS' FEES, AS WELL AS ALL COSTS OF CURING SUCH VIOLATION. NO PERSON SHALL ALTER THE DRAINAGE FLOW OF THE SURFACE WATER OR STORMWATER MANAGEMENT SYSTEM OR ANY PORTION OF THE JURISDICTIONAL WETLANDS OR CONSERVATION AREAS, INCLUDING WITHOUT LIMITATION, ANY BUFFER AREAS, SWALES, TREATMENT BERMS OR SWALES, WITHOUT THE PRIOR WRITTEN APPROVAL OF THE SJRWMD OR ACOE, AS APPLICABLE.

G. Wetlands, Jurisdictional Land Swales. This Declaration is subject to the rights of the State of Florida over portions of the Property that may be considered wetlands, marshes, sovereignty or jurisdictional lands, and every Owner shall obtain any permit necessary prior to undertaking any dredging, filling, mowing, improving, landscaping or removal of plant life existing on his or her Lot. Further, certain Lots may be improved with swales constructed within Lots that are contiguous to any jurisdictional lands. The Owners thereof shall not remove or modify the swales without the consent of the applicable governmental entities. Any Owner who alters or otherwise modifies any swale, including mowing, shall repair and restore any such swale to be in full compliance with the applicable Permits, at such Owner's sole cost and expense, and shall indemnify and hold Declarant and the Association harmless from such violation.

H. Rights of the SJRWMD. Notwithstanding any other provisions contained elsewhere in this Declaration, the SJRWMD shall have the rights and powers enumerated in this paragraph. The SJRWMD shall have the right to enforce, by a proceeding at law or in equity, the provisions contained in this Declaration, the District Permit or the Conservation Easement that relate to the maintenance, operation and repair of the Surface Water or Stormwater Management System and the Conservation Easement. Any repair or reconstruction of the Surface Water or Stormwater Management System or the Conservation Easement shall be as permitted, or if modified, as approved in writing by the SJRWMD. No person shall alter the drainage flow of the Surface Water or Stormwater Management System, including any buffer areas, if any, swales, treatment berms or swales, without prior written approval of the SJRWMD. Any amendment to this Declaration that alters the Surface Water or Stormwater Management System, beyond maintenance in its original condition including the water management portions of the Common Area, must have prior written approval of the SJRWMD. In the event that the Association is dissolved, prior to such dissolution, all responsibility relating to the Surface Water or Stormwater Management System must be assigned to and accepted by an entity approved in writing by the SJRWMD.

I. Indemnity. Declarant may be required to assume certain duties and liabilities for the maintenance of the Surface Water or Stormwater Management System or drainage system within the Property under the Plat or any supplementary Plat, permits or certain agreements with governmental agencies. The Association further agrees that subsequent to the recording of this Declaration, it shall hold Declarant harmless from all suits, actions, damages, liabilities and expenses in connection with loss of life, bodily or personal injury or property damage

arising out of any occurrence in, upon, at or from the maintenance of the Surface Water or Stormwater Management System occasioned in whole or in part by any action, omission of the Association or its agents, contractor, employees, servants or licensees but not excluding any liability occasioned wholly or in part by the acts of Declarant, its successors or assigns. Upon completion of construction of the Surface Water or Stormwater Management System or drainage system Declarant shall be deemed to have assigned all its rights, obligations and duties thereunder to the Association. The Association shall assume, and be deemed to have assumed, all such rights, duties and liabilities and shall indemnify and hold Declarant harmless therefrom.

J. Declarant's Rights. Declarant, its successors and assigns, shall have the unrestricted right, without approval or joinder of any other person or entity: (i) to designate the use of, alienate, release or otherwise assign the easements shown on the Plat or any supplementary Plats of the Property or as described herein, (ii) to plat or replat all or any part of the Property owned by Declarant, and (iii) to widen or extend any right of way shown on the Plat or supplementary Plat, if any, of the Property or convert a Lot to use as a right of way, provided that Declarant owns the lands affected by such change. Owners of Lots subject to easements shown on the Plat or any supplementary Plats of the Property shall acquire no right, title or interest in any of the cables, conduits, pipes, mains, lines or other equipment or facilities placed on, over or under the easement area. The Owners of Lots subject to any easements shall not construct any Improvements on the easement areas, alter the flow of drainage or install landscaping on such areas with hedges, trees or other items that might interfere with the exercise of the easement rights. Any Owner who constructs any Improvements on such easement areas shall remove the Improvements upon written request of Declarant, the Association or the grantee of the easement.

2.7. Plat Easement(s). The Plat and/or supplementary Plat(s), if any, may contain additional easements not discussed herein, granted in favor of the Association or others, for the specific purposes as described therein.

2.8. Easement for Community Systems. Notwithstanding anything to the contrary in this Declaration, Declarant and its affiliates, and its and their designees shall have a perpetual exclusive easement over, across, upon and under the Common Area and the Lots for the installation, operation, maintenance, repair, replacement, alteration and expansion of Community Systems.

2.9. Conservation Easement. The Conservation Easement severely limits the use that any person may make of any part of the Property encumbered thereby, and each person who ever hereafter acquires any interest in any part of the Property agrees and acknowledges that it is aware of and shall strictly comply with the Conservation Easement.

Section 3. **Delegation of Use**. Any Owner may delegate, in accordance with the Bylaws such Owner's right of enjoyment to the Common Area to the members of such Owner's family or to Tenants who have possessory rights in and to such Owner's Home, subject to the Subdivision Documents. An Owner may not delegate to any person a right to use any Common Areas unless such person then has the right to possess the Owner's Home and Lot.

Section 4. **Recognition of Easements**. Each Owner, by acceptance of a deed or other instrument of conveyance, recognizes and consents to the easements reserved and/or granted with respect to the Property under this Declaration or any other Subdivision Document.

Section 5. **Assignments; Additional Easements**. The easements reserved hereunder may be assigned by Declarant or the Association in whole or in part to any city, county or state government or agency thereof, any duly licensed or franchised public utility or any other designee of Declarant. Declarant shall have and hereby reserves the right to grant and/or reserve additional easements over, under and upon the Property or portions thereof (including the portion of Lots where no physical structure of the Home is located) which may be necessary or desirable by Declarant. The Owners hereby authorize Declarant and/or the Association to execute, on their behalf and without any further authorization, such grants of easement or other instruments as may from time to time be necessary to grant easements over and upon the Property or portions thereof in accordance with the provisions of this Declaration.

ARTICLE VI

MEMBERSHIP AND VOTING RIGHTS IN THE ASSOCIATION: BOARD; DURATION OF THE ASSOCIATION

Section 1. **Membership and Voting Rights**. Membership in the Association, and the voting rights of the Members, shall be established and terminated as set forth in the Articles and Bylaws. Each Member shall be entitled to the benefit of, and be subject to, the provisions of the Subdivision Documents.

Section 2. **Board**. The Association shall be governed by the Board which shall be appointed, designated or elected, as the case may be, as set forth in the Articles and Bylaws.

Section 3. **Duration of the Association**. The duration of the Association shall be perpetual, as set forth in the Articles. In the event of termination, dissolution or final liquidation of the Association, the responsibility for the operation and maintenance of the surface water or stormwater management system must be transferred to and accepted by an entity which complies with Rule 62-330.310, F.A.C., and Applicant's Handbook Volume I, Section 12.3, and be approved in writing by the SJRWMD, Florida Department of Environmental Regulation or other governmental authority having jurisdiction prior to such termination, dissolution or liquidation.

ARTICLE VII

COVENANT TO PAY ASSESSMENTS; ESTABLISHMENT OF LIENS; COLLECTION OF ASSESSMENTS; COLLECTION BY DECLARANT; CERTAIN RIGHTS OF DECLARANT AND INSTITUTIONAL MORTGAGEES

Section 1. **Affirmative Covenant to Pay Assessments and Special Assessments**. In order to: (a) fulfill the terms, provisions, covenants, conditions, restrictions, reservations, regulations, burdens, liens and easements contained in the Subdivision Documents; and (b) maintain, operate and preserve the Common Area for the use, safety, welfare and benefit of the Members and their family members, guests, invitees and Tenants, there is hereby imposed upon each Lot and each Owner the affirmative covenant and obligation to pay to the Association, commencing from and after the first conveyance of a Lot from Declarant as evidenced by the recordation of a deed in the public records of the County (in the manner herein set forth), all Assessments which are imposed by the Association to provide for payment of the Operating Expenses and reserves, and all Special Assessments. Each Owner, by acceptance of a deed or other instrument of conveyance conveying a Lot within the Property, whether or not it shall be so expressed in such deed or instrument, shall be obligated and agrees to pay to the Association all Assessments in accordance with the provisions of the Subdivision Documents. Declarant shall have no obligation to pay any Assessments on any Lot which it owns so long as Declarant elects to fund the Deficit as provided in Article VIII, Section 5 below.

Section 2. **Operating Expenses; Reserves; Special Assessments**.

2.1. The following expenses of the Association are hereby declared to be Operating Expenses which the Association is obligated to assess and collect, and which the Owners are obligated to pay as provided herein or as may be otherwise provided in the Subdivision Documents: (1) any and all taxes and tax liens which may be assessed or levied at any and all times against the Common Area, the Community Systems or against any and all personal property or Improvements thereon; (2) all charges levied for Community Systems or other utilities providing services for the Common Area or to Owners on a bulk basis, such as water, gas, electricity, telephone, cable television, telecommunication services, home monitoring, sanitation, sewer and any type of utility or any other type of service charge which is not separately billed to an Owner; (3) the premiums on policies of insurance contemplated to be paid hereunder including, but not limited to, liability and casualty insurance for the Common Area and directors and officers liability insurance for the officers and directors of the Association; (4) any sums necessary for the maintenance and repair of the Common Area and all Improvements located thereon; (5) administrative and operational expenses of the Association and the ARC; (6) all sums necessary for the maintenance and repair of the Surface Water or Stormwater Management System to be maintained by the Association, including but not limited to work within retention areas, drainage structures and drainage easements; and (7) any and all expenses deemed to be Operating Expenses by the Association and/or under this Declaration.

2.2. Reserves for replacements are specifically excluded from Operating Expenses. The Board may, if it so determines, include reserves in the Association's annual budget.

2.3. In addition, any expense of the Association which is not an Operating Expense shall be the subject of a Special Assessment. Expenses which are required to be the matter of Special Assessment include, by way of example but not by way of limitation, the following: the cost of reconstructing, replacing or improving the Common

Area or any portion thereof or Improvements thereon; any casualty loss affecting the Association or the Common Area to the extent such loss exceeds the insurance proceeds, if any, receivable by the Association as a result of such loss; any judgment against the Association (or against a Director or Directors if and to the extent such Director is, or such Directors are, entitled to be indemnified by the Association therefor pursuant to the Articles) to the extent such judgment exceeds the insurance proceeds, if any received by the Association as a result of such judgment, or an agreement by the Association (or such Director or Directors to whom indemnification is owed) to pay an amount in settlement of a lawsuit against it (or such Director or Directors) to the extent such settlement exceeds the insurance proceeds, if any, received by the Association as a result of such settlement agreement; and Legal Fees incurred by the Association in connection with litigation (whether incurred for the preparation, filing, prosecution or settlement thereof or otherwise), except Legal Fees incurred by the Association in connection with the collection of Assessments or other charges which Owners are obligated to pay pursuant to the Subdivision Documents or the enforcement of the use and occupancy restrictions contained in the Subdivision Documents. Notwithstanding anything to the contrary herein contained, it is recognized and declared that Special Assessments shall be in addition to, and are not part of, any Assessment. Any Special Assessments assessed against Lots and the Owners thereof shall be paid by such Owners in addition to any other Assessments and shall be assessed in the same manner as the Assessment.

Section 3. **Establishment of Liens**. Each Assessment against a Lot, together with Interest thereon and costs of collection, including, but not limited to, Legal Fees, shall be the personal obligation of the Owner of such Lot. Any and all Assessments made by the Association in accordance with the provisions of the Subdivision Documents with Interest thereon and costs of collection, including, but not limited to, Legal Fees, are hereby declared to be a charge and continuing lien upon each Lot against which each such Assessment is made. Said lien shall be effective only from and after the time of the recordation amongst the public records of the County of a written, acknowledged statement by the Association setting forth the amount due to the Association as of the date the statement is signed. Upon full payment of all sums secured by that lien, the party making payment shall be entitled to a satisfaction of the statement of lien in recordable form. In the event an Institutional Mortgagee of record obtains title to a Lot as a result of foreclosure of its Institutional Mortgage or deed in lieu of foreclosure, such acquirer of title, its successors or assigns, shall be liable for Assessments to the maximum extent provided by Section 720.3085(2)(c), Florida Statutes, as amended from time to time, and shall not be liable for any greater share of Assessments pertaining to such Lot or chargeable to the former Owner thereof which became due prior to the acquisition of a deed or title as a result of the foreclosure or deed in lieu thereof, unless the Assessment against the Lot in question is secured by a claim of lien for Assessments that is recorded prior to the recordation of the Institutional Mortgage which was foreclosed or with respect to which a deed in lieu of foreclosure was given.

Section 4. **Collection of Assessments**. In the event any Owner shall fail to pay any Assessment, or installment thereof, charged to such Owner within fifteen (15) days after the same becomes due, then the Association, through its Board, shall have any and all of the following remedies to the extent permitted by law, which remedies are cumulative and which remedies are not in lieu of, but are in addition to, all other remedies available to the Association:

4.1. To accelerate the entire amount of any Assessment for the remainder of the calendar year notwithstanding any provisions for the payment thereof in installments.

4.2. To advance on behalf of the Owner(s) in default funds to accomplish the needs of the Association up to and including the full amount for which such Owner(s) is (are) liable to the Association and the amount or amounts of monies so advanced, together with Interest and all costs of collection thereof, including, but not limited to, Legal Fees, may thereupon be collected by the Association from the Owner(s) and Parcel Owner(s) and such advance by the Association shall not waive the default.

4.3. To file an action in equity to foreclose its lien at any time after the effective date thereof as provided in Section 3 above. The lien may be foreclosed by an action in the name of the Association in like manner as a foreclosure of a mortgage on real property. By taking such action, the Association shall not be precluded from seeking a remedy under Section 4.4 below.

4.4. To file an action at law to collect said Assessment plus Interest and all costs of collection thereof including, but not limited to, Legal Fees, without waiving any lien rights or rights of foreclosure of the Association. By taking such action, the Association shall not be precluded from seeking a remedy under Section 4.3 above.

4.5. To charge Interest on such Assessment from the date it becomes due, as well as a late charge of Twenty-Five and No/100 Dollars ($25.00) to defray additional collection costs.

4.6. To suspend the use rights of the Owner(s) in default to the Common Area, subject to the Notice and Hearing provisions in Article XIII, Section 1 herein.

4.7. To suspend the right of the Owner(s) in default to vote on any matter on which Owners have the right to vote if such Owner is delinquent in payment of Assessments or Special Assessments for more than ninety (90) days.

Section 5. **Rights of Declarant and Institutional Mortgagees to Pay Assessments and Receive Reimbursement**. Declarant and any Institutional Mortgagee(s) shall have the right, but not the obligation, jointly or individually, and at their sole option, to pay any of the Assessments which are in default and which may or have become a charge against any Lot(s). Further, Declarant and any Institutional Mortgagee shall have the right, but not the obligation, jointly or individually, and, at their sole option to pay insurance premiums or fidelity bond premiums or other required items of Operating Expenses on behalf of the Association in the event the same are overdue and when lapses in policies or services may occur. Declarant and any Institutional Mortgagee paying overdue Operating Expenses on behalf of the Association will be entitled to immediate reimbursement from the Association plus Interest and any costs of collection including, but not limited to Legal Fees, and the Association shall execute an instrument in recordable form acknowledging such reimbursement obligation(s) and deliver the original of such instrument to each Institutional Mortgagee who is so entitled to reimbursement and to Declarant if Declarant is entitled to reimbursement.

Section 6. **Collection by Association**. Subject to the provisions of Article VIII below, the Association shall initially collect all assessments and other sums due the Association. Each Owner will receive one or more statements annually or each quarter, as applicable, from the Association which lists the amounts owed to the Association.

ARTICLE VIII

METHOD OF DETERMINING ASSESSMENTS AND ALLOCATION OF ASSESSMENTS

Section 1. **Determining Amount of Assessments**. The total anticipated Operating Expenses and reserves for each calendar year shall be set forth in the budget ("Budget") prepared by the Board as required under the Subdivision Documents. Each Lot shall be assessed its pro rata portion of the total anticipated Operating Expenses and reserves, which shall be the "Assessment" as to each Lot. Operating Expenses and reserves shall be divided by the total number of Lots planned for the Subdivision, but subject to change in accordance with this Declaration. Notwithstanding anything in the Subdivision Documents to the contrary, only a "Lot" and the Owner thereof shall be obligated to pay Assessments. Further, any Assessment for Legal Fees incurred by the Association for lawsuits shall be deemed an Operating Expense which is properly the subject of Special Assessment and not the subject of an Assessment, except the Legal Fees incurred by the Association in connection with the collection of assessments or other charges which Owners are obligated to pay pursuant to the Subdivision Documents or the enforcement of the use and occupancy restrictions contained in the Subdivision Documents.

Section 2. **Assessment Payments**. Assessments, exclusive of Special Assessments, shall be payable quarterly, in advance, on the first (1st) day of each fiscal quarter. Notwithstanding the foregoing, the Board has the right to change the method and frequency of the payments of Assessments. Assessments, and the amount or frequency of payments thereof, may be adjusted from time to time by the Board due to changes in the Budget or in the event the Board determines that an Assessment or any installment thereof is either less than or more than the amount actually required.

Section 3. **Special Assessments**. Special Assessments shall be paid in such installments or in a lump sum as the Board shall, from time to time, determine. Notwithstanding the foregoing, the levying of any Special Assessment after the Turnover Date shall require the affirmative assent of at least two-thirds (2/3) of all Members represented in person or by proxy at a meeting called and held in accordance with the Bylaws; provided, however, the Board acting alone and without the consent of Members may levy Special Assessments for the following: i) in the event of a casualty loss to repair and replace Common Area which is not insurable (e.g., landscaping, fencing, etc.), not insured, under insured or where insurance coverage was denied by the insurance carrier after the casualty loss; ii) to

obtain funds to cover insurance deductibles in the event of a casualty loss; and iii) any Special Assessment authorized by Article VII, Section 2.3 herein. Prior to the Turnover Date, a Declarant-controlled Board may make a Special Assessment without such vote of the Members. Special Assessments are not included in the guarantee set forth in Section 5 below.

Section 4. **Liability of Owners for Lot Assessments.** By the acceptance of a deed or other instrument of conveyance of a Lot in the Property, each Owner thereof acknowledges that each Lot and the Owners thereof are jointly and severally liable for their own Lot Assessments and their applicable portion of any Special Assessments, as well as for any and all other Assessments for which they are liable, as provided for herein. Such Owners further recognize and covenant that they are jointly and severally liable with the Owners of all Lots for the Operating Expenses (subject to any specific limitations provided for herein such as, but not limited to, the limitation with respect to matters of Special Assessment and the limitations on the liability of Institutional Mortgagees and their successors and assigns). Accordingly, subject to such specific limitations, it is recognized and agreed by each Owner, for such Owner and such Owner's heirs, executors, successors and assigns, that in the event any Owner fails or refuses to pay such Owner's Lot Assessment or any portion thereof, or such Owner's respective portion of any Special Assessment or any other Assessment, then the other Owners may be responsible for increased Lot Assessments or Special Assessments or other Assessments due to the nonpayment by such other Owner, and such increased Lot Assessment or Special Assessment or other Assessment can and may be enforced by the Association and Declarant in the same manner as all other Assessments hereunder as provided in the Subdivision Documents.

Section 5. **Declarant's Obligation for Assessments and Optional Declarant Deficit Funding**. To the extent permitted by Florida law and as specified in Section 720.308(1)(b) of the Act, during the time which Declarant has the right to control the Board, Declarant may satisfy the obligation for Assessments on completed Homes which it owns either by paying Assessments in the same manner as any other Owner or by funding the Budget deficit. The Budget deficit is the difference between (i) the amount of Assessments levied on Completed Homes owned by Owners other than Declarant, and (ii) the amount of the Association's actual expenditures during the fiscal year, excluding contributions to reserves and excluding Special Assessments arising as a result of any unusual loss or liability. Unless Declarant otherwise notifies the Board in writing at least thirty (30) days before the beginning of the fiscal year, Declarant shall continue paying on the same basis as during the previous fiscal year. Regardless of Declarant's election, Declarant's Assessment obligations may be satisfied in the form of cash or by "in kind" contributions of services or materials, or by a combination of these, the value of which shall be quantified with proof of invoices, etc. After Declarant's right to control the Board terminates, Declarant shall pay Assessments on completed Homes which it owns in the same manner as any other Owner. Declarant's rights under this Section 5 do not constitute a guarantee of Assessments or Operating Expenses under and as described in Section 720.308(2) of the Act.

Section 6. **Working Fund Contribution**. Each Owner who purchases a Lot shall pay to the Association, at the time legal title is conveyed to such Owner, a "Working Fund Contribution" in the amount of Two Hundred and 00/100 Dollars ($200.00). Working Fund Contributions are not advance payments of Assessments and shall have no effect on future Assessments, nor will they be held in reserve. To ensure that the Association will have sufficient cash available to pay for start-up expenses, Operating Expenses and other expenses, Declarant may from time to time advance to the Association the Working Fund Contribution applicable to any Lot(s) prior to the time legal title to such Lot(s) is conveyed to the Owner(s) thereof. In the event Declarant advances the Working Fund Contribution applicable to any Lot, then, at the time legal title to such Lot is conveyed to the Owner thereof, the Contribution to be paid by such Owner to the Association pursuant to this Section 7 shall be paid directly to Declarant in reimbursement of the advance, instead of to the Association. Working Fund Contributions (whether paid by Owner or advanced by Declarant) may also be used to offset Operating Expenses.

Section 7. **Declarant Subsidies**. Except as may be limited by applicable law, Declarant may (at its sole election): subsidize the Budget of the Association as provided below by making voluntary contributions in amounts determined by Declarant in Declarant's sole discretion. During the period of time that Declarant is offering Homes for sale in the Subdivision and/or based on the number of Homes owned by Owners other than Declarant, Declarant may seek to keep Assessments lower than they otherwise may be by subsidizing the Budget of the Association by making voluntary contributions in amounts determined by Declarant. The amount of any such voluntary contributions may vary from time to time or may be discontinued and/or recommenced by Declarant from time to time. The determination to subsidize the Budget of the Association, the amount of any such voluntary contribution, the discontinuance and/or recommencement of any such voluntary contributions shall all be made by Declarant in Declarant's sole discretion and in no event shall Declarant have any obligation whatsoever to make any such voluntary contributions. Each Owner shall be solely responsible to review the Budget of the Association then in effect to determine if and to what extent

DRAFT

Declarant is making any voluntary contributions to subsidize the Budget and thus lower the Assessments payable by the Owners that would otherwise by higher based on the Operating Expenses of the Association.

Section 8. **Waiver of Use.** No Owner, other than Declarant, is exempt from personal liability for Assessments duly levied by the Association. No Owner may avoid the obligation to pay Assessments by attempting to waive the use and enjoyment of the Common Area and the facilities thereon or by abandonment of such Owner's Home.

ARTICLE IX

ARCHITECTURAL CONTROL

Section 1. **Declarant Exempt**. The provisions of this Article IX, Sections 2 through 9, shall not be operative against Declarant for any period of time when Declarant owns any of the Lots.

Section 2. **Architectural Review Committee**. The site development, design and architectural review and control functions of the Association shall be administered and performed by the Architectural Review Committee ("ARC"), which shall consist of three (3) or five (5) members, none of whom are required to be Members of the Association. The Board of Directors of the Association shall have the right to appoint all of the members of the ARC. A majority of the ARC shall constitute a quorum to transact business at any meeting of the ARC, and the action of a majority present at a meeting at which a quorum is present shall constitute the action of the ARC. Any vacancy occurring on the ARC because of death, resignation or termination of service of any member thereof shall be filled by the Board of Directors. If the ARC does not function or exist, for whatever reason at any time hereafter, then all of the functions otherwise to be performed by the ARC shall be performed by the Association as a whole.

Section 3. **Powers and Duties of the ARC**. The ARC shall have the following powers and duties:

3.1. To require submission to the ARC of two (2) complete sets of all preliminary and final plans and specifications for any improvement or structure of any kind requiring review and approval of the ARC pursuant to this Article IX. The ARC may also require submission of samples of building materials, surveys and such additional information as reasonably may be necessary for the ARC to completely evaluate the proposed structure or improvement in accordance with the Subdivision Documents and applicable use restrictions and design criteria established by Declarant.

3.2. To approve or disapprove in accordance with the provisions of this Article IX, any improvements or structures of any kind, and to approve or disapprove any exterior additions, changes, modifications or alterations therein or thereon. All decisions of the ARC may, but need not be, evidenced by a certificate in recordable form executed under seal by the President or any Vice President of the Association. Any party aggrieved by a decision of the ARC shall have the right to make a written request to the Board, within thirty (30) days of such decision, for a review thereof. The determination of the Board upon review of any such decision shall be dispositive.

3.3. To adopt a schedule of reasonable fees for processing requests for ARC approval of proposed improvements. Such fees, if any, shall be payable to the Association, in cash, at the time that plans and specifications are submitted to the ARC.

Section 4. **Compensation of ARC**. The Board may, at its option, pay reasonable compensation to any or all members of the ARC, provided however, for so long as a majority of the Board of Directors shall be appointed by Declarant, no member of the ARC may be compensated.

Section 5. **Architectural Review and Approval**. No Lot Improvement of any kind, including without limitation, any building, addition, pool, play set or play equipment, fence, wall, screen enclosure, sewer, drain, disposal system, landscape device or object, driveway or other structure or Improvement shall be commenced, erected, placed or maintained upon any Lot, nor shall any addition, alteration, replacement or removal thereof be made unless and until the plans, specifications and location of the same have been submitted to and approved in writing by the ARC. All plans and specifications shall be evaluated as to visual and acoustical privacy and as to the harmony of external design and location in relation to surrounding structures, topography, existing trees and other natural vegetation and as to specific conformance with use restrictions or architectural criteria which may be imposed from time to time by Declarant or the Association with respect to any particular portion of the Property. Any Owner desiring to make any

DRAFT

Lot Improvement shall supply two (2) sets of completed plans and specifications to the ARC and no plan or specification shall be deemed approved unless a written approval is granted by the ARC to the Owner submitting same. The ARC shall approve or disapprove plans and specifications properly submitted within thirty (30) days of each submission. Any change or modification to an approved plan shall not be deemed approved unless a written approval is granted by the ARC to the Owner submitting same.

Section 6. **Security Deposit for Improvements**. Upon any Owner's submittal to the ARC for approval of any Lot Improvements as required in Section 5 above, the ARC, at its discretion, may also require the Owner's payment to the Association of a security deposit in an amount not to exceed Five Thousand and No/100 Dollars ($5,000.00) to cover costs of incidental damage caused to the Common Area, adjacent Homes or Lots or any property (real or personal) by virtue of any such Lot Improvement. The ARC shall have the sole and absolute discretion to determine whether a security deposit is required for the Lot Improvements being requested. The Association shall not be obligated to place the security deposit in an interest bearing account. The Owner shall be entitled to the return of the security deposit upon: (i) such Owner's written notice to the ARC that the Lot Improvements covered by the security deposit have been completed in accordance with the plans and specifications as approved by the ARC; and (ii) the ARC's confirmation of satisfactory completion of such Lot Improvements; provided, however, should any incidental damage be caused to any part of the Common Area by virtue of such Owner's construction of Lot Improvements, the security deposit shall not be returned to Owner until such damages have been repaired. In the event that Owner has not repaired such damages to the Common Area to the satisfaction of the ARC, Association shall have the right (but not the obligation), after five (5) days' notice to the Owner, to repair such incidental damage and to retain the security deposit, or such portion thereof, to offset the costs of such work. In addition, the Owner hereby agrees to indemnify and reimburse the Association for all reasonable costs expended by the Association in excess of the security deposit, including Interest and Legal Fees, if any, incurred in connection therewith. Should any incidental damage be caused to an adjacent Lot or Home by virtue of such Owner's construction of any Lot Improvements, the Owner of the adjacent Lot (the "Adjacent Lot Owner") shall, at their sole option: (a) remedy such damage and submit to the Association a receipt, invoice or statement therefor for reimbursement from the security deposit held by the Association; or (b) allow the offending Owner to repair such damage to the Lot or Home at the offending Owner's sole cost and expense, and upon receipt by the Association of written notice from the Adjacent Lot Owner that such incidental damage has been repaired, the offending Owner shall be entitled to a return of the security deposit being held by the Association, if any.

Notwithstanding anything contained in this Section to the contrary, the Association's return of the security deposit for any such Lot Improvements shall be based solely on considerations set forth above. The Association's return of the security deposit does not and shall not be construed to constitute a determination by members and representatives of the ARC, Declarant and/or the Association of the structural safety, approval or integrity of any Lot Improvement, conformance with building or other codes or standards or the proper issuance of governmental permits and approvals for any Lot Improvement.

Section 7. **Meetings of the ARC**. The ARC shall meet from time to time as necessary to perform its duties hereunder. The ARC may from time to time, by resolution unanimously adopted in writing, designate an ARC representative (who may, but need not, be one of its members) to take any action or perform any duties for and on behalf of the ARC except for granting variances pursuant to Section 11 below. In the absence of such designation, the vote of any two (2) members of the ARC shall constitute an act of the ARC.

Section 8. **No Waiver of Future Approvals**. The approval of the ARC of any plans and specifications or drawings for any work performed or proposed shall not be deemed to constitute a waiver of any right to withhold approval or consent to any identical or similar proposal subsequently or additionally submitted for approval or consent, whether such submission is by that applicant or another applicant. Similarly, denial by the ARC of any plans and specifications or drawings for any work performed or proposed shall not be deemed to constitute a waiver of any right to approve or consent to any identical or similar proposal subsequently or additionally submitted for approval or consent, whether such submission is by that applicant or another applicant.

Section 9. **Inspection of the Work**. Inspection of work on any Lot Improvement and correction of defects therein shall proceed as follows:

9.1. The Owner shall notify the ARC in writing upon the completion of any Lot Improvement submitted and approved under this Article.

9.2. Within thirty (30) days after receipt of such written notice, the ARC may inspect or cause the inspection of such Lot Improvement. If the ARC determines such Lot Improvement is not in substantial compliance with the approved plans, the ARC shall deliver written notice to the Owner specifying the noncompliance and requiring the Owner's remedy thereof within fifteen (15) days.

9.3. If the Owner fails to timely remedy the noncompliance, the ARC shall deliver written notice of such failure to the Board. The Board shall thereafter verify the noncompliance, the nature thereof and the estimated cost of correcting or removing the same, and shall deliver to the Owner written notice of the Board's determination. Within thirty (30) days of the date of the Board's determination, the Owner shall remedy or remove the noncompliance. If the Owner does not timely comply with the Board's ruling, the Board, at its option, may remove the Lot Improvement, remedy the noncompliance or proceed in court to compel compliance, and the submitting Owner shall be liable for reimbursement to the Association, upon demand, for all expenses incurred hereunder, including Interest and Legal Fees. If such expenses are not promptly paid to the Association by the Owner, the Board shall levy an Assessment against such Owner and said Assessment shall constitute a lien upon the Owner's Lot and Home with the same force and effect as liens for Operating Expenses.

9.4. If, for any reason, notification is not given to the submitting Owner of acceptance within thirty (30) days after receipt of said written notice of completion from the submitting Owner, the Lot Improvement and/or alteration shall be deemed to be in compliance with said approved plans.

Section 10. **Limitation on Liability.** Neither the ARC, any member thereof, any duly authorized ARC representative, the Association nor Declarant shall be liable for any loss, damage or injury arising out of or in any way connected with the performance of the ARC duties hereunder, unless due to the willful misconduct or bad faith of a member in which event only that member shall incur any liability. The ARC's review and approval or disapproval of plans submitted to it for any proposed Lot Improvement shall be based solely on considerations of the overall benefit or detriment to the Subdivision. The ARC shall not be responsible for reviewing, nor shall its approval of any plan or design be deemed approval of, any plan or design from the standpoint of structural safety or conformance with building or other codes or standards, and no member or representative of the ARC or the Association, nor Declarant, shall be liable for the safety, soundness, workmanship, materials or usefulness for any purpose of any such Lot Improvement or alteration proposed by the plans. By submitting a request for review and approval by the ARC, an Owner shall be deemed to have and does automatically agree to indemnify, defend and hold harmless the ARC, the Association and Declarant (and each of their respective officers, directors, partners, affiliates, members and representatives) from and against any and all claims, causes of action, losses, damages, liabilities, costs and expenses (including, without limitation, Interest and Legal Fees) arising from, relating to or in any way connected with any Lot Improvement for which such request was submitted. Furthermore, any approval by the ARC does not excuse Owner from also obtaining approvals from all applicable governmental authorities.

Section 11. **Variance**. Declarant and the ARC may authorize variances from compliance with any architectural provisions of this Declaration or applicable design criteria when circumstances such as topography, natural obstructions, hardships or aesthetic or environmental considerations require same. Such a variance must be evidenced by a document signed by an authorized representative of Declarant or ARC, as applicable. If such a variance was granted, no violation of the covenants, conditions and restrictions contained in this Declaration shall be deemed to have occurred with respect to the matters for which the variance was granted. The granting of such a variance shall not, however, operate to waive any of the terms and provisions of this Declaration for any purpose except as to the particular Lot and particular provisions of this Declaration or applicable design criteria covered by the variance, nor shall it effect in any way an Owner's obligation to comply with all governmental laws and regulations, including, but not limited to, zoning ordinances and setback lines or requirements imposed by any governmental or municipal authority.

Section 12. **Florida-Friendly Landscaping**. No Owner may be prohibited from installing, maintaining or otherwise implementing Florida-Friendly Landscaping, as defined in Florida Statutes Section 373.185 1(b), on the Owner's private property in accordance with Florida Statutes Section 373.185 (2022). Additional Information concerning Florida Friendly Landscaping may be found at https://ffl.ifas.ufl.edu and www.sjrwmd.com/water-conservation/waterwise-landscaping.

DRAFT

ARTICLE X

MAINTENANCE AND REPAIR OBLIGATIONS

Section 1. **By the Association**.

1.1. The Association, at its expense, shall be responsible for the operation, maintenance, repair and replacement of all of the Improvements and facilities located over, through and upon the Common Area, including, without limitation, the Surface Water or Stormwater Management System, as otherwise provided herein (except public utilities and Community Systems, to the extent same have not been made Common Area). Should any incidental damage be caused to any Home by virtue of the Association's failure to maintain the Common Area as herein required or by virtue of any work which may be performed or caused to be performed by the Association in the maintenance, repair or replacement of any Common Area, the Association shall, at its expense, repair such incidental damage. The Association shall not, however, be responsible for any loss of use, any hardship, an Owner's time or any other consequential or punitive damages.

1.2. The Association shall be responsible for the maintenance, repair and replacement of all private streets, drives, roads and roadways, if any, located upon the Common Area, and the Association hereby reserves the right to enter upon any and all parts of the Common Area and Lots for such purpose. To the extent permitted by the appropriate governmental authority, the Association may, but shall not be obligated to, also provide maintenance of all city, County, SJRWMD or municipal properties which are located within or in a reasonable proximity of the Property to the extent that their deterioration or unkempt appearance would adversely affect the appearance of the Property, including the right to enhance the landscaping in any public right of way.

1.3. The Association shall be responsible for the maintenance, repair and replacement of any common lighting located within the Property; provided, however, the Association shall not be responsible for the maintenance, repair and replacement of any lighting provided by any governmental or private electric utility.

1.4. In accordance with the provisions of this Declaration, the Association shall operate, maintain and repair the Surface Water or Stormwater Management System in accordance with the District Permit. Any repair or construction of the Surface Water or Stormwater Management System shall be as permitted or, if modified, as approved by SJRWMD. The Association hereby reserves the right to enter upon the Common Area and the Lots for the purpose of operating, maintaining, repairing and replacing the Surface Water or Stormwater Management System over, through and upon the Property. The Association shall be responsible for all costs associated with all cleaning, maintenance, repairs and replacement of any portion of the Surface Water or Stormwater Management System necessary to maintain the system in its original condition and use and as required by the District Permit. In the event the Association fails to maintain the Surface Water or Stormwater Management System in accordance with this Declaration, the District Permit and/or any other permit or permission issued by governmental agency having jurisdiction over the Surface Water or Stormwater Management System, as any of the same may be amended from time to time, then SJRWMD or other authority that issued or granted an applicable permit or permission shall have the right to commence an action against the Association, including, without limitation, monetary penalties and injunctive relief, to compel the Association to maintain the portions of the Surface Water or Storm Water Management System for which the Association is responsible in accordance with this Declaration, the District Permit or such other permit or permission. The registered agent for the Association shall retain a copy of the District Permit and any other permit or permission referenced herein for the Association's benefit. Neither the Association nor any Owner shall alter the slopes, contours or cross sections of the lakes, lake banks and littoral zones or chemically, mechanically or manually remove, damage or destroy any plants in any of the littoral zones, except upon the written approval from the applicable governmental authority. The Association shall be responsible for maintaining the required survivorship and coverage of the planted littoral areas to ensure the ongoing removal of prohibited and invasive non-native plant species from these areas and to comply with all governmental regulations applicable to the lakes, lake banks and littoral zones.

1.5. Except as otherwise provided in Article V, Section 2.6.B., the Association shall maintain and care for any sod, lawns and landscaping which are encompassed within any Common Area, including, without limitation, the common irrigation system, if any, installed thereon. "Maintenance and care" within the meaning of this Section 1.5 shall include irrigating, mowing, edging, fertilizing, trimming of trees and landscaping and spraying of lawns, all to the level of care deemed appropriate by the Association, and replacement of sod, trees and landscaping (including, without limitation, replacement of any dead or dying trees) so that, at a minimum, the initial landscaping provided by Declarant is maintained.

1.6. Any property designated as open space, buffer, preserve area, conservation or wetland area on any plat, permit or other document recorded in the public records of the County shall be preserved and maintained by the owner of such property in a natural open condition. The Association or any subsequent owner shall not do anything that diminishes or destroys the open space, buffer, preserve area or conservation area, and such areas shall not be developed for any purpose except that which improves or promotes the use and enjoyment of such areas as open space.

1.7. The Association, by action of its Board, may make minor and insubstantial alterations and Improvements to the Common Area having a cost not in excess of Five Thousand Dollars ($5,000). All other alterations and Improvements must first be approved in accordance with the procedures for approving a Special Assessment as set forth in Article VIII, Section 3 of this Declaration. No alteration or Improvement may be made to the Common Area which materially and adversely affects the rights of the Owner of any Lot to the enjoyment of such Owner's Lot or the Common Area unless the Owner and all mortgagees holding recorded mortgages on such Lot consent thereto in writing.

1.8. All expenses incurred by the Association in connection with the services, operation, maintenance, repair and replacement described in this Section 1 are Operating Expenses, payable by each Owner under the provisions of this Declaration concerning Assessments, except for those described in Section 1.6 above, and provided however, that should the maintenance, repair or replacement provided for in this Section 1 be caused by or result from the negligence of or misuse by an Owner, such Owner's family, guests, servants, invitees or Tenants, such Owner shall be responsible therefor and the Association shall have the right to levy an Assessment against such Owner's Lot and said Assessment shall constitute a lien upon the appropriate Lot and Home with the same force and effect as liens for Operating Expenses.

1.9. The Association has a reasonable right of entry upon any Lot to make emergency repairs and to do other work reasonably necessary for the proper maintenance and operation of the Subdivision.

1.10. Notwithstanding anything to the contrary in this Section 1, if the Association undertakes any maintenance or repair obligation that is otherwise the responsibility of the Association because of damage that results in majority or greater part due to or related to the negligence or misconduct of an Owner (or any of an Owner's family, guests, invitees or Tenants), then the Association shall treat the costs of undertaking such maintenance or repair obligations shall be treated as expenses for which a Special Assessment may be levied pursuant to Article VII, Section 2.3 of this Declaration.

Section 2. **By the Owners**.

2.1. Each Owner shall maintain and care for the sod, lawns and landscaping which are encompassed within that Owner's Lot, including, without limitation, the irrigation system installed thereon which is for the sole use and benefit of the Owner's Lot and which is not part of any common irrigation system. In addition to the foregoing, each Owner shall maintain and care for the grassed areas (including, without limitation, all landscaping thereon, if any) located between the front and/or side lot line of such Owner's Lot and the edge of the roadway in front and/or side of such Owner's Lot. "Maintenance and care" within the meaning of this Section 2.1 shall include irrigating, mowing, edging, fertilizing, trimming of trees and landscaping and spraying of lawns, all to the level of care deemed appropriate by the Association, and replacement of sod, trees and landscaping (including, without limitation, replacement of any dead or dying trees) so that, at a minimum, the initial landscaping provided by Declarant is maintained. The Owner of each Lot must keep and maintain the Lot, the Improvements and the Lot Improvements, including all equipment and appurtenances, in good order, condition and repair, and must perform promptly all maintenance and repair work within, upon and outside of such Owner's Home which, if omitted, could adversely affect the Subdivision, the Owners or the Association and its Members. The Owner of each Lot shall be responsible for any damages caused by a failure to so maintain such Lot, Improvements, Lot Improvements and Home. The Owners' responsibility for maintenance, repair and replacement shall include, but not be limited to, all of the physical structures constructed in, upon, above or below the Lot, and physical items attached or connected to such structures that run beyond the boundary line of the Lot which exclusively service or benefit the Lot and Home. Without limiting the generality of the foregoing, the Owner of each Lot shall keep all drainage structures (such as catch basins) located on the Owner's Lot clear of grass, leaves and other debris. Additionally, the painting, caulking and maintenance of the exterior surface of the walls, doors, windows and roof of the physical structures of the Home shall be performed by Owner, and the exterior surface of such walls, doors, windows and roof shall at all times be maintained in a good and serviceable condition with no damage or other defect therein by the Owner. The Owner of a Lot further agrees to pay for all utilities (including, without limitation, those provided by the Community Systems), such as telephone, cable or

satellite television, telecommunication systems, home monitoring, water (including water associated with irrigation, other than for a common irrigation system, if any), sewer, sanitation, electric, etc., that may be separately billed or charged to each Home. The Owner of each Lot shall be responsible for insect and pest control within the Home and the Lot.

2.2. The Owner of each Lot shall take no action or otherwise interfere with the Association's maintenance and care of the sod, lawns and landscaping encompassed within the Owner's Lot. The Owner shall not install any new sod, lawn, landscaping or trees, nor shall they alter or modify any sod, lawn, landscaping or trees, without the prior consent and approval of the Association.

2.3. Declarant may have constructed one or more drainage swales upon each Lot for the purpose of managing and containing the flow of excess surface water, if any, found upon such Lot from time to time. The Association shall be responsible for the maintenance, operation and repair of the swales on the Lot, and each Lot Owner shall cooperate with and not interfere with the Association obligations regarding drainage swales. Each Lot Owner shall not interfere with or do anything which impairs the ability of the swales to provide drainage, water storage, conveyance or other stormwater management capabilities as permitted by the SJRWMD. No Lot Owner shall fill, excavate, construct fences or otherwise obstruct the surface water flow in the swales. No alteration of the drainage swale shall be authorized and any damage to any drainage swale, whether caused by natural or human-induced phenomena, shall be repaired and the drainage swale returned to its former condition as soon as possible by the Owner(s) of the Lot(s) upon which the drainage swale is located.

2.4. The Owner of each Lot shall maintain, repair and replace as needed any fencing on their Lot, clean, maintain and repair the driveway on their Lot and keep the sidewalk located on and/or adjacent to their Lot clean and free from any stains, trash, debris and/or impediments to pedestrian traffic.

2.5. Each Owner of a Lot abutting or including any portion of the Surface Water and Stormwater Management System shall be responsible for maintaining and repairing the portion of the water bank and slopes on his or her Lot.

2.6. In addition to the above, the Owner of each Home shall be responsible to fix leaks in and otherwise maintain and repair the roof of such Owner's Home; replace any dead or obviously dying trees on their Lot; and maintain, repair and replace any fences on their Lot, except as otherwise provided in Section 1.4 above. The Owner of each Home shall also clean, maintain and repair the driveway located on its Lot and keep the sidewalks located on its Lot clean and free from any impediments to pedestrian traffic.

2.7. If a Home is damaged by fire or other casualty, its Owner shall properly and promptly restore it to at least as good a condition as it was before the casualty occurred. Any such work shall be in accordance with the original plans and specifications of the Home unless otherwise authorized by the Board and shall be otherwise subject to all provisions of Article IX hereof.

2.8. Each Owner shall keep such Owner's Home insured in an amount not less than its full insurable value against loss or damage by fire or other hazards. Evidence of such coverage shall be furnished to the Association promptly upon the Board's request.

2.9. If an Owner fails to comply with the foregoing provisions of this Section 2, the Association may proceed in court to compel compliance. Further, if the failure to comply relates to the Owner's obligations to maintain insurance, the Association shall be entitled, although not obligated, to obtain the required coverage itself and to levy on the offending Owner an Assessment equal to the cost of premiums, and any such Assessment shall constitute a lien upon the applicable Lot and Home with the same force and effect as a lien for Operating Expenses.

2.10. If a failure to comply with the provisions of this Section 2 relates to the Owner's obligation to maintain and care for the Home, landscaping or any other area required to be maintained and cared for by the Owner, then, in addition to the exercise of all other remedies, the Association or Declarant shall have the right but not the obligation, upon fifteen (15) days written notice, to enter the Lot of the Owner for the purpose of performing the maintenance and care referred to, set forth and described in the notice and to levy on the offending Owner an Assessment equal to the cost of performing such maintenance and care. Any such Assessment shall constitute a lien upon the applicable Lot and Home with the same force and effect as a lien for Operating Expenses. The determination of whether an Owner is failing to properly maintain and care for the property for which he has the maintenance

responsibility under this Declaration or any of the other Subdivision Documents shall be determined in the sole discretion of the Association or Declarant.

Section 3. **Damage to Improvements on a Lot**. The Owner of any Home which has suffered damage may apply to the ARC for approval for reconstruction, rebuilding or repair of the Improvements which suffered damage. If the obligation for repair falls upon the Association, ARC approval will not be required prior to the commencement of such work, so long as the exterior appearance of the Improvements will be substantially similar to that which existed prior to the date of the casualty.

The owner or owners of any damaged building (including, without limitation, the Owner of a Lot and/or Home), the Association and the ARC shall he obligated to proceed with all due diligence hereunder and the responsible parties shall commence reconstruction within three (3) months after the damage occurs and complete reconstruction within one (1) year after the damage occurs, unless prevented by causes beyond his or her or their reasonable control.

Declarant shall be exempt from the provisions of this Section 3, provided that any such reconstruction, rebuilding or repairs made by Declarant shall be consistent, as to the exterior appearance, with the Improvements as they existed prior to the damage or other casualty.

ARTICLE XI

DAMAGE OR DESTRUCTION TO COMMON AREA

Damage to or destruction of all or any portion of the Common Area shall, notwithstanding any provision in this Declaration to the contrary, be handled as follows:

Section 1. **Determination to Repair or Rebuild**.

1.1. If insurance proceeds are sufficient to effect total restoration of damaged or destroyed Common Area, then the Association shall cause such Common Area to be repaired and reconstructed substantially as it previously existed.

1.2. If insurance proceeds are insufficient to effect total restoration of the Common Area, and the cost of restoration would require a Special Assessment against each Lot in an amount of Five Thousand Dollars ($5,000.00) or less (such amount is based on the value of the dollar in 2014 and shall be increased each year thereafter based upon increases in the Consumer Price Index), then the Association shall cause the Common Area to be repaired and reconstructed substantially as it previously existed and the difference between the insurance proceeds and the actual cost shall be levied as a Special Assessment proportionately against each of the Lots in accordance with the provisions of Articles VII and VIII herein.

1.3. If the insurance proceeds are insufficient to effect total restoration of the Common Area and the cost of restoration of the Common Area would require a Special Assessment against each Lot in an amount greater than Five Thousand Dollars ($5,000.00) (such amount is based on the value of the dollar in 2014 and shall be increased each year thereafter based upon increases in the Consumer Price Index), then by the written consent or vote of a majority of the voting interests, they shall determine whether: (i) to rebuild and restore either (a) in substantially the same manner as the Improvements existed prior to the damage or destruction; or (b) in a manner less expensive, and in the event of (a) or (b) to raise the necessary rebuilding and restoration funds by levying pro rata restoration and construction Special Assessments against all Lots; or (ii) to not rebuild and to retain available insurance proceeds. In the event it is decided that the damaged or destroyed Common Area shall not be rebuilt, the remains of any structure or structures shall be torn down and hauled away so as not to be a safety hazard or visual nuisance and the land shall be fully sodded and landscaped or otherwise treated in an attractive manner. Notwithstanding anything contained herein to the contrary, any decision not to rebuild or to rebuild in a manner which would result in a change in the Improvements shall not be effective without the prior written approval of Declarant (which approval shall be given, conditioned or withheld in Declarant's sole and absolute discretion) as long as Declarant owns any portion of the Property.

Section 2. **Owner Responsibility.** Each Owner shall be liable to the Association for any damage to the Common Area not fully covered or collected by insurance which may be sustained by reason of the negligence or willful misconduct of said Owner or of such Owner's family, Tenants, invitees and guests, both minors and adults.

Section 3. **Excess Funds.** In the event that the repairs and replacements were paid for by any Special Assessments as well as insurance proceeds and regular Assessments, then, if after the completion of and payment for the repair, replacement, construction or reconstruction there shall remain any excess in the hands of the Association, it shall be presumed that the monies disbursed in payment of any repair, replacement, construction, and reconstruction were first disbursed from insurance proceeds and regular Assessments and any remaining funds shall be deemed to be the remaining Special Assessments which shall be returned to the Owners by means of a prorata distribution in accordance with the collection of such Special Assessments.

ARTICLE XII

INSURANCE AND CONDEMNATION

The Association shall purchase and maintain the following insurance coverages subject to the following provisions, and the cost of the premiums therefor shall be a part of the Operating Expenses:

Section 1. **Casualty Insurance**. Property and casualty insurance in an amount equal to the then full replacement cost, exclusive of land, foundation, excavation and other items normally excluded from such coverage, of all Improvements and personal property which are owned by the Association and now or hereafter located upon the Common Area, which insurance shall afford protection against such risks, if any, as shall customarily be covered with respect to areas similar to the Common Area in developments similar to the Subdivision in construction, location and use.

Section 2. **Public Liability Insurance**. A comprehensive policy of public liability insurance naming the Association and Declarant, until Declarant no longer owns any Lot within the Property, as named insureds thereof insuring against any and all claims or demands made by any person or persons whomsoever for personal injuries or property damage received in connection with, or arising from, the operation, maintenance and use of the Common Area and any Improvements located thereon, and for any other risks insured against by such policies with limits of not less than One Million Dollars ($1,000,000.00) for damages incurred or claimed by any one person for any one occurrence; not less than Three Million Dollars ($3,000,000.00) for damages incurred or claimed by more than one person for any one occurrence; and for not less than Fifty Thousand Dollars ($50,000.00) property damage per occurrence with no separate limits stated for the number of claims, or in such other amounts as may be approved by the Board of Directors. The Association may also obtain worker's compensation insurance and other liability insurance including, but not limited to, insurance for lawsuits related to employment contracts in which the Association is a party, as it may deem desirable.

Section 3. **Fidelity Coverage**. Adequate fidelity coverage to protect against dishonest acts of the officers and employees of the Association and the Board and all others who handle and are responsible for handling funds of the Association shall be maintained in the form of fidelity bonds, which requirements shall be reasonably determined by the Board.

Section 4. **Directors' Coverage**. Adequate directors' and officers' liability coverage which coverage shall be effective from and after the date the Association is created.

Section 5. **Other Insurance**. The Board may obtain such other forms of insurance as the Board may determine and in such coverage amounts as the Board shall determine to be required or beneficial for the protection or preservation of the Common Area and any Improvements now or hereafter located thereon or in the best interests of the Association and/or its officers and directors.

Section 6. **Cancellation or Modification**. All insurance policies purchased by the Association shall provide that they may not be canceled (including for nonpayment of premiums) or substantially modified without at least ten (10) days prior written notice to the Association and to each first mortgage holder, if any, named in the mortgage clause.

Section 7. **Flood Insurance**. If determined appropriate by the Board or if required by an Institutional Mortgagee, a master or blanket policy of flood insurance covering the Common Area, if available under the National Flood Insurance Program, shall be purchased, which flood insurance shall be in the form of a standard policy issued by a member of the National Flood Insurers Association, and the amount of the coverage of such insurance shall be

DRAFT

the lesser of the maximum amount of flood insurance available under such program or one hundred percent (100%) of the current replacement cost of all buildings and other insurable property located in the flood hazard area.

Section 8. **Waiver of Subrogation.** As to each policy of insurance maintained by the Association which will not be voided or impaired thereby, the Association hereby waives and releases all claims against the Board, the Owners, Declarant and the agents and employees of each of the foregoing, with respect to any loss covered by such insurance, whether or not caused by negligence of or breach of any agreement of said persons, but only to the extent that such insurance proceeds are received in compensation for such loss.

Section 9. **Condemnation**. In the event the Association receives any award or payment arising from the taking of any Common Area or any part thereof as a result of the exercise of the right of condemnation or eminent domain, the net proceeds thereof shall first be applied to the restoration of such taken areas and improvements thereon to the extent deemed advisable by the Board and approved by at least two-thirds (2/3) of the total voting interests, and the remaining balance thereof, if any, shall then be distributed pro rata to Owners and mortgagees of Lots as their respective interests may appear.

ARTICLE XIII

USE RESTRICTIONS AND RIGHTS AND EASEMENTS RESERVED BY DECLARANT

All of the Property shall be held, used and enjoyed subject to the following limitations and restrictions, and any and all additional Rules and Regulations which may, from time to time, be adopted by the Association, except as provided in Section 22 below:

Section 1. **Enforcement**. Failure of an Owner to comply with any limitations or restrictions in this Declaration or any of the Subdivision Documents or with any Rules and Regulations promulgated by the Association shall be grounds for action which may include, without limitation, an action to recover sums due for damages, injunctive relief or any combination thereof. Without limiting the generality of the foregoing, an Owner shall also be responsible for the payment of any and all Legal Fees incurred by the Association in connection with the enforcement of this Declaration or any of the Subdivision Documents or with any Rules and Regulations promulgated by the Association, whether or not an action is actually begun. Any such Legal Fees shall be paid not later than thirty (30) days after written notice thereof and if not paid within such thirty (30) day period, shall constitute a lien upon the applicable Lot and Home with the same force and effect as a lien for Operating Expenses.

In addition to all other remedies, the Association may suspend, for a reasonable period of time, any or all of the rights of any or all of an Owner or an Owner's Tenants, guests or invitees to use Common Area and facilities (including, without limitation, the use of any services provided by Community Systems, if any); may suspend the voting rights of an Owner if such Owner is delinquent in payment of Assessments for more than ninety (90) days; and may levy reasonable fines against any Owner or any Owner's Tenant, guest or invitee for failure of such Owner, and/or such Owner's family, guests, invitees, Tenants or employees to comply with any of the Subdivision Documents, provided the following procedures are adhered to:

1.1. Notice. The Association shall notify the Owner in writing of the noncompliance and set forth the corrective action to be taken. A fine or suspension of use rights may not be imposed without notice of at least fourteen (14) days to the Owner sought to be fined or suspended and an opportunity for a hearing before a committee of at least three (3) members appointed by the Board (any such committee is an "enforcement committee") who are not officers, directors or employees of the Association, or the spouse, parent, child, brother or sister of an officer, director or employee of the Association. If the enforcement committee, by majority vote, does not approve a proposed fine or suspension, it may not be imposed. At the Association's option, any fine may be levied on a daily basis in the event of a continuing violation without the necessity of a new hearing and without any limitation on the amount of such fine.

1.2. Hearing. Should the Owner still be in noncompliance after being found in violation by an enforcement committee, the noncompliance shall be presented to the Board after which the Board shall hear reasons why a fine should or should not be imposed. A written decision of the Board shall be submitted to the Owner, as applicable, not later than twenty-one (21) days after said meeting.

1.3. Payment. A fine shall be paid not later than thirty (30) days after notice of the imposition of the fine.

1.4. Fines. An Owner shall be responsible for all Legal Fees incurred in connection with the collection of a fine whether or not an action at law or in equity to collect or enforce said fine is commenced. All monies received from fines shall be allocated as directed by the Board, subject always to the provisions of this Declaration.

1.5. Failure to Pay Assessments. Notice and Hearing, as provided in Sections 1.1 and 1.2 above, shall not be required with respect to the imposition of suspension of use rights or fines upon any Owner because of such Owner's failure to pay Assessments or other charges when due.

1.6. Access. Suspension of use rights to Common Area and/or Community Systems shall not impair the right of an Owner or Tenant of a Lot and/or Home to have vehicular and pedestrian ingress to and egress from such Lot and/or Home, including, but not limited to, the right to park.

1.7. Non-exclusive Remedy. The imposition of fines authorized by this Section shall not be construed to be an exclusive remedy and shall exist in addition to all other rights and remedies to which the Association may be otherwise legally entitled; provided, however, any fine paid by an offending Owner shall be deducted from or offset against any damages which the Association may otherwise be entitled to recover by law from such Owner.

Section 2. **Residential Use**. The Lots subject to this Declaration may be used for residential dwellings and for no other purpose except that one or more Lots may be used for model homes during the development and sale of Lots within the Property or other properties. No business or commercial building may be erected on any Lot and no business may be conducted on any part thereof. No Lot shall be divided, subdivided or reduced in size without the prior written consent of the Association. Assessments for common expenses attributable to any Lot which may be subdivided pursuant to this Section 2 shall be reallocated by the Association, in its sole discretion, at the time written consent for such subdivision is given by the Association.

Section 3. **Occupancy of Home**. The Fair Housing Amendments Act of 1988 (Public Law 100-430, approved September 13, 1988) ("Fair Housing Act"), which became effective in March, 1989, and as amended effective December 31, 1995, provides that communities cannot reject families with children. Therefore, neither Declarant nor the Association shall have the authority to prohibit children.

Section 4. **Leases**. No Home, or portion thereof, may be rented for a period of less than one (1) calendar month. All leases shall provide, and if they do not so provide then the leases shall be deemed to provide, that the Association shall have the right to terminate the lease upon default by the Tenant in observing any of the provisions of this Declaration, the Articles, the Bylaws, applicable Rules and Regulations or of any other agreement, document or instrument governing the Lots or Homes. The Owner of a leased Home shall be jointly and severally liable with such Owner's Tenant for compliance with the Subdivision Documents and to the Association to pay any claim for injury or damage to property caused by the negligence of the Tenant. Every lease shall be subordinate to any lien filed by the Association whether before or after such lease was entered into.

Within five (5) days following execution of a lease for a Home, but in no event later than occupancy of the Home by a Tenant, Owner shall: (a) notify the Association in writing with the name of the Tenant and all of Tenant's family members or others that will be occupying the Home, and (b) provide the Association with a true, correct and complete copy of the lease agreement. In the event Owner fails to timely comply with the foregoing, such lease shall be null and void and of no further force or effect and Owner shall be in violation of this Declaration.

Section 5. **Increase in Insurance Rates**. No Owner may engage in any action which may reasonably be expected to result in an increase in the rate of any insurance policy or policies covering or with respect to any portion of the Property not owned by such Owner.

Section 6. **Lot Coverage and Living Area**. The total ground area to be occupied by residential buildings and structures to be constructed upon the Property shall not exceed the requirements established by the Subdivision Documents or the Zoning Code. Each detached single family residence constructed upon a Lot shall contain a minimum number of square feet of heated and air conditioned living area as Declarant deems appropriate.

DRAFT

Section 7. **No Detached Buildings**. No garages, tool or storage sheds, tents, trailers, tanks, temporary or accessory buildings or structures shall be erected or permitted to remain on any Lot without the prior written consent of the ARC or the Association.

Section 8. **Setbacks**. Front, rear and side building setbacks for all dwellings and related structures shall be as established by the Subdivision Documents or the Zoning Code. Any variation in the width of setbacks in any such documents shall be controlled by the more restrictive setback provision.

Section 9. **Easement Areas**. No dwelling shall be erected within any Common Area or easement area shown on the Plat or within any easement created, referred to in or reserved by the Subdivision Documents.

Section 10. **Parking and Vehicular Restrictions**. Parking upon the Property shall be restricted to the driveway and garage located upon each Lot and designated parking areas within the Common Area. Parking on streets that are owned and maintained by the applicable governing jurisdiction shall be subject to the local ordinances, regulations or guidelines in effect; no parking is permitted on any streets that are privately owned and maintained by the Association, except as otherwise specified by the Board in any adopted Rules and Regulations. No Owner shall keep any vehicle on any Lot in a manner which is deemed to be a nuisance by the Board. No Owner shall conduct repairs taking more than twenty-four (24) hours (except in an emergency or except within the garage of the Home with the garage door closed) or restorations of any motor vehicle, boat, trailer or other vehicle upon any Lot. No commercial vehicle, trailer, recreational vehicle, motor home, boat or boat trailer may be parked or stored on the Property except in the garage of a Home located upon a Lot or except as otherwise specified by the Board in any adopted Rules and Regulations. The Declarant and the Board have the sole authority to determine whether a vehicle is considered a commercial vehicle or otherwise violates the restrictions in this section. No bus or tractor-trailer or any other truck larger than a full-size pickup truck may be parked on the Property, except as otherwise specified by the Board in any adopted Rules and Regulations and except temporarily as in the case of a moving van or other such vehicle necessary to provide service to an Owner and with the exception of any vehicles necessary for any construction activity being performed by or on behalf of Declarant.

Section 11. **Nuisances**. Nothing shall be done or maintained on any Lot which may be or become an annoyance or nuisance to any party. Any activity on a Lot which interferes with television, cable or radio reception on another Lot shall be deemed a nuisance and a prohibited activity. If a dispute or question arises as to what may be or become a nuisance, the issue shall be submitted to the Board, whose decision shall be dispositive of such dispute or question. No immoral, improper or unlawful use shall be made of any portion of the Property and all valid laws, zoning ordinances and regulations of governmental agencies having jurisdiction thereof shall be complied with.

Section 12. **Antennae**. No outside television, radio or other electronic towers, aerials, antennae, satellite dishes or device of any type for the reception or transmission of radio or television broadcasts or other means of communication shall hereafter be erected, constructed, placed or permitted to remain on any portion of the Property or upon any improvements thereon, unless expressly approved in writing by the Association, except that this prohibition shall not apply to those satellite dishes that are expressly allowed by 47 C.F.R. Part 1, Subpart S. Section 1.4000, as amended, promulgated under the Telecommunications Act of 1996, as amended from time to time, which presently includes satellite dishes that are one (1) meter in diameter or less. The Association is empowered to adopt, and amend from time to time, Rules and Regulations governing the types of antennae which may be permitted and restrictions relating to safety, location and maintenance of antennae. The Association may also adopt (and amend from time to time) and enforce reasonable Rules and Regulations limiting installation of permissible satellite dishes or antennae to certain specified locations, not visible from the street or neighboring properties, and integrated with the Property and surrounding landscape, to the extent that reception of an acceptable signal would not be unlawfully impaired by such Rules and Regulations and provided the cost of complying with such Rules and Regulations would not unreasonably increase the cost of installation of permissible satellite dishes or antennae. Any permissible satellite dishes or antennae shall be installed in compliance with all federal, state and local laws and regulations, including zoning, land-use and building regulations. Further, any Owner desiring to install permissible satellite dishes or antennae may, but is not obligated to, submit plans and specifications for same to the ARC to ensure compliance with the Association's Rules and Regulations governing the types of permissible satellite dishes and antennae and restrictions relating to safety, location and maintenance of satellite dishes and antennae.

Section 13. **Signs**. No sign, display, poster, advertisement, notice, lettering or other advertising device of any kind whatsoever may be exhibited, displayed, inscribed, painted or affixed in public view of any portion of any building or other Improvement in the Property (including, without limitation, a Home) without the prior written consent of the Board, which consent may be given, withheld or conditioned in the sole and absolute discretion of the Board.

DRAFT

Notwithstanding the foregoing, including, without limitation, signs such as "For Sale", "For Rent", "By Owner" or any other signs for the sale or renting of homes may be posted on an Owner's Lot, provided that (i) prior to the Turnover Date, Declarant has given its approval therefore, which approval shall not be unreasonably withheld, or (ii) from and after the Turnover Date, the Board has given its approval therefore, which approval shall not be unreasonably withheld. Any signs used by Declarant, any of Declarant's affiliates or any of their successors or assigns shall be exempt from this Section 13.

Section 14. **Animals**. Dogs shall be kept under control by each Owner at all times and leashed when outside the boundaries of the Owner's Lot. Animals shall be kept for the pleasure of Owners only and not for any commercial or breeding use or purposes. If, in the discretion of the Board, any animal shall become dangerous or an annoyance or nuisance to other Owners, or destructive of wildlife or property, such animal may not thereafter be kept on a Lot. Further, in the event any group of animals shall collectively become dangerous or an annoyance or nuisance to other Owners, or destructive to wildlife or property, the Board shall have the right to require the applicable Owner to reduce the number of animals kept on the Lot or to take such other remedial action as the Board shall specify. Under no circumstances shall a "Dangerous Dog" (as hereinafter defined) be permitted on the Property. As used in this Declaration, a "Dangerous Dog" is defined as a dog which meets any one (1) of the following criteria: (a) has aggressively bitten, attacked, endangered or inflicted severe injury on a human being at any time whether on or off the Property, (b) has severely injured or killed a domestic animal at any time whether on or off the Property, or (c) has, when unprovoked, chased or approached any person upon the streets, drives, roads, avenues, roadways and/or sidewalks, or any other portion of the Property, in a menacing fashion or apparent attitude of attack; provided, however, a dog shall not be a "Dangerous Dog" if the threat, injury, death or damage was sustained by a person who, at the time, was unlawfully on the Property (or any portion thereof), or, while lawfully on the Property (or any portion thereof), was tormenting, abusing or assaulting the dog or its owner or a family member; provided further, that no dog may be a "Dangerous Dog" if the dog was protecting or defending a human being within the immediate vicinity of the dog from an unjustified attack or assault.

Section 15. **Trash and Other Materials**. No rubbish, trash, garbage, refuse, unsightly objects or other waste material shall be kept or permitted on the Lots or Common Area, or other portions of the Property, except in sanitary, self-locking containers located in appropriate areas (i.e., areas not visible from the street or any other Lot other than at times of scheduled trash pickup), and no odor shall be permitted to arise therefrom so as to render the Property or any portion thereof unsanitary, offensive, detrimental or a nuisance to Owners or to any other property in the vicinity thereof or to its occupants. No weeds, underbrush or other unsightly vegetation shall be permitted to grow or remain upon any Lot or Common Area. All Lots and all portions of the Property and any improvements placed thereon shall at all times be maintained in a neat and attractive condition and landscaping shall be maintained in a neat, attractive and orderly manner, including maintenance of grass, plants, plant beds, trees, turf, proper irrigation and lake edge maintenance, all in a manner with such frequency as is consistent with good property management. No clothing or other household items shall be hung, dried or aired in such a way as to be visible from the Common Area or another Lot. No stripped vehicles, lumber or other building materials, grass, tree clippings, metals, scrap, automobile pieces or parts, refuse or trash shall be stored or allowed to accumulate on any portion of the Property (except when accumulated during construction by Declarant, during construction approved by the ARC or when accumulated by the Association for imminent pick-up and discard).

Section 16. **Fences**. No fences or walls shall exceed six feet (6') in height and no chain link or similar style fence shall be allowed on any Lot. All fences, except those to be installed on Lots abutting a ***(golf course)***, lake or other body as described below, shall be constructed of a style, color, design and material approved in advance by the ARC. No fence or wall shall be built beyond the plane from the front corner of the Home to the side lot lines. For corner Lots, no fence or wall on the side common to the street right of way shall extend forward of the rear corner of the Home. On lots abutting ***(golf courses,)*** lakes, canals or other bodies of water, no fence shall be placed beyond the top of the bank (if applicable) and only four foot (4') tall open picket, black metal fences shall be allowed along the rear Lot line and the rear sixteen feet (16') of each side Lot line. The remaining fencing on the side Lot lines of Lots abutting ***(golf courses,)*** lakes, canals or other bodies of water may be either four foot (4') or six foot (6') tall, open picket, black metal or six foot (6') tall and of a style, color, design and material approved in advance by the ARC, with the rear sixteen feet (16') transitioning from four feet (4') to six feet (6') tall, if applicable. Owners on lots that back up to a preserve, wetland, upland buffer, landscape buffer and the like may install open picket, black metal fencing along the rear property line. All fencing where the height of the fences are different must include transition panels for the last sixteen (16) feet, if applicable. The Owner assumes complete responsibility to maintain any fence on located on such Owner's Lot, including, but not limited to, trimming any grass, ivy or other plants from the fence. In the event the ARC approves the installation of a fence, it shall also have the right to require installation of landscaping, also subject to the ARC's approval, at the time the fence is installed.

Notwithstanding that an Owner has obtained the approval of the ARC to install a fence or landscape materials, as provided hereinabove, such installation shall be at the Owner's sole risk so long as Declarant has not yet begun or is engaged in the construction of a Home on an adjacent Lot. In the event such construction activity on an adjacent Lot causes damage to or destruction of such Owner's fence or landscape materials or any part thereof, the Owner on whose Lot the fence and/or landscaping has been damaged shall be required, at the Owner's expense, to repair or replace such fence and/or landscape materials in conformance with the requirements of the ARC's approval of the initial installation of the fence and/or landscape materials and Declarant shall have no liability for any such damage or destruction. Such repair or replacement shall commence as soon as construction on the adjacent Lot has been completed and shall be pursued to completion with due diligence. For purposes of this paragraph, the term "landscape materials" shall include landscape materials located on or adjacent to any property line of a Lot, including, by way of example and not of limitation, hedges, shrubs and trees, whether associated with a fence or not.

In addition, the installation of any fence placed upon any Lot is subject to any easements which run with the land. In the event that any fence is approved by the ARC and is permitted to cross any such easements, such approval is still subject to Owner first receiving written approval from the grantee of such easements and all other applicable governmental authorities. In the event the grantee of any such easement which runs with the land (i.e., utility provider or the County), its successors and/or assigns, requires the removal of any fence upon the Lot, then the Owner of said Lot shall, at the Owner's sole cost and expense, immediately remove the fence. The Owner of a Lot when installing any fence upon the Lot shall comply with all valid laws, zoning ordinances, codes, Rules and Regulations of all applicable governmental bodies, as applicable, in addition to the ARC approval required by Article IX hereof.

Section 17. **Oil and Mining Operations**. No oil drilling, oil development operations, oil refining, boring or mining operations of any kind shall be permitted upon or on any Lot nor shall oil wells, tanks, tunnels, mineral excavations or shafts be permitted upon or in any Lot. No derrick or other structure designed for use in boring for oil or natural gas shall be erected, maintained or permitted upon any Lot.

Section 18. **Sewage Disposal**. No individual sewage disposal system shall be permitted on any of the Property, provided that a central sewage disposal system is being operated in accordance with the requirements of the governmental regulatory body having jurisdiction over said central system.

Section 19. **Water Supply**. No individual water supply system shall be permitted on any of the Property, provided that one or more central water supply systems are being operated in accordance with requirements of the governmental body having jurisdiction over said central system, except that wells are permitted for the irrigation of landscaping only, provided that a stain tank is installed in conjunction with the irrigation well.

Section 20. **Compliance with Laws**. All Owners and other occupants of the Property shall at all times comply with the terms of the Subdivision Documents and the Zoning Code, and all environmental, land use, marketing and consumer protection ordinances, statutes and regulations applicable to the Property or to any Improvements and Lot Improvements constructed thereon, as well as all governmental rules, regulations, statutes and ordinances applicable to each Owner in connection with the Property.

Section 21. **Reservation of Right to Release Restrictions**. If any Lot Improvement has been or is proposed to be erected within the Property in such a manner as to constitute a violation of, variance from or encroachment into the covenants and restrictions set forth in, or easements granted or reserved by, this Declaration, Declarant or the Association shall have the right to waive or release the violation, variance or encroachment without the consent or joinder of any person so long as Declarant or Association, as applicable, in the exercise of its sole discretion, determines in good faith that such waiver or release will not materially and adversely affect the health and safety of Owners, the value of adjacent portions of the Property and the overall appearance of the Property.

Section 22. **Declarant Exemption and General Easement Reservation**. In general, the restrictions and limitations set forth in this Article XIII shall not apply to Declarant or to Lots owned by Declarant. Declarant shall specifically be exempt from any restrictions which interfere in any manner whatsoever with Declarant's plans for development, construction, sale, lease or use of the Property and to the Improvements thereon. Declarant shall be entitled to injunctive relief for any actual or threatened interference with its rights under this Article XIII in addition to whatever remedies at law to which it might be entitled. Declarant plans to undertake the work of constructing Homes and Improvements upon the Property and may undertake the work of constructing other buildings upon adjacent land or other property being developed or marketed by Declarant or its affiliates. The completion of the aforementioned work and the sale, rental and other transfer of Homes by Declarant and Declarant's affiliates are

DRAFT

essential to the establishment and welfare of the Property as a residential community. In order that such work may be completed and a fully occupied community established as rapidly as possible, neither the Owners, the Association nor the ARC shall do anything whatsoever to interfere with any of Declarant's or Declarant's affiliates' activities relating to the constructing of Homes and Improvements upon the Property, the constructing of other buildings upon adjacent land or any other property being developed or marketed by Declarant or its affiliates, or the sale, rental and/or other transfer of Homes by Declarant or its affiliates. Declarant hereby reserves the right for itself and its employees, agents, licensees and invitees to come upon any and all portions of the Property (including, without limitation, the Common Area as well as any Lot regardless of whether it has been conveyed to an Owner) as may be necessary or convenient to enable Declarant to carry on its work and other activities including, without limitation, Declarant's development and construction of the Subdivision and the Homes therein.

Section 23. **Sidewalks.** Any Owner developing or constructing a home as an initial improvement on a Lot shall construct any sidewalk on such Lot in accordance with the Subdivision construction plans submitted to and approved by the County. Such sidewalk shall be completed prior to the issuance of a certificate of occupancy for the Home.

ARTICLE XIV

GENERAL PROVISIONS

Section 1. **Assignment of Permit Responsibilities and Indemnification**. In connection with the platting and development of the Property, Declarant assumed certain obligations in connection with the maintenance of the Surface Water or Stormwater Management System and the District Permit. Declarant hereby assigns to the Association, and the Association shall be solely responsible for, all of Declarant's obligations and responsibilities for maintenance of the Surface Water or Stormwater Management System pursuant to, and for compliance with, the District Permit. Further, the Association shall indemnify, defend and hold Declarant harmless from all suits, actions, damages, liability and expenses in connection with loss of life, bodily or personal injury or property damage, or any other damage arising from or out of an occurrence in, upon, at or resulting from the operation or maintenance of the Surface Water or Stormwater Management System, occasioned wholly or in part by any act or omission of the Association or its agents, contractors, employees, servants or licensees.

Section 2. **Usage**. Whenever the context so requires or permits, any pronoun used herein may be deemed to mean the corresponding masculine, feminine or neuter form thereof, and the singular form of any nouns and pronouns herein may be deemed to mean the corresponding plural form thereof and vice versa.

Section 3. **Conflict with Other Subdivision Documents**. In the event of any conflict between the provisions of this Declaration and the provisions of the Articles and/or Bylaws and/or Rules and Regulations promulgated by the Association, the provisions of (i) this Declaration, (ii) the Articles, (iii) the Bylaws and (iv) the Rules and Regulations, shall control in that order.

Section 4. **Notices**. Any notice or other communication required or permitted to be given or delivered hereunder shall be deemed properly given and delivered upon the mailing thereof by United States mail, postage prepaid, to: (i) each Owner, at the address of the person whose name appears as the Owner on the records of the Association at the time of such mailing and, in the absence of any specific address, at the address of the Home owned by such Owner; (ii) the Association, certified mail, return receipt requested, at 4220 Race Track Road, St. Johns, Florida 32259, or such other address as the Association shall hereinafter notify Declarant and the Owners of in writing; and (iii) Declarant, certified mail, return receipt requested, at 4220 Race Track Road, St. Johns, Florida 32259, or such other address or addresses as Declarant shall hereafter notify the Association of in writing, any such notice to the Association of a change in Declarant's address being deemed notice to the Owners.

Section 5. **Enforcement**. The covenants and restrictions herein contained may be enforced by Declarant (so long as Declarant holds an equitable or legal interest in any Lot and/or Home), the Association (provided that it follows the procedures set forth in Article XIII, Section 1 hereof), any Owner and any Institutional Mortgagee holding a mortgage on any portion of the Property in any judicial proceeding seeking any remedy recognizable at law or in equity, including damages, injunction or any other form of relief against any person, firm or entity violating or attempting to violate any covenant, restriction or provision hereunder. The failure by any party to enforce any such covenant, restriction or provision herein contained shall in no event be deemed a waiver of such covenant, restriction or provision or of the right of such party to thereafter enforce such covenant, restriction or provision. The prevailing

DRAFT

party in any such litigation shall be entitled to reimbursement of all costs thereof including, but not limited to, Legal Fees, from the non-prevailing party. SJRWMD shall have the right to enforce, by a proceeding at law or in equity, the provisions contained in this Declaration which relate to the maintenance, operation and repair of the Surface Water or Stormwater Management System.

Section 6. **Interpretation**. The provisions of this Declaration shall be liberally construed to effectuate its purpose of creating a uniform plan for the development of a residential community and for the maintenance of recreational facilities, if any, and Common Area. Article, Section and Paragraph captions, headings and titles inserted throughout this Declaration are intended as a matter of convenience only and in no way shall such captions, headings or titles define, limit or in any way affect the subject matter or any of the terms and provisions thereunder or the terms and provisions of this Declaration.

Section 7. **Severability**. In the event any of the provisions of this Declaration shall be deemed invalid by a court of competent jurisdiction, said judicial determination shall in no way affect any of the other provisions hereof, which shall remain in full force and effect, and any provisions of this Declaration deemed invalid by a court of competent jurisdiction by virtue of the term or scope thereof shall be deemed limited to the maximum term and scope permitted by law. In the event that any court should hereafter determine that any provision of this Declaration is in violation of the rule of property known as the "rule against perpetuities" or any other rule of law because of the duration of a time period, such provision shall not thereby become invalid, but instead the duration of such time period shall be reduced to the maximum period allowed under such rule of law, and in the event the determination of the duration of such time period requires measuring lives, such measuring life shall be that of the incorporator of the Association.

Section 8. **Certain Rights of Declarant**. Notwithstanding anything to the contrary herein contained, no Improvements constructed or installed by Declarant shall be subject to the approval of the Association, the Owners or the provisions and requirements of this Declaration, although it is the intent of Declarant to create a community with a common scheme of development. Notwithstanding the other provisions of this Declaration, Declarant reserves for itself, and Declarant and its nominees shall have, the right to enter into and transact on the Property any business necessary to consummate the sale, lease or encumbrance of Homes or real property within or outside the Subdivision, including, but not limited to, the right to maintain models and a sales and/or leasing office, a construction office and/or a service office, place signs, employ sales, leasing, construction and service personnel, use the Common Area and show Homes, and Declarant further reserves the right to make repairs to the Common Area and to carry on construction activity for the benefit of the Property. Declarant, and its nominees, may exercise the foregoing rights without notifying the Association or the Owners. Any such models, sales and/or leasing office, construction office, service office, signs and any other items pertaining to such sales, leasing, construction or service efforts shall not be considered a part of the Common Area and shall remain the property of Declarant. In addition, Declarant hereby has, shall have and hereby reserves the right to enter upon the Common Area (including, without limitation, all drainage, lake maintenance, canal maintenance and utility easements whether located on a Lot or Common Area) in order for Declarant to final-out and/or close-out any and all approvals, permits, orders, conditions and/or requirements that have been issued or imposed by any governmental entity in connection with the development and construction of the Subdivision and all Improvements therein, and for Declarant to comply and adhere to the same, and such rights shall survive the Turnover Date and continue for such period of time as is necessary for Declarant to fully comply with all such governmentally issued approvals, permits, orders, conditions and/or requirements. Without limiting the generality of the foregoing, in exercising any such rights, Declarant shall have the right to remove and/or relocate any and all items (including, without limitation, landscape materials, fences and/or other Improvements) that may be required to he removed and/or relocated to final-out and/or close-out any and all such approvals, permits, orders, conditions and/or requirements without compensation to the Association or the Owners. This Article XIV, Section 8 may not be suspended, superseded or modified in any manner by any amendment to this Declaration unless such amendment is consented to in writing by Declarant. This right of use and transaction of business as set forth herein and the other rights reserved by Declarant in the Subdivision Documents may be assigned in writing by Declarant in whole or in part. The rights and privileges of Declarant as set forth in this Section 8, are in addition to, and are no way a limit on, any other rights or privileges of Declarant under any of the Subdivision Documents.

Declarant shall also have the right, but not the obligation, to conduct inspections and tests from time to time of all or any portion of the Common Area in order to ascertain the physical condition of the Improvements and to determine if maintenance, repair or replacement of any such Improvement is necessary. If Declarant conducts any such tests or inspections, it shall pay all costs thereof and restore the affected portion of the Property to its condition immediately prior to the inspections and tests. Declarant shall have such rights of entry on, over, under, across and through the Property as may be reasonably necessary to exercise the rights described in this Section 8. Declarant's right of inspection shall exist whether or not the Turnover Date has occurred. In the event Declarant exercises its

DRAFT

inspection right(s), it is acknowledged by the Association and all Owners that Declarant is performing any such inspection(s) for its own benefit and not for the benefit of the Association and/or the Owners and further, Declarant shall have no obligation to inform the Association and/or the Owners of the result of any such inspection.

ALL OWNERS, OCCUPANTS AND USERS OF THE SUBDIVISION ARE HEREBY PLACED ON NOTICE THAT DECLARANT AND/OR ITS AGENTS, CONTRACTORS, SUBCONTRACTORS, LICENSEES AND OTHER DESIGNEES MAY PERFORM, FROM TIME TO TIME, EXCAVATION, CONSTRUCTION AND OTHER ACTIVITIES WITHIN OR IN PROXIMITY TO THE SUBDIVISION. BY THE ACCEPTANCE OF THEIR DEED OR TITLE OR OTHER CONVEYANCE OR MORTGAGE, LEASEHOLD, LICENSE OR OTHER INTEREST, AND BY USING ANY PORTION OF THE SUBDIVISION, EACH SUCH OWNER, OCCUPANT AND USER AUTOMATICALLY ACKNOWLEDGES, STIPULATES AND AGREES (I) THAT NONE OF THE AFORESAID ACTIVITIES SHALL BE DEEMED NUISANCES OR NOXIOUS OR OFFENSIVE ACTIVITIES, HEREUNDER OR AT LAW GENERALLY, (II) NOT TO ENTER UPON, OR ALLOW THEIR CHILDREN OR OTHER PERSONS UNDER THEIR CONTROL OR DIRECTION TO ENTER UPON (REGARDLESS OF WHETHER SUCH ENTRY IS A TRESPASS OR OTHERWISE), ANY PROPERTY WITHIN OR IN PROXIMITY TO THE SUBDIVISION WHERE SUCH ACTIVITY IS BEING CONDUCTED (EVEN IF NOT BEING ACTIVELY CONDUCTED AT THE TIME OF ENTRY, SUCH AS AT NIGHT OR OTHERWISE DURING NON-WORKING HOURS), (III) DECLARANT AND THE OTHER AFORESAID RELATED PARTIES SHALL NOT BE LIABLE IN ANY MANNER WHATSOEVER FOR ANY AND ALL LOSSES, DAMAGES (COMPENSATORY, CONSEQUENTIAL, PUNITIVE OR OTHERWISE), INJURIES OR DEATHS ARISING FROM OR RELATING TO THE AFORESAID ACTIVITIES, (IV) ANY PURCHASE OR USE OF ANY PORTION OF THE SUBDIVISION HAS BEEN AND WILL BE MADE WITH FULL KNOWLEDGE OF THE FOREGOING, AND (V) THIS ACKNOWLEDGMENT AND AGREEMENT IS A MATERIAL INDUCEMENT TO DECLARANT TO SELL, CONVEY, LEASE AND/OR ALLOW THE USE OF THE APPLICABLE PORTION OF THE SUBDIVISION.

Section 9. **Disputes As To Use**. In the event there is any dispute as to whether the use of the Property or any portion or portions thereof complies with the covenants, restrictions, easements or other provisions contained in this Declaration, such dispute shall be referred to the Board, and a determination rendered by the Board with respect to such dispute shall be final and binding on all parties concerned therewith. Notwithstanding anything to the contrary herein contained, any use by Declarant of the Property shall be deemed a use which complies with this Declaration and shall not be subject to a contrary determination by the Board.

Section 10. **Amendment and Modification**. Any amendment to this Declaration which alters any provision relating to the surface water or stormwater management system, beyond maintenance in its original condition, including the water management portions of the common areas, must have the prior approval of SJRWMD. This Declaration may be amended at any time by an instrument signed by the President or Vice President and the Secretary or Assistant Secretary of the Association, certifying that such amendment has been adopted by the written consent or vote of two thirds (2/3rds) of the Owners, which amendment shall become effective upon its filing in the public records of the County. Provided, however, that:

10.1. As long as Declarant is an Owner of any Lot or any portion of the Property, no amendment shall become effective without the written consent of Declarant.

10.2. Until the Turnover Date, all amendments or modifications shall only be made by Declarant without the requirement of the Association's consent, the consent of the Owners or the consent of any mortgagee so long as such amendments or modifications do not materially impair the common plan of development of the Subdivision; provided, however, that the Association shall, forthwith upon request of Declarant, join in any such amendments or modifications and execute such instruments to evidence such joinder and consent as Declarant shall, from time to time, request. Notwithstanding the foregoing, until the Turnover Date, any amendments to this Declaration (including without limitation, the merger or consolidation of the Association with any other property owners association, the dedication of any part of the Common Area for public use and the conveyance, mortgaging or encumbrance of any part of the Common Area) must have prior written approval of the Federal Housing Administration ("FHA") or Veterans Administration ("VA") in accordance with the United States Department of Housing and Urban Development regulations, if the FHA or VA is the insurer of any mortgage encumbering a Lot and if any such prior approval is required by the FHA and/or VA.

10.3. Declarant specifically reserves the absolute and unconditional right (subject only to FHA or VA approval as set forth above, if required), so long as it owns any of the Property, to amend this Declaration without the consent or joinder of any party: (i) to conform to the requirements of any Institutional Mortgagee; (ii) to conform to the requirements of title insurance companies; (iii) to conform to the requirements of any governmental entity having control

or jurisdiction over the Property; (iv) to clarify the provisions of this Declaration; or (v) in such other manner as Declarant may deem necessary or convenient.

10.4. Amendments for correction of scrivener's errors or other nonmaterial changes may be made by Declarant alone until the Turnover Date and by the Board thereafter and without the need of consent of the Owners.

10.5. Notwithstanding anything to the contrary herein contained, no amendment to this Declaration shall be effective which shall impair or prejudice the rights or priorities of Declarant, the Association or of any Institutional Mortgagee under the Subdivision Documents without the specific written approval of such party affected thereby. In addition and notwithstanding anything to the contrary contained herein, no amendment to this Declaration shall be effective which shall eliminate or modify the provisions of this Article XIV, Section 10, and any such amendment shall be deemed to impair and prejudice the rights of Declarant.

10.6. A true copy of any amendment to this Declaration shall be sent certified mail by the Association to Declarant and to all Listed Mortgagees (as that term is defined hereinafter) holding a mortgage on any portion of the Property requesting notice. The amendment shall become effective upon the recording amongst the public records of the County of said amendment or any Supplemental Declaration to this Declaration which sets forth any amendment or modification to this Declaration.

Section 11. **Delegation**. The Association, pursuant to a resolution duly adopted by the Board, shall have the continuing authority to delegate all or any portion of its responsibilities for maintenance, operation and administration, as provided herein, to any managing agency or entity selected by the Board from time to time and whether or not related to Declarant.

Section 12. **Term**. This Declaration and the terms, provisions, conditions, covenants, restrictions, reservations, regulations, burdens and liens contained herein shall run with and bind the Property and inure to the benefit of Declarant, the Association and the Owners and their respective legal representatives, heirs, successors and assigns for a term of fifty (50) years from the date of recording this Declaration amongst the public records of the County, after which time this Declaration shall be automatically renewed and extended for successive periods of ten (10) years each unless at least one (1) year prior to the termination of such fifty (50)-year term or any such ten (10)-year extension there is recorded amongst the public records of the County an instrument agreeing to terminate this Declaration signed by Owners owning two-thirds (2/3) of the Lots and Institutional Mortgagees holding first mortgages encumbering two-thirds (2/3) of all Lots encumbered by first mortgages held by Institutional Mortgagees, upon which event this Declaration shall be terminated upon the expiration of the fifty (50)-year term or the ten (10)-year extension during which such instrument was recorded.

In the event this Declaration is terminated or the Association ceases to exist for any reason, the Owners shall be jointly and severally responsible for the costs to maintain and shall maintain the Common Area in the manner described herein. This provision shall survive the termination of this Declaration and shall run with the Property in perpetuity. Any Owner may, however, petition the Circuit Court for the appointment of a Receiver to manage the affairs of the Association in the event of dissolution of the Association.

Section 13. **Rights of Mortgagees**.

13.1. Right to Notice. The Association shall make available for inspection upon request, during normal business hours or under reasonable circumstances, the Subdivision Documents and the books, records and financial statements of the Association to Owners and the holders, insurers or guarantors of any first mortgages encumbering any portion of the Property. In addition, evidence of insurance shall be issued to each Owner and mortgagee holding a mortgage encumbering a Home upon written request to the Association.

13.2. Rights of Listed Mortgagee. Upon written request to the Association, identifying the name and address of the holder, insurer or guarantor (such holder, insurer or guarantor is herein referred to as a "Listed Mortgagee") of a mortgage encumbering a Lot and the legal description of such Lot, the Association shall provide such Listed Mortgagee with timely written notice of the following:

A. Any condemnation, loss or casualty loss which affects any material portion of the Common Area;

B. Any lapse, cancellation or material modification of any insurance policy or fidelity bond maintained by the Association;

C. Any proposed action which would require the consent of mortgagees holding a mortgage encumbering a Lot: and

D. Any failure by an Owner owning a Lot encumbered by a mortgage held, insured or guaranteed by such Listed Mortgagee to perform such Owner's obligations under the Subdivision Documents, including, but not limited to, any delinquency in the payment of Assessments, or any other charge owed to the Association by said Owner where such failure or delinquency has continued for a period of sixty (60) days.

13.3. Right of Listed Mortgagee to Receive Financial Statement. Any Listed Mortgagee shall, upon written request made to the Association, be entitled to financial statements of the Association for the prior fiscal year free of charge and the statement shall be furnished within a reasonable time following such request.

Section 14. **Approval of Association Lawsuits by Owners**. Notwithstanding anything contained herein to the contrary, in order to prevent the Board from incurring expenses not contemplated by the Subdivision Documents, the Association shall be required to obtain the approval of three-fourths (3/4) of the total voting interests (at a duly called meeting of the Owners at which a quorum is present) prior to engaging persons or entities for the purpose of suing or making, preparing or investigating any lawsuit or commencing any lawsuit other than for the following purposes:

14.1. the collection of Assessments;

14.2. the collection of other charges which Owners are obligated to pay pursuant to the Subdivision Documents;

14.3. the enforcement of the use and occupancy restrictions contained in the Subdivision Documents;

14.4. dealing with an emergency when waiting to obtain the approval of the Owners creates a substantial risk of irreparable injury to the Common Area or to Owner(s) (the imminent expiration of a statute of limitations shall not be deemed an emergency obviating the need for the requisite vote of three-fourths [3/4] of the Owners); or

14.5. filing a compulsory counterclaim.

Section 15. **Compliance with Provisions**. Every person who owns, occupies or acquires any right, title, estate or interest in or to any Lot except as elsewhere herein provided does consent and agree to, and shall be conclusively deemed to have consented and agreed to, every limitation, restriction, easement, reservation, condition and covenant contained herein, whether or not any reference to these restrictions is contained in the instrument by which such person acquired an interest in such property. Declarant shall not in any way or manner be held liable or responsible for any violation of this Declaration by any person other than Declarant.

Section 16. **Security**. The Association may, but shall not be obligated to, maintain or support certain activities within the Property designed to make the Property safer than it otherwise might be. NOTWITHSTANDING THE FOREGOING, NEITHER DECLARANT NOR THE ASSOCIATION MAKES ANY REPRESENTATIONS WHATSOEVER AS TO THE SECURITY OF THE PREMISES OR THE EFFECTIVENESS OF ANY MONITORING SYSTEM OR SECURITY SERVICE, IF ANY, WHETHER SAME ARE PROVIDED THROUGH THE COMMUNITY SYSTEMS OR OTHERWISE. ALL OWNERS AGREE TO HOLD DECLARANT AND THE ASSOCIATION HARMLESS FROM ANY LOSS OR CLAIM ARISING FROM THE OCCURRENCE OF ANY CRIME OR OTHER ACT. NEITHER THE ASSOCIATION, DECLARANT NOR ANY SUCCESSOR DECLARANT SHALL IN ANY WAY BE CONSIDERED INSURERS OR GUARANTORS OF SECURITY OR SAFETY WITHIN THE PROPERTY, AND NEITHER THE ASSOCIATION, DECLARANT NOR ANY SUCCESSOR DECLARANT GUARANTEES OR WARRANTS, EXPRESSLY OR IMPLIEDLY, THE MERCHANTABILITY OR FITNESS FOR USE OF ANY SUCH MONITORING SYSTEM OR SECURITY SERVICE, IF ANY, OR THAT ANY SYSTEM OR SERVICES WILL PREVENT INTRUSIONS, FIRES, DAMAGE, INJURY, DEATH OR OTHER OCCURRENCES, OR THE CONSEQUENCES OF SUCH OCCURRENCES, REGARDLESS OF WHETHER OR NOT THE SYSTEM OR SERVICES ARE DESIGNED TO MONITOR SAME. NEITHER THE ASSOCIATION, DECLARANT NOR ANY SUCCESSOR DECLARANT SHALL BE HELD LIABLE FOR ANY LOSS OR DAMAGE

BY REASON OF FAILURE TO PROVIDE ADEQUATE SECURITY OR INEFFECTIVENESS OF SECURITY MEASURES UNDERTAKEN, IF ANY. ALL MEMBERS, OWNERS AND OCCUPANTS OF ANY LOT OR HOME, AND TENANTS, GUESTS AND INVITEES OF ANY OWNER ACKNOWLEDGE THAT THE ASSOCIATION AND ITS BOARD, DECLARANT AND ANY SUCCESSOR DECLARANT DO NOT REPRESENT OR WARRANT THAT: (a) ANY FIRE PROTECTION SYSTEM, BURGLAR ALARM SYSTEM OR OTHER SECURITY SYSTEM (WHETHER SAME ARE PROVIDED THROUGH THE COMMUNITY SYSTEMS OR OTHERWISE), IF ANY, RECOMMENDED BY, OR INSTALLED ACCORDING TO GUIDELINES ESTABLISHED BY, DECLARANT OR THE ARC MAY NOT BE COMPROMISED OR CIRCUMVENTED, OR (b) THAT ANY FIRE PROTECTION OR BURGLAR ALARM SYSTEMS OR OTHER SECURITY SYSTEM (WHETHER SAME ARE PROVIDED THROUGH THE COMMUNITY SYSTEMS OR OTHERWISE) WILL IN ALL CASES PROVIDE THE DETECTION OR PROTECTION FOR WHICH THE SYSTEM IS DESIGNED OR INTENDED. EACH MEMBER, OWNER AND OCCUPANT OF ANY LOT OR HOME, AND EACH TENANT, GUEST AND INVITEE OF AN OWNER, ACKNOWLEDGES AND UNDERSTANDS THAT THE ASSOCIATION, ITS BOARD AND THE COMMITTEE, DECLARANT AND ANY SUCCESSOR DECLARANT ARE NOT INSURERS OR GUARANTORS AND THAT EACH MEMBER, OWNER AND OCCUPANT OF ANY LOT OR HOME, AND EACH TENANT, GUEST AND INVITEE OF ANY MEMBER OR OWNER ASSUMES ALL RISKS FOR LOSS OR DAMAGE TO PERSONS, TO LOTS OR HOMES AND TO THE CONTENTS OF LOTS OR HOMES, AND FURTHER ACKNOWLEDGES THAT THE ASSOCIATION, ITS BOARD AND THE COMMITTEE, DECLARANT AND ANY SUCCESSOR DECLARANT HAVE MADE NO REPRESENTATIONS, WARRANTIES AND/OR GUARANTIES, NOR HAS ANY OWNER, MEMBER, OCCUPANT, TENANT, GUEST OR INVITEE RELIED UPON ANY REPRESENTATIONS OR WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE, RELATIVE TO ANY FIRE AND/OR BURGLAR ALARM SYSTEMS OR OTHER SECURITY SYSTEMS (WHETHER SAME ARE PROVIDED THROUGH THE COMMUNITY SYSTEMS OR OTHERWISE), IF ANY, RECOMMENDED OR INSTALLED, IF ANY, OR ANY SECURITY MEASURES UNDERTAKEN WITHIN THE PROPERTY OR THE SUBDIVISION.

Section 17. **Covenant Running With the Land**. All provisions of this Declaration shall, to the extent applicable and unless otherwise expressly provided herein to the contrary, be construed to be covenants running with the Lots and Homes and the Property and with every part thereof and interest therein, and all of the provisions hereof shall be binding upon and inure to the benefit of Declarant and subsequent Owner(s) of the Homes, Lots and Property or any part thereof, or interest therein, and their respective heirs, successors and assigns. However, the same are not intended to create nor shall they be construed as creating any rights in or for the benefit of the general public, unless specifically provided herein to the contrary. All present and future Owners, Tenants and occupants of the Lots and Homes, as applicable, shall be subject to and shall comply with the provisions of this Declaration, the Articles, Bylaws and applicable Rules and Regulations as they exist and may from time to time be amended. The acceptance of a deed of conveyance of a Lot, or the entering into a lease of or occupancy of a Home, shall constitute an adoption and ratification by such Owner, Tenant or occupant of the provisions of this Declaration, the Articles, Bylaws and applicable Rules and Regulations of the Association, as they may be amended from time to time. In the event that any easements granted herein shall fail for want of a grantee in being or for any other purpose, the same shall constitute and be covenants running with the land.

Section 18. **No Public Right or Dedication**. Nothing contained in this Declaration shall be deemed to be a gift or dedication of all or any portion of the Common Area to the public, or for any public use.

Section 19. **NO REPRESENTATIONS OR WARRANTIES**. NO REPRESENTATIONS OR WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED, HAVE BEEN GIVEN OR MADE BY DECLARANT OR ITS AGENTS OR EMPLOYEES IN CONNECTION WITH ANY PORTION OF THE COMMON AREA, ITS PHYSICAL CONDITION, ZONING, COMPLIANCE WITH APPLICABLE LAWS, FITNESS FOR INTENDED USE OR IN CONNECTION WITH THE PROPERTY, SALE, OPERATION, MAINTENANCE, COST OF MAINTENANCE, TAXES OR REGULATION THEREOF, EXCEPT AS SPECIFICALLY AND EXPRESSLY SET FORTH IN THIS DECLARATION.

Section 20. **Certain Reserved Rights of Declarant With Respect To Community Systems**. Without limiting the generality of any other applicable provisions of this Declaration, and without such provisions limiting the generality hereof, Declarant hereby reserves and retains to itself:

20.1. the title to any Community Systems and a perpetual exclusive easement over, under and across the Property for the placement and location thereof;

20.2. the right to connect, from time to time, the Community Systems to such receiving or intermediary transmission source(s) as Declarant may in its sole discretion deem appropriate, in location(s) on the Property as Declarant may determine in its sole discretion, including, without limitation, companies licensed to provide

CATV or satellite service(s) in the County, for which service(s) Declarant shall have the right to charge any users a fee (which shall not exceed any maximum allowable charge provided for in the applicable ordinances of the County);

20.3. the continuing right to air conditioned space within and/or on the Common Area as Declarant may determine in its sole discretion to install, operate, maintain, repair and replace the equipment serving, providing or running the Community Systems, which location may include, without limitation, room(s) within any Improvements constructed on any part of the Common Area; and

20.4. the exclusive right to offer and provide from time to time to the Association, the Lots and the Lot Owners, any and all Bundled Services through the Community Systems.

Neither the Association nor any officer, director, employee, enforcement committee member or agent thereof (including any management company) shall be liable for any damage to property, personal injury or death arising from or connected with any act or omission of any of the foregoing during the course of performing any duty or exercising any right privilege (including, without limitation, performing maintenance work which is the duty of the Association or exercising any remedial maintenance or alteration rights under this Declaration) required or authorized to be done by the Association, or any of the other aforesaid parties, under this Declaration or otherwise as required or permitted by law.

Section 21. **Association and Declarant as Attorney-In-Fact**. Each Owner, by reason of having acquired ownership of a Lot, whether by purchase, gift, operation of law or otherwise, and each occupant of a Home, by reason of his or her occupancy, is hereby declared to have acknowledged and agreed to his or her automatic consent to any rezoning, replatting, covenant in lieu of unity of title, change, addition or deletion made in, on or to the Subdivision by Declarant (hereinafter, collectively, the "Modifications") and, in respect thereto, each Owner of a Lot and occupant of a Home hereby designates the Association to act as agent and attorney-in-fact on behalf of such Owner or occupant to consent to any such Modification. If requested by Declarant, each Owner shall evidence his or her consent to a Modification in writing (provided, however, that any refusal to give such written consent shall not obviate the automatic effect of this provision). Further, each Owner, by reason of having acquired ownership of such Owner's Lot, hereby agrees to execute, at the request of Declarant, any document and/or consent which may be required by any government agency to allow Declarant and/or its affiliates to complete the plan of development of the Subdivision, as such plan may be hereafter amended, and each such Owner hereby further appoints Declarant as such Owner's agent and attorney-in-fact to execute, on behalf and in the name of each such Owner, any and all of such documents and/or consents. This power of attorney is irrevocable and is coupled with an interest. The provisions of this Section 21 may not be amended without Declarant's prior written consent.

[SIGNATURE PAGES FOLLOW]

DRAFT

IN WITNESS WHEREOF, Declarant has caused this instrument to be executed under seal this ___ day of _____, 201___.

Signed, sealed and delivered
in the presence of:

_____

Print Name: _____

_____

Print Name: _____

D.R. HORTON, INC. – JACKSONVILLE, a Delaware corporation

By: _____

Name: _____
Its: _____

(CORPORATE SEAL)

STATE OF FLORIDA }

}SS

COUNTY OF ST. JOHNS)

The foregoing instrument was acknowledged before me by means of physical presence this _____ day of _____ 201___, by _____, the _____ of **D.R. HORTON, INC. - JACKSONVILLE,** a Delaware corporation, on behalf of the corporation. He is (check one)(___) personally known to me, or (___) has produced a _____ as identification.

_____
Print: _____
NOTARY PUBLIC
State of Florida at Large
Commission # _____
My Commission Expires: _____

DRAFT

Signed, sealed and delivered
in the presence of:

THE ROOKERY OWNERS ASSOCIATION, INC., a Florida not for profit corporation

_____

By: _____

Print Name: _____

Name: _____
Its: _____

_____

(CORPORATE SEAL)

Print Name: _____

STATE OF FLORIDA }

}SS

COUNTY OF ST. JOHNS)

The foregoing instrument was acknowledged before me by means of physical presence this _____ day of _____ 201___, by _____, the _____ of **THE ROOKERY OWNERS ASSOCIATION, INC.**, a Florida not for profit corporation, on behalf of the not for profit corporation. He is personally known to me.

_____
Print: _____
NOTARY PUBLIC
State of Florida at Large
Commission # _____
My Commission Expires: _____

DRAFT

EXHIBIT A

Legal Description of the Property

The Rookery, according to plat thereof recorded in Map/Plat Book _____, pages _____ through _____ _____, inclusive, in the public records of Clay County, Florida

DRAFT

EXHIBIT B

Articles of Incorporation

DRAFT

EXHIBIT C

Bylaws

DRAFT

CITY OF GREEN COVE SPRINGS
CITY COUNCIL REGULAR SESSION

321 WALNUT STREET, GREEN COVE SPRINGS, FLORIDA
TUESDAY, MARCH 07, 2023 – 7:00 PM

MINUTES

Invocation & Pledge of Allegiance to the Flag - **Reverend Dwayne McCallister, First African Missionary Baptist Church**

Roll Call
COUNCIL MEMBERS PRESENT: Mayor Matt Johnson, Vice Mayor Connie Butler, Council Member Steven Kelley (via Teams), Council Member Thomas Smith

COUNCIL MEMBERS ABSENT
Council Member Ed Gaw

STAFF MEMBERS PRESENT: L.J. Arnold, III, City Attorney, Steve Kennedy, City Manager, Mike Null, Assistant City Manager, Erin West, City Clerk

Mayor to call on members of the audience wishing to address the Council on matters not on the Agenda.

1. Van Royal 3688 LaCosta Ct. GCS speaks about the Waterfront update and questions if there will be project engineers present to answer any questions.
   City Manager Steve Kennedy advises there will be project engineers present to answer questions.
   Mr. Royal advises he has questions about the timeline and the pushing of contractors and engineers to get projects completed.

AWARDS & RECOGNITION

1. The Art Students will be displaying their art in City Hall for the month of March and will visit the Council to be recognized!
   Mayor Johnson calls Barbara Cornett, Henrietta Francis, and the art students to the front to be recognized.
   Barbara Cornett speaks about the Mentoring Center and the Art Program. Ms. Cornett thanks the Council for opening the Mentoring Center and introduces the art students that are present.
   Henrietta Francis speaks about other programs being offered at the Mentoring Center and community partnerships.

2. Proclamation - Mt. Zion Church
   Chief Guzman reads and presents the proclamation
   Reverend Pernell speaks about the Mt. Zion Church.

PRESENTATIONS

3. FMPA - March 2023 ***Bob Page***
   Mr. Bob Page presents the March FMPA report.

PUBLIC HEARINGS

4. First Reading of Ordinance O-21-2022, for the Creation of the Low Density Residential, R-1A Zoning District
   City Attorney Arnold reads Ordinance No. O-21-2022, by title.
   Development Services Director Michael Daniels presents on O-21-2022 and O-22-2022.
   Mayor Johnson opens the public hearing.
   Van Royal 3688 LaCost Ct. GCS speaks positively about this item and the value it will bring to the community.
   Following no further public comment, Mayor Johnson closes the public hearing.
   Vice Mayor Butler questions how many parcels this will affect.
   Mr. Daniels advises 184 and notices have been sent to all residents.
   Council Member Smith asks about any feedback from residents.
   Mr. Daniels advises there was some positive feedback and mostly just requesting more information.
   Council Member Kelley speaks about this hopefully providing more options for affordable housing.
   Council discussion followed.

   Motion to approve the first reading of Ordinance No. O-21-2022 amending City Code Chapter 117, Article I, Sec. 117-3 and Sec. 117-6 and Article II Division 3 for form and legality.
   Motion made by Vice Mayor Butler, Seconded by Council Member Smith.
   Voting Yea: Mayor Johnson, Vice Mayor Butler, Council Member Kelley, Council Member Smith

5. First Reading of Ordinance O-22-2022, regarding a City initiated Zoning Amendment from R-1 and Institutional to R-1A Single Family Residential for 184 residential parcels. ***Michael Daniels***
   City Attorney Arnold reads Ordinance No. O-22-2022, by title.
   Mayor Johnson opens the public hearing.
   Following no public comment, Mayor Johnson closes the public hearing.

   Motion to approve on first reading Ordinance No. O-22-2022, to amend the Zoning of the property described therein from Residential Low Density Land Use, R-1 to Residential Low Density Land Use R-1A for form and legality.
   Motion made by Council Member Smith, Seconded by Vice Mayor Butler.
   Voting Yea: Mayor Johnson, Vice Mayor Butler, Council Member Kelley, Council Member Smith

6. First Reading of Ordinance O-01-2023, Hall Property Annexation Application for approximately 3.44 acres located on South US Highway 17 and CR 209. ***Michael Daniels***
   City Attorney Arnold reads Ordinance No. O-01-2023, by title.
   Development Services Director Michael Daniels advises his presentation is for items 6 through 14.
   City Manager Steve Kennedy speaks about the communication with the County and the coordination of working together.
   Mayor Johnson opens the public hearing.

Mark Scrubby speaks on behalf of the Hall family and advises his comments will be for items 6 through 14. The Hall family looks forward to working with the City on the annexation and rezoning.
Susan Fraiser speaks on behalf of the Hall family concerning the annexation and rezoning. Ms. Fraiser advises her comments will be for items 6 through 14.
Kevin Troutman 729 North Pine St. GCS asks about any environmental issues pertaining to this property.
Following no further public comment, Mayor Johnson closes the public hearing.
Council Member Smith thanks Mr. Troutman for bringing that concern to the Council. He also questions Chief Guzman how this development will affect PD response time.
Chief Guzman advises the new developments coming to the City are on the radar and included in the new strategic plan that is being completed.
Vice Mayor Butler speaks to the concerns brought forward and advises the City will look into addressing those concerns.
Council discussion followed.

Motion to approve the first reading of Ordinance O-01-2023, to approve the voluntary annexation of 3.44 acres located on CR 209 (a portion of parcel #016499-007-00) for form and legality.
Motion made by Vice Mayor Butler, Seconded by Council Member Smith.
Voting Yea: Mayor Johnson, Vice Mayor Butler, Council Member Kelley, Council Member Smith

7. First Reading of Ordinance O-02-2023, Hall Property, located on CR 209 requesting a Small Scale Future Land Use Amendment From: Industrial (County) To: Mixed Use. ***Michael Daniels***
City Attorney Arnold reads Ordinance No. O-02-2023, by title.
Mayor Johnson opens the public hearing.
Mark Scrubby advises same comments from item 6.
Joe Sobotta 212 North St. GCS questions about light industrial and what can be put on the property.
Mr. Daniels advises in C2 zoning it would be retail commercial but there are some light industrial uses that require a special exception. A warehouse coming in that zoning district would need a special exception.
Following no further public comment, Mayor Johnson closes the public hearing.

Motion to approve the first reading of Ordinance O-02-2023, to amend the Future Land Use of the property described therein from Industrial (County) to Mixed Use for form and legality.
Motion made by Vice Mayor Butler, Seconded by Council Member Smith.
Voting Yea: Mayor Johnson, Vice Mayor Butler, Council Member Kelley, Council Member Smith

8. First Reading of Ordinance O-03-2023, Hall Property, located on CR 209 requesting a Zoning Amendment From: Light Industrial (County) To: C-2, General Commercial. ***Michael Daniels***
City Attorney Arnold reads Ordinance No. O-03-2023, by title.
Mayor Johnson opens the public hearing.

Mark Scrubby advises same comments from item 6.
Following no further public comment, Mayor Johnson closes the public hearing.

Motion to approve the first reading of Ordinance O-03-2023, to amend the Zoning of the property described therein from Light Industrial to C-2 General Commercial form and legality.
Motion made by Council Member Smith, Seconded by Vice Mayor Butler.
Voting Yea: Mayor Johnson, Vice Mayor Butler, Council Member Kelley, Council Member Smith

9. First Reading of Ordinance O-04-2023, Hall Property Annexation Application for approximately 28.81 acres located on South US Highway 17 and CR 209. ***Michael Daniels***
City Attorney Arnold reads Ordinance No. O-04-2023, by title.
Mayor Johnson opens the public hearing.
Mark Scrubby advises same comments from item 6.
Susan Fraiser advises same comments from item 6.
Following no further public comment, Mayor Johnson closes the public hearing.

Motion to approve the first reading of Ordinance O-04-2023, to approve the voluntary annexation of 28.81acres located on CR 209 (a portion of parcel #016513-000-00) for form and legality.
Motion made by Vice Mayor Butler, Seconded by Council Member Smith.
Voting Yea: Mayor Johnson, Vice Mayor Butler, Council Member Kelley, Council Member Smith

10. First Reading of Ordinance O-05-2023, Hall Property Future Land Use Application for approximately 28.81 acres located on South US Highway 17 and CR 209 Small Scale Future Land Use Amendment From: Industrial (County) To: Mixed Use. ***Michael Daniels***
City Attorney Arnold reads Ordinance No. O-05-2023, by title.
Mayor Johnson opens the public hearing.
Mark Scrubby advises same comments from item 6.
Susan Fraiser advises same comments from item 6.
Following no further public comment, Mayor Johnson closes the public hearing.

Motion to approve the first reading of Ordinance O-05-2022, to amend the Future Land Use of the property described therein from Industrial (County) to Mixed Use for form and legality.
Motion made by Council Member Smith, Seconded by Vice Mayor Butler.
Voting Yea: Mayor Johnson, Vice Mayor Butler, Council Member Kelley, Council Member Smith

11. First Reading of Ordinance O-06-2023, Hall Property Zoning Application for approximately 28.81 acres located on South US Highway 17 and CR 209 requesting a Zoning Amendment From: Heavy Industrial (County) To: C-2, General Commercial. ***Michael Daniels***
City Attorney Arnold reads Ordinance No. O-06-2023, by title.
Mayor Johnson opens the public hearing.
Mark Scrubby advises same comments from item 6.

Susan Fraiser advises same comments from item 6.
Following no further public comment, Mayor Johnson closes the public hearing.

Motion to approve the first reading of Ordinance O-06-2023, to amend the Zoning of the property described therein from Heavy (County) to C-2, General Commercial for form and legality.
Motion made by Vice Mayor Butler, Seconded by Council Member Smith.
Voting Yea: Mayor Johnson, Vice Mayor Butler, Council Member Kelley, Council Member Smith

12. First Reading of Ordinance O-07-2023, Hall Property Annexation Application for approximately 39.23 acres located on South US Highway 17 and CR 209. ***Michael Daniels***
City Attorney Arnold reads Ordinance No. O-07-2023, by title.
Mayor Johnson opens the public hearing.
Mark Scrubby advises same comments from item 6.
Susan Fraiser advises same comments from item 6.
Following no further public comment, Mayor Johnson closes the public hearing.

Motion to approve the first reading of Ordinance O-07-2023, to approve the voluntary annexation of 39.23 acres located on CR 209 (parcel #016513-013-00) for form and legality.
Motion made by Council Member Smith, Seconded by Vice Mayor Butler.
Voting Yea: Mayor Johnson, Vice Mayor Butler, Council Member Kelley, Council Member Smith

13. First Reading of Ordinance O-08-2023, Hall Property Future Land Use Application for approximately 39.23 acres located on CR 209 Small Scale Future Land Use Amendment From: Industrial (County) To: Mixed Use. ***Michael Daniels***
City Attorney Arnold reads Ordinance No. O-08-2023, by title.
Mayor Johnson opens the public hearing.
Mark Scrubby advises same comments from item 6.
Susan Fraiser advises same comments from item 6.
Following no further public comment, Mayor Johnson closes the public hearing.

Motion to approve the first reading of Ordinance O-08-2022, to amend the Future Land Use of the property described therein from Industrial (County) to Mixed Use for form and legality.
Motion made by Council Member Smith, Seconded by Vice Mayor Butler.
Voting Yea: Mayor Johnson, Vice Mayor Butler, Council Member Kelley, Council Member Smith

14. First Reading of Ordinance O-09-2023, Hall Property Zoning Application for approximately 39.23 acres located on South US Highway 17 and CR 209 Zoning Amendment
From: Heavy Industrial (County) To: C-2, General Commercial. ***Michael Daniels***
City Attorney Arnold reads Ordinance No. O-09-2023, by title.
Mayor Johnson opens the public hearing.
Mark Scrubby advises same comments from item 6.
Susan Fraiser advises same comments from item 6.
Following no further public comment, Mayor Johnson closes the public hearing.

Motion to recommend approval of the first reading of Ordinance O-09-2023, to amend the Zoning of the property described therein from Heavy Industrial (County) to C-2, General Commercial for form and legality.
Motion made by Vice Mayor Butler, Seconded by Council Member Smith.
Voting Yea: Mayor Johnson, Vice Mayor Butler, Council Member Kelley, Council Member Smith

15. First Reading of Ordinance O-10-2023, Adding Convenience Stores with gas pumps as a permitted use in the C-2 Zoning District. ***Michael Daniels***
City Attorney Arnold reads Ordinance No. O-10-2023, by title.
Development Services Director Michael Daniels presents the ordinance.
Mayor Johnson opens the public hearing.
Following no public comment, Mayor Johnson closes the public hearing.
Vice Mayor Butler questions if someone will have to apply and that is how it will be identified.
Mr. Daniels advises there has been some interest in a new gas station and it would need an application submitted.
Council discussion followed.

Motion to approve the first reading of Ordinance No. O-10-2023 amending City Code Chapter 117, Sec. 117-3 and Section 117-253(2) for form and legality.
Motion made by Vice Mayor Butler, Seconded by Council Member Smith.
Voting Yea: Mayor Johnson, Vice Mayor Butler, Council Member Kelley, Council Member Smith

CONSENT AGENDA

All matters under the consent agenda are considered to be routine by the city council and will be enacted by one motion in the form listed below. There will be no separate discussion on these items. If discussion is desired, that item will be removed from the consent agenda and will be considered separately. Backup documentation and staff recommendations have been previously submitted to the city council on these items.

Pulled items 18, 19, and 20 due to blue cards.

Motion to approve Consent Agenda items 16 through 20 minus 18, 19, and 20.
Motion made by Council Member Smith, Seconded by Vice Mayor Butler.
Voting Yea: Mayor Johnson, Vice Mayor Butler, Council Member Kelley, Council Member Smith

16. City Council approval of Minutes from 1/3/2023 Special Session and 1/3/2023 Regular Session. ***Erin West***

17. City Council approval of Proclamation for Service provided by Antal Molnar. ***Kimberly Thomas***

18. City Council approval of task order to Tocoi Engineering in the not to exceed amount of $44,000 to design, permit and produce bid documents for the paving of MLK Blvd from Oakridge Ave to Kirk St. ***Greg Bauer***

Van Royal 3688 LaCosta Ct. GCS speaks concerning the timeframe and making a push to keep that timeframe.
City Manager Steve Kennedy advises staff are committed to pushing and keeping projects on a timeframe.
Council discussion
Assistant City Manager Mike Null advises the Council of the timeframe and advises of the next steps.

Motion to approve Consent Agenda item 18.
Motion made by Vice Mayor Butler, Seconded by Council Member Smith.
Voting Yea: Mayor Johnson, Vice Mayor Butler, Council Member Kelley, Council Member Smith

19. City Council approval of agreement # Z3277 with FDEM for FEMA reimbursements related to Hurricane Ian. ***Mike Null***
Van Royal 3688 LaCosta Ct. GCS asks what the money includes.
Assistant City Manager Mike Null advises the costs include personnel and equipment.

Motion to approve Consent Agenda item 19.
Motion made by Vice Mayor Butler, Seconded by Council Member Smith.
Voting Yea: Mayor Johnson, Vice Mayor Butler, Council Member Kelley, Council Member Smith

20. City Council approval of a task order to WGI, Inc. in an amount not to exceed $91,650 for additional design for the Walnut Street parking lot and post-design services related to the Walnut Street project. ***Mike Null***
Van Royal 3688 LaCosta Ct. GCS reiterates staying on top of the contractor and keeping on timeframe.

Motion to approve Consent Agenda item 20.
Motion made by Vice Mayor Butler, Seconded by Council Member Smith.
Voting Yea: Mayor Johnson, Vice Mayor Butler, Council Member Kelley, Council Member Smith

COUNCIL BUSINESS

21. Update on design of roadway, utility, pedestrian and streetscape improvements on Walnut St from Palmetto Ave to the River. ***Mike Null***
Assistant City Manager Mike Null updates the Council on the progress of this project and the next steps to be completed. The schedule included with the agenda item is the projected schedule for the project.
Van Royal 3688 LaCosta Ct. GCS speaks about golf cart traffic and events.
Joe Sobotta 212 North St. GCS questions planning ahead and putting in utility conduit.
Mr. Null advises utility conduit is being planned so that it is completed for future use.
Council discussion followed with comments concerning the project.

22. City Manager & City Attorney Reports / Correspondence
    The City Manager and City Attorney made comments regarding various city activities, events, operations, and projects.

23. City Council Reports / Correspondence
    The City Council made comments regarding various city activities, events, operations, and projects.

Adjournment
There being no further business to come before the City Council, the meeting was adjourned at 9:45 p.m.

CITY OF GREEN COVE SPRINGS, FLORIDA

Daniel M. Johnson, Mayor

Attest:

Erin West, City Clerk

STAFF REPORT

CITY OF GREEN COVE SPRINGS, FLORIDA

TO: Counsel Meeting **MEETING DATE:** May 16,2023

FROM: Andy Yeager, Electric Superintendent

SUBJECT: Chapman Substation Transformer

BACKGROUND

Chapman Substation Transformer number 1 and 2 is having issues in the LTC compartment and we took them offline until we can get an inspection and maintenance done to keep from having a failure and causing more damage to the transformer

FISCAL IMPACT

If we do not get the inspection and maintenance done there is a chance, we could have a failure which would affect a good portion of our service territory.

RECOMMENDATION

The recommendation is to have Southern Switch & Contacts come a do an inspection and maintenance on both transformer number 1 and number 2 as soon as we can arrange for them to come. The inspection and maintenance will be $14,327. 00 per transformer.

Southern Switch & Contacts

QUOTE

DATE
May 4, 2023

EXPIRATION DATE
June 3, 2023

Southern Switch & Contacts
855 Virginia Ave.
Palm Harbor, FL 34683
727-789-0951
todd@southernswitch.com

The City of Green Cove Springs
321 Walnut St
Green Cove Springs, FL 32043

Southern Switch & Contacts is please to submit this proposal for services to The City of Green Cove Springs

To perform inspection, repair, and maintenance on a McGraw 550CS LTC, Southern Switch & Contacts will perform the work for **$14,327 per LTC**

Scope of Base Services:

- Mobilize to site and ground equipment
- Drain LTC oil into clean tote
- Investigate operational issue; if gearbox is seized SS&C will provide a fully refurbished gearbox for **$2,500**
- Inspect contacts, if contacts require replacement SS&C can provide the components and perform the replacement on a T&M basis
- Operate and adjust LTC as required
- Provide & install new door seal gasket
- Filter oil and refill LTC
- Perform full transformer testing to include: overall power factor, bushing power factor, winding resistance, TTR, core ground resistance, SFRA
- Remove all debris and demobilize
- Provide written reports

Add Option: **$4,525 per LTC**

- Provide new transformer oil to replace existing LTC oil

Quote Qualifiers:

- Site access delays over two hours will be charged at an hourly rate of $500 per hour
- Southern Switch & Contacts to provide all equipment necessary to perform the scope of work safely & efficiently
- It is assumed that work can be completed in one mobilization, working on one LTC at a time

STAFF REPORT

CITY OF GREEN COVE SPRINGS, FLORIDA

TO: City Council Regular Session **MEETING DATE:** May 16, 2022

FROM: Scott Schultz, Assistant Water Utilities Director

SUBJECT: City Council approval of the 2022 water quality Consumer Confidence Report and authorization to include in all customer bills for a single cycle in June / July, or use the new electronic distribution process (still under review).

BACKGROUND

The Florida Department of Environmental Protection (FDEP) requires utilities to provide to customers an annual report of the quality of their drinking water. This activity is to comply with the requirement.

FISCAL IMPACT

Approximately $500.00 in mailing costs.

RECOMMENDATION

Approve the 2022 water quality Consumer Confidence Report and authorize distribution to all customers.

CITY OF GREEN COVE SPRINGS
2022 Annual Drinking Water Quality Report

The City of Green Cove Springs is pleased to present to you this year's Annual Water Quality Report. The City wants to keep you informed about the excellent water and services we have delivered to you over the past year. The City's goal is and always has been, to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water. The City's water comes from five (5) wells that receive water from the Floridan Aquifer. The Floridan Aquifer is the primary source of water for the majority of Florida's water systems. We aerate and chlorinate this water before distribution to consumers.

In 2022 the Florida Department of Environmental Protection (DEP) performed a Source Water Assessment on our system. The assessment was conducted to provide information about any potential sources of contamination in the vicinity of our wells. There are five (5) potential sources of contamination identified for this system, all with low susceptibility levels. The assessment results are available on the FDEP Source Water Assessment and Protection Program website at https://prodapps.dep.state.fl.us/swapp/ or they can be obtained from Jesse Ryan, Lead Operator.

If you have any questions about this report or concerning your water utility, please contact Jesse Ryan, Lead Operator, City of Green Cove Springs Water/Wastewater Department, between 7:30 a.m. and 3:30 p.m., Monday through Friday, at (904) 297-7056 or Scott Schultz, Asst. Water Utilities Director at (904) 297-7060. The City encourages our customers to be informed about their water utility. If you want to learn more, please attend any of our regularly scheduled council meetings. They are held on the first and third Tuesday of each month at 7:00 p.m., 321 Walnut Street, Green Cove Springs, FL. You can call the Green Cove Springs City Hall at (904) 297-7500 to voice your concerns, comments and/or opinions and request to be placed on the agenda for the regularly scheduled meeting.

The City of Green Cove Springs routinely monitors for contaminants in your drinking water according to Federal and State laws, rules, and regulations. Except where indicated otherwise, this report is based on the results of our monitoring for the period of January 1 to December 31, 2022. Data obtained before January 1, 2022 and presented in this report are from the most recent testing done in accordance with the laws, rules, and regulations.

In the table below, you may find unfamiliar terms and abbreviations. To help you better understand these terms we have provided the following definitions:

***Maximum Contaminant Level (MCL)**: The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.*

***Maximum Contaminant Level Goal (MCLG)**: The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.*

***Action Level (AL)**: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.*

***Maximum Residual Disinfectant Level (MRDL)**: The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.*

***Maximum Residual Disinfectant Level Goal (MRDLG)**: The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.*

***Parts per million (ppm)** or **milligrams per liter (mg/L)**: one part by weight of analyte to 1 million parts by weight of the water sample.*

***Parts per billion (ppb)** or **micrograms per liter (µg/L)**: one part by weight of analyte to 1 billion parts by weight of the water sample.*

***Picocurie per liter (pCi/L)**: measure of the radioactivity in water.*

Radioactive Contaminants

Contaminant and Unit of Measurement	Dates of sampling (mo/yr)	MCL Violation (Y/N)	Level Detected	Range of Results	MCLG	MCL	Likely Source of Contamination
Radium 226 + 228, or Combined Radium (pCi/L)	04/2017	N	1.5	0.6-1.5	0	5	Erosion of natural deposits

Inorganic Contaminants

Contaminant and Unit of Measurement	Dates of sampling (mo/yr)	MCL Violation Y/N	Level Detected	Range of Results	MCLG	MCL	Likely Source of Contamination
Barium (ppm)	09/2020	N	0.016	0.012 - 0.016	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Sodium (ppm)	09/2020	N	12	7.6 – 12	N/A	160	Salt water intrusion, leaching from soil

Stage 1 Disinfectants

Disinfectant and Unit of Measurement	Dates of sampling (mo/yr)	MCL Violation Y/N	Level Detected	Range of Results	MRDLG	MRDL	Likely Source of Contamination
Chlorine (ppm)	Monthly 2022	N	1.62	0.94-1.94	4.0	4.0	Water additive used to control microbes
For chlorine, the level detected is the highest running annual average (RAA) that occurred in 2022, computed quarterly, of monthly averages of all samples collected. Range of results is the range of all individual samples collected in 2022.							

Stage 2 Disinfection By-Products

Contaminant and Unit of Measurement	Dates of sampling (mo/yr)	MCL Violation (Y/N)	Level Detected	Range of Results	MCLG	MCL	Likely Source of Contamination
Haloacetic Acids (HAA5) (ppb)	07/2022	N	5.63	N/A	N/A	60	By-product of drinking water disinfection
Total Trihalomethanes (TTHM) (ppb)	07/2022	N	22.23	N/A	N/A	80	By-product of drinking water disinfection

Lead and Copper (Tap Water)

Contaminant and Unit of Measurement	Dates of sampling (mo./yr.)	AL Violation Y/N	90th Percentile Result	No. of sampling sites exceeding the AL	MCLG	AL (Action Level)	Likely Source of Contamination
Copper (tap water) (ppm)	09/2022	N	0.078	0 of 23	1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (tap water) (ppb)	09/2022	N	1.3	0 of 23	0	15	Corrosion of household plumbing systems, erosion of natural deposits

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Green Cove Springs Water System is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at http://www.epa.gov/safewater/lead.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

(A) Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

(B) Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

(C) Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.

(D) Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.

(E) Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. U.S. Environmental Protection Agency/Center for Disease Control guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

We at the City of Green Cove Springs work to provide top quality water to every tap. We ask that all of our customers help us protect our water sources, which are vital to our community's health and welfare. If you see any suspicious or unusual activity concerning the water system, please report it to the Green Cove Springs Police Department at (904) 297-7300.

STAFF REPORT

CITY OF GREEN COVE SPRINGS, FLORIDA

TO: City Council Regular Session **MEETING DATE:** May 16, 2023

FROM: Scott Schultz, Asst. Water Utilities Director

SUBJECT: City Council approval of Contractor's Pay Request #19 for Williams Industrial Services, LLC, in the amount of $419,615.61, for the Florida Department of Environmental Protection (FDEP), State Revolving Fund (SRF), Harbor Road Water Reclamation Facility (WRF) Expansion, Phase 2, SRF Agreement No. WW1000420. In addition, upon completion by Mittauer staff, authorization for the mayor to sign the subsequent Disbursement Request which returns funds to the Wastewater CIP Budget.

BACKGROUND

On June 7, 2016, Council provided direction for staff to pursue "Scenario #3" (See excerpt from the June 7th staff report) sewer system expansion/improvements.

Excerpt from the June 7, 2016 Staff Report

"At the October 20, 2015 meeting, Council authorized submittal of a loan application under the Florida Department of Environmental Protection (FDEP) State Revolving Fund (SRF) program for the "Phase I" planning portion of the project which would be completed by Mittauer & Associates. In addition, the Council approved a task order to Mittauer & Associates to prepare the planning documents necessary to secure capital financing under the SRF Program to complete a Facilities Plan, Environmental Plan, Capital Financing Plan, and associated Special Studies."

The staff report reviewed additional aspects of the analysis to date, and summarized three main development scenarios the City was considering. They are outlined as follows:

Scenario 1: AWWTP only (no reclaimed water improvements)
Scenario 2: AWWTP and Reclaimed Water System Improvements
Scenario 3: AWWTP, Reclaimed Water System, and Existing Collection System Improvements

As a result of the discussions and preliminary analysis, the City selected Scenario 3, which had the following implications:

"Scenario 3 – AWWTP, reclaimed water system improvements and collection system improvements (repair and replacement of clay lines city-wide)

Project Cost	$35,181,000
Loan Amount	$28,681,000
Retained Earnings	$1,000,000
Impact Fee Revenue	$1,200,000
Grants	$4,300,000
Annual Loan Payment	$1,316,100"

The costs are planning-level values and the annual loan payment will be based on final bid prices, interest

rates at the time of construction loan acquisition, and accumulated grants/retained earnings/impact-fee revenue. Each scenario was reviewed with the following common variables: All scenarios assumed a 2% increase in the number of wastewater customers each year through FY'20 and a 0.5% increase each year from FY'21 through FY'25.All scenarios assumed $6,500,000 available in grant funding, retained earnings, and impact fee revenue dedicated to the project up front in order to reduce the total loan repayment amount. Retained earnings is estimated at $1,000,000. Impact fee revenue is estimated at $1,200,000. Grant funding from all sources is estimated at $4,300,000. Although, as indicated earlier in this writing, we may qualify for 45% grant funds from SRF, the total dollar amount available each year for grant funding is limited. Staff feels that $4,300,000 is a reasonably conservative and prudent estimate as to the amount of grant dollars we may receive. However, depending on the number of projects funded by the SRF program in the next two years and the amount of grant funding available, that number can certainly increase. All scenarios assume a 2.2%, 30-year loan repayment which is in line with the Capital Financing Plan formulas. However, based on recent interest rate history in the SRF program and use of interest rate buy-downs such as requiring Davis-Bacon wage requirements and Buy-American provisions of the contractor, we may be able to realize lower interest rates when our loan is actually processed. The 30-year loan timeline contemplates repayments from FY'21 through FY'50.Reynolds Park re-development is not factored in to any of the scenarios.

On August 10, 2016, SRF staff approved SRF Project # 100400 granting the City of Green Cove Springs a $2,261,200.00 loan with a principal forgiveness amount of $1,491,035.00 to address the project's design, permitting, and SSES needs. These tasks were completed and the project has been completed / closed.

On October 18, 2016, the City Council adopted after second and final reading, Ordinance O-13-2016, authorizing the expenditures of up to $34,158,100.00 for capital improvements to the City's wastewater treatment, wastewater collection and reclaimed water systems

On August 8, 2018, FDER SRF staff approved SRF Project # 100400 granting the City of Green Cove Springs a $6,120,600.00 loan with a principal forgiveness amount of $4,063,425.00 for Phase I Construction which includes reclaimed water, electrical and improvements to Lift Stations #2 and #4.

On October 2, 2018 Council approved Resolution No. R-29-2018, a Resolution authorizing staff to submit and mayor to execute a loan application to the Florida Department of Environmental Protection (FDEP) State Revolving Fund (SRF) loan program for Phase I Construction of the Consolidated Advanced Wastewater Treatment Plant (AWWTP) and associated Lift Station Improvements.

On December 4, 2018, council approved and authorized the execution of the contract for SRF Project # 100400 granting the City of Green Cove Springs a $6,120,600.00 loan with a principal forgiveness amount of $4,063,425.00 for Phase I Construction which includes reclaimed water, electrical and improvements to Lift Stations #2 and #4.

On March 19, 2019, Council approved bid tabulations and awarded Sawcross the plant portion, and R2T the lift station portion, of the Phase I construction.

Phase I construction being completed in May of 2020, Council authorized staff to submit a Request for Inclusion (RFI) to the Florida Department of Environmental Protection (FDEP) State Revolving Fund (SRF) for Construction Phase II, which includes construction of a 1.25 million gallon per day (MGD) - annual average daily flow (AADF), advanced wastewater treatment facility (AWWTF), in the amount of $18,165,500.00.

On August 12, 2020, the FDEP SRF program awarded the City a $12,000,000.00, 20 year loan, with $4,452,835.00 in principal forgiveness (grant). Due to a limitation of available funds, the SRF program withheld $6,186,500.00 in requested funds, which will be reviewed for award and addition to the current loan the next award period.

On 10/6/2020 City Council approved Resolution No. R-27-2020, a Resolution authorizing staff to submit and Mayor to execute the loan application for SRF Loan # 100401 to the Florida Department of Environmental Protection (FDEP) State Revolving Fund (SRF) loan program for Phase II Construction of the Consolidated

Advanced Wastewater Treatment Plant (AWWTP) in the amount of $12,000,000.00 with a principal forgiveness (grant) amount of $4,452,835.00 providing for an actual repayment amount of $7,547,165.00.

On 1/19/2021 the City Council approved of, and authorized the Mayor, City Attorney and City Clerk to execute, the Clean Water State Revolving Fund (SRF), Construction Loan Agreement WW100420, Grant Agreement SG 100421 for Phase II Construction of the Consolidated Advanced Wastewater Treatment Plant (AWWTP) in the amount of $12,000,000.00 with a principal forgiveness (grant) amount of $4,452,835.00 providing for an actual repayment amount of $7,547,165.00. The original loan request was for $18,106,500.00. Due to limited funds, the SRF program limited the award to $12,000,000.00, with the plan to award the city an additional $6,106,500.00 in July 2021.

On February 2, 2021, eight Sealed Bids were opened for the construction of the above referenced project. Williams Industrial was determined to be the lowest qualified bidder. The estimated budget / original SRF loan request was for $18,106,500.00. This project came in under projected budget, including the Additive Alternates.

On 2/10/2021 Council approved the Engineer's Recommendation of Award to Williams Industrial Services, LLC, in the amount of $15,426,644.33, for the Florida Department of Environmental Protection (FDEP), State Revolving Fund (SRF), Harbor Road Water Reclamation Facility (WRF) Expansion, Phase 2, SRF Agreement No. WW1000420.

This is Contractor's Pay Request #13 for Williams Industrial

FISCAL IMPACT

$419,615.61 **from** the Wastewater CIP Budget

RECOMMENDATION

Approve Contractor's Pay Request #18 for Williams Industrial Services, LLC, in the amount of $548,467.47, for the Florida Department of Environmental Protection (FDEP), State Revolving Fund (SRF), Harbor Road Water Reclamation Facility (WRF) Expansion, Phase 2, SRF Agreement No. WW1000420

MITTAUER
& ASSOCIATES, INC.
CONSULTING ENGINEERS &
PROJECT FUNDING SPECIALISTS

580-1 WELLS ROAD
ORANGE PARK, FL 32073
PHONE: (904) 278-0030
FAX: (904) 278-0840
WWW.MITTAUER.COM

May 11, 2023 VIA EMAIL

Mr. Scott Schultz, Assistant Water Utilities Director
City of Green Cove Springs
321 Walnut Street
Green Cove Springs, FL 32043

RE: Contractor's Pay Request No. 19
DEP SRF Harbor Road WRF Expansion, Ph. 2
SRF Agreement No. WW100420
City of Green Cove Springs, Florida
Mittauer & Associates, Inc. Project No. 8905-56-1

Dear Mr. Schultz:

We have reviewed Pay Request No. 19 from Williams Industrial Services, LLC and find it acceptable. We have, accordingly, indicated our approval and are forwarding an electronic copy to you for approval and payment. This pay request totals $419,615.61.

100% of this pay request will be reimbursed by the FDEP SRF Grant/Loan.

Please do not hesitate to call should you have any questions.

Sincerely yours,
Mittauer & Associates, Inc.

Jason R. Shepler, P.E.
Vice President of Environmental Services

JRS/pj
Enclosure
cc: Williams Industrial Services, LLC

46300001—19

EJCDC
ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

Contractor's Application for Payment No. 19

To (Owner): City of Green Cove Springs, Florida	Application Period: 03/02/2023-04/06/2023	Application Date: 04/30/2023
Project: DEP SRF Harbor Road WRF Expansion, Ph. 2	From (Contractor): Williams Industrial Services LLC	Via (Engineer): Mittauer & Associates, Inc.
SRF Agreement No.: WW100420	Contract: DEP SRF Harbor Road WRF Expansion, Ph. 2	
	Contractor's Project No.: 46300001	Engineer's Project No.: 8905-56-1

RECEIVED
MAY 11 2023
MITTAUER & ASSOC., INC.

Application For Payment
Change Order Summary

Approved Change Orders

Number	Additions	Deductions
1	$6,345.98	
2	$97,501.70	
3	$22,880.66	
TOTALS	$126,728.34	
NET CHANGE BY CHANGE ORDERS	$126,728.34	

1. ORIGINAL CONTRACT PRICE	$ 15,426,644.33
2. NET CHANGE BY CHANGE ORDERS	$ 126,728.34
3. CURRENT CONTRACT PRICE (Line 1 ± 2)	$ 15,553,372.67
4. TOTAL COMPLETED AND STORED TO DATE (Column F total on Progress Estimates)	$ 13,746,460.39
5. RETAINAGE:	
a. X 5% Work Completed	$ 582,549.74
b. X 5% Stored Material	$ 103,348.36
c. Total Retainage (Line 5.a + Line5.b)	$ 685,898.10
6. AMOUNT ELIGIBLE TO DATE (Line 4 - Line 5.c)	$ 13,060562.29
7. LESS PREVIOUS PAYMENTS (Line 6 from prior Application)	$ 12,471,135.77
8. AMOUNT DUE THIS APPLICATION	$ 419,615.61
9. BALANCE TO FINISH, PLUS RETAINAGE (Column G total on Progress Estimates + Line 5.c above)	$ 2,492,810.38

Contractor's Certification

The undersigned Contractor certifies, to the best of its knowledge, the following:
(1) All previous progress payments received from Owner on account of Work done under the Contract have been applied on account to discharge Contractor's legitimate obligations incurred in connection with the Work covered by prior Applications for Payment;
(2) Title to all Work, materials and equipment incorporated in said Work, or otherwise listed in or covered by this Application for Payment, will pass to Owner at time of payment free and clear of all Liens, security interests, and encumbrances (except such as are covered by a bond acceptable to Owner indemnifying Owner against any such Liens, security interest, or encumbrances); and
(3) All the Work covered by this Application for Payment is in accordance with the Contract Documents and is not defective.

Contractor Signature

By: Sharon SC Date: ~~04/30/23~~ 5-11-23

Payment of: $ 419,615.61
(Line 8 or other - attach explanation of the other amount)

is recommended by: JRS 5/11/23
Jason R. Shepler, P.E. — Date
Mittauer & Associates, Inc.

Payment of: $ _____
(Line 8 or other - attach explanation of the other amount)

is approved by: _____ _____
City of Green Cove Springs, Florida — (Date)

Approved by: _____ _____
Funding or Financing Entity (if applicable) — (Date)

CONDITIONAL WAIVER AND RELEASE OF LIEN UPON PROGRESS PAYMENT

The undersigned lienor, Williams Industrial Services LLC, in consideration of the sum of $419,615.61 hereby waives and releases its lien and right to claim a lien for labor, services, or materials furnished to The City of Green Cove Springs (name of owner), for the improvements to the following described project DEP SRF Harbor Road WRF Expansion, Ph. 2.
The lienor certifies that all progress payments have been utilized to provide progress payments to subcontractors, suppliers, and other related vendors associated with the listed project.

Dated on April 30th, 2023

Lienor's Name: Williams Industrial Services LLC

Address: 591 Pickettville Rd.

Jacksonville, FL 32220

By: _____

Printed Name: Alvin Young

STATE OF FLORIDA

COUNTY OF Clay

The foregoing instrument was acknowledged before me via ☑ physical presence OR ☐ online notarizations this 30th day of April, 20 23, by Alvin Young

as Project Manager for Williams Industrial Services

Personally known ☑ OR Produced identification ☐

Type of Identifications Produced _____

_____
(Signature of Notary Public)

EVELYN M SOLORZANO
Notary Public - State of Florida
Commission # HH 357298
My Comm. Expires Feb 1, 2027
Bonded through National Notary Assn.

_____
(Print, Type, or Stamp Commissioned Name of Notary

CONTRACTOR:

56-1
WILLIAMS INDUSTRIAL CONTRACTORS, LLC
MITTAUER & ASSOCIATES PROJECT NO. 1277
HARBOR RD GREEN COVE SPRINGS, FL 32043

PROJECT NO. 8905- GREEN COVE WWTF UPGRADES PROJECT

DESCRIPTION	TOTAL VALUE $	PREVIOUS WORK COMPLETE	CURRENT WORK COMPLETE	PREVIOUS STORED MATERIALS	CURRENT STORED MATERIALS	% COMPLETE	$ VALUE COMPLETED	$ BALANCE TO FINISH	RETAINAGE 5%
DIVISION 1 - GENERAL REQUIREMENTS									
1 BONDS / BUILDER'S RISK INSURANCE	$ 349,520.97	$ 349,520.97				100%	$ 349,520.97	$ 0.00	$ 17,476.05
2 MOBILIZATION	$ 123,360.35	$ 123,360.35				100%	$ 123,360.35	$ 0.00	$ 6,168.02
3 DEMOBILIZATION	$ 17,523.27					0%	$ -	$ 17,523.27	$ -
4 START-UP & TEST PLANT	$ 30,505.47					0%	$ -	$ 30,505.47	$ -
5 SOIL & CONCRETE TESTING	$ 25,871.72	$ 22,074.95	$ 1,727.00			92%	$ 23,801.95	$ 2,069.77	$ 1,190.10
6 SITEWORK	$ 1,158,435.14	$ 836,368.87		$ 92,497.24		80%	$ 928,866.11	$ 229,569.03	$ 46,443.31
7 UNDERGROUND PIPING	$ 926,748.32	$ 404,169.79		$ 470,817.27		94%	$ 874,987.06	$ 51,761.26	$ 43,749.35
8 ABOVE GROUND PIPING	$ 591,960.49	$ 9,286.87	$ 17,567.00	$ 517,749.54		92%	$ 544,603.65	$ 47,356.84	$ 27,230.18
9 LANDSCAPING/ RETAINING WALL BLOCK	$ 308,916.11	$ 121,049.16	$ 17,963.00			45%	$ 139,012.25	$ 169,903.86	$ 6,950.61
10 FENCING	$ 154,458.05	$ 117,507.20				76%	$ 117,507.20	$ 36,950.85	$ 5,875.36
DIVISION 2 - INFLUENT STRUCTURE									
1 EXCAVATION	$ 11,255.31	$ 11,255.31				100%	$ 11,255.31	$ -	$ 562.77
2 STRUCTURE WALLS & ELEVATED SLABS	$ 112,553.10	$ 55,500.00		$ 29,225.00		75%	$ 84,725.00	$ 27,828.10	$ 4,236.25
3 FOUNDATIONS	$ 56,276.55	$ 56,276.55				100%	$ 56,276.55	$ -	$ 2,813.83
4 ERECT ACCESS STAIRS AND HANDRAILS	$ 75,035.40					0%	$ -	$ 75,035.40	$ -
5 MISC METALS	$ 37,517.70					0%	$ -	$ 37,517.70	$ -
6 EQUIPMENT	$ 337,659.30	$ 24,234.46		$ 90,175.00		34%	$ 114,409.46	$ 223,249.84	$ 5,720.47
7 PIPING	$ 120,056.64	$ 60,224.32	$ 8,972.00	$ 20,845.56		75%	$ 90,042.48	$ 30,014.16	$ 4,502.12
DIVISION 3 - OXIDATION DITCH									
1 OXIDATION DITCH GENERAL CONDITIONS	$ 113,130.00	$ 113,130.00				100%	$ 113,130.00	$ 0.00	$ 5,656.50
2 OXIDATION DITCH FLOOR	$ 358,245.00	$ 358,245.00				100%	$ 358,245.00	$ (0.00)	$ 17,912.25
3 OXIDATION DITCH OUTER ST. WALLS	$ 245,115.00	$ 245,115.00				100%	$ 245,115.00	$ (0.00)	$ 12,255.75
4 OXIDATION DITCH INTERNAL WALLS	$ 848,353.35	$ 848,353.35				100%	$ 848,353.35	$ (0.00)	$ 42,417.67
5 OXIDATION DITCH CIRCULAR END WALLS	$ 113,130.00	$ 113,130.00				100%	$ 113,130.00	$ 0.00	$ 5,656.50
6 OXIDATION DITCH DECKS & COLUMNS	$ 301,680.00	$ 301,680.00				100%	$ 301,680.00	$ (0.00)	$ 15,084.00
7 OXIDATION DITCH WALKWAYS	$ 94,275.00	$ 94,275.00				100%	$ 94,275.00	$ 0.00	$ 4,713.75
8 OXIDATION DITCH ACCESSORIES & PAINTING	$ 56,565.00	$ 56,565.00				100%	$ 56,565.00	$ 0.00	$ 2,828.25
9 OXIDATION DITCH EQUIPMENT	$ 1,401,530.00	$ 1,401,530.00				100%	$ 1,401,530.00	$ (0.00)	$ 70,076.50
DIVISION 4 - CLARIFIER FLOW SPLITTER									
1 EXCAVATION	$ 2,376.00	$ 2,376.00				100%	$ 2,376.00	$ -	$ 118.80
2 UNDERSLAB PIPING	$ 3,564.00	$ 3,564.00				100%	$ 3,564.00	$ -	$ 178.20
3 FOUNDATIONS & WALLS	$ 35,640.00			$ 16,136.14		45%	$ 16,136.14	$ 19,503.86	$ 806.81
4 MISC METALS	$ 5,940.00					0%	$ -	$ 5,940.00	$ -
5 STRUCTURAL	$ 7,128.00					0%	$ -	$ 7,128.00	$ -

CONTRACTOR:

56-1
WILLIAMS INDUSTRIAL CONTRACTORS, LLC
MITTAUER & ASSOCIATES PROJECT NO. 1277
HARBOR RD GREEN COVE SPRINGS, FL 32043

PROJECT NO. 8905- GREEN COVE WWTF UPGRADES PROJECT

DESCRIPTION	TOTAL VALUE $	PREVIOUS WORK COMPLETE	CURRENT WORK COMPLETE	PREVIOUS STORED MATERIALS	CURRENT STORED MATERIALS	% COMPLETE	$ VALUE COMPLETED	$ BALANCE TO FINISH	RETAINAGE 5%
6 MECHANICAL	$ 16,632.00	$ 15,000.00				90%	$ 15,000.00	$ 1,632.00	$ 750.00
7 PIPING	$ 47,520.00	$ 42,768.00				90%	$ 42,768.00	$ 4,752.00	$ 2,138.40
DIVISION 5 - CLARIFIERS									
1 EXCAVATION	$ 17,276.40	$ 17,276.40				100%	$ 17,276.40	$ 0.00	$ 863.82
2 UNDERSLAB CONCRETE ENCASED PIPING	$ 34,552.80	$ 34,552.80				100%	$ 34,552.80	$ 0.00	$ 1,727.64
3 FOUNDATIONS AND FLOOR	$ 322,492.80	$ 322,492.80				100%	$ 322,492.80	$ 0.00	$ 16,124.64
4 STRUCTURAL CONCRETE WALLS	$ 414,633.60	$ 414,633.60				100%	$ 414,633.60	$ 0.00	$ 20,731.68
5 MISC METALS	$ 57,588.00	$ 56,887.00				99%	$ 56,887.00	$ 701.00	$ 2,844.35
6 CLARIFIER EQUIPMENT	$ 522,316.80	$ 516,316.80				99%	$ 516,316.80	$ 6,000.00	$ 25,815.84
7 PIPING	$ 47,899.60	$ 47,899.60				100%	$ 47,899.60	$ (0.00)	$ 2,394.98
DIVISION 6 - RAS/WAS PUMP STATION									
1 EXCAVATION	$ 5,063.20	$ 5,063.20				100%	$ 5,063.20	$ -	$ 253.16
2 FOUNDATIONS	$ 50,632.00	$ 50,632.00				100%	$ 50,632.00	$ -	$ 2,531.60
3 ERECT BUILDING	$ 22,784.40	$ 22,784.40				100%	$ 22,784.40	$ -	$ 1,139.22
4 PUMPS	$ 136,706.40	$ 136,706.40				100%	$ 136,706.40	$ -	$ 6,835.32
5 MECHANICAL	$ 25,316.00	$ 25,316.00				100%	$ 25,316.00	$ -	$ 1,265.80
6 PIPING	$ 12,658.00	$ 12,658.00				100%	$ 12,658.00	$ -	$ 632.90
DIVISION 7 - FILTERS									
1 EXCAVATION	$ 11,496.00	$ 11,496.00				100%	$ 11,496.00	$ -	$ 574.80
2 FOUNDATIONS, WALLS & ELEVATED DECK	$ 114,960.00	$ 42,000.00	$ 37,390.00	$ 12,577.50		80%	$ 91,968.00	$ 22,992.00	$ 4,598.40
3 SET FILTERS & DRIVE MOTORS	$ 86,220.00			$ 45,000.00		52%	$ 45,000.00	$ 41,220.00	$ 2,250.00
4 MISC METALS	$ 28,740.00					0%	$ -	$ 28,740.00	$ -
5 WEIRS	$ 17,244.00		$ 4,795.00	$ 9,000.00		80%	$ 13,795.20	$ 3,448.80	$ 689.76
6 MECHANICAL	$ 57,480.00		$ 13,110.00	$ 30,000.00		75%	$ 43,110.00	$ 14,370.00	$ 2,155.50
7 PIPING	$ 229,920.00		$ 106,928.00	$ 100,000.00		90%	$ 206,928.00	$ 22,992.00	$ 10,346.40
8 PUMPS	$ 28,740.00		$ 2,874.00			10%	$ 2,874.00	$ 25,866.00	$ 143.70
DIVISION 8 - CHLORINE CONTACT CHAMBER									
1 EXCAVATION	$ 3,180.60	$ 3,180.60				100%	$ 3,180.60	$ -	$ 159.03
2 SET CHEMICAL VAULT	$ 7,951.50	$ 7,951.50				100%	$ 7,951.50	$ -	$ 397.58
3 FOUNDATIONS & WALLS	$ 97,907.86	$ 97,907.86				100%	$ 97,907.86	$ 0.00	$ 4,895.39
4 STRUCTURAL	$ 15,903.00	$ 15,903.00				100%	$ 15,903.00	$ -	$ 795.15
5 MISC METALS	$ 7,951.50	$ 1,900.00	$ 5,653.00			95%	$ 7,553.93	$ 397.58	$ 377.70
6 CHLORINE PUMPS	$ 7,951.50	$ 7,525.00				95%	$ 7,525.00	$ 426.50	$ 376.25
7 MECHANICAL	$ 7,951.50	$ 7,150.00	$ 403.93			95%	$ 7,553.93	$ 397.58	$ 377.70

CONTRACTOR:

56-1
WILLIAMS INDUSTRIAL CONTRACTORS, LLC
MITTAUER & ASSOCIATES PROJECT NO. 1277
HARBOR RD GREEN COVE SPRINGS, FL 32043

PROJECT NO. 8905- GREEN COVE WWTF UPGRADES PROJECT

DESCRIPTION	TOTAL VALUE $	PREVIOUS WORK COMPLETE	CURRENT WORK COMPLETE	PREVIOUS STORED MATERIALS	CURRENT STORED MATERIALS	% COMPLETE	$ VALUE COMPLETED	$ BALANCE TO FINISH	RETAINAGE 5%
8 EFFLUENT PUMPS	$ 7,951.50	$ 7,525.00				95%	$ 7,525.00	$ 426.50	$ 376.25
9 PIPING	$ 52,479.90	$ 47,400.00	$ 5,079.90			100%	$ 52,479.90	$ -	$ 2,624.00
DIVISION 11 - CHEMICAL FEED & STORAGE FACILITIES									
1 EXCAVATION	$ 5,032.80	$ 5,032.80				100%	$ 5,032.80	$ -	$ 251.64
2 SET CATCH BASINS	$ 7,549.20	$ 7,549.20				100%	$ 7,549.20	$ -	$ 377.46
3 FOUNDATIONS W/ UNDERDRAINS	$ 50,328.00	$ 44,738.00		$ 5,590.00		100%	$ 50,328.00	$ -	$ 2,516.40
4 PRECAST CONCRETE BOXES	$ 12,582.00	$ 3,897.70		$ 3,393.10		58%	$ 7,290.80	$ 5,291.20	$ 364.54
5 CHEMICAL STORAGE TANKS	$ 25,164.00	$ 6,291.00		$ 18,873.00		100%	$ 25,164.00	$ -	$ 1,258.20
6 MISC METALS	$ 136,534.58			$ 124,809.52		91%	$ 124,809.52	$ 11,725.06	$ 6,240.48
7 ERECT PEMB	$ 50,328.00			$ 36,792.35		73%	$ 36,792.35	$ 13,535.65	$ 1,839.62
8 PIPING	$ 88,074.00			$ 4,870.70		6%	$ 4,870.70	$ 83,203.30	$ 243.54
DIVISION 12 - IN-PLANT / TRANSFER PUMP STATION & VAC CON									
1 EXCAVATION	$ 26,124.00	$ 26,124.00				100%	$ 26,124.00	$ -	$ 1,306.20
2 WET WELL	$ 65,310.00	$ 65,310.00				100%	$ 65,310.00	$ -	$ 3,265.50
3 MISC METALS	$ 26,124.00	$ 7,755.26				30%	$ 7,755.26	$ 18,368.74	$ 387.76
4 PUMPS	$ 104,496.00	$ 5,579.86	$ 47,857.34	$ 51,058.80		100%	$ 104,496.00	$ -	$ 5,224.80
5 PIPING	$ 39,186.00		$ 35,771.80	$ 3,414.20		100%	$ 39,186.00	$ -	$ 1,959.30
DIVISION 13 - AEROBIC DIGESTERS									
1 DEMO MECHANICAL PIPING	$ 14,340.00					0%	$ -	$ 14,340.00	$ -
2 AERATORS & MOORING ARMS	$ 143,400.00	$ 940.90		$ 122,383.10		86%	$ 123,324.00	$ 20,076.00	$ 6,166.20
3 SUPERNATE DISCHARGE BOX	$ 14,340.00	$ 3,500.00		$ 559.00		28%	$ 4,059.00	$ 10,281.00	$ 202.95
4 AERATORS INSTALL	$ 20,076.00	$ 10,050.00				50%	$ 10,050.00	$ 10,026.00	$ 502.50
5 UNDERGROUND DI PIPING	$ 71,700.00					0%	$ -	$ 71,700.00	$ -
6 INSTALL TELESCOPING VALVES	$ 22,944.00					0%	$ -	$ 22,944.00	$ -
DIVISION 14 - OPERATIONS BUILDING									
1 EXCAVATION	$ 12,150.00	$ 12,150.00				100%	$ 12,150.00	$ -	$ 607.50
2 FOUNDATIONS	$ 64,030.50	$ 64,030.50				100%	$ 64,030.50	$ -	$ 3,201.53
3 STRUCTURAL PEMB	$ 110,018.25	$ 110,018.25				100%	$ 110,018.25	$ -	$ 5,500.91
4 CMU BLOCK	$ 99,326.25	$ 99,326.25				100%	$ 99,326.25	$ -	$ 4,966.31
5 ERECT TRUSSES AND METAL ROOF	$ 36,450.00	$ 36,450.00				100%	$ 36,450.00	$ -	$ 1,822.50
6 HVAC	$ 78,975.00	$ 78,975.00				100%	$ 78,975.00	$ -	$ 3,948.75
7 PLUMBING	$ 72,900.00	$ 72,900.00				100%	$ 72,900.00	$ -	$ 3,645.00
8 INSTALL LAB MATERIALS	$ 30,375.00	$ 21,000.00	$ 1,656.05	$ 6,200.20		95%	$ 28,856.25	$ 1,518.75	$ 1,442.81
9 ARCHITECTURAL ITEMS	$ 72,900.00	$ 72,900.00				100%	$ 72,900.00	$ -	$ 3,645.00

CONTRACTOR:
56-1
WILLIAMS INDUSTRIAL CONTRACTORS, LLC
MITTAUER & ASSOCIATES PROJECT NO. 1277
HARBOR RD GREEN COVE SPRINGS, FL 32043

PROJECT NO. 8905- GREEN COVE WWTF UPGRADES PROJECT

DESCRIPTION	TOTAL VALUE $	PREVIOUS WORK COMPLETE	CURRENT WORK COMPLETE	PREVIOUS STORED MATERIALS	CURRENT STORED MATERIALS	% COMPLETE	$ VALUE COMPLETED	$ BALANCE TO FINISH	RETAINAGE 5%
10 SECURITY SYSTEM	$ 30,375.00	$ 27,200.00				90%	$ 27,200.00	$ 3,175.00	$ 1,360.00
DIVISION 16 - LINE CREW BUILDING									
1 EXCAVATION	$ 18,062.18	$ 18,062.18				100%	$ 18,062.18	$ (0.00)	$ 903.11
2 FOUNDATIONS	$ 180,621.80	$ 180,621.80				100%	$ 180,621.80	$ (0.00)	$ 9,031.09
3 STRUCTURAL PEMB	$ 217,660.63	$ 217,660.63				100%	$ 217,660.63	$ (0.00)	$ 10,883.03
4 CMU BLOCK	$ 54,186.54	$ 54,186.54				100%	$ 54,186.54	$ (0.00)	$ 2,709.33
5 METAL SIDING	$ 18,062.18	$ 18,062.18				100%	$ 18,062.18	$ (0.00)	$ 903.11
6 HVAC	$ 108,373.08	$ 108,373.08				100%	$ 108,373.08	$ 0.00	$ 5,418.65
7 PLUMBING	$ 72,248.72	$ 72,248.72				100%	$ 72,248.72	$ (0.00)	$ 3,612.44
8 MISC METALS	$ 45,155.45	$ 40,116.77	$ 4,135.57			98%	$ 44,252.34	$ 903.11	$ 2,212.62
9 CASEWORK & CABINETS	$ 63,217.63	$ 19,711.09				31%	$ 19,711.09	$ 43,506.54	$ 985.55
10 ARCHITECTURAL ITEMS	$ 99,497.44	$ 44,965.07	$ 54,532.37			100%	$ 99,497.44	$ -	$ 4,974.87
DIVISION 17 - ELECTRICAL									
1 MOBILIZATION & TEMPORARY POWER	$ 49,520.00	$ 49,520.00				100%	$ 49,520.00	$ -	$ 2,476.00
2 SUBMITTALS	$ 24,760.00	$ 24,760.00				100%	$ 24,760.00	$ -	$ 1,238.00
3 GENERAL CONDITIONS	$ 99,040.00	$ 95,943.50				97%	$ 95,943.50	$ 3,096.50	$ 4,797.18
4 TESTING, START-UP, & CHECKOUT	$ 49,520.00					0%	$ -	$ 49,520.00	$ -
5 LIGHTNING PROTECTION	$ 24,760.00	$ 8,500.00				34%	$ 8,500.00	$ 16,260.00	$ 425.00
6 DEMOBILIZATION	$ 24,760.00					0%	$ -	$ 24,760.00	$ -
7 MANHOLES	$ 49,520.00	$ 49,520.00				100%	$ 49,520.00	$ -	$ 2,476.00
8 INSTALL MANHOLES	$ 24,760.00	$ 24,760.00				100%	$ 24,760.00	$ -	$ 1,238.00
9 ELECTRICAL GEAR	$ 1,089,440.00	$ 812,500.00		$ 255,000.00		98%	$ 1,067,500.00	$ 21,940.00	$ 53,375.00
10 INSTALL ELECTRICAL EQUIPMENT	$ 74,280.00	$ 64,000.00				86%	$ 64,000.00	$ 10,280.00	$ 3,200.00
11 LIGHTING	$ 74,280.00	$ 74,280.00				100%	$ 74,280.00	$ -	$ 3,714.00
12 INSTALL LIGHTING	$ 49,520.00	$ 16,500.00				33%	$ 16,500.00	$ 33,020.00	$ 825.00
13 UNDERGROUND CONDUIT & EXCAVATION	$ 247,600.00	$ 242,000.00	$ 5,600.00			100%	$ 247,600.00	$ -	$ 12,380.00
14 SURFACE CONDUIT	$ 173,320.00	$ 106,975.00	$ 14,349.00			70%	$ 121,324.00	$ 51,996.00	$ 6,066.20
15 WIRE & TERMINATIONS	$ 198,080.00	$ 118,500.00				60%	$ 118,500.00	$ 79,580.00	$ 5,925.00
16 GROUNDING	$ 24,760.00	$ 18,375.00				74%	$ 18,375.00	$ 6,385.00	$ 918.75
17 SECURITY CONDUIT & WIRE	$ 24,760.00	$ 22,000.00				89%	$ 22,000.00	$ 2,760.00	$ 1,100.00
18 LINE CREW LIGHTING	$ 24,760.00	$ 24,760.00				100%	$ 24,760.00	$ -	$ 1,238.00
19 LINE CREW INSTALL LIGHTING	$ 24,760.00		$ 24,760.00			100%	$ 24,760.00	$ -	$ 1,238.00
20 LINE CREW UNDERGROUND CONDUIT & EXCAVATION	$ 49,520.00	$ 49,520.00				100%	$ 49,520.00	$ -	$ 2,476.00
21 LINE CREW SURFACE CONDUIT	$ 24,760.00	$ 24,760.00				100%	$ 24,760.00	$ -	$ 1,238.00
22 LINE CREW WIRE & TERMINATIONS	$ 24,760.00	$ 20,000.00	$ 4,760.00			100%	$ 24,760.00	$ -	$ 1,238.00
23 LINE CREW GROUNDING	$ 24,760.00	$ 24,760.00				100%	$ 24,760.00	$ -	$ 1,238.00

CONTRACTOR:

56-1
WILLIAMS INDUSTRIAL CONTRACTORS, LLC
MITTAUER & ASSOCIATES PROJECT NO. 1277
HARBOR RD GREEN COVE SPRINGS, FL 32043

PROJECT NO. 8905- GREEN COVE WWTF UPGRADES PROJECT

DESCRIPTION	TOTAL VALUE $	PREVIOUS WORK COMPLETE	CURRENT WORK COMPLETE	PREVIOUS STORED MATERIALS	CURRENT STORED MATERIALS	% COMPLETE	$ VALUE COMPLETED	$ BALANCE TO FINISH	RETAINAGE 5%	
									$ -	
APPROVED CHANGE ORDERS									$ -	
CO# 1 SOFFIT CHANGES	$ 6,345.98	$ 6,345.98				100%	$ 6,345.98	$ -	$ 317.30	
CO# 2 COMMS SWITCH/EQUIPMENT	$ 9,783.41		$ 2,935.02			30%	$ 2,935.02	$ 6,848.39	$ 146.75	
CO# 3 FENCING	$ 26,119.03	$ 26,119.03				100%	$ 26,119.03	$ -	$ 1,305.95	
CO# 4 CHEMICAL FEED VAULT	$ 1,312.40	$ 1,312.40				100%	$ 1,312.40	$ -	$ 65.62	
CO# 5 CHEMICAL FEED PIPING	$ 4,278.97					0%		$ 4,278.97	$ -	
CO# 6 EMERGENCY LIGHTING	$ 6,878.43					0%		$ 6,878.43	$ -	
CO# 7 ADDITIONAL VAULT COVER	$ 991.01					0%		$ 991.01	$ -	
CO# 8 OVERHEAD DOOR	$ 43,772.95	$ 43,772.95				100%	$ 43,772.95	$ -	$ 2,188.65	
CO# 9 INCREASED WALKWAY WIDTH	$ 4,365.50	$ 4,365.50				100%	$ 4,365.50	$ -	$ 218.28	
CO# 10 EXTRA FRAMING FOR BATHROOM CEILING	$ 2,911.26					0%	$ -	$ 2,911.26	$ -	
CO# 11 METAL STUD & DRYWALL PRICE INCREASE	$ 18,599.78					0%	$ -	$ 18,599.78	$ -	
CO# 12 WIDENING THE CURVED WALKWAY	$ 4,365.50					0%	$ -	$ 4,365.50	$ -	
CO# 13 4 INCH PREFORATED PIPE DISCOVERY	$ 1,265.38					0%	$ -	$ 1,265.38	$ -	
CO# 14 ADAD SINK SWAP	$ 1,356.36					0%	$ -	$ 1,356.36	$ -	
CO# 15 ADDED 5 FOOT SPOOL PIECE OFF RECLAIM WATER TANK	$ 11,035.72					0%	$ -	$ 11,035.72	$ -	
CO# 16 SPLITTER BOX PIPE EXTENSION	$ 22,880.66		$ 22,880.66			100%	$ 22,880.66	$ -	$ 1,144.03	
TOTAL	$ 15,553,372.67	$ 11,209,294.25	$ 441,700.64	$ 2,066,967.22	$ -	88%	$ 13,717,964.66	$ 1,874,942.00	$ 685,898.23	$ 13,717,962.11

STAFF REPORT

CITY OF GREEN COVE SPRINGS, FLORIDA

TO: City Council Regular Session **MEETING DATE:** May 16, 2023

FROM: Scott Schultz, Asst. Water Utilities Director

SUBJECT: City Council approval of the purchase of 500 MCM electric cable for inventory from Irby in the amount of $31299.00 (Line 2 on Irby Quote) for electric system inventory.

BACKGROUND

On behalf of the electric department the warehouse keeps on hand an assortment of wire, cable and other electrical appurtenances. The inventory of certain underground and overhead cables are in need of restocking. Warehouse staff utilize a combination of price, availability, reel sizes and certain construction components to choose the proper cable and vendor. American Wire Group and Anixter were “no-quotes”

FISCAL IMPACT

31,299.00 to the warehouse electric inventory budget

RECOMMENDATION

Approve of the purchase of 500 MCM electric cable for inventory from Irby in the amount of $31299.00

TRI-STATE UTILITY PRODUCTS, INC.
160 GARRETT DRIVE
HAVANA, FLORIDA 32333
PHONE: 850-539-8088
FAX: 850-539-8087

GRCOVE

QUOTATION NUMBER
2008244-0000-02

BILL TO:
CITY OF GREEN COVE SPRINGS
321 WALNUT STREET
GREEN CV SPGS FL 32043

SHIP TO:
CITY OF GREEN COVE SPRINGS
900 W. GUM ST.
GREEN CV SPGS FL 32043

CUSTOMER P.O. NO. LS CABLE QUOTE

CUSTOMER P.O. NO. LS CABLE QUOTE

QUOTATION***QUOTATION******QUOTATION******QUOTATION******QUOTATION***

QUOTATION NUMBER	SLSMN.	QUOTATION DATE	ORDERED BY	CUSTOMER P.O. NUMBER	DATE
2008244-0000-02	212	04/20/23	214	LS CABLE QUOTE	

INSTRUCTIONS		PAGE NO.
	P	1

QUANTITY ORDERED	QUANTITY B.O./RET.	QUANTITY SHIPPED	DISP.	ITEM CODE AND DESCRIPTION	U/M	MULT.	UNIT PRICE	AMOUNT
20000				*E9KPM-1A6F01CA00 1C 1/0 AL FILLED 25KV 100% 260MILS EPR W/ FCN (16WX14), LLDPE JKT, MV-90, URD, *2500FT REEL* ---------- MINIMUM ORDER QTY. = 10,000FT - LEAD TIME = 56 WEEKS ----------	FT		4.7200	94400.00
10000				*E9KPT-A66F01CA00 1C 500KCMIL, AL FILLED 25KV 100% 260MILS EPR W/ 1/3 RCN (25W X 14), LLPDE JKT, MV-90, URD - *1,000FT REEL* ---------- MINIMUM ORDER QTY. = 10,000FT - LEAD TIME = 46 WEEKS ----------	FT		8.9900	89900.00

Omission of quotation number or reference to an expired quotation will result in application of standard price at time of shipment. Standard terms and conditions of sale to apply. Deviations pertaining to the quantities, prices, or duration of the above quotation are not valid unless confirmed in writing by TRI-STATE UTILITY PRODUCTS, INC.

Thank You

SUB TOTAL	CONTINUED
MISC. CHARGE	
TELE. CHARGE	
FREIGHT TOTAL	
FED./OTHER TAX	
STATE TAX	
PAYMENT REC'D.	

TRI-STATE UTILITY PRODUCTS, INC.

ALL PRICES ARE BASED ON	ACCEPTANCE BY	AND ARE FIRM THRU

BY _____

TRI-STATE UTILITY PRODUCTS, INC.
160 GARRETT DRIVE
HAVANA, FLORIDA 32333
PHONE: 850-539-8088
FAX: 850-539-8087

GRCOVE

QUOTATION NUMBER
2008244-0000-02

BILL TO:
CITY OF GREEN COVE SPRINGS
321 WALNUT STREET
GREEN CV SPGS FL 32043

SHIP TO:
CITY OF GREEN COVE SPRINGS
900 W. GUM ST.
GREEN CV SPGS FL 32043

CUSTOMER P.O. NO. LS CABLE QUOTE

CUSTOMER P.O. NO. LS CABLE QUOTE

QUOTATION***QUOTATION******QUOTATION******QUOTATION******QUOTATION***

QUOTATION NUMBER	SLSMN.	QUOTATION DATE	ORDERED BY	CUSTOMER P.O. NUMBER	DATE
2008244-0000-02	212	04/20/23	214	LS CABLE QUOTE	

INSTRUCTIONS		PAGE NO.
	P	2

QUANTITY ORDERED	QUANTITY B.O./RET.	QUANTITY SHIPPED	DISP.	ITEM CODE AND DESCRIPTION	U/M	MULT.	UNIT PRICE	AMOUNT
10000				*E9KPT-B56F01CA00 1C 1000KCMIL AL FILLED 25KV 100% 260MILS EPR W/ 1/3 RCN (31W X 12), LLPDE JKT, MV-90, URD - *1,000FT REEL* ---------- MINIMUM ORDER QTY. = 10,000FT - LEAD TIME = 46 WEEKS ---------- *QUOTATION NOTES / DETIALS:* LS CABLE'S SPEC IS ATTACHED FOR REVIEW AND APPROVAL PRICES ARE SUBJECT TO ESCALATION / DE-ESCALATION AT THE TIME OF SHIPMENT BASED ON CLOSING PRICES OF COMEX FOR COPPER AND LME+MW PREMIUM FOR ALUMINUM FOR THE PREVIOUS BUSINESS DAY. *CURRENT METAL PRICING AT TIME OF QUOTE: CU=$4.0660/LB AL=$1.3361/LB LEAD TIMES ARE ESTIMATED FROM CURRENT FACTORY LOAD/CAPACITY AND ARE SUBJECT TO CHANGE	FT		15.1200	151200.00

Omission of quotation number or reference to an expired quotation will result in application of standard price at time of shipment. Standard terms and conditions of sale to apply. Deviations pertaining to the quantities, prices, or duration of the above quotation are not valid unless confirmed in writing by TRI-STATE UTILITY PRODUCTS, INC.

SUB TOTAL	CONTINUED
MISC. CHARGE	
TELE. CHARGE	
FREIGHT TOTAL	
FED./OTHER TAX	
STATE TAX	
PAYMENT REC'D.	

Thank You

TRI-STATE UTILITY PRODUCTS, INC.

ALL PRICES ARE BASED ON	ACCEPTANCE BY	AND ARE FIRM THRU

BY _____

TRI-STATE UTILITY PRODUCTS, INC.
160 GARRETT DRIVE
HAVANA, FLORIDA 32333
PHONE: 850-539-8088
FAX: 850-539-8087

GRCOVE

QUOTATION NUMBER
2008244-0000-02

BILL TO:
CITY OF GREEN COVE SPRINGS
321 WALNUT STREET
GREEN CV SPGS FL 32043

SHIP TO:
CITY OF GREEN COVE SPRINGS
900 W. GUM ST.
GREEN CV SPGS FL 32043

CUSTOMER P.O. NO. LS CABLE QUOTE

CUSTOMER P.O. NO. LS CABLE QUOTE

QUOTATION***QUOTATION******QUOTATION******QUOTATION******QUOTATION***

QUOTATION NUMBER	SLSMN.	QUOTATION DATE	ORDERED BY	CUSTOMER P.O. NUMBER	DATE
2008244-0000-02	212	04/20/23	214	LS CABLE QUOTE	

INSTRUCTIONS		PAGE NO.
	P	3

QUANTITY ORDERED	QUANTITY B.O./RET.	QUANTITY SHIPPED	DISP.	ITEM CODE AND DESCRIPTION	U/M	MULT.	UNIT PRICE	AMOUNT
				WITHOUT NOTICE ESTIMATED FREIGHT FOR SHIPMENT VIA FLATBED = $1,900.00 TO BE ADDED AT TIME OF INVOICING ADDITIONAL CHARGES IF ITEMS ARE WANTED: PULLING EYES: $150 PER EACH WOOD LAGGING: $350 PER REEL ORDER IS NON-CANCELLABLE ONCE PLACED *PRICING VALID UNTIL 05/02/2023*				

Omission of quotation number or reference to an expired quotation will result in application of standard price at time of shipment. Standard terms and conditions of sale to apply. Deviations pertaining to the quantities, prices, or duration of the above quotation are not valid unless confirmed in writing by TRI-STATE UTILITY PRODUCTS, INC.

Thank You

SUB TOTAL	335,500.00
MISC. CHARGE	
TELE. CHARGE	
FREIGHT TOTAL	
FED./OTHER TAX	0.00
STATE TAX	0.00
PAYMENT REC'D.	0.00
TOTAL A	335,500.00

TRI-STATE UTILITY PRODUCTS, INC.

ALL PRICES ARE BASED ON	ACCEPTANCE BY	AND ARE FIRM THRU

BY _____

Quotation

STUART C IRBY BR333 LAKE MARY FL
38 SKYLINE DR
SUITE 1000
LAKE MARY FL 32746-7112
407-282-1486 Fax 407-855-4285

QUOTE DATE	ORDER NUMBER
04/20/23	S013510918

REMIT TO:
STUART C IRBY CO
POST OFFICE BOX 741001
ATLANTA GA 30384

PAGE NO. 1

SOLD TO:
CITY OF GREEN COVE SPRINGS
321 WALNUT ST
GREEN COVE SPRINGS, FL 32043-3441

SHIP TO:
CITY OF GREEN COVE SPRINGS
PUBLIC WORKS
900 GUM ST
GREEN COVE SPRINGS, 32043-2803

ORDERED BY: JOE

CUSTOMER NUMBER	CUSTOMER ORDER NUMBER	JOB/RELEASE NUMBER	OUTSIDE SALESPERSON
209762			Erich R Ewoldt

INSIDE SALESPERSON		REQD DATE	FRGHT ALLWD	SHIP VIA
Mark Alan Ke		04/20/23	No	

ORDER QTY	SHIP QTY	LINE	DESCRIPTION	Prc/UOM	Ext Amt
20000FT		1	*OKON 163-23-4072 1/0-19X AL F/S 260M EPR 25KV 16X14 2500' (+/-) DELIVERY 58-WEEKS	4734.450M	94689.00
3000FT		2	*OKON 162-23-4093 500MCM-37X AL F/ 260M EPR 25KV 16X12 PARTIAL (+/-) ON 1000' REELS DELIVERY 56-WEEKS	10433.000M	31299.00
3000FT		3	^*OKON 162-23-4099 1000MCM-61X AL F/S 260M EPR 25KV 18X.1066 (+/-) ON 1000' REELS DELIVERY 58-WEEKS	17488.500M	52465.50

*** This is a quotation ***

Prices firm for acceptance within 30 days with the exception of commodity prices which are subject to change daily. Quotation is void if changed. Complete quote must be used unless authorized in writing.

Subtotal	**178453.50**
S&H CHGS	**0.00**
Sales Tax	**0.00**
TOTAL	**178453.50**

OUR PRODUCT AND SERVICES ARE SUBJECT TO, AND GOVERNED EXCLUSIVELY BY, OUR TERMS AND CONDITIONS OF SALE, WHICH ARE INCORPORATED HEREIN AND AVAILABLE AT www.irby.com/terms. ADDITIONAL OR CONFLICTING TERMS ARE REJECTED, VOID AND OF NO FORCE OR EFFECT.

** Reprint ** Reprint **

STAFF REPORT

CITY OF GREEN COVE SPRINGS, FLORIDA

TO: City Council Regular Session. **MEETING DATE:** May 16, 2023

FROM: Steve Thomas Asst Public Works Director

SUBJECT: City Council Approval of the West St project, Bid 2023-06, to EltonAlan, Inc. in the amount of $2,176,936.00. ***Steve Thomas***

BACKGROUND

City staff accepted bids for the West St CDBG drainage improvements on April 10, 2023 and we received (2) bids. One was from EltonAlan @ a Cost of $ 2,176,936.00 as low bid and we received a bid from DB Civil Construction, LLC @ a cost of $2,699,650.00 and these bids came in more than budgeted cost of $1,018,000.00. The design engineer as well as city staff have reviewed the documents and recommend acceptance and award to Elton Alan in the amount of $2,176,936.00 as the lowest responsive, responsible bidder.

FISCAL IMPACT

406-3036-5006307 # $2,176,936.00

RECOMMENDATION

City Council approval to award EltonAlan the West St CDBG Drainage improvements at the bid Cost of $ 2,176,936.00.

TOCOI Engineering

May 8, 2023

Steve Thomas
Assistant Public Works Director
City of Green Cove Springs
900 Gum Street
Green Cove Springs, FL 32043

Dear Steve,

This letter is to recommend Elton Alan, Inc. to be awarded construction bid 2023-06, West Street CDBG Drainage Improvements, as this company provided the lowest qualified bid at $2,176,936.00.

If you have any questions concerning this recomendation, please contact me at 904-215-1388, or at csohm@tocoi.com.

Respectfully,
TOCOI ENGINEERING

Charlie Sohm

Charles Sohm, PE
Project Manager

Atttachments.

PROPOSAL FORM

BID NO. 2023-06, West Street CDBG Drainage Improvements

City's Designated Representative (regarding this Bid Package): Kim Thomas, Executive Assistant, at (904) 297-7500 ext. 3320 or kthomas@greencovesprings.com.

The undersigned, hereinafter called the Bidder, declares that the only persons or parties interested in this Bid are those named herein, that this Bid is, in all respects, fair and without fraud, that it is made without collusion with any official of the City of Green Cove Springs, and that the Bid is made without any connection or collusion with any person submitting another Bid for the requested item(s).

Bidder declares and accepts the responsibility for providing the City with all relevant documentation or information to afford the evaluation of their proposal. Further, Bidder understands and accepts that the City reserves the right to base its analysis and award recommendation solely upon the information provided by the Bidder at the time of the bid opening. Additional request for explanations or information shall not be made unless the City deems that such requirements are necessary to facilitate in the evaluation and/or selection of the lowest responsive and responsible bid.

Bidder declares that any deviations are explained on the sheet labeled "Clarifications and Exceptions" and is enclosed within this bid package.

BIDDER: EltonAlan, Inc.

ADDRESS: 4463 Harbour North Ct, Jax FL 32225

Bidder's Representative (authorized to bind the Bidder and/or Business/Company to the terms, specifications, and proposed prices of the bid):

Michael E. Holcomb	CEO	904-891-0360
(Name)	(Title)	(Phone Number)

Bidder's Signature: Michael E Holcomb

ADDENDA
The Bidder hereby acknowledges receipt of Addenda No.

_____, _____, _____, _____, _____ pertaining to Bid No. 2023-06.

PRICES SET FORTH ARE FIRM FOR A PERIOD OF 60 DAYS AFTER BID OPENING AND ARE NOT SUBJECT TO PRICE ADJUSTMENT. BIDDERS RESPONDING AGREE TO ALL CONDITIONS, SPECIFICATIONS AND TERMS AS DESCRIBED IN THE BID DOCUMENTS.

BIDDERS RESPONDING AGREE TO ALL CONDITIONS, SPECIFICATIONS AND TERMS AS DESCRIBED IN THESE BID DOCUMENTS.

LUMP SUM BID PRICE: $ 2,176,936.00

POLICY RELATING TO THE EMPLOYMENT OF SMALL AND MINORITY BUSINESSES

DEFINITIONS

1. SMALL BUSINESS – An independently owned and operated business concern which employs twenty-five (25) or fewer permanent full-time employees, and which has a net worth of not more than one million dollars as applicable to sole proprietorships. The one million dollar net worth requirement shall include both personal and business investments.
2. MINORITY BUSINESS ENTERPRISES - Any small business concern which is organized to engage in commercial transactions, which is at least fifty-one (51) percent owned by minority persons and whose management and daily operations are controlled by such persons. A minority business enterprise may primarily involve the practice of a profession.
3. CERTIFIED MINORITY BUSINESS ENTERPRISE - A business enterprise which has been verified by the State of Florida Department of General Services as a minority business enterprise in accordance with the provision of the Small and Minority Business Assistance Act of 1985.
4. MINORITY PERSONS- "minority" is defined in Ch. 288.703, Florida Statutes as African American, Hispanic American, Asian American, Native American or American Woman.

ACTION PLAN

In that the City of Green Cove Springs will continuously seek to administer programs funded in part or in total by allocations directly or indirectly from the U.S. Department of Housing and Urban Development, the City will be bound by the provisions of Section III of the Housing and Urban Development Act of 1986, the Equal Opportunity Act, Executive Order 11246, and the City's desire to enhance the opportunities for small and minority businesses and local businesses to participate in contracts with the City.

To accomplish this objective, the City Council establishes and implements the following steps to insure the deployment of affirmative action in expenditures for contractual services, commodities, and construction contracts.

1. To utilize the news media, Chamber of Commerce, State Department of General Services, local advertising services, citizen advisory boards, regional planning councils, listing by federal agencies, and other appropriate sources to identify small and minority business concerns for possible involvement with the City contracts.
2. To maintain and update the listing of small and minority businesses concerns and notify them of contracting opportunities with the City.
3. To maintain records (copies of memoranda, general correspondence, etc.). To determine that all steps in the action plan have been followed.
4. To establish or utilize an existing position to function and the Equal Opportunity Officer to coordinate the implementation of the Affirmative Action Plan with operators of City administered or City funded projects and programs.

POLICY RELATING TO THE EMPLOYMENT OF SMALL AND MINORITY BUSINESSES

It shall be the policy of the City of Green Cove Springs to require each department, agency, entity, or agent of the City to promote and assist small and minority businesses in gaining entry to do business with the City of Green Cove Springs. By assisting small and minority businesses, the City will help to expand and develop the small and minority business section in and around the City of Green Cove Springs.

For projects assisted by programs providing direct financial assistance from the U.S. Department of Housing and Urban Development (HUD), the City will include the Section III clause of the Housing and Urban Development Act of 1968 in all contracts for work connected with the projects. The City will also comply with the Section III clause which requires:

1. To the greatest extend feasible; opportunities for training and employment are given to low income project area residents.
2. To the greatest extent feasible, contract for work in connection with the project will be awarded to businesses located in, or owned in substantial part by persons residing in the project area.
3. Certifying that parties to the contract are under no obligation which would prevent them from complying.
4. Insuring that the contractor will send labor organizations with which he has had a collective bargaining agreement, a notice stating his commitments under this section and post this notice in places available to employees.
5. Insuring that the contractor will include a "Section III Clause" in every subcontract, and
6. Insuring that the contractor will not subcontract with anyone that has previously violated Section III requirements.
7. Obligate the contractor to provide a preliminary statement of work force needs prior to signing the contract.
8. Include Section III requirements in bid invitations and contract specifications.
9. Cooperate with secretary of Housing and Urban Development in obtaining compliance from the recipient's contractors,
10. Submit to compliance reviews by HUD when necessary, and,
11. Permit HUD access to all required records, accounts, reports books, etc.

NON-BIDDER'S RESPONSE

Should for any reason the vendor/contractor receiving this Bid Invitation package decline to make a proposal please assist us by completing the information requested below and returning it to:

City Hall
Attn: Kim Thomas
321 Walnut Street
Green Cove Springs, FL 32043

Please be sure "**NO BID**" and **Bid No. 2023-06,** clearly shown on the package of this Bid Invitation are clearly shown on the outside of the envelope.

We are not responding to this Bid Invitation for the following reason(s).

1. We do not provide the nature of products or services requested in this bid. _____
2. We are unable to meet the Specifications requested in the bid. _____
3. We are unable to comply with other terms of this Bid Invitation. _____
   *Please provide details:_____
   _____
4. The bid was too restrictive. _____
5. The bid was not sufficiently clear. _____

Other comments: _____
_____

Vendor/Contractor: _____

Address: _____

Phone: _____

SWORN STATEMENT PURSUANT TO SECTION 287.133(3)(a), FLORIDA STATUTES, ON PUBLIC ENTITY CRIMES

THIS FORM MUST BE SIGNED AND SWORN TO IN THE PRESENCE OF A NOTARY PUBLIC OR OTHER OFFICER AUTHORIZED TO ADMINISTER OATHS.

1. This sworn statement is submitted to Green Cove Springs
(print name of the public entity)

by Michael E. Holcomb
(print individual's name and title)

for EltonAlan, Inc.
(print name of entity submitting sworn statement)

whose business address is 4463 Harbour North Ct. Jax FL 32225

and (if applicable) its Federal Employer Identification Number (FEIN) is 26-4377711

(If the entity has no FEIN, include the Social Security Number of the Individual signing this sworn statement: _____.)

2. I understand that a "public entity crime" as defined in Paragraph 287.133(1)(g), Florida Statutes, means a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any business with any public entity or with an agency or political subdivision of any other state or of the United States, including, but not limited to, any bid or contract for goods or services to be provided to any public entity or an agency or political subdivision or any other state or of the United States and involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, or material misrepresentation.

3. I understand that "convicted" or "conviction" as defined in Paragraph 287.133(1)(b), Florida Statutes, means a finding of guilt or a conviction of a public entity crime, with or without an adjudication of guilt, in any federal or state trial court of record relating to charges brought by indictment or information after July 1, 1989, as a result of jury verdict, nonjury trial, or entry of a plea of guilty or nolo contendere.

4. I understand that an "affiliate" as described in paragraph 287.133(1)(a), Florida Statute, means:

a. A predecessor or successor of a person convicted of a public entity crime; or

b. An entity under the control of any natural person who is active in the management of the entity and who has been convicted of a public entity crime. The term "affiliate" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of an affiliate. The ownership by one person of shares constituting a controlling interest in another person or a pooling of equipment or income among persons when not for fair market value under an arm's length agreement, shall be a prima facie case that one person controls another person. A person who knowingly enters into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding 36 months shall be considered affiliate.

c. I understand that a "person" as defined in Paragraph 287.133(1)(e), Florida Statutes, means any natural person or entity organized under the laws of any state or of the United States with the legal power to enter into a binding contract and which bids or applies to bid on contracts for the provision of goods or services let by a public entity, or which otherwise transacts or applies to transact business with a public entity. The term "person" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in management of an entity.

d. Based on information and belief, the statement which I have marked below is true in relation to the entity submitting this sworn statement. **Indicate which statement applies:**

X
---------Neither the entity submitting this sworn statement, nor any of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, nor any affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989.

_____The entity submitting this sworn statement, or one or more of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989.

_____The entity submitting this sworn statement, or one or more of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989. However, there has been a subsequent proceeding before a Hearing Officer of the State of Florida, Division of Administrative Hearings and Final Order entered by the Hearing Officer determined that it was not in the public interest to place the entity submitting this sworn statement on the convicted vendor list. **(attach a copy of the final order)**

I UNDERSTAND THAT THE SUBMISSION OF THIS FORM TO THE CONTRACTING OFFICER FOR THE PUBLIC ENTITY IDENTIFIED IN PARAGRAPH 1 (ONE) ABOVE IS FOR THAT PUBLIC ENTITY ONLY AND, THAT THIS FORM IS VALID THOROUGH DECEMBER 31 OF THE CALENDAR YEAR IN WHICH IT IS FILED. I ALSO UNDERSTAND THAT I AM REQUIRED TO INFORM THE PUBLIC ENTITY PRIOR TO ENTERING INTO A CONTRACT IN EXCESS OF THE THRESHOLD AMOUNT PROVIDED IN SECTION 287.017, FLORIDA STATUTES FOR CATEGORY TWO OF ANY CHANGE IN THE INFORMATION CONTAINED IN THIS FORM.

_____
Signature

Sworn to and subscribed before me this 4 day of APRIL, 20 23

Personally known MIKE HOCO-23
OR produced identification _____

_____
(Type of identification)

Title: NOTARY
Notary Public –State of FLORIDA

My commission expires 7/2/2023

PAUL DOHERTY
Printed typed or stamped commissioned name of notary public

NOTARY PUBLIC STATE OF FLORIDA

PAUL DOHERTY
Commission # GG 351180
Expires July 2, 2023
Bonded Thru Budget Notary Services

DRUG-FREE WORKPLACE COMPLIANCE FORM

In order to have a drug-free workplace program, a business shall abide as follows:
The undersigned vendor/contractor in accordance with Florida Statue 287.087 hereby certifies that EltonAlan, Inc (name of business) does:

1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.
2. Inform employees about the dangers of drug abuse in the workplace, the company's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees or drug abuse violations.
3. Give each employee engaged in providing the commodities or contractual services that are under proposal a copy of the statement specified in item 1, above.
4. In the statement specified in item 1, notify the employees that as a condition of working on the commodities or contractual services which are under proposal, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to any violation of Chapter 1893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) days after such conviction.
5. Impose a sanction on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community, by any employee who is convicted.
6. Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

As the person authorized to sign the statement, I certify that, EltonAlan, Inc.

(name of business) fully complies/does not comply with the above requirements.

04-10-2023

Vendor/Contractor Signature Date

REFERENCES

The following are client/customer references for whom EltonAlan, Inc. (Bidder) has provided products and/or services within the past year similar to those requested in this Bid Invitation. The City of Green Cove Springs may contact the listed references to request such information as it may deem appropriate relative to our company's and its representative's services, professionalism, integrity, reputation, competency and charges. We encourage these references to use complete candor in providing such information to the City of Green Cove Springs to use in its evaluation of our proposal.

Client/Customer	E- Mail Address	Phone No.	Contact Person
Putnam County	mike.rodriguez@putnam-fl.com	386-329-0346	Mike Rodriquez
City of Jacksonville	aheric@coj.net	904-652-5866	Aaron Heric
JTA	wjoyce@jtafla.com	904-742-6756	Bill Joyce
Atlantic Beach	swilliams@coab.com	904-247-5834	Scott Williams
Nassau County	rcompanion@nassaucountyfl.com	904-530-6010	Robert Companion

Below are names, addresses, phone numbers and contact persons (if applicable) of professional or trade association (or similar organization) in which we are a member in good standing. The City of Green Cove Springs is encouraged to verify out status with the following.

Michael E. Holcomb (CEO EltonAlan)

Submitting Respondent

04-10-2023

Signature Date

TITLE: **WEST STREET CDBG DRAINAGE IMPROVEMENTS**

CLARIFICATIONS AND EXCEPTIONS

Bidder hereby agrees that the material, equipment or service offered will meet all the requirements of the specifications in this bid unless deviations from them are clearly indicated on this form below. An authorized representative must sign the Clarifications and Exceptions Form. An explanation must be made for each item in which an exception is taken, giving in detail the extent of the exception and the reason for which it is taken.

Vendor/Contractor Signature

04-30-2023
Date

STANDARD ADDENDUM
TO ALL
CITY CONTRACTS AND AGREEMENTS

Any other provisions of the Contract or Agreement to which this Standard Addendum is attached to the contrary notwithstanding, the parties specifically agree that the provisions hereinafter set forth will apply exclusively with respect to the matters addressed, whether addressed in said Contract or Agreement or not, and shall be deemed an integral part of said Contract or Agreement as if duly set out therein, having a force and effect of equal or superior dignity, as applicable, with the provisions thereof; provided, that if the provisions of the Contract or Agreement address a particular matter in a manner which results in a lower cost to the City than this Standard Addendum, then such provisions of the Contract or Agreement shall control and supersede the applicable provisions hereof (as used herein, the term "Contractor" means the vendor or other party in the Contract or Agreement providing construction, labor, materials, professional services, and/or equipment to the City thereunder; the term "City" means Green Cove Springs, a municipal corporation of the State of Florida, its City Council, or any other name or label set forth in the Contract or Agreement identifying such entity).

1. All payments for services rendered, or supplies, materials, equipment and the like constructed, delivered or installed under the Contract or Agreement (the Work) shall be made by the City in accordance with the Local Government Prompt Payment Act (the Act). Upon receipt of a proper statement, invoice or draw request, the City shall have the number of days provided in the Act in which to make payment.

2. Any work or professional services sub-contracted for by the Contractor for which the City has agreed to reimburse the Contractor shall not be marked up, but shall be payable by the City only in the exact amount reasonably incurred by the Contractor. No other such sub-contracted services shall be reimbursed.

3. In the event the Contract or Agreement is for professional services, charged on a time basis, the City shall not be billed or invoiced for time spent traveling to and from the Contractor's offices or other points of dispatch of its sub-contractors, employees, officers, or agents in connection with the services being rendered.

4. The City shall not be liable to reimburse the Contractor for any courier service, telephone, facsimile, or postage charges incurred by the Contractor, except as follows, and then only in the exact amount incurred by the Contractor [if the space below is left blank, then "NONE" is deemed to have been inserted therein]:

5. The City shall not be liable to reimburse the Contractor for any copying expenses incurred by the Contractor, except as follows, and then only at $0.05 per page [if the space below is left blank, then "NONE" is deemed to have been inserted therein]:

6. If and only if travel and per diem expenses are addressed in the Contract or Agreement in a manner which expressly provides for the City to reimburse the Contractor for the same, then the City shall reimburse the Contractor only for those travel and per diem expenses reasonably incurred and only in accordance with the provisions of Section 112.061, Florida Statutes or as otherwise limited by Florida law. In the event the Contractor has need to utilize hotel accommodations or common carrier services, the City shall reimburse the Contractor for his, her, or its reasonable expense incurred

thereby provided prior written approval of the City Manager of the City or his or her designee is obtained.

7. With respect to drawings and/or plans prepared on behalf of the City by the Contractor under the Contract or Agreement, unless specifically provided otherwise therein, complete sets of such drawings and/or plans shall be reproduced by the Contractor without cost to the City for all bidders requesting the same, and five (5) complete sets of such drawings and/or plans shall be reproduced and delivered to the City without cost.

8. With respect to any indemnification by the City provided under the Contract or Agreement, any such indemnification shall be subject to and within the limits set forth in Section 768.28, Florida Statutes, and shall otherwise be limited as provided by law.

9. In that the City is a governmental agency exempt from sales tax, the City shall pay no such taxes, any other provisions of the Contract or Agreement to the contrary notwithstanding. The City shall provide proof of its exempt status upon reasonable request.

10. Any pre-printed provisions of the Contract or Agreement to the contrary notwithstanding, the same shall not automatically be renewed but shall be renewed only upon subsequent agreement of the parties.

11. The Contractor acknowledges that in the budget for each fiscal year of the City during which the term of the Contract or Agreement is in effect, a limited amount of funds are appropriated which are available to make payments arising under the Contract or Agreement. Any other provisions of the Contract or Agreement to the contrary notwithstanding, and pursuant to applicable Florida Statutes, the maximum payment that the City is obligated to make under the Contract or Agreement from the budget of any fiscal year shall not exceed the appropriation for said fiscal year.

CITY OF GREEN COVE SPRINGS

By:_____
Mayor

ATTEST:

By:_____
Erin West, City Clerk

CONTRACTOR

By: Michael E. Holcomb (CEO)
(Printed Name and Title)

ADDENDUM #1

BID #2023-06

WEST ST. DRAINAGE IMPROVEMENTS

The plans only have callouts on the north side of the roadway for the removal and replacement of existing curb and gutter yet the plan linework seem to indicate that all of it is to be replaced. Please clarify.

Curb and gutter of both sides of West Street and Spruce Street, as well as the cross streets are to be replaced up to the extent of repaving.

The geometry plans show for the entire roadway to be milled and resurfaced. There are several intersections that appear to require some roadway reconstruction. Other than areas over utility trenches (drainage pipes), there are no other areas in the plans that call out for full depth reconstruction. Please clarify if there are any areas of full depth roadway reconstruction.

Only areas requiring storm pipe and structure replacement will require full depth reconstruction. Mill and resurface other areas.

There are a number of driveways that are called out as "Replace any disturbed exiting concrete driveways". As the plans currently read, none of the driveways on the southside of the roadways will end up being reconstructed regardless of their current condition. Please confirm that is the City's wishes.

Confirmed. Only disturbed driveways need be replaced.

Please show the location of the proposed sidewalk – there are no dimensions or station offsets shown on the plans to locate this proposed sidewalk. The typical section shows it located up against the ROW line but that does not agree with what is shown in the plans.

Sidewalks are to abut the road right-of-way line. The right-of-way width shifts at North Street, accounting for the change in sidewalk location in relation to the road.

There are several apparent discrepancies with pipe sizes shown on sheet 5H (pipe P-21 is shown as a 30" on this sheet) versus those show in the plan sheets (pipe P-21 is shown as a 36" in the plans) – please revise accordingly.

The proposed P-21 in the table on 5H is to be 36" diameter as per sheet 5D.

BID OPENING RECORD SHEET **BID#2023-06, APRIL 10, 2023**

West Street CDBG Drainage Improvements

FIRMS NAME	Representative	E-mail/Phone #
ELTON PLAN	PAUL DOHERTY	PAUL@ELTONPLAN.COM 904-910-2132
City G.C.S	Steve Thomas	(904) 297-7500 sthomas@greencovesprings.com
City of G.C.S.	Greg BAUER	904-297-7500 gbauer@greenCoveSprings.com
DB Civil Const.	Connie Baylor	estimating@DBCivilConstruction.com
City GCS	Mike Null	mnull@greencovesprgs.com

BID OPENING RECORD SHEET BID#2023-06, APRIL 10, 2023

West Street CDBG Drainage Improvements

FIRMS NAME	YES/NO (ALL REQUESTED DOCUMENTS INCLUDED)	LUMP SUM BID
Elton Alan inc.		2,176,936.00
DB Civil Construction, LLC		2,699,650.00

Recorded by: Greg Bauer - Date: April 11th, 2023

PROPOSAL FORM

BID NO. 2023-06, West Street CDBG Drainage Improvements

City's Designated Representative (regarding this Bid Package): Kim Thomas, Executive Assistant, at (904) 297-7500 ext. 3320 or kthomas@greencovesprings.com.

The undersigned, hereinafter called the Bidder, declares that the only persons or parties interested in this Bid are those named herein, that this Bid is, in all respects, fair and without fraud, that it is made without collusion with any official of the City of Green Cove Springs, and that the Bid is made without any connection or collusion with any person submitting another Bid for the requested item(s).

Bidder declares and accepts the responsibility for providing the City with all relevant documentation or information to afford the evaluation of their proposal. Further, Bidder understands and accepts that the City reserves the right to base its analysis and award recommendation solely upon the information provided by the Bidder at the time of the bid opening. Additional request for explanations or information shall not be made unless the City deems that such requirements are necessary to facilitate in the evaluation and/or selection of the lowest responsive and responsible bid.

Bidder declares that any deviations are explained on the sheet labeled "Clarifications and Exceptions" and is enclosed within this bid package.

BIDDER: EltonAlan, Inc.

ADDRESS: 4463 Harbour North Ct, Jax FL 32225

Bidder's Representative (authorized to bind the Bidder and/or Business/Company to the terms, specifications, and proposed prices of the bid):

Michael E. Holcomb	CEO	904-891-0360
(Name)	(Title)	(Phone Number)

Bidder's Signature: Michael E Holcomb

ADDENDA
The Bidder hereby acknowledges receipt of Addenda No.

_____, _____, _____, _____, _____ pertaining to Bid No. 2023-06.

PRICES SET FORTH ARE FIRM FOR A PERIOD OF 60 DAYS AFTER BID OPENING AND ARE NOT SUBJECT TO PRICE ADJUSTMENT. BIDDERS RESPONDING AGREE TO ALL CONDITIONS, SPECIFICATIONS AND TERMS AS DESCRIBED IN THE BID DOCUMENTS.

BIDDERS RESPONDING AGREE TO ALL CONDITIONS, SPECIFICATIONS AND TERMS AS DESCRIBED IN THESE BID DOCUMENTS.

LUMP SUM BID PRICE: $ 2,176,936.00

POLICY RELATING TO THE EMPLOYMENT OF SMALL AND MINORITY BUSINESSES

DEFINITIONS

1. SMALL BUSINESS – An independently owned and operated business concern which employs twenty-five (25) or fewer permanent full-time employees, and which has a net worth of not more than one million dollars as applicable to sole proprietorships. The one million dollar net worth requirement shall include both personal and business investments.
2. MINORITY BUSINESS ENTERPRISES - Any small business concern which is organized to engage in commercial transactions, which is at least fifty-one (51) percent owned by minority persons and whose management and daily operations are controlled by such persons. A minority business enterprise may primarily involve the practice of a profession.
3. CERTIFIED MINORITY BUSINESS ENTERPRISE - A business enterprise which has been verified by the State of Florida Department of General Services as a minority business enterprise in accordance with the provision of the Small and Minority Business Assistance Act of 1985.
4. MINORITY PERSONS- "minority" is defined in Ch. 288.703, Florida Statutes as African American, Hispanic American, Asian American, Native American or American Woman.

ACTION PLAN

In that the City of Green Cove Springs will continuously seek to administer programs funded in part or in total by allocations directly or indirectly from the U.S. Department of Housing and Urban Development, the City will be bound by the provisions of Section III of the Housing and Urban Development Act of 1986, the Equal Opportunity Act, Executive Order 11246, and the City's desire to enhance the opportunities for small and minority businesses and local businesses to participate in contracts with the City.

To accomplish this objective, the City Council establishes and implements the following steps to insure the deployment of affirmative action in expenditures for contractual services, commodities, and construction contracts.

1. To utilize the news media, Chamber of Commerce, State Department of General Services, local advertising services, citizen advisory boards, regional planning councils, listing by federal agencies, and other appropriate sources to identify small and minority business concerns for possible involvement with the City contracts.
2. To maintain and update the listing of small and minority businesses concerns and notify them of contracting opportunities with the City.
3. To maintain records (copies of memoranda, general correspondence, etc.). To determine that all steps in the action plan have been followed.
4. To establish or utilize an existing position to function and the Equal Opportunity Officer to coordinate the implementation of the Affirmative Action Plan with operators of City administered or City funded projects and programs.

POLICY RELATING TO THE EMPLOYMENT OF SMALL AND MINORITY BUSINESSES

It shall be the policy of the City of Green Cove Springs to require each department, agency, entity, or agent of the City to promote and assist small and minority businesses in gaining entry to do business with the City of Green Cove Springs. By assisting small and minority businesses, the City will help to expand and develop the small and minority business section in and around the City of Green Cove Springs.

For projects assisted by programs providing direct financial assistance from the U.S. Department of Housing and Urban Development (HUD), the City will include the Section III clause of the Housing and Urban Development Act of 1968 in all contracts for work connected with the projects. The City will also comply with the Section III clause which requires:

1. To the greatest extend feasible; opportunities for training and employment are given to low income project area residents.
2. To the greatest extent feasible, contract for work in connection with the project will be awarded to businesses located in, or owned in substantial part by persons residing in the project area.
3. Certifying that parties to the contract are under no obligation which would prevent them from complying.
4. Insuring that the contractor will send labor organizations with which he has had a collective bargaining agreement, a notice stating his commitments under this section and post this notice in places available to employees.
5. Insuring that the contractor will include a "Section III Clause" in every subcontract, and
6. Insuring that the contractor will not subcontract with anyone that has previously violated Section III requirements.
7. Obligate the contractor to provide a preliminary statement of work force needs prior to signing the contract.
8. Include Section III requirements in bid invitations and contract specifications.
9. Cooperate with secretary of Housing and Urban Development in obtaining compliance from the recipient's contractors,
10. Submit to compliance reviews by HUD when necessary, and,
11. Permit HUD access to all required records, accounts, reports books, etc.

NON-BIDDER'S RESPONSE

Should for any reason the vendor/contractor receiving this Bid Invitation package decline to make a proposal please assist us by completing the information requested below and returning it to:

City Hall
Attn: Kim Thomas
321 Walnut Street
Green Cove Springs, FL 32043

Please be sure "**NO BID**" and **Bid No. 2023-06,** clearly shown on the package of this Bid Invitation are clearly shown on the outside of the envelope.

We are not responding to this Bid Invitation for the following reason(s).

1. We do not provide the nature of products or services requested in this bid. _____
2. We are unable to meet the Specifications requested in the bid. _____
3. We are unable to comply with other terms of this Bid Invitation. _____
   *Please provide details:_____
   _____
4. The bid was too restrictive. _____
5. The bid was not sufficiently clear. _____

Other comments: _____
_____

Vendor/Contractor: _____

Address: _____

Phone: _____

SWORN STATEMENT PURSUANT TO SECTION 287.133(3)(a), FLORIDA STATUTES, ON PUBLIC ENTITY CRIMES

THIS FORM MUST BE SIGNED AND SWORN TO IN THE PRESENCE OF A NOTARY PUBLIC OR OTHER OFFICER AUTHORIZED TO ADMINISTER OATHS.

1. This sworn statement is submitted to Green Cove Springs
(print name of the public entity)

by Michael E. Holcomb
(print individual's name and title)

for EltonAlan, Inc.
(print name of entity submitting sworn statement)

whose business address is 4463 Harbour North Ct. Jax FL 32225

and (if applicable) its Federal Employer Identification Number (FEIN) is 26-4377711

(If the entity has no FEIN, include the Social Security Number of the Individual signing this sworn statement: _____.)

2. I understand that a "public entity crime" as defined in Paragraph 287.133(1)(g), Florida Statutes, means a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any business with any public entity or with an agency or political subdivision of any other state or of the United States, including, but not limited to, any bid or contract for goods or services to be provided to any public entity or an agency or political subdivision or any other state or of the United States and involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, or material misrepresentation.

3. I understand that "convicted" or "conviction" as defined in Paragraph 287.133(1)(b), Florida Statutes, means a finding of guilt or a conviction of a public entity crime, with or without an adjudication of guilt, in any federal or state trial court of record relating to charges brought by indictment or information after July 1, 1989, as a result of jury verdict, nonjury trial, or entry of a plea of guilty or nolo contendere.

4. I understand that an "affiliate" as described in paragraph 287.133(1)(a), Florida Statute, means:

   a. A predecessor or successor of a person convicted of a public entity crime; or

   b. An entity under the control of any natural person who is active in the management of the entity and who has been convicted of a public entity crime. The term "affiliate" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of an affiliate. The ownership by one person of shares constituting a controlling interest in another person or a pooling of equipment or income among persons when not for fair market value under an arm's length agreement, shall be a prima facie case that one person controls another person. A person who knowingly enters into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding 36 months shall be considered affiliate.

   c. I understand that a "person" as defined in Paragraph 287.133(1)(e), Florida Statutes, means any natural person or entity organized under the laws of any state or of the United States with the legal power to enter into a binding contract and which bids or applies to bid on contracts for the provision of goods or services let by a public entity, or which otherwise transacts or applies to transact business with a public entity. The term "person" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in management of an entity.

d. Based on information and belief, the statement which I have marked below is true in relation to the entity submitting this sworn statement. **Indicate which statement applies:**

X ---------Neither the entity submitting this sworn statement, nor any of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, nor any affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989.

_____The entity submitting this sworn statement, or one or more of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989.

_____The entity submitting this sworn statement, or one or more of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989. However, there has been a subsequent proceeding before a Hearing Officer of the State of Florida, Division of Administrative Hearings and Final Order entered by the Hearing Officer determined that it was not in the public interest to place the entity submitting this sworn statement on the convicted vendor list. **(attach a copy of the final order)**

I UNDERSTAND THAT THE SUBMISSION OF THIS FORM TO THE CONTRACTING OFFICER FOR THE PUBLIC ENTITY IDENTIFIED IN PARAGRAPH 1 (ONE) ABOVE IS FOR THAT PUBLIC ENTITY ONLY AND, THAT THIS FORM IS VALID THOROUGH DECEMBER 31 OF THE CALENDAR YEAR IN WHICH IT IS FILED. I ALSO UNDERSTAND THAT I AM REQUIRED TO INFORM THE PUBLIC ENTITY PRIOR TO ENTERING INTO A CONTRACT IN EXCESS OF THE THRESHOLD AMOUNT PROVIDED IN SECTION 287.017, FLORIDA STATUTES FOR CATEGORY TWO OF ANY CHANGE IN THE INFORMATION CONTAINED IN THIS FORM.

_____
Signature

Sworn to and subscribed before me this 4 day of APRIL, 20 23

Personally known MIKE HOCO-23
OR produced identification _____

_____
(Type of identification)

Title: NOTARY
Notary Public –State of FLORIDA

My commission expires 7/2/2023

PAUL DOHERTY
Printed typed or stamped commissioned name of notary public

NOTARY PUBLIC STATE OF FLORIDA

PAUL DOHERTY
Commission # GG 351180
Expires July 2, 2023
Bonded Thru Budget Notary Services

DRUG-FREE WORKPLACE COMPLIANCE FORM

In order to have a drug-free workplace program, a business shall abide as follows:
The undersigned vendor/contractor in accordance with Florida Statue 287.087 hereby certifies that EltonAlan, Inc (name of business) does:

1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.
2. Inform employees about the dangers of drug abuse in the workplace, the company's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees or drug abuse violations.
3. Give each employee engaged in providing the commodities or contractual services that are under proposal a copy of the statement specified in item 1, above.
4. In the statement specified in item 1, notify the employees that as a condition of working on the commodities or contractual services which are under proposal, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to any violation of Chapter 1893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) days after such conviction.
5. Impose a sanction on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community, by any employee who is convicted.
6. Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

As the person authorized to sign the statement, I certify that, EltonAlan, Inc.

(name of business) fully complies/does not comply with the above requirements.

04-10-2023

Vendor/Contractor Signature Date

REFERENCES

The following are client/customer references for whom EltonAlan, Inc. (Bidder) has provided products and/or services within the past year similar to those requested in this Bid Invitation. The City of Green Cove Springs may contact the listed references to request such information as it may deem appropriate relative to our company's and its representative's services, professionalism, integrity, reputation, competency and charges. We encourage these references to use complete candor in providing such information to the City of Green Cove Springs to use in its evaluation of our proposal.

Client/Customer	E- Mail Address	Phone No.	Contact Person
Putnam County	mike.rodriguez@putnam-fl.com	386-329-0346	Mike Rodriquez
City of Jacksonville	aheric@coj.net	904-652-5866	Aaron Heric
JTA	wjoyce@jtafla.com	904-742-6756	Bill Joyce
Atlantic Beach	swilliams@coab.com	904-247-5834	Scott Williams
Nassau County	rcompanion@nassaucountyfl.com	904-530-6010	Robert Companion

Below are names, addresses, phone numbers and contact persons (if applicable) of professional or trade association (or similar organization) in which we are a member in good standing. The City of Green Cove Springs is encouraged to verify out status with the following.

Michael E. Holcomb (CEO EltonAlan)

Submitting Respondent

04-10-2023

Signature Date

TITLE: **WEST STREET CDBG DRAINAGE IMPROVEMENTS**

CLARIFICATIONS AND EXCEPTIONS

Bidder hereby agrees that the material, equipment or service offered will meet all the requirements of the specifications in this bid unless deviations from them are clearly indicated on this form below. An authorized representative must sign the Clarifications and Exceptions Form. An explanation must be made for each item in which an exception is taken, giving in detail the extent of the exception and the reason for which it is taken.

Vendor/Contractor Signature

04-30-2023
Date

STANDARD ADDENDUM
TO ALL
CITY CONTRACTS AND AGREEMENTS

Any other provisions of the Contract or Agreement to which this Standard Addendum is attached to the contrary notwithstanding, the parties specifically agree that the provisions hereinafter set forth will apply exclusively with respect to the matters addressed, whether addressed in said Contract or Agreement or not, and shall be deemed an integral part of said Contract or Agreement as if duly set out therein, having a force and effect of equal or superior dignity, as applicable, with the provisions thereof; provided, that if the provisions of the Contract or Agreement address a particular matter in a manner which results in a lower cost to the City than this Standard Addendum, then such provisions of the Contract or Agreement shall control and supersede the applicable provisions hereof (as used herein, the term "Contractor" means the vendor or other party in the Contract or Agreement providing construction, labor, materials, professional services, and/or equipment to the City thereunder; the term "City" means Green Cove Springs, a municipal corporation of the State of Florida, its City Council, or any other name or label set forth in the Contract or Agreement identifying such entity).

1. All payments for services rendered, or supplies, materials, equipment and the like constructed, delivered or installed under the Contract or Agreement (the Work) shall be made by the City in accordance with the Local Government Prompt Payment Act (the Act). Upon receipt of a proper statement, invoice or draw request, the City shall have the number of days provided in the Act in which to make payment.

2. Any work or professional services sub-contracted for by the Contractor for which the City has agreed to reimburse the Contractor shall not be marked up, but shall be payable by the City only in the exact amount reasonably incurred by the Contractor. No other such sub-contracted services shall be reimbursed.

3. In the event the Contract or Agreement is for professional services, charged on a time basis, the City shall not be billed or invoiced for time spent traveling to and from the Contractor's offices or other points of dispatch of its sub-contractors, employees, officers, or agents in connection with the services being rendered.

4. The City shall not be liable to reimburse the Contractor for any courier service, telephone, facsimile, or postage charges incurred by the Contractor, except as follows, and then only in the exact amount incurred by the Contractor [if the space below is left blank, then "NONE" is deemed to have been inserted therein]:

5. The City shall not be liable to reimburse the Contractor for any copying expenses incurred by the Contractor, except as follows, and then only at $0.05 per page [if the space below is left blank, then "NONE" is deemed to have been inserted therein]:

6. If and only if travel and per diem expenses are addressed in the Contract or Agreement in a manner which expressly provides for the City to reimburse the Contractor for the same, then the City shall reimburse the Contractor only for those travel and per diem expenses reasonably incurred and only in accordance with the provisions of Section 112.061, Florida Statutes or as otherwise limited by Florida law. In the event the Contractor has need to utilize hotel accommodations or common carrier services, the City shall reimburse the Contractor for his, her, or its reasonable expense incurred

thereby provided prior written approval of the City Manager of the City or his or her designee is obtained.

7. With respect to drawings and/or plans prepared on behalf of the City by the Contractor under the Contract or Agreement, unless specifically provided otherwise therein, complete sets of such drawings and/or plans shall be reproduced by the Contractor without cost to the City for all bidders requesting the same, and five (5) complete sets of such drawings and/or plans shall be reproduced and delivered to the City without cost.

8. With respect to any indemnification by the City provided under the Contract or Agreement, any such indemnification shall be subject to and within the limits set forth in Section 768.28, Florida Statutes, and shall otherwise be limited as provided by law.

9. In that the City is a governmental agency exempt from sales tax, the City shall pay no such taxes, any other provisions of the Contract or Agreement to the contrary notwithstanding. The City shall provide proof of its exempt status upon reasonable request.

10. Any pre-printed provisions of the Contract or Agreement to the contrary notwithstanding, the same shall not automatically be renewed but shall be renewed only upon subsequent agreement of the parties.

11. The Contractor acknowledges that in the budget for each fiscal year of the City during which the term of the Contract or Agreement is in effect, a limited amount of funds are appropriated which are available to make payments arising under the Contract or Agreement. Any other provisions of the Contract or Agreement to the contrary notwithstanding, and pursuant to applicable Florida Statutes, the maximum payment that the City is obligated to make under the Contract or Agreement from the budget of any fiscal year shall not exceed the appropriation for said fiscal year.

CITY OF GREEN COVE SPRINGS

By:_____
Mayor

ATTEST:

By:_____
Erin West, City Clerk

CONTRACTOR

By: Michael E. Holcomb (CEO)
(Printed Name and Title)

ADDENDUM #1

BID #2023-06

WEST ST. DRAINAGE IMPROVEMENTS

The plans only have callouts on the north side of the roadway for the removal and replacement of existing curb and gutter yet the plan linework seem to indicate that all of it is to be replaced. Please clarify.

Curb and gutter of both sides of West Street and Spruce Street, as well as the cross streets are to be replaced up to the extent of repaving.

The geometry plans show for the entire roadway to be milled and resurfaced. There are several intersections that appear to require some roadway reconstruction. Other than areas over utility trenches (drainage pipes), there are no other areas in the plans that call out for full depth reconstruction. Please clarify if there are any areas of full depth roadway reconstruction.

Only areas requiring storm pipe and structure replacement will require full depth reconstruction. Mill and resurface other areas.

There are a number of driveways that are called out as "Replace any disturbed exiting concrete driveways". As the plans currently read, none of the driveways on the southside of the roadways will end up being reconstructed regardless of their current condition. Please confirm that is the City's wishes.

Confirmed. Only disturbed driveways need be replaced.

Please show the location of the proposed sidewalk – there are no dimensions or station offsets shown on the plans to locate this proposed sidewalk. The typical section shows it located up against the ROW line but that does not agree with what is shown in the plans.

Sidewalks are to abut the road right-of-way line. The right-of-way width shifts at North Street, accounting for the change in sidewalk location in relation to the road.

There are several apparent discrepancies with pipe sizes shown on sheet 5H (pipe P-21 is shown as a 30" on this sheet) versus those show in the plan sheets (pipe P-21 is shown as a 36" in the plans) – please revise accordingly.

The proposed P-21 in the table on 5H is to be 36" diameter as per sheet 5D.

ORIGINAL

PROPOSAL FORM

BID NO. 2023-06, West Street CDBG Drainage Improvements

City's Designated Representative (regarding this Bid Package): Kim Thomas, Executive Assistant, at (904) 297-7500 ext. 3320 or kthomas@greencovesprings.com.

The undersigned, hereinafter called the Bidder, declares that the only persons or parties interested in this Bid are those named herein, that this Bid is, in all respects, fair and without fraud, that it is made without collusion with any official of the City of Green Cove Springs, and that the Bid is made without any connection or collusion with any person submitting another Bid for the requested item(s).

Bidder declares and accepts the responsibility for providing the City with all relevant documentation or information to afford the evaluation of their proposal. Further, Bidder understands and accepts that the City reserves the right to base its analysis and award recommendation solely upon the information provided by the Bidder at the time of the bid opening. Additional request for explanations or information shall not be made unless the City deems that such requirements are necessary to facilitate in the evaluation and/or selection of the lowest responsive and responsible bid.

Bidder declares that any deviations are explained on the sheet labeled "Clarifications and Exceptions" and is enclosed within this bid package.

BIDDER: DB Civil Construction, LLC

ADDRESS: 4475 US 1 South, Suite 707, St. Augustine, FL 32086

Bidder's Representative (authorized to bind the Bidder and/or Business/Company to the terms, specifications, and proposed prices of the bid):

Connie Baylor	Manager	386-256-7460
(Name)	(Title)	(Phone Number)

Bidder's Signature: Connie Baylor

ADDENDA
The Bidder hereby acknowledges receipt of Addenda No.

1 , _____ , _____ , _____ , _____ pertaining to Bid No. 2023-06.

PRICES SET FORTH ARE FIRM FOR A PERIOD OF 60 DAYS AFTER BID OPENING AND ARE NOT SUBJECT TO PRICE ADJUSTMENT. BIDDERS RESPONDING AGREE TO ALL CONDITIONS, SPECIFICATIONS AND TERMS AS DESCRIBED IN THE BID DOCUMENTS.

BIDDERS RESPONDING AGREE TO ALL CONDITIONS, SPECIFICATIONS AND TERMS AS DESCRIBED IN THESE BID DOCUMENTS.

LUMP SUM BID PRICE: $ 2,699,650.00

POLICY RELATING TO THE EMPLOYMENT OF SMALL AND MINORITY BUSINESSES

DEFINITIONS

1. SMALL BUSINESS – An independently owned and operated business concern which employs twenty-five (25) or fewer permanent full-time employees, and which has a net worth of not more than one million dollars as applicable to sole proprietorships. The one million dollar net worth requirement shall include both personal and business investments.
2. MINORITY BUSINESS ENTERPRISES - Any small business concern which is organized to engage in commercial transactions, which is at least fifty-one (51) percent owned by minority persons and whose management and daily operations are controlled by such persons. A minority business enterprise may primarily involve the practice of a profession.
3. CERTIFIED MINORITY BUSINESS ENTERPRISE - A business enterprise which has been verified by the State of Florida Department of General Services as a minority business enterprise in accordance with the provision of the Small and Minority Business Assistance Act of 1985.
4. MINORITY PERSONS- "minority" is defined in Ch. 288.703, Florida Statutes as African American, Hispanic American, Asian American, Native American or American Woman.

ACTION PLAN

In that the City of Green Cove Springs will continuously seek to administer programs funded in part or in total by allocations directly or indirectly from the U.S. Department of Housing and Urban Development, the City will be bound by the provisions of Section III of the Housing and Urban Development Act of 1986, the Equal Opportunity Act, Executive Order 11246, and the City's desire to enhance the opportunities for small and minority businesses and local businesses to participate in contracts with the City.

To accomplish this objective, the City Council establishes and implements the following steps to insure the deployment of affirmative action in expenditures for contractual services, commodities, and construction contracts.

1. To utilize the news media, Chamber of Commerce, State Department of General Services, local advertising services, citizen advisory boards, regional planning councils, listing by federal agencies, and other appropriate sources to identify small and minority business concerns for possible involvement with the City contracts.
2. To maintain and update the listing of small and minority businesses concerns and notify them of contracting opportunities with the City.
3. To maintain records (copies of memoranda, general correspondence, etc.). To determine that all steps in the action plan have been followed.
4. To establish or utilize an existing position to function and the Equal Opportunity Officer to coordinate the implementation of the Affirmative Action Plan with operators of City administered or City funded projects and programs.

POLICY RELATING TO THE EMPLOYMENT OF SMALL AND MINORITY BUSINESSES

It shall be the policy of the City of Green Cove Springs to require each department, agency, entity, or agent of the City to promote and assist small and minority businesses in gaining entry to do business with the City of Green Cove Springs. By assisting small and minority businesses, the City will help to expand and develop the small and minority business section in and around the City of Green Cove Springs.

For projects assisted by programs providing direct financial assistance from the U.S. Department of Housing and Urban Development (HUD), the City will include the Section III clause of the Housing and Urban Development Act of 1968 in all contracts for work connected with the projects. The City will also comply with the Section III clause which requires:

1. To the greatest extend feasible; opportunities for training and employment are given to low income project area residents.
2. To the greatest extent feasible, contract for work in connection with the project will be awarded to businesses located in, or owned in substantial part by persons residing in the project area.
3. Certifying that parties to the contract are under no obligation which would prevent them from complying.
4. Insuring that the contractor will send labor organizations with which he has had a collective bargaining agreement, a notice stating his commitments under this section and post this notice in places available to employees.
5. Insuring that the contractor will include a "Section III Clause" in every subcontract, and
6. Insuring that the contractor will not subcontract with anyone that has previously violated Section III requirements.
7. Obligate the contractor to provide a preliminary statement of work force needs prior to signing the contract.
8. Include Section III requirements in bid invitations and contract specifications.
9. Cooperate with secretary of Housing and Urban Development in obtaining compliance from the recipient's contractors,
10. Submit to compliance reviews by HUD when necessary, and,
11. Permit HUD access to all required records, accounts, reports books, etc.

{N/A}

NON-BIDDER'S RESPONSE

Should for any reason the vendor/contractor receiving this Bid Invitation package decline to make a proposal please assist us by completing the information requested below and returning it to:

City Hall
Attn: Kim Thomas
321 Walnut Street
Green Cove Springs, FL 32043

Please be sure "**NO BID**" and **Bid No. 2023-06,** clearly shown on the package of this Bid Invitation are clearly shown on the outside of the envelope.

We are not responding to this Bid Invitation for the following reason(s).

1. We do not provide the nature of products or services requested in this bid. _____

2. We are unable to meet the Specifications requested in the bid. _____

3. We are unable to comply with other terms of this Bid Invitation. _____
*Please provide details: _____

_____

4. The bid was too restrictive. _____

5. The bid was not sufficiently clear. _____

Other comments: _____

_____

Vendor/Contractor: _____

Address: _____

Phone: _____

SWORN STATEMENT PURSUANT TO SECTION 287.133(3)(a), FLORIDA STATUTES, ON PUBLIC ENTITY CRIMES

THIS FORM MUST BE SIGNED AND SWORN TO IN THE PRESENCE OF A NOTARY PUBLIC OR OTHER OFFICER AUTHORIZED TO ADMINISTER OATHS.

1. This sworn statement is submitted to City of Green Cove Springs
(print name of the public entity)
by Connie Baylor, Manager
(print individual's name and title)
for DB Civil Construction, LLC
(print name of entity submitting sworn statement)
whose business address is 4475 US 1 South, Suite 707, St. Augustine, FL 32086

and (if applicable) its Federal Employer Identification Number (FEIN) is 82-1245533
(If the entity has no FEIN, include the Social Security Number of the Individual signing this sworn statement: _____.)

2. I understand that a "public entity crime" as defined in Paragraph 287.133(1)(g), Florida Statutes, means a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any business with any public entity or with an agency or political subdivision of any other state or of the United States, including, but not limited to, any bid or contract for goods or services to be provided to any public entity or an agency or political subdivision or any other state or of the United States and involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, or material misrepresentation.

3. I understand that "convicted" or "conviction" as defined in Paragraph 287.133(1)(b), Florida Statutes, means a finding of guilt or a conviction of a public entity crime, with or without an adjudication of guilt, in any federal or state trial court of record relating to charges brought by indictment or information after July 1, 1989, as a result of jury verdict, nonjury trial, or entry of a plea of guilty or nolo contendere.

4. I understand that an "affiliate" as described in paragraph 287.133(1)(a), Florida Statute, means:

a. A predecessor or successor of a person convicted of a public entity crime; or

b. An entity under the control of any natural person who is active in the management of the entity and who has been convicted of a public entity crime. The term "affiliate" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of an affiliate. The ownership by one person of shares constituting a controlling interest in another person or a pooling of equipment or income among persons when not for fair market value under an arm's length agreement, shall be a prima facie case that one person controls another person. A person who knowingly enters into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding 36 months shall be considered affiliate.

c. I understand that a "person" as defined in Paragraph 287.133(1)(e), Florida Statutes, means any natural person or entity organized under the laws of any state or of the United States with the legal power to enter into a binding contract and which bids or applies to bid on contracts for the provision of goods or services let by a public entity, or which otherwise transacts or applies to transact business with a public entity. The term "person" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in management of an entity.

d. Based on information and belief, the statement which I have marked below is true in relation to the entity submitting this sworn statement. **Indicate which statement applies:**

X Neither the entity submitting this sworn statement, nor any of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, nor any affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989.

_____ The entity submitting this sworn statement, or one or more of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989.

_____ The entity submitting this sworn statement, or one or more of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989. However, there has been a subsequent proceeding before a Hearing Officer of the State of Florida, Division of Administrative Hearings and Final Order entered by the Hearing Officer determined that it was not in the public interest to place the entity submitting this sworn statement on the convicted vendor list. **(attach a copy of the final order)**

I UNDERSTAND THAT THE SUBMISSION OF THIS FORM TO THE CONTRACTING OFFICER FOR THE PUBLIC ENTITY IDENTIFIED IN PARAGRAPH 1 (ONE) ABOVE IS FOR THAT PUBLIC ENTITY ONLY AND, THAT THIS FORM IS VALID THOROUGH DECEMBER 31 OF THE CALENDAR YEAR IN WHICH IT IS FILED. I ALSO UNDERSTAND THAT I AM REQUIRED TO INFORM THE PUBLIC ENTITY PRIOR TO ENTERING INTO A CONTRACT IN EXCESS OF THE THRESHOLD AMOUNT PROVIDED IN SECTION 287.017, FLORIDA STATUTES FOR CATEGORY TWO OF ANY CHANGE IN THE INFORMATION CONTAINED IN THIS FORM.

Connie Baylor
Signature

Sworn to and subscribed before me this 10 day of April, 2023

Personally know: Connie Baylor
OR produced identification _____

Title: Manager
Notary Public –State of Florida

_____
(Type of identification)

My commission expires 2/10/26

Notary Public State of Florida
Victoria Grace Murphy
My Commission
HH 227491
Exp. 2/10/2026

_____
Printed typed or stamped commissioned name of notary public

DRUG-FREE WORKPLACE COMPLIANCE FORM

In order to have a drug-free workplace program, a business shall abide as follows:
The undersigned vendor/contractor in accordance with Florida Statue 287.087 hereby certifies that DB Civil Construction, LLC (name of business) does:

1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.
2. Inform employees about the dangers of drug abuse in the workplace, the company's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees or drug abuse violations.
3. Give each employee engaged in providing the commodities or contractual services that are under proposal a copy of the statement specified in item 1, above.
4. In the statement specified in item 1, notify the employees that as a condition of working on the commodities or contractual services which are under proposal, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to any violation of Chapter 1893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) days after such conviction.
5. Impose a sanction on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community, by any employee who is convicted.
6. Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

As the person authorized to sign the statement, I certify that, DB Civil Construction, LLC

(name of business), fully complies/does not comply with the above requirements.

Connie Boyd 4-7-23

Vendor/Contractor Signature Date

REFERENCES

The following are client/customer references for whom DB Civil Construction, LLC (Bidder) has provided products and/or services within the past year similar to those requested in this Bid Invitation. The City of Green Cove Springs may contact the listed references to request such information as it may deem appropriate relative to our company's and its representative's services, professionalism, integrity, reputation, competency and charges. We encourage these references to use complete candor in providing such information to the City of Green Cove Springs to use in its evaluation of our proposal.

Client/Customer	E- Mail Address	Phone No.	Contact Person
City of Davenport		(863) 270-1292	Aaron Perschan
City of Winter Haven		(863) 287-3928	Ron Bach
City of St Augustine		(904) 209-4227	Jes Beach
Putnam County		(863) 287-3928	Mike Rodriguez
City of Winter Haven		(386) 329-0346	Ron Bach

Below are names, addresses, phone numbers and contact persons (if applicable) of professional or trade association (or similar organization) in which we are a member in good standing. The City of Green Cove Springs is encouraged to verify out status with the following.

State of Florida Department of Business and Professional Regulation - Construction Industry Licensing Board - CUC1224644

Florida Unified Certification Program - Disadvantaged Business Enterprise (DBE) - DB Civil Construction, LLC

Connie Baylor, Manager
Submitting Respondent

Connie Baylor 4-10-23
Signature Date

TITLE: **WEST STREET CDBG DRAINAGE IMPROVEMENTS**

CLARIFICATIONS AND EXCEPTIONS

Bidder hereby agrees that the material, equipment or service offered will meet all the requirements of the specifications in this bid unless deviations from them are clearly indicated on this form below. An authorized representative must sign the Clarifications and Exceptions Form. An explanation must be made for each item in which an exception is taken, giving in detail the extent of the exception and the reason for which it is taken.

N/A

Vendor/Contractor Signature

4-7-23
Date

STANDARD ADDENDUM
TO ALL
CITY CONTRACTS AND AGREEMENTS

Any other provisions of the Contract or Agreement to which this Standard Addendum is attached to the contrary notwithstanding, the parties specifically agree that the provisions hereinafter set forth will apply exclusively with respect to the matters addressed, whether addressed in said Contract or Agreement or not, and shall be deemed an integral part of said Contract or Agreement as if duly set out therein, having a force and effect of equal or superior dignity, as applicable, with the provisions thereof; provided, that if the provisions of the Contract or Agreement address a particular matter in a manner which results in a lower cost to the City than this Standard Addendum, then such provisions of the Contract or Agreement shall control and supersede the applicable provisions hereof (as used herein, the term "Contractor" means the vendor or other party in the Contract or Agreement providing construction, labor, materials, professional services, and/or equipment to the City thereunder; the term "City" means Green Cove Springs, a municipal corporation of the State of Florida, its City Council, or any other name or label set forth in the Contract or Agreement identifying such entity).

1. All payments for services rendered, or supplies, materials, equipment and the like constructed, delivered or installed under the Contract or Agreement (the Work) shall be made by the City in accordance with the Local Government Prompt Payment Act (the Act). Upon receipt of a proper statement, invoice or draw request, the City shall have the number of days provided in the Act in which to make payment.

2. Any work or professional services sub-contracted for by the Contractor for which the City has agreed to reimburse the Contractor shall not be marked up, but shall be payable by the City only in the exact amount reasonably incurred by the Contractor. No other such sub-contracted services shall be reimbursed.

3. In the event the Contract or Agreement is for professional services, charged on a time basis, the City shall not be billed or invoiced for time spent traveling to and from the Contractor's offices or other points of dispatch of its sub-contractors, employees, officers, or agents in connection with the services being rendered.

4. The City shall not be liable to reimburse the Contractor for any courier service, telephone, facsimile, or postage charges incurred by the Contractor, except as follows, and then only in the exact amount incurred by the Contractor [if the space below is left blank, then "NONE" is deemed to have been inserted therein]:

5. The City shall not be liable to reimburse the Contractor for any copying expenses incurred by the Contractor, except as follows, and then only at $0.05 per page [if the space below is left blank, then "NONE" is deemed to have been inserted therein]:

6. If and only if travel and per diem expenses are addressed in the Contract or Agreement in a manner which expressly provides for the City to reimburse the Contractor for the same, then the City shall reimburse the Contractor only for those travel and per diem expenses reasonably incurred and only in accordance with the provisions of Section 112.061, Florida Statutes or as otherwise limited by Florida law. In the event the Contractor has need to utilize hotel accommodations or common carrier services, the City shall reimburse the Contractor for his, her, or its reasonable expense incurred

thereby provided prior written approval of the City Manager of the City or his or her designee is obtained.

7. With respect to drawings and/or plans prepared on behalf of the City by the Contractor under the Contract or Agreement, unless specifically provided otherwise therein, complete sets of such drawings and/or plans shall be reproduced by the Contractor without cost to the City for all bidders requesting the same, and five (5) complete sets of such drawings and/or plans shall be reproduced and delivered to the City without cost.

8. With respect to any indemnification by the City provided under the Contract or Agreement, any such indemnification shall be subject to and within the limits set forth in Section 768.28, Florida Statutes, and shall otherwise be limited as provided by law.

9. In that the City is a governmental agency exempt from sales tax, the City shall pay no such taxes, any other provisions of the Contract or Agreement to the contrary notwithstanding. The City shall provide proof of its exempt status upon reasonable request.

10. Any pre-printed provisions of the Contract or Agreement to the contrary notwithstanding, the same shall not automatically be renewed but shall be renewed only upon subsequent agreement of the parties.

11. The Contractor acknowledges that in the budget for each fiscal year of the City during which the term of the Contract or Agreement is in effect, a limited amount of funds are appropriated which are available to make payments arising under the Contract or Agreement. Any other provisions of the Contract or Agreement to the contrary notwithstanding, and pursuant to applicable Florida Statutes, the maximum payment that the City is obligated to make under the Contract or Agreement from the budget of any fiscal year shall not exceed the appropriation for said fiscal year.

CITY OF GREEN COVE SPRINGS

By:_____
Mayor

ATTEST:

By:_____
Erin West, City Clerk

CONTRACTOR

By: Dan Bayh, Manager
(Printed Name and Title)

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 07/13/2022

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Brown & Brown of Florida, Inc. P.O. Box 2412 Daytona Beach FL 32115-2412	CONTACT NAME: Denise DAbato PHONE (A/C, No, Ext): (386) 239-7281 FAX (A/C, No): (386) 323-9121 E-MAIL ADDRESS: Denise.DAbato@bbrown.com
INSURED DB CIVIL CONSTRUCTION, LLC 4475 US-1 SOUTH SUITE 707 ST. AUGUSTINE FL 32086	INSURER(S) AFFORDING COVERAGE — NAIC # INSURER A: Crum & Forster Specialty Insurance Company — 44520 INSURER B: Auto-Owners Insurance Company — 18988 INSURER C: XL Specialty Insurance Company — 37885 INSURER D: Bridgefield Casualty Insurance Company — 10335 INSURER E: — INSURER F: —

COVERAGES **CERTIFICATE NUMBER:** 2022-23 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	[X] COMMERCIAL GENERAL LIABILITY [ ] CLAIMS-MADE [X] OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: [ ] POLICY [X] PRO-JECT [ ] LOC [ ] OTHER:			EPK-140198	06/28/2022	06/28/2023	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG Pollution	$ 5,000,000 $ 100,000 $ 5,000 $ 5,000,000 $ 5,000,000 $ 5,000,000 $ $5m/$5m
B	AUTOMOBILE LIABILITY [X] ANY AUTO [ ] OWNED AUTOS ONLY [ ] SCHEDULED AUTOS [ ] HIRED AUTOS ONLY [ ] NON-OWNED AUTOS ONLY			5185713701	06/28/2022	06/28/2023	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident) PIP	$ 1,000,000 $ $ $ $ 10,000
	[ ] UMBRELLA LIAB [ ] OCCUR [ ] EXCESS LIAB [ ] CLAIMS-MADE [ ] DED [ ] RETENTION $						EACH OCCURRENCE AGGREGATE —	$ $ $
D	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) Y / N [ ] If yes, describe under DESCRIPTION OF OPERATIONS below	N / A		196-53348	07/26/2022	07/26/2023	[X] PER STATUTE [ ] OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	 $ 1,000,000 $ 1,000,000 $ 1,000,000
C	Equipment Floater			UM00116969MA22A	06/28/2022	06/28/2023	Leased/rented	$250,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

CERTIFICATE HOLDER

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

© 1988-2015 ACORD CORPORATION. All rights reserved.

FDOT

GREATER ORLANDO AVIATION AUTHORITY

Florida Unified Certification Program

Disadvantaged Business Enterprise (DBE)

Certificate of Eligibility

DB CIVIL CONSTRUCTION LLC

MEETS THE REQUIREMENTS OF 49 CFR, PART 26

APPROVED NAICS CODES:

237110

Samuel Febres

Samuel (Sammy) Febres

DBE & Small Business Development Manager

Florida Department of Transportation

Tampa International Airport

Votran

Detail by Entity Name

Florida Limited Liability Company
DB CIVIL CONSTRUCTION, LLC

Filing Information

Document Number	L17000064257
FEI/EIN Number	82-1245533
Date Filed	03/21/2017
State	FL
Status	ACTIVE
Last Event	LC AMENDMENT
Event Date Filed	07/21/2017
Event Effective Date	NONE

Principal Address

4475 US1 South
SUITE 707
ST. AUGUSTINE, FL 32086

Changed: 01/08/2021

Mailing Address

4475 US1 SOUTH
SUITE 707
ST. AUGUSTINE, FL 32086

Changed: 01/08/2021

Registered Agent Name & Address

BAYLOR, DALTON
4475 US1 SOUTH
SUITE 707
ST. AUGUSTINE, FL 32086

Name Changed: 03/09/2020

Address Changed: 01/08/2021

Authorized Person(s) Detail

Name & Address

Title Manager

BAYLOR, CONNIE
4475 US1 SOUTH
SUITE 707
ST. AUGUSTINE, FL 32086

Title Authorized Member

BAYLOR, DALTON
4475 US1 SOUTH
SUITE 707
ST. AUGUSTINE, FL 32086

Annual Reports

Report Year	Filed Date
2021	01/08/2021
2021	02/19/2021
2022	01/25/2022

Document Images

01/25/2022 -- ANNUAL REPORT	View image in PDF format
02/19/2021 -- AMENDED ANNUAL REPORT	View image in PDF format
01/08/2021 -- ANNUAL REPORT	View image in PDF format
03/31/2020 -- AMENDED ANNUAL REPORT	View image in PDF format
03/09/2020 -- AMENDED ANNUAL REPORT	View image in PDF format
01/21/2020 -- ANNUAL REPORT	View image in PDF format
01/23/2019 -- ANNUAL REPORT	View image in PDF format
03/26/2018 -- ANNUAL REPORT	View image in PDF format
07/21/2017 -- LC Amendment	View image in PDF format
03/21/2017 -- Florida Limited Liability	View image in PDF format

Ron DeSantis, Governor

Melanie S. Griffin, Secretary

Florida dbpr

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

CONSTRUCTION INDUSTRY LICENSING BOARD

THE UNDERGROUND UTILITY & EXCAVATION CO HEREIN IS CERTIFIED UNDER THE PROVISIONS OF CHAPTER 489, FLORIDA STATUTES

BAYLOR, CONNIE

DB CIVIL CONSTRUCTION, LLC
1142 ATHLONE WAY
ORMOND BEACH FL 32174

LICENSE NUMBER: CUC1224644

EXPIRATION DATE: AUGUST 31, 2024

Always verify licenses online at MyFloridaLicense.com

Do not alter this document in any form.

This is your license. It is unlawful for anyone other than the licensee to use this document.

State of Florida

Woman Business Certification

DB Civil Construction, LLC

Is certified under the provisions of
287 and 295.187, Florida Statutes, for a period from:
05/17/2022 to 05/17/2024

J. Todd Inman
Florida Department of Management Services

Department of MANAGEMENT SERVICES
Office of Supplier Diversity

Office of Supplier Diversity
4050 Esplanade Way, Suite 380
Tallahassee, FL 32399
850-487-0915
www.dms.myflorida.com/osd

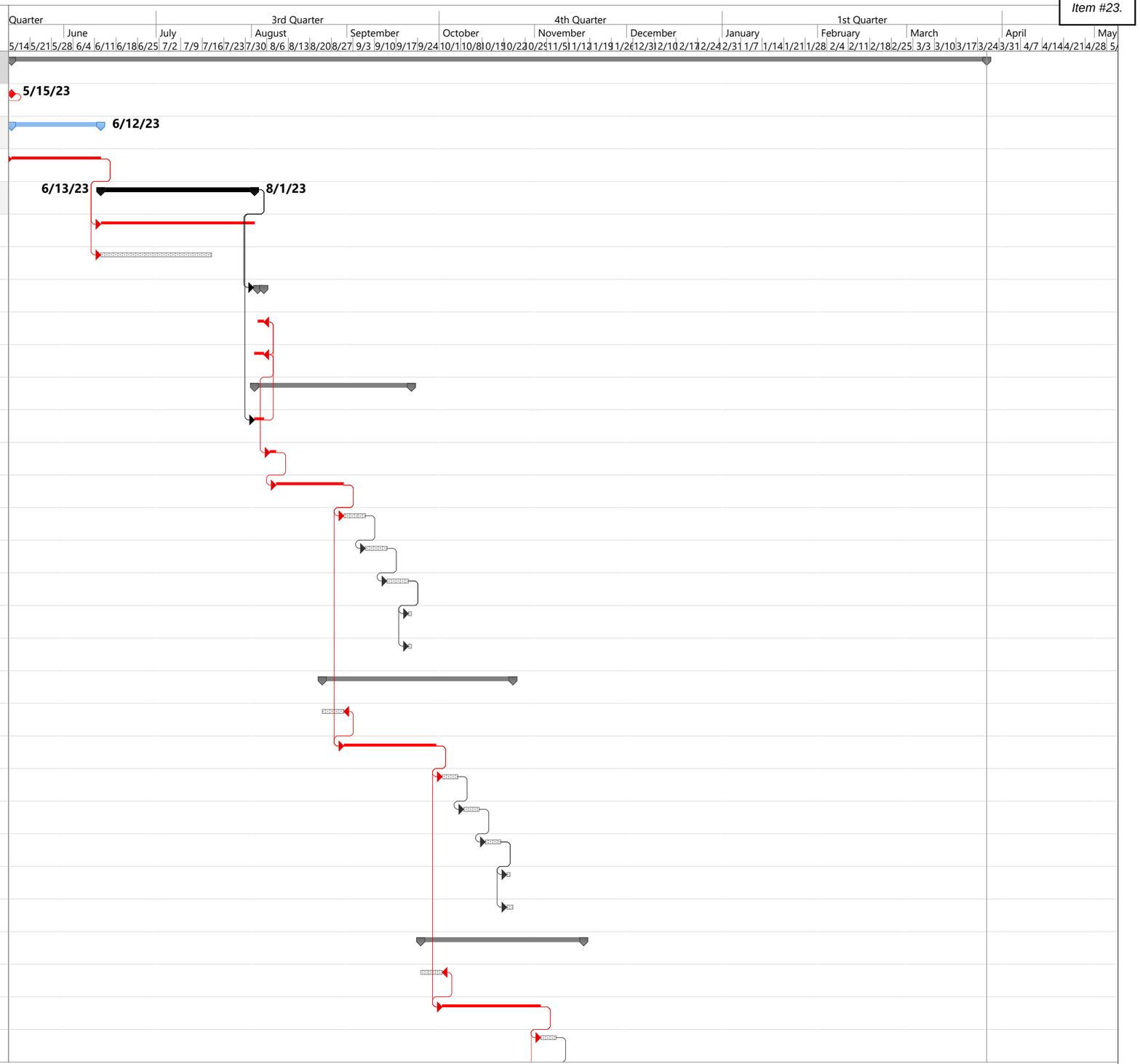
CIVIL CONSTRUCTION

EQUIPMENT LIST

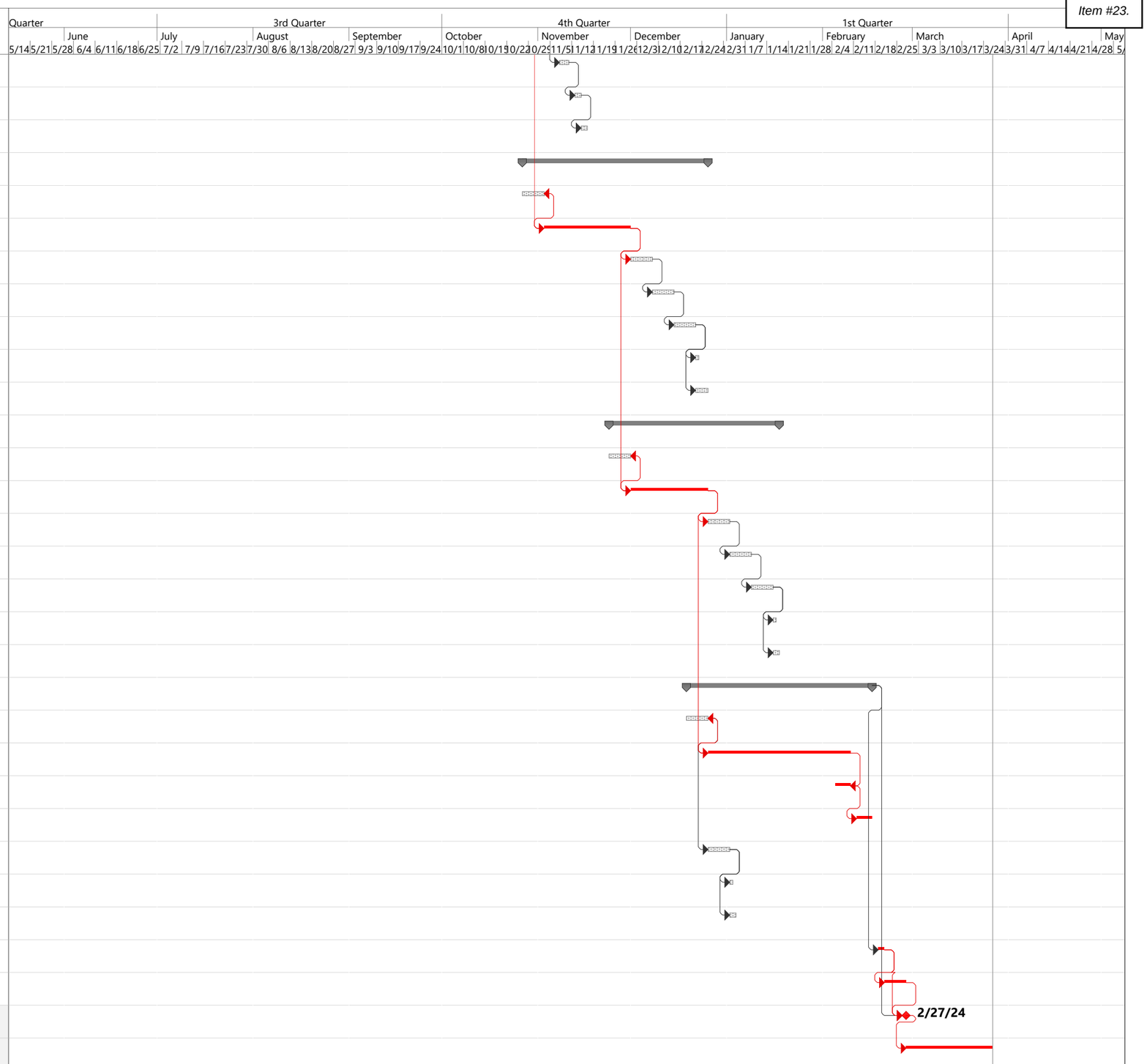
- Case Mini Ex 37
- Cat 335
- Hitachi Mini Ex 35
- Hitachi Mini Ex 55
- John Deere 85G
- LinkBelt 80X3
- LinkBelt 145X1LC
- LinkBelt 235
- Hitachi Loader 80
- Hitachi Loader 80
- Hitachi Loader 140
- Hitachi Loader 180
- Hitachi Loader ZW156-6
- Hitachi Loader ZW220-6
- John Deere Grader 670 GP
- John Deere Doz. 450
- Komatsu Doz. P39
- Cat Skid 289
- Bobcat Skid T740
- Bobcat Sweeper attachment
- Road Hog 48" Milling Head
- Fecon Mulching Head
- Sakai Roller SV2040
- Bomag Roller BW2110-50
- Hamm Double Roll Drum
- Laymoor Sweep Master 300
- Broce Broom BB250
- Broce Broom BB250
- Cat Light tower
- Conex 20' Container

Rentals Available If Needed

ID	Task Name	Actual Start	Actual Finish	Actual Contract Days
1	**West Street Drainage**	**Mon 5/15/23**	**Tue 3/26/24**	**317**
2	NTP	Mon 5/15/23	Mon 5/15/23	1
3	**Project Start-Up**	**Mon 5/15/23**	**Mon 6/12/23**	**29**
4	Submittals	Mon 5/15/23	Mon 6/12/23	29
5	**Material Procurement**	**Tue 6/13/23**	**Tue 8/1/23**	**50**
6	Drainage Structures	Tue 6/13/23	Tue 8/1/23	50
7	Drainage Pipe	Tue 6/13/23	Tue 7/18/23	36
8	**Mobilization**	**Thu 8/3/23**	**Fri 8/4/23**	**2**
9	Set up MOT	Thu 8/3/23	Fri 8/4/23	2
10	**Asphalt Milling**	**Wed 8/2/23**	**Fri 8/4/23**	**3**
11	**West St - Pond to MLK**	**Wed 8/2/23**	**Thu 9/21/23**	**51**
12	Utility Locates/SWPPP/MOT Set-Up	Wed 8/2/23	Fri 8/4/23	3
13	Clearing & Grubbing / Demolition	Mon 8/7/23	Tue 8/8/23	2
14	Pipes & Structures (Includes Removal of Existing)	Wed 8/9/23	Wed 8/30/23	22
15	Limerock Base	Thu 8/31/23	Wed 9/6/23	7
16	Curb & Gutter	Thu 9/7/23	Wed 9/13/23	7
17	Sidewalk & Driveways	Thu 9/14/23	Wed 9/20/23	7
18	Install ADA Mats	Thu 9/21/23	Thu 9/21/23	1
19	Final Dressing & Sod	Thu 9/21/23	Thu 9/21/23	1
20	**West St - MLK to Spruce Street**	**Thu 8/24/23**	**Tue 10/24/23**	**62**
21	Clearing & Grubbing	Thu 8/24/23	Thu 8/31/23	8
22	Pipes & Structures (Includes Removal of Existing)	Thu 8/31/23	Fri 9/29/23	30
23	Limerock Base	Mon 10/2/23	Fri 10/6/23	5
24	Curb & Gutter	Mon 10/9/23	Fri 10/13/23	5
25	Sidewalk & Driveways	Mon 10/16/23	Fri 10/20/23	5
26	Install ADA Mats	Mon 10/23/23	Mon 10/23/23	1
27	Final Dressing & Sod	Mon 10/23/23	Tue 10/24/23	2
28	**Spruce Street**	**Mon 9/25/23**	**Thu 11/16/23**	**53**
29	Clearing & Grubbing	Mon 9/25/23	Mon 10/2/23	8
30	Pipes & Structures (Includes Removal of Existing)	Mon 10/2/23	Thu 11/2/23	32
31	Limerock Base	Fri 11/3/23	Tue 11/7/23	5



ID	Task Name	Actual Start	Actual Finish	Actual Contract Days
32	Curb & Gutter	Wed 11/8/23	Fri 11/10/23	3
33	Sidewalk & Driveways	Mon 11/13/23	Tue 11/14/23	2
34	Final Dressing & Sod	Wed 11/15/23	Thu 11/16/23	2
35	**West St - Spruce Street to Forbes Street**	**Fri 10/27/23**	**Mon 12/25/23**	**60**
36	Clearing & Grubbing	Fri 10/27/23	Fri 11/3/23	8
37	Pipes & Structures (Includes Removal of Existing)	Fri 11/3/23	Thu 11/30/23	28
38	Limerock Base	Fri 12/1/23	Thu 12/7/23	7
39	Curb & Gutter	Fri 12/8/23	Thu 12/14/23	7
40	Sidewalk & Driveways	Fri 12/15/23	Thu 12/21/23	7
41	Install ADA Mats	Fri 12/22/23	Fri 12/22/23	1
42	Final Dressing & Sod	Fri 12/22/23	Mon 12/25/23	4
43	**West St - Forbes St. to North Street**	**Fri 11/24/23**	**Wed 1/17/24**	**55**
44	Clearing & Grubbing	Fri 11/24/23	Fri 12/1/23	8
45	Pipes & Structures (Includes Removal of Existing)	Fri 12/1/23	Mon 12/25/23	25
46	Limerock Base	Tue 12/26/23	Mon 1/1/24	7
47	Curb & Gutter	Tue 1/2/24	Mon 1/8/24	7
48	Sidewalk & Driveways	Tue 1/9/24	Mon 1/15/24	7
49	Install ADA Mats	Tue 1/16/24	Tue 1/16/24	1
50	Final Dressing & Sod	Tue 1/16/24	Wed 1/17/24	2
51	**West St - North Street to Walnut Street**	**Tue 12/19/23**	**Fri 2/16/24**	**60**
52	Clearing & Grubbing	Tue 12/19/23	Tue 12/26/23	8
53	Pipes & Structures (Includes Removal of Existing)	Tue 12/26/23	Fri 2/9/24	46
54	Limerock Base	Mon 2/5/24	Fri 2/9/24	5
55	Curb & Gutter	Mon 2/12/24	Fri 2/16/24	5
56	Sidewalk & Driveways	Tue 12/26/23	Mon 1/1/24	7
57	Install ADA Mats	Tue 1/2/24	Tue 1/2/24	1
58	Final Dressing & Sod	Tue 1/2/24	Wed 1/3/24	2
59	**Asphalt Pavement**	**Mon 2/19/24**	**Tue 2/20/24**	**2**
60	**Signing & Pavement Marking**	**Wed 2/21/24**	**Tue 2/27/24**	**7**
61	**Substantial Completion**	**Tue 2/27/24**	**Tue 2/27/24**	**1**
62	**Final Completion**	**Wed 2/28/24**	**Tue 3/26/24**	**28**



STAFF REPORT

CITY OF GREEN COVE SPRINGS, FLORIDA

TO: City Council Regular Session **MEETING DATE:** May 16,2023

FROM: Greg Bauer, Public Works Field Supervisor

SUBJECT: Pay Application #1, Thomas May Construction Company for Public Works Compound Phase ll.

BACKGROUND

On March 21st 2023, the City of Green Cove Springs entered in to an agreement for Professional Construction Services with Thomas May Construction Company, to complete the Public Works Compound Phase ll project. The Public Works Compound Phase ll project consist of storm drainage work, pond reconstruction, and a paved employee parking lot.

FISCAL IMPACT

$191,093.45 – G/L 001-3052-5006200

RECOMMENDATION

City Council approval of Pay Application #1 to Thomas May Construction Company in the amount of $191,093.45, leaving a balance of $534,356.55 in agreement for professional construction services for Bid #2023-01, Public Works compound Phase ll.

APPLICATION AND CERTIFICATION FOR PAYMENT

TO OWNER CITY OF GREEN COVE SPRINGS
321 WALNUT STREET
GREEN COVE SPRINGS FL 32043-3441

PROJECT: GCS PUBLIC WORKS COMPOUND #2
900 GUM STREET
GREEN COVE SPRINGS FL 32043

APPLICATION NO: 1
PERIOD TO: 05/12/2023

Distribution to:

X	OWNER
	ARCHITECT
X	CONTRACTOR
	CONSULTANT

FROM CONTRACTOR: THOMAS MAY CONSTRUCTION COMPANY
310 COLLEGE DRIVE
ORANGE PARK FL 32065

VIA ARCHITECT:

CONTRACT FOR: GCS PUBLIC WORKS COMPOUND #2
CONTRACT DATE: 03/21/2023
PROJECT NOS: 2023-01

CONTRACTOR'S APPLICATION FOR PAYMENT

1. ORIGINAL CONTRACT SUM		725,450.00
2. Net change by Change Orders		0.00
3. CONTRACT SUM TO DATE (Line 1+2)		725,450.00
4. TOTAL COMPLETED & STORED TO DATE (Column G on detailed sheet)		201,151.00
5. RETAINAGE:		
a. 5.00 % of Completed Work (Column D + E on detailed sheet)	10,057.55	
b. 5.00 % of Stored Material (Column F on detailed sheet)	0.00	
Total Retainage (Lines 5a + 5b or Total in Column I of detailed sheet)		10,057.55
6. TOTAL EARNED LESS RETAINAGE (Line 4 less Line 5 Total)		191,093.45
7. LESS PREVIOUS CERTIFICATES FOR PAYMENT (Line 6 from prior Certificate)		0.00
8. CURRENT PAYMENT DUE		191,093.45
9. BALANCE TO FINISH, INCLUDING RETAINAGE (Line 3 less Line 6)		534,356.55

CHANGE ORDER SUMMARY	ADDITIONS	DEDUCTIONS
Total Changes approved in Previous month by Owner	0.00	0.00
Total approved this Month	0.00	0.00
NET CHANGES by Change Order	0.00	0.00
TOTAL	0.00	

CONTRACTOR'S CERTIFICATION OF WORK

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

CONTRACTOR: THOMAS MAY CONSTRUCTION COMPANY Date: 05/10/2023

State of: FLORIDA County of: CLAY

Subscribed and sworn to before me this 10TH day of MAY, 2023
PERSONALLY KNOWN TO ME
Notary Public: Brenda S. Rau

My Commission Expires: OCTOBER 30, 2023

BRENDA S RAU
Notary Public - State of Florida
Commission # GG 906674
My Comm. Expires Oct 30, 2023
Bonded through National Notary Assn.

ARCHITECT'S CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on on-site observation and the data comprising the above application, the Architect certifies to the best of the Architect's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

AMOUNT CERTIFIED.....$_____

(Attach explanation if amount certified differs from amount applied for). Initial all figures on this Application and on the Continuation Sheet that are changed to conform with the amount certified.

ARCHITECT:
By:_____ Date:_____

This Certificate is non negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor on this Contract.

CONTINUATION SHEET

Schedule of Work Completed

APPLICATION NO: 1
APPLICATION DATE: 05/10/2023
PERIOD TO: 05/12/2023
ARCHITECT'S PROJECT NO: 2023-01

A Item No.	B Description of Work	C Scheduled Value	D From Previous Applications	E Work Comp This Period	F Stored Materials (Not in D or E)	G Total Completed & Stored to Date (D+E+F)	% (G/C)	H Balance to Finish (C-G)	I Retainage
1	MOBILIZATION	5,600.00		5,600.00		5,600.00	100.00		280.00
2	GENERAL CONDITIONS, BOND, I	60,268.00		23,521.00		23,521.00	39.03	36,747.00	1,176.05
3	SURVEYING	33,350.00		6,668.00		6,668.00	19.99	26,682.00	333.40
4	SITE DEMO	18,955.00		6,635.00		6,635.00	35.00	12,320.00	331.75
5	SITE CLEARING	17,135.00		8,866.00		8,866.00	51.74	8,269.00	443.30
6	EARTHWORK	101,582.00						101,582.00	
7	EROSION CONTROL	20,998.00		10,470.00		10,470.00	49.86	10,528.00	523.50
8	STORM DRAINAGE	174,602.00		139,391.00		139,391.00	79.83	35,211.00	6,969.55
9	PAVING	57,285.00						57,285.00	
10	PAVING BASE AND STABILIZATIO	78,598.00						78,598.00	
11	SIGNAGE AND MARKINGS	2,500.00						2,500.00	
12	CONCRETE	33,198.00						33,198.00	
13	IRRIGATION	28,034.00						28,034.00	
14	LANDSCAPING	25,000.00						25,000.00	
15	FENCING	41,995.00						41,995.00	
16	GATE AND CONTROLS ALLOWAN	15,000.00						15,000.00	
17	ELECTRICAL AND LIGHTING	11,350.00						11,350.00	
	Totals:	**725,450.00**		**201,151.00**		**201,151.00**	**27.73**	**524,299.00**	**10,057.55**

WAIVER AND RELEASE OF LIEN
UPON PROGRESS PAYMENT

The undersigned lienor, in consideration of the progress payment in the amount of $ 191,093.45, hereby waives and releases its lien and right to claim a lien for labor, services or materials furnished through (Date) 05/12/2023 on the project for CITY OF GREEN COVE SPRINGS (Owner of Property), for the following described property:

Project: GCS PUBLIC WORKS COMPOUND PHASE 2 JOB #23024

Location: 900 GUM STREET, GREEN COVE SPRINGS, FL. 32043

This waiver and release does not cover any retention of labor, services, or materials furnished after the date specified.

Dated on 05/10 20 23

THOMAS MAY CONSTRUCTION COMPANY
(Lienor's Name)

310 COLLEGE DRIVE
(ADDRESS)

ORANGE PARK, FL 32065

By: [signature]

Name: KEITH R. WARD

Title: PRESIDENT

Sworn to and subscribed before me on this:

10TH day of MAY A.D., 20 23

[signature]
(Notary Public)

BRENDA S RAU
Notary Public - State of Florida
Commission # GG 906674
My Comm. Expires Oct 30, 2023
Bonded through National Notary Assn.

My Commission Expires: OCTOBER 30, 2023

Personally known to me: X

Produced Identification: _____

Driver's License # _____

Note: This is a statutory form prescribed by Section 713.20, Florida Statutes (1996). Effective October 1, 1996, a person may not require a lienor to furnish a waiver or release of lien that is different from the statutory form.

AGREEMENT FOR PROFESSIONAL CONSTRUCTION SERVICES

Bid # 2023-01 – Public Works Compound – Phase 2

This Agreement is entered into as of this 21st day of March, 2023, by and between the City of Green Cove Springs, Florida, a municipal corporation under the laws of the State of Florida whose address is: 321 Walnut Street, Green Cove Springs, Florida, 32043, hereinafter referred to as "CITY" and Thomas May Construction Company, whose address is: 310 College Drive, Orange Park, FL 32065, hereinafter referred to as "CONTRACTOR."

WITNESSETH

WHEREAS, the CITY is in need of qualified and licensed Construction services for the Public Works Compound Phase 2 Project; and

WHEREAS, the CITY solicited a proposal for services; and

WHEREAS, the CONTRACTOR submitted a proposal to provide said services and has represented to the CITY that it is qualified and desires to perform said services in accordance with the terms and conditions contained herein, and all applicable laws and professional standards.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties covenant and agree as follows:

1.0 TERM

1.1 This Agreement is to become effective upon execution by both parties and shall remain in effect until completion of the work outlined in Bid # 2023-01 – Public Works Compound Phase 2.

2.0 DESCRIPTION OF SERVICES

2.1 It is expressly understood and acknowledged that the CONTRACTOR shall provide those services as more particularly described in Exhibit "A" (Proposal Form) including, but not necessarily limited to the pond, parking lot, fencing, stormwater work and landscaping .

2.2 The CONTRACTOR shall not be authorized to proceed until the CITY has issued a Notice to Proceed to the CONTRACTOR. Upon receipt of the signed Notice to Proceed from the CITY, the CONTRACTOR shall perform the services set forth herein.

2.3 The CONTRACTOR shall provide the CITY'S designated Project Manager with statements for services rendered during the preceding month. Each time sheet shall state the names and classifications of all personnel who performed services during said month.

3.0 SCHEDULE

3.1 The CONTRACTOR shall perform services in conformance with the mutually agreed upon schedule consistent with the completion of the project and the fee proposal attached herein as Exhibit "A". More specifically, the construction shall be completed within 120 days from issuance of Notice to Proceed per the bid documents. The CONTRACTOR shall complete all services in a timely manner and will keep the CITY fully informed of the status of the work on a reasonable basis in relation to the scope of the project or at least monthly. Should the CONTRACTOR fall behind the agreed upon schedule it shall employ such resources so as to comply with the agreed upon schedule at no additional cost to the CITY.

3.2 No extension for completion of services shall be granted to the CONTRACTOR without the CITY'S prior written consent.

4.0 METHOD OF PAYMENT FOR SERVICES AND EXPENSES

4.1 The CITY shall allow the CONTRACTOR one payment draw per month, less 5% retainage, payment shall be based upon the agreed upon fees found in Exhibit "A". The fee schedules shall include wages, salaries, taxes, insurance, overhead, and profit. The CITY shall pay the CONTRACTOR in an amount not to exceed $725,450.00. This is a lump sum, all-inclusive of the base bid and sliding gate allowance. Any adjustments to the Fee Schedule must be mutually agreed to by the CITY and the CONTRACTOR in advance and in writing and must be based upon items that are beyond the Project Scope of Services in Exhibits "A".

4.2 TIME FOR PAYMENT: Once a month the CONTRACTOR may submit an invoice for payment. As a condition for receiving payment, the CONTRACTOR shall be on schedule and in good standing with the CITY, they shall not be in default of any of the terms and conditions of this Agreement. The CONTRACTOR and shall provide to the CITY an invoice, along with all partial/final release of liens from subcontractors and suppliers. The invoice shall be forwarded to the CITY's Representative for Review and approval, the Representative will then forward it to Finance for payment. All Requests for Payment shall be signed by an authorized representative of the CONTRACTOR, no manually corrected invoices shall be accepted, for payment, any corrected invoices shall be returned to the CONTRACTOR for their review and the corrected invoice re-submitted for payment. The monthly invoice shall include a statement identifying the time frame which it corresponds to, it shall be for a single lump sum billed amount for services

performed as set forth in Exhibit "A"., less the 5% retainage. The CITY shall pay all valid, approved, and undisputed invoices within thirty (30) days of receipt from the CONTRACTOR. In the event that the CITY disputes any invoice submitted, it shall advise the CONTRACTOR, in writing, and said invoice shall not be deemed due and payable under this Agreement. Neither the CITY'S review, approval, or acceptance of, nor payment for, any services provided hereunder shall be construed to operate as a waiver of any rights under this Agreement and the CONTRACTOR shall be liable to the CITY for any and all damages to the CITY caused by the CONTRACTOR'S negligence or wrongful performance of any of the services furnished under this Agreement.

4.3 In the event of termination by the CITY under Section 16.0 during the performance of the services, payments due the CONTRACTOR up to the point of termination, including payments for services rendered, and all costs incurred shall constitute total payment for such services.

5.0 RIGHT TO INSPECTION

5.1 The CITY or its agents shall at all times have the right to review or observe the services performed by the CONTRACTOR. No inspection, review, or observation shall relieve the CONTRACTOR of its responsibility under this Agreement.

6.0 PROGRESS MEETING

6.1 The CITY'S designated Project Manager may hold periodic meetings on a monthly basis, or more frequently, if required, during the term of this Agreement. The CONTRACTOR'S Project Manager and all other appropriate personnel shall attend such meetings as designated by the CITY'S Project Manager.

7.0 SAFETY

7.1 The CONTRACTOR agrees to comply with the CITY'S published safety standards while on the property of the CITY.

7.2 The CONTRACTOR shall have full responsibility and assume all liability for the safety and supervision of its employees while performing services provided hereunder.

8.0 REASONABLE ACCESS

8.1 During the term of this Agreement, the CITY shall grant the CONTRACTOR reasonable access to the CITY'S premises for purposes of fulfilling its obligations under this Agreement.

9.0 INSURANCE/BONDS AND HOLD HARMLESS / INDEMNIFICATION

9.1 The CONTRACTOR shall maintain in force during the term of this Agreement, at its own expense, insurance set forth in Exhibit "A", attached hereto and incorporated herein, and shall be bound by the terms of the Hold Harmless / Indemnification provisions expressed therein.

9.2 The CONSTRUTION MANAGER shall maintain a performance bond in an amount equal to the contract amount for the duration of the term of this agreement.

10.0 COMPLIANCE WITH LAWS AND REGULATIONS

10.1 The CONTRACTOR shall comply with all requirements of Federal, State, and local laws, rules, regulations, standards, and/or ordinances applicable to the performance of this Agreement.

11.0 REPRESENTATIONS

11.1 The CONTRACTOR represents that the services provided hereunder shall conform to all requirements of this Agreement, response thereto and any amendments or supplements thereto; shall be consistent with recognized and sound professional construction management practices and procedures; and shall conform to the customary standards of care, skill, and diligence appropriate to the nature of the services rendered.

11.2 The recommendations, advice, budgetary information and schedules to be furnished by CONTRACTOR under this Agreement shall not be deemed to be representations, warranties, or guarantees or constitute the performance of licensed professional services. Further CONTRACTOR shall not be required to provide professional services that constitute the practice of architecture or engineering. CONTRACTOR shall cause any such services to be provided by a properly licensed design professional. Any claim by Owner for damage, loss, or expense, based directly or indirectly upon acts, errors, or omissions of any architect, engineer, or other design professional who CONTRACTOR is required to engage in connection with this Agreement shall be made by Owner against said design professional and its insurer(s) only, and CONTRACTOR shall have no liability of any kind, direct or indirect, for the professional negligence of said design professional under this Agreement or otherwise.

In no event shall CONTRACTOR's liability arising out of or in connection with the performance or nonperformance of any or all Services or other obligations under this Agreement exceed the value of the contract or not otherwise addressed in CONTRACTOR's insurance coverage in which case the higher coverage amount shall apply, whether based on delay, contract, tort, negligence, strict liability, warranty,

indemnity, error and omissions or otherwise, provided that such limitation of liability shall not apply to CONTRACTOR's indemnity obligations for claims asserted against the Owner by third parties for personal injury or tangible property damage caused by the negligence of the CONTRACTOR or its employees, and provided further that such limitation shall not apply to amounts actually paid from the professional liability insurance CONTRACTOR is required to maintain pursuant to the terms of this Agreement.

11.3 The CONTRACTOR represents that the personnel furnishing such services shall be qualified and competent to perform the services assigned to them and that such guidance given by and the recommendations and performance of such personnel shall reflect their best professional knowledge and judgment.

11.4 Subject to the provisions of this Section, should the CONTRACTOR breach the warranties set forth herein, the CITY shall have such remedies as may be provided at law or equity.

12.0 DOCUMENTS

12.1 Upon the CITY'S or its designated Project Manager's request, at any time during the term of this Agreement, or upon completion or termination of this Agreement, the CONTRACTOR shall provide the CITY, or its designated Project Manager, with a copy of all documents, plans, drawings and electronic files prepared by the CONTRACTOR under this Agreement.

13.0 ASSIGNMENT

13.1 The CONTRACTOR shall not assign or subcontract this Agreement or any rights or monies due or to become due hereunder without the prior written consent of the CITY.

13.2 If, upon receiving written approval from the CITY, any part of this Agreement is subcontracted by the CONTRACTOR, the CONTRACTOR shall be fully responsible to the CITY for all acts and/or omissions performed by the subcontractor as if no subcontract had been made.

13.3 It the CITY determines that any subcontractor is not performing in accordance with this Agreement, the CITY shall so notify the CONTRACTOR who shall take immediate steps to remedy the situation.

13.4 If any part of this Agreement is subcontracted by the CONTRACTOR prior to commencement of any work by the subcontractor, the CONTRACTOR shall require the subcontractor to provide the CITY and its affiliates with insurance coverage as required by the CITY.

14.0 INDEPENDENT CONTRACTOR

14.1 At all times during the term of this Agreement, the CONTRACTOR shall be considered an Independent Contractor.

15.0 DEFAULT

15.1 If, during the term of this Agreement, the CONTRACTOR shall be found in default of any of the material provisions of this Agreement, the CITY may suspend its performance hereunder until such delinquency or default has been corrected; the CITY shall notify the CONTRACTOR in writing and of the deficiency and allow them ten (10) days to correct the default before suspending them. If the CONTRACTOR fails to correct such delinquency within the allotted time-period, the CITY may terminate this Agreement.

16.0 TERMINATION

16.1 Notwithstanding any other provision of this Agreement, the CITY may, upon written notice to the CONTRACTOR, terminate this Agreement if: a) without cause and for convenience upon thirty (30) days written notice to the CONTRACTOR; b) the CONTRACTOR is adjudged to be bankrupt; c) the CONTRACTOR makes a general assignment for the benefit of its creditors; or d) the CONTRACTOR fails to comply with any of the conditions or provisions of this Agreement, without prejudice to any other right or remedy the CITY may have under this Agreement. In the event of such termination, the CITY shall be liable only for the payment of all unpaid charges, determined in accordance with the provisions of this Agreement, for work, properly performed and accepted prior to the effective date of termination.

16.2 The CONTRACTOR may stop work or terminate if through no act or fault of CONTRACTOR, the Work is suspended for a period of more than 60 days by owner or under an order of court or other public authority, or Owner fails to act on any Application for Payment within 30 days after it is submitted or Owner fails to pay CONTRACTOR in accordance with Florida's Prompt Payment Act any sum finally determined to be due, then CONTRACTOR may, upon 10 days' written notice to Owner, and provided Owner does not remedy such suspension or failure within that time, terminate the Agreement and recover from Owner payment invoiced for services rendered to date. In lieu of terminating the Agreement and without prejudice to any other right or remedy, if Owner has failed for 30 days to pay CONTRACTOR any sum finally determined to be due, CONTRACTOR may upon 10 days' written notice to Owner stop the Work until payment is made of all such amounts due CONTRACTOR.

17.0 FORCE MAJEURE

17.1 Any delay or failure of either party in the performance of its required obligations hereunder shall be excused if, and to the extent, caused by acts of God, fire, flood, windstorm, explosion, riot, war, sabotage, strikes, extraordinary breakdown of or damage to the CITY'S affiliates' generating plants, their equipment or facilities; court injunction or order; Federal and/or State law or regulation; order by any regulatory agency; or cause or causes beyond the reasonable control of the party affected; provided that prompt notice of such delay is given by such party to the other and each of the parties hereunto shall be diligent in attempting to remove such cause or causes. If any circumstances of Force Majeure remain in effect for sixty (60) days, either party may terminate this Agreement.

18.0 PUBLIC RECORDS REQUIREMENTS

18.1 Notwithstanding any provision in this agreement to the contrary, the following public records requirements shall apply:

1. Keep and maintain public records required by the public agency (City/Organization) to perform the service.
2. Upon request from the public agency's custodian of public records (City Clerk), provide the public agency with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119, F.S. or as otherwise provided by law.
3. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the contract if the contractor does not transfer the records to the public agency.
4. Upon completion of the contract, transfer, at no cost, to the public agency all public records in possession of the contractor or keep and maintain public records required by the public agency to perform the service. If the contractor transfers all public records to the public agency upon completion of the contract, the contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public disclosure requirements. If the contractor keeps and maintains public records upon completion of the contract, the contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the public agency upon request from the public agency's custodian of public records, in a format that is compatible with the information technology systems of the public agency.

If the Contractor has questions regarding the application of Chapter 119 Florida Statues, for their duties to provide public records relating to this contract then contact the City's custodian of Public Records City Clerk Erin West at (904) 297-7500 X 3307, or e-mail ewest@greencovesprings.com, 321 Walnut St. Green Cove Spring FL 32043.

19.0 GOVERNING LAW & VENUE

19.1 This Agreement is made and shall be interpreted, construed, governed, and enforced in accordance with the laws of the State of Florida. Venue shall be Clay County, Florida, or the United States District Court in and for the Middle District of Florida. Each party waives their rights to a jury trial of any issues arising hereunder and agreement to submit to binding arbitration.

20.0 HEADINGS

20.1 Paragraph headings are for the convenience of the parties only and are not to be construed as part of this Agreement.

21.0 SEVERABILITY

21.1 In the event any portion of this Agreement is deemed invalid, against public policy, void, or otherwise unenforceable by a court of law, the parties shall negotiate an equitable adjustment in the affected provision of this Agreement. The validity and enforceability of the remaining parts thereof shall otherwise be fully enforceable.

22.0 WAIVER AND ELECTION OF REMEDIES

22.1 Waiver by either party of any terms, conditions, or provisions of this Agreement shall not be considered a waiver of that term, condition, or provision in the future.

22.2 No waiver, consent, or modification of any of the provisions of this Agreement shall be binding unless in writing and signed by a duly authorized representative of each party hereto.

23.0 THIRD PARTY RIGHTS

23.1 Nothing in this Agreement shall be construed to give any rights or benefits to anyone other than the CITY and the CONTRACTOR.

24.0 PROHIBITION AGAINST CONTINGENT FEES

24.1 The CONTRACTOR warrants that it has not employed or retained any company or person, other than a bona fide employee working solely for the CONTRACTOR, to solicit or secure this Agreement, and that it has not paid or agreed to pay any person, company, corporation, individual, or firm, other than a bona fide employee working solely for the CONTRACTOR, any fee, commission, percentage, gift, or other consideration contingent upon or resulting from the award or making of this Agreement.

25.0 ENTIRE AGREEMENT

25.1 Except as otherwise stated, this Agreement, including the schedules, attachments, appendixes, and exhibits attached hereto, constitutes the entire Agreement between the CITY and the CONTRACTOR with respect to the service specified and all previous representations relative thereto, either written or oral, are hereby annulled and superseded.

26.0 SOVEREIGN IMMUNITY

26.1 Nothing contained in the Agreement shall be construed as a waiver of the CITY'S rights to sovereign immunity under Section 768.28, Florida Statutes, or other limitations imposed on the CITY'S potential liability under Federal or State law.

27.0 NOTICE

27.1 Any notices required to be given by the terms of this Agreement shall be delivered by hand or mailed, postage pre-paid, to:

CITY: City of Green Cove Springs
321 Walnut Street
Green Cove Springs, FL 32043

CONTRACTOR: Thomas May Construction Company
310 College Drive
Orange Park, FL 32065

Either party may change the name of the person receiving notices and the address at which notices are received by so advising the other party in writing.

(Remainder of this page intentionally left blank)

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the dates set forth below.

City of Green Cove Springs

Daniel M. Johnson, Mayor — Date: 3/21/23

Steve Kennedy, City Manager — Date: 3/21/23

ATTEST:

Erin West, City Clerk — Date: 3/21/23

AS TO FORM ONLY:

L. J. Arnold, III, City Attorney — Date: 3/21/23

Thomas May Construction

Keith R. Ward, President — Date: 3/25/23

Exhibit "A"

PROPOSAL FORM

ORIGINAL

BID NO. 2023-01, Public Works Compound Phase 2

City's Designated Representative (regarding this Bid Package): Kim Thomas, Executive Assistant, at (904) 297-7500 ext. 3320 or kthomas@greencovesprings.com.

The undersigned, hereinafter called the Bidder, declares that the only persons or parties interested in this Bid are those named herein, that this Bid is, in all respects, fair and without fraud, that it is made without collusion with any official of the City of Green Cove Springs, and that the Bid is made without any connection or collusion with any person submitting another Bid for the requested item(s).

Bidder declares and accepts the responsibility for providing the City with all relevant documentation or information to afford the evaluation of their proposal. Further, Bidder understands and accepts that the City reserves the right to base its analysis and award recommendation solely upon the information provided by the Bidder at the time of the bid opening. Additional request for explanations or information shall not be made unless the City deems that such requirements are necessary to facilitate in the evaluation and/or selection of the lowest responsive and responsible bid.

Bidder declares that any deviations are explained on the sheet labeled "Clarifications and Exceptions" and is enclosed within this bid package.

BIDDER: **Thomas May Construction Company**

ADDRESS: **310 College Dri ve**

Orange Park, Florida 32065

Bidder's Representative (authorized to bind the Bidder and/or Business/Company to the terms, Specifications, and proposed prices of the bid):

Keith R. Ward	**President**	**(904) 272-4808**
(Name)	(Title)	(Phone Number)

Bidder's Signature: _____

ADDENDA

The Bidder hereby acknowledges receipt of Addenda No. 1 2 3 pertaining to Bid No. 2023-01.

PRICES SET FORTH ARE FIRM FOR A PERIOD OF 60 DAYS AFTER BID OPENING AND ARE NOT SUBJECT TO PRICE ADJUSTMENT. BIDDERS RESPONDING AGREE TO ALL CONDITIONS, SPECIFICATIONS AND TERMS AS DESCRIBED IN THE BID DOCUMENTS.

BIDDERS RESPONDING AGREE TO ALL CONDITIONS, SPECIFICATIONS AND TERMS AS DESCRIBED IN THESE BID DOCUMENTS.

*REFER TO THE **SPECIAL INSTRUCTIONS** OF THE BIDDING DOCUMENTS TO VERIFY THE CORRECT METHOD TO COMPLETING THIS FORM.

Please Use Provided Table

Bid Price	
Base Bid Lump Sum Price (labor, materials, equipment, taxes, freight, etc.)	$ **710,450.00** **SEVEN HUNDRED TEN THOUSAND, FOUR HUNDRED & FIFTY DOLLARS AND ZERO CENTS**
Sliding Gate Allowance:	$ 15,000.00 **FIFTEEN THOUSAND DOLLARS AND ZERO CENTS**
TOTAL BID (ITEM A + ITEM B):	$ **725,450.00** **SEVEN HUNDRED TWENTY–FIVE THOUSAND, FOUR HUNDRED & FIFTY DOLLARS AND ZERO CENTS**

Thomas May Construction Company

TITLE: **Public Works Compound Phase 2**

CLARIFICATIONS AND EXCEPTIONS

Bidder hereby agrees that the material, equipment or service offered will meet all the requirements of the specifications in this bid unless deviations from them are clearly indicated on this form below. An authorized representative must sign the Clarifications and Exceptions Form. An explanation must be made for each item in which an exception is taken, giving in detail the extent of the exception and the reason for which it is taken.

03/09/2023

Vendor/Contractor Signature Keith R. Ward Date

Thomas May Construction Company

Non-Bidder's Response

Should for any reason the vendor/contractor receiving this Bid Invitation package decline to make a proposal please assist us by completing the information requested below and returning it to:

City Hall
Attn: Kim Thomas
321 Walnut Street
Green Cove Springs, FL 32043

Please be sure "**NO BID**" and **Bid No 2023-01,** clearly shown on the package of this Bid Invitation are clearly shown on the outside of the envelope.

We are not responding to this Bid Invitation for the following reason(s).

1. We do not provide the nature of products or services requested in this bid. ____
2. We are unable to meet the Specifications requested in the bid. ____
3. We are unable to comply with other terms of this Bid Invitation. ____
   *Please provide details: _____

N/A

4. The bid was too restrictive. ____
5. The bid was not sufficiently clear. ____

Other comments: _____

_____

Vendor/Contractor: _____
Address: _____
Phone: _____

THOMAS MAY CONSTRUCTION COMPANY

AFFIRMATIVE ACTION PLAN

POLICY STATEMENT

It is the policy of Thomas May Construction Company that disadvantaged businesses shall have the maximum opportunity to participate as subcontractors and suppliers on all contracts awarded by the City of Green Cove Springs.

All applicable federal, state and local laws and regulations, including but not limited to the Executive Order 11246 and its amendments including 11375 and 12086; the Rehabilitation Act of 1973; the Vietnam Era Veterans Readjustment Assistance Act of 1975; Title IX of the Education Amendments of 1972; Civil Rights Act of 1964; Equal Pay Act of 1963; Age Discrimination Act of 1975; Immigration Reform and Control Act of 1986; Public Law 95-507; the Americans with Disabilities Act; 41 CFR Part 60 and any additions or amendments, shall apply to all contracts entered into between the City of Green Cove Springs and Thomas May Construction Company. Subcontractors and/or suppliers to the Thomas May Construction Company will also be bound by these requirements.

Thomas May Construction Company, and its subcontractors shall take all necessary and reasonable steps in accordance with Executive Orders 11246 and 11375, to ensure that disadvantaged businesses have the maximum opportunity to compete and perform work contracted with the City of Green Cove Springs.

Thomas May Construction Company, and its subcontractors shall not discriminate on the basis of race, color, religion, national origin, handicap, or sex in the administration of the contracts with the City of Green Cove Springs.
Such action will include, but will not be limited to the following:

> employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff, or termination; rates of pay or other forms of compensation. Our company agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this non-discrimination clause.

Implementing our Affirmative Action Plan will satisfy compliance with the above requirements.

Thomas May Construction Company has appointed an Equal Employment Opportunity (EEO) Officer to develop, implement, and monitor our Affirmative Action Plan. The EEO Officer will be responsible for disseminating this policy statement throughout our Construction Company and to disadvantaged controlled businesses. The EEO Officer shall report all data to a designated Liaison Officer. The Liaison Officer will submit all records, reports and documents required, and shall maintain such records for a period not less than three years, or as directed by any specific contractual requirement.

The following individuals have been assigned as the Equal Employment Opportunity Officer and Liaison Officer for our company, with the responsibility for implementing the Company's affirmative action program in accordance with all requirements

Equal Employment Opportunity Officer
Keith R. Ward
President
310 College Drive
Orange Park, Florida 32065

Liaison Officer
Brenda Rau
Office Administrator
310 College Drive
Orange Park, Florida 32065

I. DESIGNATION OF EQUAL EMPLOYMENT OPPORTUNITY OFFICER

Thomas May Construction Company will aggressively recruit disadvantaged businesses as subcontractors and suppliers for all contracts with the City of Green Cove Springs. The company has appointed an EEO Officer to develop and maintain this Affirmative Action Plan in accordance with the requirements of Executive Orders 11246 and 11375.

A. The EEO Officer will have primary responsibility for developing, maintaining, and monitoring the company's utilization of disadvantaged subcontractors.

B. The EEO Officer shall aggressively solicit bids from disadvantaged business subcontractors for all City of Green Cove Springs contracts.

C. The EEO Officer shall abide by all applicable laws and regulations governing hiring practices. He shall comply with all requirements of Section Three of the Housing and Urban Development Act of 1968.

D. The EEO Officer shall target the project area for the purpose of job training and employment.

E. The EEO Officer shall solicit business concerns from the area including the entire Clay County region, for the purposes of awarding contracts.

F. The EEO Officer shall secure the cooperation and compliance of contractors, subcontractors, and Unions in implementing this affirmative action plan.

II. DESIGNATION OF LIAISON OFFICER

A. The Liaison Officer will submit all records, reports, and documents required by the department, and shall maintain such records for a period not less than three years, or as directed by any specific contractual requirement of the department.

B. The Liaison Officer shall implement all approved recommendations given by the EEO Officer.

III. AFFIRMATIVE ACTION METHODS

In order to formulate a realistic Affirmative Action Plan, Thomas May Construction Company has identified the following known barriers for participation by disadvantaged subcontractors, before describing its proposed affirmative action methods.

A. Lack of qualified disadvantaged subcontractors in our specific geographical areas of work.

B. Lack of certified disadvantaged subcontractors who seek to perform Clay County work.

C. Lack of interest in performing Clay County work.

D. Lack of response when requested to bid.

E. Limited knowledge of the City of Green Cove Springs plans and specifications to prepare a responsible bid.

In view of the barriers to disadvantaged businesses stated above, it shall be the policy of the Thomas May Construction Company to provide maximum opportunity by utilizing the following affirmative action methods to ensure participation on contracts with the City of Green Cove Springs. Thomas May Construction Company shall:

A. Provide written notice including, but not limited to our Invitation to Bid form, to a reasonable number of specific DBE subcontractors in all areas of work to be subcontracted by the company.

B. Advertise requirements in minority focused media including, but not limited to, community organizations, public and private institutions, YMCA, YWCA, Chamber of Commerce, and other associations, concerning subcontract and employment opportunities with the company.

C. Select portions of the work to be performed by DBE's in order to increase the likelihood of meeting contract goals (including, where appropriate, breaking down contracts into economically feasible units to facilitate DBE participation).

D. Provide adequate information about the plans, specifications, and requirements of the contract, not rejecting subcontractors without sound reasons based on a thorough investigation of their capabilities.

E. Waive requirements of performance bonds where it is practical to do so.

F. Attend pre-bid meetings to apprise disadvantaged subcontractors of opportunities with the company.

G. Follow up on initial solicitations of interest to DBE contractors to

determine with certainty whether the company is interested in the subcontract opportunity.

H. Continue on-the-job training with new hires and/or participation in training programs for the area (NEFBA Apprenticeship Program), which include minorities and women.

I. Encourage current minority and female employees to recruit other minority personnel.

Thomas May Construction Company understands that this list of affirmative action methods are not exhaustive and will include additional approaches after having established familiarity with the disadvantaged subcontracting community and/or determined the stated approaches to be ineffective.

IV. IMPLEMENTATION

On contracts with specific DBE goals, Thomas May Construction Company will make every effort to meet contract goals as stated by utilizing its affirmative action methods. On projects with no specific goals, the company will, as an expression of good faith, seek to utilize DBE subcontractors where work is to be subcontracted.

V. REPORTING

The Thomas May Construction Company shall keep and maintain such records as are necessary to determine the company's compliance with its Affirmative Action Plan.

The company will design and maintain its record keeping system to indicate:

A. The number of DBE subcontractors and suppliers used by the company, identifying the items of work, materials and services provided.

B. The efforts and progress being made in obtaining DBE subcontractors through local and community sources.

C. Documentation of all contracts, to include correspondence, telephone calls, newspaper advertisements, etc., to obtain DBE participation on all City of Green Cove Springs Projects.

Thomas May Construction Company shall maintain its current Equal Employment Opportunity records including, but not limited to:

A. Log of Applicants
B. New Hire Listing
C. New Hire Veterans Listing
D. Minority Listing

E. Workforce Roster
F. Terminated Employee Listing

SWORN STATEMENT PURSUANT TO SECTION 287.133(3)(a), FLORIDA STATUTES, ON PUBLIC ENTITY CRIMES

THIS FORM MUST BE SIGNED AND SWORN TO IN THE PRESENCE OF A NOTARY PUBLIC OR OTHER OFFICER AUTHORIZED TO ADMINISTER OATHS.

1. This sworn statement is submitted to **The City Of Green Cove Springs**
(print name of the public entity)

by **Keith R. Ward, President**
(print individual's name and title)

for **Thomas May Construction Company**
(print name of entity submitting sworn statement)

whose business address is **310 College Drive**
Orange Park, Florida 32065

and (if applicable) its Federal Employer Identification Number (FEIN) is **59-2520445**

(If the entity has no FEIN, include the Social Security Number of the Individual signing this sworn statement: **N/A**.)

2. I understand that a "public entity crime" as defined in Paragraph 287.133(1)(g), Florida Statutes, means a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any business with any public entity or with an agency or political subdivision of any other state or of the United States, including, but not limited to, any bid or contract for goods or services to be provided to any public entity or an agency or political subdivision or any other state or of the United States and involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, or material misrepresentation.

3. I understand that "convicted" or "conviction" as defined in Paragraph 287.133(1)(b), Florida Statutes, means a finding of guilt or a conviction of a public entity crime, with or without an adjudication of guilt, in any federal or state trial court of record relating to charges brought by indictment or information after July 1, 1989, as a result of jury verdict, nonjury trial, or entry of a plea of guilty or nolo contendere.

4. I understand that an "affiliate" as described in paragraph 287.133(1)(a), Florida Statute, means:

a. A predecessor or successor of a person convicted of a public entity crime; or

b. An entity under the control of any natural person who is active in the management of the entity and who has been convicted of a public entity crime. The term "affiliate" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of an affiliate. The ownership by one person of shares constituting a controlling interest in another person or a pooling of equipment or income among persons when not for fair market value under an arm's length agreement, shall be a prima facie case that one person controls another person. A person who knowingly enters into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding 36 months shall be considered affiliate.

c. I understand that a "person" as defined in Paragraph 287.133(1)(e), Florida Statutes, means any natural person or entity organized under the laws of any state or of the United States with the legal power to enter into a binding contract and which bids or applies to bid on contracts for the provision of goods or services let by a public entity, or which otherwise transacts or applies to transact business with a public entity. The term

"person" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in management of an entity.

d. Based on information and belief, the statement which I have marked below is true in relation to the entity submitting this sworn statement. **Indicate which statement applies:**

X ---------Neither the entity submitting this sworn statement, nor any of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, nor any affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989.

_____The entity submitting this sworn statement, or one or more of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989.

_____The entity submitting this sworn statement, or one or more of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989. However, there has been a subsequent proceeding before a Hearing Officer of the State of Florida, Division of Administrative Hearings and Final Order entered by the Hearing Officer determined that it was not in the public interest to place the entity submitting this sworn statement on the convicted vendor list. **(attach a copy of the final order)**

I UNDERSTAND THAT THE SUBMISSION OF THIS FORM TO THE CONTRACTING OFFICER FOR THE PUBLIC ENTITY IDENTIFIED IN PARAGRAPH 1 (ONE) ABOVE IS FOR THAT PUBLIC ENTITY ONLY AND, THAT THIS FORM IS VALID THOROUGH DECEMBER 31 OF THE CALENDAR YEAR IN WHICH IT IS FILED. I ALSO UNDERSTAND THAT I AM REQUIRED TO INFORM THE PUBLIC ENTITY PRIOR TO ENTERING INTO A CONTRACT IN EXCESS OF THE THRESHOLD AMOUNT PROVIDED IN SECTION 287.017, FLORIDA STATUTES FOR CATEGORY TWO OF ANY CHANGE IN THE INFORMATION CONTAINED IN THIS FORM

Signature Keith R. Ward

Sworn to and subscribed before me this 2nd day of March, 20 23

Personally know: X Title: President

OR produced identification _____ Notary Public –State of Florida

N/A My commission expires October 30, 2023

(Type of identification)

Brenda S. Rau

Printed typed or stamped commissioned name of notary pu

Brenda S. Rau

BRENDA S RAU
Notary Public - State of Florida
Commission # GG 906674
My Comm. Expires Oct 30, 2023
Bonded through National Notary Assn.

DRUG-FREE WORKPLACE COMPLIANCE FORM

In order to have a drug-free workplace program, a business shall abide as follows:

The undersigned vendor/contractor in accordance with Florida Statue 287.087 hereby certifies that **Thomas May Construction Co.** (name of business) does:

1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.
2. Inform employees about the dangers of drug abuse in the workplace, the company's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees or drug abuse violations.
3. Give each employee engaged in providing the commodities or contractual services that are under proposal a copy of the statement specified in item 1, above.

4. In the statement specified in item 1, notify the employees that as a condition of working on the commodities or contractual services which are under proposal, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to any violation of Chapter 1893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) days after such conviction.
5. Impose a sanction on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community, by any employee who is convicted.
6. Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

As the person authorized to sign the statement, I certify that,
Keith R. Ward **President**

Thomas May Construction Company (name of business), fully complies/does not comply with the above requirements.

Vendor/Contractor Signature **Keith R. Ward** **03/09/2023** Date

REFERENCES

The following are client/customer references for whom Thomas May Construction Company (Bidder) has provided products and/or services within the past year similar to those requested in this Bid Invitation. The City of Green Cove Springs may contact the listed references to request such information as it may deem appropriate relative to our company's and its representative's services, professionalism, integrity, reputation, competency and charges. We encourage these references to use complete candor in providing such information to the City of Green Cove Springs to use in its evaluation of our proposal.

Client/Customer	E- Mail Address	Phone No.	Contact Person
St. Johns Co. Board of Co. Commissioners	plaw@sjcfl.us	(904) 209-0417	Pat Law
City of St Augustine Beach	btredik@cityofsab.org	(904) 471-1119	William J. Tredik
City of Fernandina Beach	cgeorge@fbfl.org	(904) 310-3421	Charles George
Nassau County School Board	bunchje@nassau.k12.fl.us	(904) 225-5343	Jeffrey L. Bunch
Clay County School Board	david.kramer@myoneclay.net	(904) 336-6849	David Kramer

Additional References & Experience on Attached Spreadsheets per Item "D" In Bid Evaluation List

Below are names, addresses, phone numbers and contact persons (if applicable) of professional or trade association (or similar organization) in which we are a member in good standing. The City of Green Cove Springs is encouraged to verify out status with the following.

Northeast Florida Builders Association 6747 Southpoint Pkwy., Jacksonville, FL. 32216	Jessie Spradley	(904) 294-0213
Clay County Development Authority 1845 Town Center Blvd. #410, Fleming Island, FL. 32003	Josh Cockrell	(803) 917-2420

Thomas May Construction Company
Submitting Respondent

Signature Keith R. Ward 03/09/2023 Date

THOMAS MAY construction company

310 College Drive
Orange Park, Florida 32065
(904) 272-4808
Fax (904) 272-4957

GENERAL CONTRACTOR
CGC027983 & CGC1530108
ROOFING CONTRACTOR
CCC1333915

ADDITIONAL QUALIFICATION REQUIREMENTS

REFERENCE LIST

Per your specifications for the enclosed bid, we are including references from projects completed.

Point of Contact	Contact Numbers	Projects
Phyllis Thorpe St. Johns County 2750 Industry Center Road St. Augustine, FL. 32084	(904) 209-0150 (904) 209-0151 Fax pthorpe@sjcfl.us	West Augustine New Community Center District Park, Offices, Olympic-size Pool St. Augustine Amphitheatre & Arboretum NW Annex Tax Office Renovation Open-Sided Pole Barns Multiple Locations
Dean Scott R. Dean Scott, Architect 126 West Adams St. #602 Jacksonville, FL. 32202	(904) 598-0072 (904) 598-0450 Fax dscott@rdeanscott.com	Hibernia Baptist Church Sanctuary, Kirkland Residence Smart House & Handicapped-Accessible Pool Park Av. Dermatology
Jeffery Marks Clay Co. School Board 900 Walnut St. Green Cove Springs, FL. 32043	(904) 336-6821 (904) 336-6522 Fax Jeffery.marks@myoneclay.net	Fleming Island High AICE Testing Facility Coppergate New Elementary School "V" CCSD Operations Building 1West End Renovation Clay Co Schools District Office Renovation Clay Co Schools Re-Roof Portables County-wide CCSD Front Entrance Security Control Access County-wide
Scott Augustine St Johns County Board of County Commissioners	(904) 209-0107 (904) 209-0109 Fax saugustine@sjcfl.us	SJC Mussallem Beachfront Parking Phase 2 SJC Fire Rescue Administration Building Fence Installation SJC Doug Crane Park Dock & Parking Lot/Sitework SJC Ocean Hammock Phase II Parking Lot/Sitework
Jeffrey Bunch Nassau Co. School Board 86334 Goodbread Rd. Yulee, FL. 32097	(904) 225-5343 (904) 225-0094 Fax bunchje@nassau.k12.fl.us	Fernandina Beach Middle School Remodel Yulee Primary School Yulee Elementary School Callahan Intermediate School Multiple Sitework Projects New Wildlight Elementary Phase I & Phase II Addition Yulee Middle School Addition
William Hagan Hagan Ace Hardware	(904) 272-1414 (904) 272-1939 Fax bhagan@haganace.com	Hagan Ace Hardware of MacClenny Hagan Ace Hardware - Mandarin Hagan Ace Hardware - Orange Park Remodel Hagan Ace Hardware - St. Augustine
Dave Loper Clay Electric Cooperative, Inc. P.O. Box 308 Keystone Heights, FL. 32656	(352) 473-8000 (352) 473-1361 dloper@clayelectric.com	Clay Electric New Headquarters Clay Electric Call Center Clay Electric Access Control at Card Reader Stations

ITEM "D" **EVIDENCE OF JOB EXPERIENCE**

GC Division

Owner	Project	Point of Contact Information	Contract Price	Dates of Project	% of Work by TMC
Challenge Enterprises of North Florida	Challenge Enterprises Office Suite Renovations	Fisher / Koppenhafer, P.A. (907) 367-0077 Kope@fkaid.com	$475,430 $547,394 Owner Change Orders & Direct Purchases	03/05/2020 11/01/2020	34%
Slate Real Estate	Slate Real Estate Tenant Build-out Durbin Pavilion Drive #101 Duval County	Brian Boatright Architect (904) 413-8028	$261,025 $278,352 Owner Change Orders	04/08/2021 08/19/2021	23%
Nassau County School Board	Yulee Middle School Classroom Addition to Existing School	Dean Scott - Architect (904) 598-0072 Jeffrey Bunch - Nassau County bunchje@nassau.k12.fl.us	$9,463,900 $7,353,797 Direct Purchase Project	09/06/2021 02/28/2023	16%
School District of Clay County	Orange Park High School Front Entrance Renovation Orange Park, FL	Erik Kasper - Architect (904) 683-9201 Jeffery Marks - Clay County (904) 336-6821 Jeffery.marks@myoneclay.net	$999,619 $1,303,279 Owner Change Orders	06/01/2022 01/10/2023	24%
School District of Clay County	Orange Park High School Stadium Renovation Orange Park, FL	Erik Kasper - Architect (904) 683-9201 Jeffery Marks - Clay County (904) 336-6821 Jeffery.marks@myoneclay.net	$2,438722 $2,447,390 Owner Change Orders	07/07/2022 04/06/2023	12%
School District of Clay County	Ridgeview High School Restroom Renovations Buildings #5, #6 & #7	Kasper Architects Erik Kasper (904) 683-9201	$383,500 $396,325 Owner Change Orders	05/19/2022 09/09/2022	26%
City of Fernandina Beach Nassau County	Amelia River Waterfront Stabilization Project Parking Lots C & D Fernandina Beach	Charles George City Engineer (904) 310-3421	$2,435,584 $2,468,944 Owner Change Orders	08/21/2021 05/31/2022	8%
St. Johns County Board of County Commissioners	Construction of (6) Pole Barns in Multiple Locations in St. Johns County	Phyllis Thorpe - Project Manager (904) 209-0150	$72,000 Task Order #26	03/16/2021 04/07/2021	12%
St. Johns County Board of County Commissioners	Mussallem Beach Park Parking Lot Construction	Scott Augustine - Project Manager (904) 484-4101 saugustine@sjcfl.us	$200,000 $203,113 Task Order #39	05/18/2022 09/23/2022	15%
School District of Clay County	Coppergate Elementary School Control Booth (Sound Booth) Remodel	Jeffery Marks - Clay County (904) 336-6821 Jeffery.marks@myoneclay.net	$75,000	12/03/2021 02/28/2022	34%
Nassau County School Board	Wildlight Elementary School Phase II Classroom Building Addition	R. Dean Scott, Architect, Inc. (904) 598-0072	$6,197,000 $4,879,874 Direct Purchase Project	08/03/2020 10/31/2021	11%

EVIDENCE OF JOB EXPERIENCE

Owner	Project	Point of Contact Information	Contract Price	Dates of Project	% of Work by TMC
St. Johns County Board of County Commissioners	St. Johns County Fire Rescue Administration Building Fencing	Patrick Law - Project Manager plaw@sjcfl.us	$199,746	05/12/2022 09/07/2022	11%
Duval County Public Schools	Wolfson High School #224 Field Houses Renovations & Additions	Bhide & Hall Architects, Inc. (904) 264-1919	$416,462 $413,088	06/10/2020 04/29/2021	30%
St. Johns County Board of County Commissioners	SJC Building Services Renovations & Acoustical Panels Permit Center	Patrick Law - Project Manager plaw@sjcfl.us	$124,300 $127,770 Task Order #25	08/24/2020 03/10/2021	29%
Nassau County Board of County Commissioners	Nassau County Animal Services Cattery Addition	Gillette & Associates (904) 261-8819	$227,650	05/26/2020 11/11/2020	36%
School District of Clay County	Clay County School Board District Office Operations Building #1 West End Renovation & Remodel	Brian Boatright Architect (904) 413-8028	$199,500 $226,112 Owner Change Orders	07/16/2020 11/25/2020	40%
Nassau County School Board	Callahan Intermediate School Parent Pickup Lane Extension	Mittauer & Associates (904) 278-0030	$548,000 $705,220 Owner Change Orders	06/01/2020 08/21/2020	27%
Nassau County School Board	Callahan Intermediate School Emergency Repairs Phase II	Jeffrey Bunch - Project Manager (904) 225-5343 bunchje@nassau.k12.fl.us	$459,025 $466,525 Owner Change Orders	04/06/2020 06/04/2020	15%
Nassau County School Board	Callahan Intermediate School Emergency Storm Drain & Asphalt Pavement Repairs	Jeffrey Bunch - Project Manager (904) 225-5343 bunchje@nassau.k12.fl.us	$236,540 $243,115	03/04/2020 04/02/2020	31%

ITEM "D" EVIDENCE OF EXPERIENCE

THOMAS MAY CONSTRUCTION COMPANY

Additional Completed Construction Projects in 2021

Orange Park High School Ceiling / Lighting Cafeteria 2300 Kingsley Avenue Orange Park, FL. 32073	Clay County School District 915 Walnut Street Green Cove Springs, FL 32043 Bryce Ellis/Michael Kemp 904-336-6850	Jeffery Marks Project Manager Facilities 904-336-6850 jeffery.marks@myoneclay.net	$143,412 Continuing Services Contract Task Order #20/21-01 Master #18-MCC-THO-09215	11/02/21 11/16/21
Fernandina Beach High School Pirates Baseball Exercise Room 435 Citrona Drive Fernandina Beach, FL. 32034	Nassau County School Board 1201 Atlantic Avenue Fernandina Beach, FL. 32034 Jeffrey Bunch bunchje@nassau.k12.fl.us	Jeffrey Bunch - Director of Facilities NCSB 904-225-5343 bunchje@nassau.k12.fl.us	$121,860 Continuing Services Contract	09/10/21 12/15/21
Orange Park Sheriff Substation Retrofit 212 Blanding Blvd. Orange Park, FL. 32073 Hurricane Wind Retrofit	Clay County Board of County Commissioners 477 Houston Street Green Cove Springs, FL. 32043	Alyssa Hamilton Purchasing 904-278-3766	$233,120 Competitive Bid Change Order for Damaged Wood Replacement	09/02/21 12/21/21
Yulee Middle School Four (4) Buildings Roofing Under BBG Contracting 85439 Miner Road Yulee, FL. 32097	BBG Contracting Group, Inc. 10562 New Kings Road Jacksonville, FL. 32219	Blake McCrea 904-766-5800 Jeffrey Bunch - Director of Facilities NCSB 904-225-5343	$86,077 Competitive Bid as Sub One Change Order Replace Damaged Wood	09/15/21 10/13/21
Orange Park High School Building #12 Shop Ceiling Insulation Repairs / Renovations 2300 Kingsley Avenue Orange Park, FL. 32073	Clay County School District 915 Walnut Street Green Cove Springs, FL 32043 Bryce Ellis/Michael Kemp 904-336-6850	Jeffery Marks Project Manager Facilities 904-336-6850	$114,750 Continuing Services Contract Task Order #20/21-01 Master #18-MCC-THO-09215	09/16/21 10/30/21
Clay County School District Re-Roofing 37 Portable Classrooms nd Misc. Buildings County-Wide 00 Walnut Street reen Cove Springs, FL. 32043	Clay County School District 915 Walnut Street Green Cove Springs, FL 32043 Bryce Ellis/Michael Kemp 904-336-6850	Mike Griffis Project Manager Facilities 904-336-6850 Phil Hans 904-336-6835 Dir of Maintenance	$147,733 Hard Bid #18-MA-315 3 Change Orders For Damaged Wood	02/19/21 09/29/21

ITEM "D" EVIDENCE OF EXPERIENCE

THOMAS MAY CONSTRUCTION COMPANY

Additional Completed Construction Projects in 2021

Clay County School District Security Entrance Access Control 900 Walnut Street ,Green Cove Springs, FL. 32043 Wilkinson Elem, Lake Asbury Jr High, Lake Asbury Elem, GCS Jr High, Clay Hill Elem, Keystone Heights Elementary Renovation to 6 Existing Structures	Clay County School District 915 Walnut Street Green Cove Springs, FL 32043 Bryce Ellis/Michael Kemp 904-336-6850	Jeffery Marks Project Manager Facilities 904-336-6850	$10,550 $29,350 $9,295 $9,350 $8,620 $13,895 Contractor Continuing Services Agreement Master# 18-MCC-THO-09215	Varied per Campus Varied per Campus
Clay County School District District Operations Building #1 Roofing 925 Center Street Green Cove Springs, FL. 32043	Clay County School District 915 Walnut Street Green Cove Springs, FL 32043 Bryce Ellis/Michael Kemp 904-336-6850	Jeffery Marks Project Manager Facilities 904-336-6850	$54,500 Task Order #c-27-20/21 Contractor Continuing Services Agreement Master #18-MA-315	05/24/21 06/10/21
Clay County School District Security Entrance Access Control 900 Walnut Street ,Green Cove Springs, FL. 32043 Fleming Island High, Fleming Island Elem, Thunderbolt Elem, Coppergate Elem, Rideout Elem, Swimming Pen Creek Elem, Paterson Elementary Renovation to 7 Existing Structures	Clay County School District 915 Walnut Street Green Cove Springs, FL 32043 Bryce Ellis/Michael Kemp 904-336-6850	Jeffery Marks Project Manager Facilities 904-336-6850	$20,580 $14,930 $18,500 $13,740 $13,525 $21,050 $12,610 Contractor Continuing Services Agreement Master# 18-MCC-THO-09215	Varied per Campus Varied per Campus
Springcrest Elementary School 1419 Walker Av. SW Live Oak, FL. 32064 Construction of a Covered Play Area	Suwannee County School Board 1740 Ohio Avenue South Live Oak, FL. 32064	Ethan Butts - Director of Facilities 386-249-1178	$69,250 Bid #21-202 No Change Orders	04/13/21 06/07/21
Clay County School District Security Entrance Access Control 900 Walnut Street ,Green Cove Springs, FL. 32043 Orange Park Jr High, Lakeside Jr High, Clay High, Montclair Elem, CE Bennett Elm Keystone High, Doctors Inlet Elem, Tannerman Learning Center Renovation to Existing Structure	Clay County School District 915 Walnut Street Green Cove Springs, FL 32043 Bryce Ellis/Michael Kemp 904-336-6850	Jeffery Marks Project Manager Facilities 904-336-6850	$83,550 $83,245 $102,936 $112,850 $108,650 $146,000 $110,650 $111,250 Contractor Continuing Services Agreement Master# 18-MCC-THO-09215	Varied per Campus Varied per Campus

ITEM "D" EVIDENCE OF EXPERIENCE

THOMAS MAY CONSTRUCTION COMPANY

Additional Completed Construction Projects in 2021

Slate Real Estate Tenant Build-Out 45 Durbin Pavilion Dr., #101 Jacksonville, FL. 32259 Interior Build-out	Cole Slate Durbin Park Pavilion, LLC 1301 Riverplace Blvd. #1900 Jacksonville, FL. 32207	Brian Boatright - Architect 904-413-8028	$278,002 Negotiated Contract Owner Change Orders - Additions	04/08/21 08/19/21
St. Johns County Construction of Eight (8) Pole Barns in Various Locations Throughout County	St. Johns County Purchasing Board of County Commissioners 500 San Sebastian View St. Augustine, FL. 32084	Phyllis Thorpe 904-209-0150	$72,000 Continuing Services Task Order #26	03/16/21 04/07/21
St. Johns County Construction of Sidewalks & ADA Parking at Butler Park East 5860 A1A South, St. Augustine, FL. 32080	St. Johns County Purchasing Board of County Commissioners 500 San Sebastian View St. Augustine, FL. 32084	Phyllis Thorpe 904-209-0150	$68,950 Continuing Services Task Order #27 No Change Orders	02/22/21 03/22/21
St. Johns County Remodel Existing Restrooms/Changing Rooms at Butler Park East 5860 A1A South, St. Augustine, FL. 32080	St. Johns County Purchasing Board of County Commissioners 500 San Sebastian View St. Augustine, FL. 32084	Phyllis Thorpe 904-209-0150	$79,905 Continuing Services Task Order #28 One Change Order	03/04/21 05/19/21
Tower Hill Insurance Building Roofing 1479 SW 74th Dr. Gainesville, FL 32607 Concept Co Headquarters Roofing 1449 SW 74th Dr. Gainesville, FL. 32607	Theory Construction 3324 University Ave., PMB 151 Gainesville, FL. 32607	Todd Higgins - Project Manager 352-333-3233	$42,336 $40,395 Competitive Bid One Change Orders Add Flashing	03/29/21 05/17/21 06/14/21 08/17/21
Yulee Middle School Four (4) Buildings Roofing Under BBG Contracting 85439 Miner Road Yulee, FL. 32097	BBG Contracting Group, Inc. 10562 New Kings Road Jacksonville, FL. 32219	Blake McCrea 904-766-5800 Jeffrey Bunch - Director of Facilities NCSB 904-225-5343	$177,623 Competitive Bid One Change Order Replace Damaged Wood	06/21/21 08/01/21

Form **W-9**
(Rev. October 2018)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

▶ Go to *www.irs.gov/FormW9* for instructions and the latest information.

Give Form to the requester. Do not send to the IRS.

Print or type. See Specific Instructions on page 3.

1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.
Thomas May Construction Company

2 Business name/disregarded entity name, if different from above

3 Check appropriate box for federal tax classification of the person whose name is entered on line 1. Check only **one** of the following seven boxes.

☐ Individual/sole proprietor or single-member LLC ☐ C Corporation ☒ S Corporation ☐ Partnership ☐ Trust/estate

☐ Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=Partnership) ▶ _____

Note: Check the appropriate box in the line above for the tax classification of the single-member owner. Do not check LLC if the LLC is classified as a single-member LLC that is disregarded from the owner unless the owner of the LLC is another LLC that is **not** disregarded from the owner for U.S. federal tax purposes. Otherwise, a single-member LLC that is disregarded from the owner should check the appropriate box for the tax classification of its owner.

☐ Other (see instructions) ▶

4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):

Exempt payee code (if any) _____

Exemption from FATCA reporting code (if any) _____

(Applies to accounts maintained outside the U.S.)

5 Address (number, street, and apt. or suite no.) See instructions.
310 College Drive

Requester's name and address (optional)

6 City, state, and ZIP code
Orange Park, Florida 32065

7 List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN*, later.

Note: If the account is in more than one name, see the instructions for line 1. Also see *What Name and Number To Give the Requester* for guidelines on whose number to enter.

Social security number
			-			-				

or

Employer identification number
5	9	-	2	5	2	0	4	4	5

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

Sign Here Signature of U.S. person ▶ Keith R. Ward Date ▶ 03/02/2023

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to *www.irs.gov/FormW9*.

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following.

- Form 1099-INT (interest earned or paid)
- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)
- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding, *later.*

By signing the filled-out form, you:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),

2. Certify that you are not subject to backup withholding, or

3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and

4. Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct. See *What is FATCA reporting,* later, for further information.

Note: If you are a U.S. person and a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are:

- An individual who is a U.S. citizen or U.S. resident alien;
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States;
- An estate (other than a foreign estate); or
- A domestic trust (as defined in Regulations section 301.7701-7).

Special rules for partnerships. Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax under section 1446 on any foreign partners' share of effectively connected taxable income from such business. Further, in certain cases where a Form W-9 has not been received, the rules under section 1446 require a partnership to presume that a partner is a foreign person, and pay the section 1446 withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid section 1446 withholding on your share of partnership income.

In the cases below, the following person must give Form W-9 to the partnership for purposes of establishing its U.S. status and avoiding withholding on its allocable share of net income from the partnership conducting a trade or business in the United States.

- In the case of a disregarded entity with a U.S. owner, the U.S. owner of the disregarded entity and not the entity;
- In the case of a grantor trust with a U.S. grantor or other U.S. owner, generally, the U.S. grantor or other U.S. owner of the grantor trust and not the trust; and
- In the case of a U.S. trust (other than a grantor trust), the U.S. trust (other than a grantor trust) and not the beneficiaries of the trust.

Foreign person. If you are a foreign person or the U.S. branch of a foreign bank that has elected to be treated as a U.S. person, do not use Form W-9. Instead, use the appropriate Form W-8 or Form 8233 (see Pub. 515, Withholding of Tax on Nonresident Aliens and Foreign Entities).

Nonresident alien who becomes a resident alien. Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a "saving clause." Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the payee has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, you must attach a statement to Form W-9 that specifies the following five items.

1. The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.

2. The treaty article addressing the income.

3. The article number (or location) in the tax treaty that contains the saving clause and its exceptions.

4. The type and amount of income that qualifies for the exemption from tax.

5. Sufficient facts to justify the exemption from tax under the terms of the treaty article.

Example. Article 20 of the U.S.-China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporarily present in the United States. Under U.S. law, this student will become a resident alien for tax purposes if his or her stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U.S.-China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first protocol) and is relying on this exception to claim an exemption from tax on his or her scholarship or fellowship income would attach to Form W-9 a statement that includes the information described above to support that exemption.

If you are a nonresident alien or a foreign entity, give the requester the appropriate completed Form W-8 or Form 8233.

Backup Withholding

What is backup withholding? Persons making certain payments to you must under certain conditions withhold and pay to the IRS 24% of such payments. This is called "backup withholding." Payments that may be subject to backup withholding include interest, tax-exempt interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, payments made in settlement of payment card and third party network transactions, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will not be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

Payments you receive will be subject to backup withholding if:

1. You do not furnish your TIN to the requester,

2. You do not certify your TIN when required (see the instructions for Part II for details),

3. The IRS tells the requester that you furnished an incorrect TIN,

4. The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only), or

5. You do not certify to the requester that you are not subject to backup withholding under 4 above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See *Exempt payee code,* later, and the separate Instructions for the Requester of Form W-9 for more information.

Also see *Special rules for partnerships,* earlier.

What is FATCA Reporting?

The Foreign Account Tax Compliance Act (FATCA) requires a participating foreign financial institution to report all United States account holders that are specified United States persons. Certain payees are exempt from FATCA reporting. See *Exemption from FATCA reporting code,* later, and the Instructions for the Requester of Form W-9 for more information.

Updating Your Information

You must provide updated information to any person to whom you claimed to be an exempt payee if you are no longer an exempt payee and anticipate receiving reportable payments in the future from this person. For example, you may need to provide updated information if you are a C corporation that elects to be an S corporation, or if you no longer are tax exempt. In addition, you must furnish a new Form W-9 if the name or TIN changes for the account; for example, if the grantor of a grantor trust dies.

Penalties

Failure to furnish TIN. If you fail to furnish your correct TIN to a requester, you are subject to a penalty of $50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

Civil penalty for false information with respect to withholding. If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a $500 penalty.

Criminal penalty for falsifying information. Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

Misuse of TINs. If the requester discloses or uses TINs in violation of federal law, the requester may be subject to civil and criminal penalties.

Specific Instructions

Line 1

You must enter one of the following on this line; **do not** leave this line blank. The name should match the name on your tax return.

If this Form W-9 is for a joint account (other than an account maintained by a foreign financial institution (FFI)), list first, and then circle, the name of the person or entity whose number you entered in Part I of Form W-9. If you are providing Form W-9 to an FFI to document a joint account, each holder of the account that is a U.S. person must provide a Form W-9.

a. **Individual.** Generally, enter the name shown on your tax return. If you have changed your last name without informing the Social Security Administration (SSA) of the name change, enter your first name, the last name as shown on your social security card, and your new last name.

Note: ITIN applicant: Enter your individual name as it was entered on your Form W-7 application, line 1a. This should also be the same as the name you entered on the Form 1040/1040A/1040EZ you filed with your application.

b. **Sole proprietor or single-member LLC.** Enter your individual name as shown on your 1040/1040A/1040EZ on line 1. You may enter your business, trade, or "doing business as" (DBA) name on line 2.

c. **Partnership, LLC that is not a single-member LLC, C corporation, or S corporation.** Enter the entity's name as shown on the entity's tax return on line 1 and any business, trade, or DBA name on line 2.

d. **Other entities.** Enter your name as shown on required U.S. federal tax documents on line 1. This name should match the name shown on the charter or other legal document creating the entity. You may enter any business, trade, or DBA name on line 2.

e. **Disregarded entity.** For U.S. federal tax purposes, an entity that is disregarded as an entity separate from its owner is treated as a "disregarded entity." See Regulations section 301.7701-2(c)(2)(iii). Enter the owner's name on line 1. The name of the entity entered on line 1 should never be a disregarded entity. The name on line 1 should be the name shown on the income tax return on which the income should be reported. For example, if a foreign LLC that is treated as a disregarded entity for U.S. federal tax purposes has a single owner that is a U.S. person, the U.S. owner's name is required to be provided on line 1. If the direct owner of the entity is also a disregarded entity, enter the first owner that is not disregarded for federal tax purposes. Enter the disregarded entity's name on line 2, "Business name/disregarded entity name." If the owner of the disregarded entity is a foreign person, the owner must complete an appropriate Form W-8 instead of a Form W-9. This is the case even if the foreign person has a U.S. TIN.

Line 2

If you have a business name, trade name, DBA name, or disregarded entity name, you may enter it on line 2.

Line 3

Check the appropriate box on line 3 for the U.S. federal tax classification of the person whose name is entered on line 1. Check only one box on line 3.

IF the entity/person on line 1 is a(n) . . .	THEN check the box for . . .
• Corporation	Corporation
• Individual • Sole proprietorship, or • Single-member limited liability company (LLC) owned by an individual and disregarded for U.S. federal tax purposes.	Individual/sole proprietor or single-member LLC
• LLC treated as a partnership for U.S. federal tax purposes, • LLC that has filed Form 8832 or 2553 to be taxed as a corporation, or • LLC that is disregarded as an entity separate from its owner but the owner is another LLC that is not disregarded for U.S. federal tax purposes.	Limited liability company and enter the appropriate tax classification. (P= Partnership; C= C corporation; or S= S corporation)
• Partnership	Partnership
• Trust/estate	Trust/estate

Line 4, Exemptions

If you are exempt from backup withholding and/or FATCA reporting, enter in the appropriate space on line 4 any code(s) that may apply to you.

Exempt payee code.

- Generally, individuals (including sole proprietors) are not exempt from backup withholding.
- Except as provided below, corporations are exempt from backup withholding for certain payments, including interest and dividends.
- Corporations are not exempt from backup withholding for payments made in settlement of payment card or third party network transactions.
- Corporations are not exempt from backup withholding with respect to attorneys' fees or gross proceeds paid to attorneys, and corporations that provide medical or health care services are not exempt with respect to payments reportable on Form 1099-MISC.

The following codes identify payees that are exempt from backup withholding. Enter the appropriate code in the space in line 4.

1—An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2)

2—The United States or any of its agencies or instrumentalities

3—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

4—A foreign government or any of its political subdivisions, agencies, or instrumentalities

5—A corporation

6—A dealer in securities or commodities required to register in the United States, the District of Columbia, or a U.S. commonwealth or possession

7—A futures commission merchant registered with the Commodity Futures Trading Commission

8—A real estate investment trust

9—An entity registered at all times during the tax year under the Investment Company Act of 1940

10—A common trust fund operated by a bank under section 584(a)

11—A financial institution

12—A middleman known in the investment community as a nominee or custodian

13—A trust exempt from tax under section 664 or described in section 4947

The following chart shows types of payments that may be exempt from backup withholding. The chart applies to the exempt payees listed above, 1 through 13.

IF the payment is for . . .	THEN the payment is exempt for . . .
Interest and dividend payments	All exempt payees except for 7
Broker transactions	Exempt payees 1 through 4 and 6 through 11 and all C corporations. S corporations must not enter an exempt payee code because they are exempt only for sales of noncovered securities acquired prior to 2012.
Barter exchange transactions and patronage dividends	Exempt payees 1 through 4
Payments over $600 required to be reported and direct sales over $5,000[1]	Generally, exempt payees 1 through 5[2]
Payments made in settlement of payment card or third party network transactions	Exempt payees 1 through 4

[1] See Form 1099-MISC, Miscellaneous Income, and its instructions.

[2] However, the following payments made to a corporation and reportable on Form 1099-MISC are not exempt from backup withholding: medical and health care payments, attorneys' fees, gross proceeds paid to an attorney reportable under section 6045(f), and payments for services paid by a federal executive agency.

Exemption from FATCA reporting code. The following codes identify payees that are exempt from reporting under FATCA. These codes apply to persons submitting this form for accounts maintained outside of the United States by certain foreign financial institutions. Therefore, if you are only submitting this form for an account you hold in the United States, you may leave this field blank. Consult with the person requesting this form if you are uncertain if the financial institution is subject to these requirements. A requester may indicate that a code is not required by providing you with a Form W-9 with "Not Applicable" (or any similar indication) written or printed on the line for a FATCA exemption code.

A—An organization exempt from tax under section 501(a) or any individual retirement plan as defined in section 7701(a)(37)

B—The United States or any of its agencies or instrumentalities

C—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

D—A corporation the stock of which is regularly traded on one or more established securities markets, as described in Regulations section 1.1472-1(c)(1)(i)

E—A corporation that is a member of the same expanded affiliated group as a corporation described in Regulations section 1.1472-1(c)(1)(i)

F—A dealer in securities, commodities, or derivative financial instruments (including notional principal contracts, futures, forwards, and options) that is registered as such under the laws of the United States or any state

G—A real estate investment trust

H—A regulated investment company as defined in section 851 or an entity registered at all times during the tax year under the Investment Company Act of 1940

I—A common trust fund as defined in section 584(a)

J—A bank as defined in section 581

K—A broker

L—A trust exempt from tax under section 664 or described in section 4947(a)(1)

M—A tax exempt trust under a section 403(b) plan or section 457(g) plan

Note: You may wish to consult with the financial institution requesting this form to determine whether the FATCA code and/or exempt payee code should be completed.

Line 5

Enter your address (number, street, and apartment or suite number). This is where the requester of this Form W-9 will mail your information returns. If this address differs from the one the requester already has on file, write NEW at the top. If a new address is provided, there is still a chance the old address will be used until the payor changes your address in their records.

Line 6

Enter your city, state, and ZIP code.

Part I. Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. If you are a resident alien and you do not have and are not eligible to get an SSN, your TIN is your IRS individual taxpayer identification number (ITIN). Enter it in the social security number box. If you do not have an ITIN, see *How to get a TIN* below.

If you are a sole proprietor and you have an EIN, you may enter either your SSN or EIN.

If you are a single-member LLC that is disregarded as an entity separate from its owner, enter the owner's SSN (or EIN, if the owner has one). Do not enter the disregarded entity's EIN. If the LLC is classified as a corporation or partnership, enter the entity's EIN.

Note: See *What Name and Number To Give the Requester*, later, for further clarification of name and TIN combinations.

How to get a TIN. If you do not have a TIN, apply for one immediately. To apply for an SSN, get Form SS-5, Application for a Social Security Card, from your local SSA office or get this form online at *www.SSA.gov*. You may also get this form by calling 1-800-772-1213. Use Form W-7, Application for IRS Individual Taxpayer Identification Number, to apply for an ITIN, or Form SS-4, Application for Employer Identification Number, to apply for an EIN. You can apply for an EIN online by accessing the IRS website at *www.irs.gov/Businesses* and clicking on Employer Identification Number (EIN) under Starting a Business. Go to *www.irs.gov/Forms* to view, download, or print Form W-7 and/or Form SS-4. Or, you can go to *www.irs.gov/OrderForms* to place an order and have Form W-7 and/or SS-4 mailed to you within 10 business days.

If you are asked to complete Form W-9 but do not have a TIN, apply for a TIN and write "Applied For" in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, generally you will have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments. The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

Note: Entering "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon.

Caution: A disregarded U.S. entity that has a foreign owner must use the appropriate Form W-8.

Part II. Certification

To establish to the withholding agent that you are a U.S. person, or resident alien, sign Form W-9. You may be requested to sign by the withholding agent even if item 1, 4, or 5 below indicates otherwise.

For a joint account, only the person whose TIN is shown in Part I should sign (when required). In the case of a disregarded entity, the person identified on line 1 must sign. Exempt payees, see *Exempt payee code*, earlier.

Signature requirements. Complete the certification as indicated in items 1 through 5 below.

1. Interest, dividend, and barter exchange accounts opened before 1984 and broker accounts considered active during 1983. You must give your correct TIN, but you do not have to sign the certification.

2. Interest, dividend, broker, and barter exchange accounts opened after 1983 and broker accounts considered inactive during 1983. You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item 2 in the certification before signing the form.

3. Real estate transactions. You must sign the certification. You may cross out item 2 of the certification.

4. Other payments. You must give your correct TIN, but you do not have to sign the certification unless you have been notified that you have previously given an incorrect TIN. "Other payments" include payments made in the course of the requester's trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services (including payments to corporations), payments to a nonemployee for services, payments made in settlement of payment card and third party network transactions, payments to certain fishing boat crew members and fishermen, and gross proceeds paid to attorneys (including payments to corporations).

5. Mortgage interest paid by you, acquisition or abandonment of secured property, cancellation of debt, qualified tuition program payments (under section 529), ABLE accounts (under section 529A), IRA, Coverdell ESA, Archer MSA or HSA contributions or distributions, and pension distributions. You must give your correct TIN, but you do not have to sign the certification.

What Name and Number To Give the Requester

For this type of account:	Give name and SSN of:
1. Individual	The individual
2. Two or more individuals (joint account) other than an account maintained by an FFI	The actual owner of the account or, if combined funds, the first individual on the account[1]
3. Two or more U.S. persons (joint account maintained by an FFI)	Each holder of the account
4. Custodial account of a minor (Uniform Gift to Minors Act)	The minor[2]
5. a. The usual revocable savings trust (grantor is also trustee)	The grantor-trustee[1]
b. So-called trust account that is not a legal or valid trust under state law	The actual owner[1]
6. Sole proprietorship or disregarded entity owned by an individual	The owner[3]
7. Grantor trust filing under Optional Form 1099 Filing Method 1 (see Regulations section 1.671-4(b)(2)(i)(A))	The grantor*
For this type of account:	**Give name and EIN of:**
8. Disregarded entity not owned by an individual	The owner
9. A valid trust, estate, or pension trust	Legal entity[4]
10. Corporation or LLC electing corporate status on Form 8832 or Form 2553	The corporation
11. Association, club, religious, charitable, educational, or other tax-exempt organization	The organization
12. Partnership or multi-member LLC	The partnership
13. A broker or registered nominee	The broker or nominee
14. Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments	The public entity
15. Grantor trust filing under the Form 1041 Filing Method or the Optional Form 1099 Filing Method 2 (see Regulations section 1.671-4(b)(2)(i)(B))	The trust

[1] List first and circle the name of the person whose number you furnish. If only one person on a joint account has an SSN, that person's number must be furnished.

[2] Circle the minor's name and furnish the minor's SSN.

[3] You must show your individual name and you may also enter your business or DBA name on the "Business name/disregarded entity" name line. You may use either your SSN or EIN (if you have one), but the IRS encourages you to use your SSN.

[4] List first and circle the name of the trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.) Also see *Special rules for partnerships*, earlier.

***Note:** The grantor also must provide a Form W-9 to trustee of trust.

Note: If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.

Secure Your Tax Records From Identity Theft

Identity theft occurs when someone uses your personal information such as your name, SSN, or other identifying information, without your permission, to commit fraud or other crimes. An identity thief may use your SSN to get a job or may file a tax return using your SSN to receive a refund.

To reduce your risk:

- Protect your SSN,
- Ensure your employer is protecting your SSN, and
- Be careful when choosing a tax preparer.

If your tax records are affected by identity theft and you receive a notice from the IRS, respond right away to the name and phone number printed on the IRS notice or letter.

If your tax records are not currently affected by identity theft but you think you are at risk due to a lost or stolen purse or wallet, questionable credit card activity or credit report, contact the IRS Identity Theft Hotline at 1-800-908-4490 or submit Form 14039.

For more information, see Pub. 5027, Identity Theft Information for Taxpayers.

Victims of identity theft who are experiencing economic harm or a systemic problem, or are seeking help in resolving tax problems that have not been resolved through normal channels, may be eligible for Taxpayer Advocate Service (TAS) assistance. You can reach TAS by calling the TAS toll-free case intake line at 1-877-777-4778 or TTY/TDD 1-800-829-4059.

Protect yourself from suspicious emails or phishing schemes. Phishing is the creation and use of email and websites designed to mimic legitimate business emails and websites. The most common act is sending an email to a user falsely claiming to be an established legitimate enterprise in an attempt to scam the user into surrendering private information that will be used for identity theft.

The IRS does not initiate contacts with taxpayers via emails. Also, the IRS does not request personal detailed information through email or ask taxpayers for the PIN numbers, passwords, or similar secret access information for their credit card, bank, or other financial accounts.

If you receive an unsolicited email claiming to be from the IRS, forward this message to *phishing@irs.gov*. You may also report misuse of the IRS name, logo, or other IRS property to the Treasury Inspector General for Tax Administration (TIGTA) at 1-800-366-4484. You can forward suspicious emails to the Federal Trade Commission at *spam@uce.gov* or report them at *www.ftc.gov/complaint*. You can contact the FTC at *www.ftc.gov/idtheft* or 877-IDTHEFT (877-438-4338). If you have been the victim of identity theft, see *www.IdentityTheft.gov* and Pub. 5027.

Visit *www.irs.gov/IdentityTheft* to learn more about identity theft and how to reduce your risk.

Privacy Act Notice

Section 6109 of the Internal Revenue Code requires you to provide your correct TIN to persons (including federal agencies) who are required to file information returns with the IRS to report interest, dividends, or certain other income paid to you; mortgage interest you paid; the acquisition or abandonment of secured property; the cancellation of debt; or contributions you made to an IRA, Archer MSA, or HSA. The person collecting this form uses the information on the form to file information returns with the IRS, reporting the above information. Routine uses of this information include giving it to the Department of Justice for civil and criminal litigation and to cities, states, the District of Columbia, and U.S. commonwealths and possessions for use in administering their laws. The information also may be disclosed to other countries under a treaty, to federal and state agencies to enforce civil and criminal laws, or to federal law enforcement and intelligence agencies to combat terrorism. You must provide your TIN whether or not you are required to file a tax return. Under section 3406, payers must generally withhold a percentage of taxable interest, dividend, and certain other payments to a payee who does not give a TIN to the payer. Certain penalties may also apply for providing false or fraudulent information.

Ron DeSantis, Governor

Melanie S. Griffin, Secretary

Florida dbpr

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

CONSTRUCTION INDUSTRY LICENSING BOARD

THE GENERAL CONTRACTOR HEREIN IS CERTIFIED UNDER THE
PROVISIONS OF CHAPTER 489, FLORIDA STATUTES

WARD, NIKOLE SHARI

THOMAS MAY CONSTRUCTION COMPANY
310 COLLEGE DRIVE
ORANGE PARK FL 32065

LICENSE NUMBER: CGC1530108

EXPIRATION DATE: AUGUST 31, 2024

Always verify licenses online at MyFloridaLicense.com

Do not alter this document in any form.

This is your license. It is unlawful for anyone other than the licensee to use this document.

Ron DeSantis, Governor

Melanie S. Griffin, Secretary

Florida dbpr

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

CONSTRUCTION INDUSTRY LICENSING BOARD

THE GENERAL CONTRACTOR HEREIN IS CERTIFIED UNDER THE
PROVISIONS OF CHAPTER 489, FLORIDA STATUTES

MAY, THOMAS A

THOMAS MAY CONSTRUCTION CO
310 COLLEGE DR
ORANGE PARK FL 32065-7653

LICENSE NUMBER: CGC027983

EXPIRATION DATE: AUGUST 31, 2024

Always verify licenses online at MyFloridaLicense.com

Do not alter this document in any form.

This is your license. It is unlawful for anyone other than the licensee to use this document.

Ron DeSantis, Governor

Melanie S. Griffin, Secretary

Florida dbpr

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

CONSTRUCTION INDUSTRY LICENSING BOARD

THE ROOFING CONTRACTOR HEREIN IS CERTIFIED UNDER THE
PROVISIONS OF CHAPTER 489, FLORIDA STATUTES

WARD, NIKOLE SHARI

THOMAS MAY CONSTRUCTION COMPANY
310 COLLEGE RD
ORANGE PARK FL 32065

LICENSE NUMBER: CCC1333915

EXPIRATION DATE: AUGUST 31, 2024

Always verify licenses online at MyFloridaLicense.com

Do not alter this document in any form.

This is your license. It is unlawful for anyone other than the licensee to use this document.

Ron DeSantis, Governor

Melanie S. Griffin, Secretary

Florida dbpr

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

CONSTRUCTION INDUSTRY LICENSING BOARD

THE UNDERGROUND UTILITY & EXCAVATION CO HEREIN IS CERTIFIED UNDER THE PROVISIONS OF CHAPTER 489, FLORIDA STATUTES

MAY, THOMAS A

THOMAS MAY CONSTRUCTION COMPANY
310 COLLEGE DRIVE
ORANGE PARK FL 32065

LICENSE NUMBER: CUC057064

EXPIRATION DATE: AUGUST 31, 2024

Always verify licenses online at MyFloridaLicense.com

Do not alter this document in any form.

This is your license. It is unlawful for anyone other than the licensee to use this document.

39

Ron DeSantis, Governor

Melanie S. Griffin, Secretary

Florida dbpr

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

CONSTRUCTION INDUSTRY LICENSING BOARD

THE UNDERGROUND UTILITY & EXCAVATION CO HEREIN IS CERTIFIED UNDER THE PROVISIONS OF CHAPTER 489, FLORIDA STATUTES

WARD, NIKOLE SHARI

THOMAS MAY CONSTRUCTION COMPANY
310 COLLEGE DR
ORANGE PARK FL 32065

LICENSE NUMBER: CUC1225944

EXPIRATION DATE: AUGUST 31, 2024

Always verify licenses online at MyFloridaLicense.com

Do not alter this document in any form.

This is your license. It is unlawful for anyone other than the licensee to use this document.

ACORD

THOMMAY-01

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 3/1/2023

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME: Debbie Cassady, CIC, AAI
Insuramerica of Florida, Inc. 4348 Southpoint Blvd Ste 200 Jacksonville, FL 32216	PHONE (A/C, No, Ext): (904) 596-0346 FAX (A/C, No): (904) 296-1888 E-MAIL ADDRESS: dcassady@insuramerica-fl.com

INSURED	INSURER(S) AFFORDING COVERAGE	NAIC #
Thomas May Construction Company 310 College Drive Orange Park, FL 32065	INSURER A : Upland Specialty Insurance Company	16988
	INSURER B : Auto-Owners Insurance Company	18988
	INSURER C : Ategrity Specialty Insurance Company	16427
	INSURER D : Builders Mutual Insurance Company	10844
	INSURER E : Navigators Insurance Company	42307
	INSURER F : American Zurich Insurance Company	40142

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY CLAIMS-MADE [ ] OCCUR [X] GEN'L AGGREGATE LIMIT APPLIES PER: POLICY [X] PRO-JECT [ ] LOC OTHER:	X		USPCL0044123	3/1/2023	3/1/2024	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG Empl. Benefits	$ 1,000,000 $ 100,000 $ Excluded $ 1,000,000 $ 2,000,000 $ 2,000,000 $ 1,000,000
B	AUTOMOBILE LIABILITY X ANY AUTO OWNED AUTOS ONLY [ ] SCHEDULED AUTOS HIRED AUTOS ONLY [ ] NON-OWNED AUTOS ONLY			5219252800	3/1/2023	3/1/2024	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$ 1,000,000 $ $ $
C	X UMBRELLA LIAB [X] OCCUR EXCESS LIAB [ ] CLAIMS-MADE DED [X] RETENTION $ 10,000			01-P-XL-P70002546-0	3/1/2023	3/1/2024	EACH OCCURRENCE AGGREGATE	$ 5,000,000 $ 5,000,000
D	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) Y/N [N] If yes, describe under DESCRIPTION OF OPERATIONS below	N / A		WCP106339103	3/1/2023	3/1/2024	X PER STATUTE [ ] OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	$ 1,000,000 $ 1,000,000 $ 1,000,000
E	Pollution Liability			SF23ECPU00143NC	3/1/2023	3/1/2024		1,000,000
F				EC13462660	3/1/2023	3/1/2024	Leased/Rented	100,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
The General Liability policy includes blanket additional insured, including completed operations, primary/non-contributory and waiver of subrogation endorsements, all when required by written contract or agreement. The Automobile Liability policy includes blanket additional insured, waiver of subrogation endorsements, all when required by written contract or agreement. The Workers Compensation policy includes attached blanket waiver of subrogation, when required by written contract or agreement.

CERTIFICATE HOLDER

City of Green Cove Springs
321 Walnut Street
Green Cove Springs, FL 32043

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

© 1988-2015 ACORD CORPORATION. All rights reserved.
The ACORD name and logo are registered marks of ACORD

POLICY NUMBER: USPCL8008422

COMMERCIAL GENERAL LIABILITY
CG 20 10 12 19

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED – OWNERS, LESSEES OR CONTRACTORS – SCHEDULED PERSON OR ORGANIZATION

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

SCHEDULE

Name Of Additional Insured Person(s) Or Organization(s)	Location(s) Of Covered Operations
Any person or organization when you have agreed in a written and executed contract, prior to an "occurrence", that such person or organization be added as an additional insured on your policy.	All locations and completed operations for which you have agreed in a written and executed contract prior to an "occurrence."
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.	

A. Section II – Who Is An Insured is amended to include as an additional insured the person(s) or organization(s) shown in the Schedule, but only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part, by:

1. Your acts or omissions; or
2. The acts or omissions of those acting on your behalf;

in the performance of your ongoing operations for the additional insured(s) at the location(s) designated above.

However:

1. The insurance afforded to such additional insured only applies to the extent permitted by law; and
2. If coverage provided to the additional insured is required by a contract or agreement, the insurance afforded to such additional insured will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

B. With respect to the insurance afforded to these additional insureds, the following additional exclusions apply:

This insurance does not apply to "bodily injury" or "property damage" occurring after:

1. All work, including materials, parts or equipment furnished in connection with such work, on the project (other than service, maintenance or repairs) to be performed by or on behalf of the additional insured(s) at the location of the covered operations has been completed; or
2. That portion of "your work" out of which the injury or damage arises has been put to its intended use by any person or organization other than another contractor or subcontractor engaged in performing operations for a principal as a part of the same project.

© Insurance Services Office, Inc., 2018

C. With respect to the insurance afforded to these additional insureds, the following is added to **Section III – Limits Of Insurance:**

If coverage provided to the additional insured is required by a contract or agreement, the most we will pay on behalf of the additional insured is the amount of insurance:

1. Required by the contract or agreement; or

2. Available under the applicable limits of insurance;

whichever is less.

This endorsement shall not increase the applicable limits of insurance.

© Insurance Services Office, Inc., 2018

POLICY NUMBER: USPCL8008422

COMMERCIAL GENERAL LIABILITY
CG 20 37 12 19

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED – OWNERS, LESSEES OR CONTRACTORS – COMPLETED OPERATIONS

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART
PRODUCTS/COMPLETED OPERATIONS LIABILITY COVERAGE PART

SCHEDULE

Name Of Additional Insured Person(s) Or Organization(s)	Location And Description Of Completed Operations
Any person or organization when you have agreed in a written and executed contract, prior to an "occurrence", that such person or organization be added as an additional insured on your policy.	All locations and completed operations for which you have agreed in a written and executed contract prior to an "occurrence."
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.	

A. Section II – Who Is An Insured is amended to include as an additional insured the person(s) or organization(s) shown in the Schedule, but only with respect to liability for "bodily injury" or "property damage" caused, in whole or in part, by "your work" at the location designated and described in the Schedule of this endorsement performed for that additional insured and included in the "products-completed operations hazard".

However:

1. The insurance afforded to such additional insured only applies to the extent permitted by law; and
2. If coverage provided to the additional insured is required by a contract or agreement, the insurance afforded to such additional insured will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

B. With respect to the insurance afforded to these additional insureds, the following is added to **Section III – Limits Of Insurance:**

If coverage provided to the additional insured is required by a contract or agreement, the most we will pay on behalf of the additional insured is the amount of insurance:

1. Required by the contract or agreement; or
2. Available under the applicable limits of insurance;

whichever is less.

This endorsement shall not increase the applicable limits of insurance.

© Insurance Services Office, Inc., 2018

POLICY NUMBER: USPCL8008422

COMMERCIAL GENERAL LIABILITY
CG 20 28 04 13

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED – LESSOR OF LEASED EQUIPMENT

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

SCHEDULE

Name Of Additional Insured Person(s) Or Organization(s):
Any person or organization you have agreed in a written and executed contract, prior to an "occurrence", that such person or organization be added as an additional insured on your policy.
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.

A. Section II – Who Is An Insured is amended to include as an additional insured the person(s) or organization(s) shown in the Schedule, but only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part, by your maintenance, operation or use of equipment leased to you by such person(s) or organization(s).

However:

1. The insurance afforded to such additional insured only applies to the extent permitted by law; and
2. If coverage provided to the additional insured is required by a contract or agreement, the insurance afforded to such additional insured will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

B. With respect to the insurance afforded to these additional insureds, this insurance does not apply to any "occurrence" which takes place after the equipment lease expires.

C. With respect to the insurance afforded to these additional insureds, the following is added to **Section III – Limits Of Insurance:**

If coverage provided to the additional insured is required by a contract or agreement, the most we will pay on behalf of the additional insured is the amount of insurance:

1. Required by the contract or agreement; or
2. Available under the applicable Limits of Insurance shown in the Declarations;

whichever is less.

This endorsement shall not increase the applicable Limits of Insurance shown in the Declarations.

© Insurance Services Office, Inc., 2012

PRIMARY AND NONCONTRIBUTORY – OTHER INSURANCE CONDITION

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART
LIQUOR LIABILITY COVERAGE PART
PRODUCTS/COMPLETED OPERATIONS LIABILITY COVERAGE PART

The following is added to the **Other Insurance** Condition and supersedes any provision to the contrary:

Primary And Noncontributory Insurance

This insurance is primary to and will not seek contribution from any other Commercial General Liability insurance available to an additional insured under your policy provided that:

(1) The additional insured is a Named Insured under such other Commercial General Liability insurance; and

(2) You have agreed in writing in a contract or agreement that this insurance would be primary and would not seek contribution from any other Commercial General Liability insurance available to the additional insured.

POLICY NUMBER: USPCL8008422

COMMERCIAL GENERAL LIABILITY
CG 24 04 12 19

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

WAIVER OF TRANSFER OF RIGHTS OF RECOVERY AGAINST OTHERS TO US (WAIVER OF SUBROGATION)

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART
ELECTRONIC DATA LIABILITY COVERAGE PART
LIQUOR LIABILITY COVERAGE PART
POLLUTION LIABILITY COVERAGE PART DESIGNATED SITES
POLLUTION LIABILITY LIMITED COVERAGE PART DESIGNATED SITES
PRODUCTS/COMPLETED OPERATIONS LIABILITY COVERAGE PART
RAILROAD PROTECTIVE LIABILITY COVERAGE PART
UNDERGROUND STORAGE TANK POLICY DESIGNATED TANKS

SCHEDULE

Name Of Person(s) Or Organization(s):
Any person or organization you have agreed in a written and executed contract, prior to an "occurrence", that you would provide such person or organization a waiver of transfer of rights of recovery against others to us on your policy.
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.

The following is added to Paragraph **8. Transfer Of Rights Of Recovery Against Others To Us** of **Section IV – Conditions:**

We waive any right of recovery against the person(s) or organization(s) shown in the Schedule above because of payments we make under this Coverage Part. Such waiver by us applies only to the extent that the insured has waived its right of recovery against such person(s) or organization(s) prior to loss. This endorsement applies only to the person(s) or organization(s) shown in the Schedule above.

© Insurance Services Office, Inc., 2018

Policy Number: USPCL8008422

CL 00 07 07 21

DESIGNATED CONSTRUCTION PROJECT(S) GENERAL AGGREGATE LIMIT – SUBJECT TO A MAXIMUM AGGREGATE

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

SCHEDULE

Designated Construction Project(s): All construction projects for which you have agreed in writing in a contract, prior to an occurrence that causes "bodily injury", "property damage" or "personal and advertising injury", to provide project specific limits.
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.

A. For all sums which the insured becomes legally obligated to pay as damages caused by "occurrences" under Section **I** – Coverage **A**, and for all medical expenses caused by accidents under Section **I** – Coverage **C**, which can be attributed only to ongoing operations at a single designated construction project shown in the Schedule above:

1. A separate Designated Construction Project General Aggregate Limit applies to each designated construction project, and that limit is equal to the amount of the General Aggregate Limit shown in the Declarations.
2. The Designated Construction Project General Aggregate Limit is the most we will pay for the sum of all damages under Coverage **A**, except damages because of "bodily injury" or "property damage" included in the "products-completed operations hazard", and for medical expenses under Coverage **C** regardless of the number of:
   a. Insureds;
   b. Claims made or "suits" brought; or
   c. Persons or organizations making claims or bringing "suits".
3. Any payments made under Coverage **A** for damages or under Coverage **C** for medical expenses shall reduce the Designated Construction Project General Aggregate Limit for that designated construction project. Such payments shall not reduce the General Aggregate Limit shown in the Declarations nor shall they reduce any other Designated Construction Project General Aggregate Limit for any other designated construction project shown in the Schedule above.
4. The limits shown in the Declarations for Each Occurrence, Damage To Premises Rented To You and Medical Expense continue to apply. However, instead of being subject to the General Aggregate Limit shown in the Declarations, such limits will be subject to the applicable Designated Construction Project General Aggregate Limit.
5. All payments under this endorsement are subject to a Maximum Aggregate Limit of:

   $5,000,000

   The Maximum Aggregate Limit is the most we will pay under this endorsement regardless of the number of Designated Construction Project General Aggregate Limits.

B. For all sums which the insured becomes legally obligated to pay as damages caused by "occurrences" under Section **I** – Coverage **A**, and for all medical expenses caused by accidents under Section **I** – Coverage **C**, which cannot be attributed only to ongoing operations at a single designated construction project shown in the Schedule above:

1. Any payments made under Coverage **A** for damages or under Coverage **C** for medical expenses shall reduce the amount available under the General Aggregate Limit or the Products-completed Operations Aggregate Limit, whichever is applicable; and
2. Such payments shall not reduce any Designated Construction Project General Aggregate Limit.

C. When coverage for liability arising out of the "products-completed operations hazard" is provided, any payments for damages because of "bodily injury" or "property damage" included in the "products-completed operations hazard" will reduce the Products-completed Operations Aggregate Limit, and not reduce the General Aggregate Limit nor the Designated Construction Project General Aggregate Limit.

D. If the applicable designated construction project has been abandoned, delayed, or abandoned and then restarted, or if the authorized contracting parties deviate from plans, blueprints, designs, specifications or timetables, the project will still be deemed to be the same construction project.

E. The provisions of Section **III** – Limits Of Insurance not otherwise modified by this endorsement shall continue to apply as stipulated.

58504 (1-15)

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

DESIGNATED INSURED FOR COVERED AUTOS LIABILITY COVERAGE - BLANKET COVERAGE

This endorsement modifies insurance provided under the following:

COMMERCIAL AUTO POLICY

SECTION II - COVERED AUTOS LIABILITY COVERAGE is amended. The following provision is added. Any person or organization is an **insured** for Covered Autos Liability Coverage, but only to the extent that person or organization qualifies as an **insured** under **SECTION II - COVERED AUTOS LIABILITY COVERAGE, A. COVERAGE, 1. Who Is An Insured**.

All other policy terms and conditions apply.

58583 (1-15)

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

WAIVER OF OUR RIGHT TO RECOVER PAYMENTS (WAIVER OF SUBROGATION) - BLANKET

This endorsement modifies insurance provided under the following:

COMMERCIAL AUTO POLICY

SECTION V CONDITIONS, A. LOSS CONDITIONS is amended. **5. Our Right to Recover Payments** is deleted and replaced by the following condition.

5. Our Right to Recover Payments

If **we** make a payment under this policy and the person to or for whom payment is made has a right to recover damages from another, **we** will be entitled to that right. That person shall do everything necessary to transfer that right to **us** and do nothing to prejudice it.

However, **we** waive **our** right to recover payments made for **bodily injury** or **property damage**:

a. Covered by the policy; and

b. Arising out of the operation of **autos** covered by the policy, in accordance with the terms and conditions of a written contract between **you** and such person or entity

only if such rights have been waived by the written contract prior to the **accident** or **loss** which caused the **bodily injury** or **property damage**.

All other policy terms and conditions apply.

WAIVER OF OUR RIGHT TO RECOVER FROM OTHERS ENDORSEMENT

We have the right to recover our payments from anyone liable for an injury covered by this policy. We will not enforce our right against the person or organization named in the Schedule. (This agreement applies only to the extent that you perform work under a written contract that requires you to obtain this agreement from us.)

This agreement shall not operate directly or indirectly to benefit anyone not named in the Schedule.

Schedule

BLANKET WAIVER OF SUBROGATION
ANY PERSON OR ORGANIZATION THAT IS REQUIRED BY WRITTEN CONTRACT

This endorsement changes the policy to which it is attached and is effective on the date issued unless otherwise stated.
(The information below is required only when this endorsement is issued subsequent to preparation of the policy.)

Endorsement Effective Policy No. Endorsement No.

Insured Premium $

Insurance Company Countersigned by_____

WC 00 03 13
(Ed. 4-84)

Copyright 1983 National Council on Compensation Insurance.

POLICY NUMBER: USPCL8008422

COMMERCIAL GENERAL LIABILITY
CG 20 10 12 19

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED – OWNERS, LESSEES OR CONTRACTORS – SCHEDULED PERSON OR ORGANIZATION

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

SCHEDULE

Name Of Additional Insured Person(s) Or Organization(s)	Location(s) Of Covered Operations
Any person or organization when you have agreed in a written and executed contract, prior to an "occurrence", that such person or organization be added as an additional insured on your policy.	All locations and completed operations for which you have agreed in a written and executed contract prior to an "occurrence."
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.	

A. Section II – Who Is An Insured is amended to include as an additional insured the person(s) or organization(s) shown in the Schedule, but only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part, by:

1. Your acts or omissions; or
2. The acts or omissions of those acting on your behalf;

in the performance of your ongoing operations for the additional insured(s) at the location(s) designated above.

However:

1. The insurance afforded to such additional insured only applies to the extent permitted by law; and
2. If coverage provided to the additional insured is required by a contract or agreement, the insurance afforded to such additional insured will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

B. With respect to the insurance afforded to these additional insureds, the following additional exclusions apply:

This insurance does not apply to "bodily injury" or "property damage" occurring after:

1. All work, including materials, parts or equipment furnished in connection with such work, on the project (other than service, maintenance or repairs) to be performed by or on behalf of the additional insured(s) at the location of the covered operations has been completed; or
2. That portion of "your work" out of which the injury or damage arises has been put to its intended use by any person or organization other than another contractor or subcontractor engaged in performing operations for a principal as a part of the same project.

© Insurance Services Office, Inc., 2018

C. With respect to the insurance afforded to these additional insureds, the following is added to **Section III – Limits Of Insurance:**

If coverage provided to the additional insured is required by a contract or agreement, the most we will pay on behalf of the additional insured is the amount of insurance:

1. Required by the contract or agreement; or
2. Available under the applicable limits of insurance;

whichever is less.

This endorsement shall not increase the applicable limits of insurance.

© Insurance Services Office, Inc., 2018

POLICY NUMBER: USPCL8008422

COMMERCIAL GENERAL LIABILITY
CG 20 37 12 19

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED – OWNERS, LESSEES OR CONTRACTORS – COMPLETED OPERATIONS

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART
PRODUCTS/COMPLETED OPERATIONS LIABILITY COVERAGE PART

SCHEDULE

Name Of Additional Insured Person(s) Or Organization(s)	Location And Description Of Completed Operations
Any person or organization when you have agreed in a written and executed contract, prior to an "occurrence", that such person or organization be added as an additional insured on your policy.	All locations and completed operations for which you have agreed in a written and executed contract prior to an "occurrence."
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.	

A. **Section II – Who Is An Insured** is amended to include as an additional insured the person(s) or organization(s) shown in the Schedule, but only with respect to liability for "bodily injury" or "property damage" caused, in whole or in part, by "your work" at the location designated and described in the Schedule of this endorsement performed for that additional insured and included in the "products-completed operations hazard".

However:

1. The insurance afforded to such additional insured only applies to the extent permitted by law; and
2. If coverage provided to the additional insured is required by a contract or agreement, the insurance afforded to such additional insured will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

B. With respect to the insurance afforded to these additional insureds, the following is added to **Section III – Limits Of Insurance:**

If coverage provided to the additional insured is required by a contract or agreement, the most we will pay on behalf of the additional insured is the amount of insurance:

1. Required by the contract or agreement; or
2. Available under the applicable limits of insurance;

whichever is less.

This endorsement shall not increase the applicable limits of insurance.

© Insurance Services Office, Inc., 2018

PRIMARY AND NONCONTRIBUTORY – OTHER INSURANCE CONDITION

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART
LIQUOR LIABILITY COVERAGE PART
PRODUCTS/COMPLETED OPERATIONS LIABILITY COVERAGE PART

The following is added to the **Other Insurance** Condition and supersedes any provision to the contrary:

Primary And Noncontributory Insurance

This insurance is primary to and will not seek contribution from any other Commercial General Liability insurance available to an additional insured under your policy provided that:

(1) The additional insured is a Named Insured under such other Commercial General Liability insurance; and

(2) You have agreed in writing in a contract or agreement that this insurance would be primary and would not seek contribution from any other Commercial General Liability insurance available to the additional insured.

POLICY NUMBER: USPCL8008422

COMMERCIAL GENERAL LIABILITY
CG 24 04 12 19

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

WAIVER OF TRANSFER OF RIGHTS OF RECOVERY AGAINST OTHERS TO US (WAIVER OF SUBROGATION)

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART
ELECTRONIC DATA LIABILITY COVERAGE PART
LIQUOR LIABILITY COVERAGE PART
POLLUTION LIABILITY COVERAGE PART DESIGNATED SITES
POLLUTION LIABILITY LIMITED COVERAGE PART DESIGNATED SITES
PRODUCTS/COMPLETED OPERATIONS LIABILITY COVERAGE PART
RAILROAD PROTECTIVE LIABILITY COVERAGE PART
UNDERGROUND STORAGE TANK POLICY DESIGNATED TANKS

SCHEDULE

Name Of Person(s) Or Organization(s):
Any person or organization you have agreed in a written and executed contract, prior to an "occurrence", that you would provide such person or organization a waiver of transfer of rights of recovery against others to us on your policy.
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.

The following is added to Paragraph **8. Transfer Of Rights Of Recovery Against Others To Us** of **Section IV – Conditions:**

We waive any right of recovery against the person(s) or organization(s) shown in the Schedule above because of payments we make under this Coverage Part. Such waiver by us applies only to the extent that the insured has waived its right of recovery against such person(s) or organization(s) prior to loss. This endorsement applies only to the person(s) or organization(s) shown in the Schedule above.

© Insurance Services Office, Inc., 2018

EVIDENCE OF PROPERTY INSURANCE

DATE (MM/DD/YYYY) 7/6/2022

THIS EVIDENCE OF PROPERTY INSURANCE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE ADDITIONAL INTEREST NAMED BELOW. THIS EVIDENCE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS EVIDENCE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE ADDITIONAL INTEREST.

AGENCY Insuramerica of Florida, Inc. 4348 Southpoint Blvd Ste 200 Jacksonville, FL 32216	PHONE (A/C, No, Ext): (904) 332-8585 COMPANY American Zurich Insurance Co
FAX (A/C, No): (904) 296-1888 E-MAIL ADDRESS: info@insuramerica-fl.com	
CODE: SUB CODE: AGENCY CUSTOMER ID #: THOMMAY-01	
INSURED Thomas May Construction Company 310 College Drive Orange Park, FL 32065	LOAN NUMBER POLICY NUMBER EC78621153
EFFECTIVE DATE 6/1/2022 EXPIRATION DATE 6/1/2023 ☐ CONTINUED UNTIL TERMINATED IF CHECKED	
THIS REPLACES PRIOR EVIDENCE DATED:	

PROPERTY INFORMATION

LOCATION/DESCRIPTION
Reporting Form - See Special Condition Section Below

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS EVIDENCE OF PROPERTY INSURANCE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

COVERAGE INFORMATION

PERILS INSURED ☐ BASIC ☐ BROAD ☐ SPECIAL ☐

COVERAGE / PERILS / FORMS	AMOUNT OF INSURANCE	DEDUCTIBLE
Builders Risk - Any One structure - Joisted Masonry or Better	$10,000,000	
Builders Risk - Any One Structure - Frame	$5,000,000	
All Covered Property	$10,000,000	
Deductible - All Other Perils		5,000
Named Storm Deductible - Frame, Joisted Masonry & Non-Combustible - Percentage Deductible		3
Named Storm Deductible -Masonry Non-Combustible - Percentage Deductible		1
Named Storm - Frame, Joisted Masonry & Non-Combustible - Minimum Deductible		25,000
Named Storm - Non-Combustible & Masonry Non-Combustible - Minimum Deductible		10,000

REMARKS (Including Special Conditions)

Special Conditions:
3% Windstorm Deductible.

Description of Projects: New construction and non-structural renovations of various commercial projects including office buildings, hospitals, schools, shopping centers, condominiums, etc. Excludes coverage fro the existing structures & exclude the following types of projects: piers, wharfs, docks, tunnels, dams, oil & gas & power generation.

Description of Project Sites: Various locations in the State of Florida, Projects must be located within 1,000 feet of an operable fire hydrants and within five
SEE ATTACHED ACORD 101

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

ADDITIONAL INTEREST

NAME AND ADDRESS

For Informational Purposes Only

☐ ADDITIONAL INSURED ☐ LENDER'S LOSS PAYABLE ☐ LOSS PAYEE
☐ MORTGAGEE

LOAN #

AUTHORIZED REPRESENTATIVE

© 1993-2015 ACORD CORPORATION. All rights reserved.
The ACORD name and logo are registered marks of ACORD

STAFF REPORT

CITY OF GREEN COVE SPRINGS, FLORIDA

TO: City Council **MEETING DATE:** May 16, 2023

FROM: Michael Daniels, AICP, Planning & Zoning Director

SUBJECT: First Reading of Ordinance O-15-2023, the CRA Trust Fund. ***Michael Daniels***

BACKGROUND

After approval of a community redevelopment plan, there may be established for each community redevelopment agency created under s. 163.356 a redevelopment trust fund. Funds allocated to and deposited into this fund shall be used by the agency to finance or refinance any community redevelopment it undertakes pursuant to the approved community redevelopment plan. No community redevelopment agency may receive or spend any increment revenues pursuant to this section unless and until the governing body has, by ordinance, created the trust fund and provided for the funding of the redevelopment trust fund until the time certain set forth in the community redevelopment plan as required by s. 163.362(10). Such ordinance may be adopted only after the governing body has approved a community redevelopment plan.

FISCAL IMPACT

An estimated $10 to $36 Million could be generated within the proposed Community Redevelopment Area.

RECOMMENDATION

Staff recommends approval of Ordinance O-15-2023, CRA Trust Fund

RECOMMENDED MOTION:

Motion to approve first reading of Ordinance O-15-2023, CRA Trust Fund for form and legality

ORDINANCE NO. O-15-2023

AN ORDINANCE OF THE CITY OF GREEN COVE SPRINGS, FLORIDA, ESTABLISHING A REDEVELOPMENT TRUST FUND; PROVIDING FOR THE FUNDING OF A REDEVELOPMENT TRUST FUND FOR COMMUNITY REDEVELOPMENT WITHIN THE GREEN COVE SPRINGS COMMUNITY REDEVELOPMENT AREA; PROVIDING FOR ADMINISTRATION OF THE REDEVELOPMENT TRUST FUND; DETERMINING THE INCREMENT REVENUE TO BE DEPOSITED IN THE REDEVELOPMENT TRUST FUND; ESTABLISHING THE BASE YEAR FOR DETERMINING ASSESSED VALUES OF PROPERTY IN THE COMMUNITY REDEVELOPMENT AREA FOR INCREMENT REVENUE PURPOSES; PROVIDING FOR THE ANNUAL APPROPRIATIONS OF THE INCREMENT REVENUE BY TAXING AUTHORITIES IN THE COMMUNITY REDEVELOPMENT AREA; APPOINTING THE GOVERNING BODY OF THE GREEN COVE SPRINGS COMMUNITY REDEVELOPMENT AGENCY AS THE TRUSTEE OF THE REDEVELOPMENT TRUST FUND; AND PROVIDING FOR CONFLICTS, SEVERABILITY AND SETTING AN EFFECTIVE DATE.

WHEREAS, the Community Redevelopment Act of 1969 as codified in Part III of Chapter 163, Florida Statutes, the Redevelopment Act ("Act"), empowers counties and municipalities to undertake community redevelopment in order to eliminate, remedy or prevent slums and blighted areas and to provide affordable housing; and

WHEREAS, Clay County, Florida ("County") has adopted a home rule charter and it is necessary for the City Council of the City of Green Cove Springs ("City") to obtain a delegation of the powers conferred upon the County by the Redevelopment Act, so that the City may exercise the authority and powers conferred by such act within the community redevelopment area ("Redevelopment Area") in the City; and

WHEREAS, on April 19, 2022, the City adopted Resolution No. R-03-2022 by which the City (1) ascertained, determined and declared a Finding of Necessity as required by law and determined that the Redevelopment Area (as defined therein) constituted a "blighted area" as defined in Section 163.340(8), Florida Statutes; (2) expressed the desire for the creation of a community redevelopment agency ("Agency"), pursuant to Section 163.356, Florida Statutes to promote and encourage rehabilitation, conservation and redevelopment within the Redevelopment Area; and (3) either in the Resolution or otherwise sought approval from Clay County that the Redevelopment Area meets the criteria described in Section 163.340(8) and 163.355, Florida Statutes and requested delegation of authority from the County to create a community redevelopment agency, adopt a community redevelopment plan and establish a redevelopment trust fund; and

WHEREAS, on August 9, 2022, the County found and determined that the establishment of a community redevelopment agency and the establishment of the Redevelopment Area would serve a public purpose and would be consistent with the goals, objectives and policies of the Clay County Comprehensive Plan, and would otherwise be consistent with the controlling provisions of State law. Pursuant to Section 163.410, Florida Statutes, the County adopted Resolution No. 2021-2022-56 which delegated to the City the limited power to the create a community redevelopment agency and to prepare and adopt a redevelopment plan to be reviewed and approved by the City and the County; and

WHEREAS, on November 29, 2022, the City Planning and Zoning Commission, as the Local Planning Agency, unanimously approved a redevelopment plan; and

WHEREAS, on January 12, 2023, the Community Redevelopment Agency approved the redevelopment plan dated January 11, 2023 and attached hereto as Exhibit A (the

"Redevelopment Plan") and recommended the Redevelopment Plan be approved by the City Council; and

WHEREAS, on April 25, 2023 Clay County adopted Resolution 2022/2023-39 approving the Redevelopment Plan and, an Interlocal Agreement, attached hereto as Exhibit B, by and among the County, the City and the Agency, which sets the rates for the increment ad valorem contributions. With this Resolution, the County has now found and determined that the establishment of the Redevelopment Area will serve a public purpose and is consistent with the goals, objectives and policies of the Clay County Comprehensive Plan, and will otherwise be consistent with the controlling provisions of State law. Pursuant to Section 163.410, Florida Statutes, the County has delegated to the City, as set forth in Section 3 of the Interlocal Agreement, such authority, rights, and responsibilities conferred upon the County pursuant to Part III, Chapter 163, Florida Statutes to adopt the Redevelopment Plan and establish a redevelopment trust fund, with certain limitations thereon; and

WHEREAS, on May 16, 2023, following a noticed public hearing, the City adopted the Redevelopment Plan and approved the Interlocal Agreement pursuant to Resolution No. R-06-2023; and

WHEREAS, in order to plan and implement the Redevelopment Plan within the Redevelopment Area, it is necessary that a redevelopment trust fund be established and created for said area as provided in Section 163.387, Florida Statutes; and

WHEREAS, notice of the City Council's intention to create a redevelopment trust fund has been published in a local newspaper of general circulation and mailed to all "taxing authorities" in accordance with Section 163.346, Florida Statutes; and

WHEREAS, this ordinance was read by title at two public meetings held on May 16,

2023 and on June 6, 2023 in front of City Council, and additionally, a properly noticed public hearing regarding this Ordinance was held on June 6, 2023.

NOW, THEREFORE, BE IT ENACTED BY THE CITY COUNCIL OF THE CITY OF GREEN COVE SPRINGS, FLORIDA, as follows:

Section 1. The foregoing recitals are incorporated as part of this Ordinance by reference.

Section 2. The City Council has the authority to adopt this Ordinance pursuant to Article VII of the Constitution of the State of Florida and Chapters 163 and 166, Florida Statutes, and the delegation of authority granted by Clay County pursuant to Resolution 2022/2023-39.

Section 3. There is hereby established and created, in accordance with the provisions of the Act and the Interlocal Agreement, a Community Redevelopment Trust Fund ("Trust Fund") for the Redevelopment Area, which Trust Fund shall be utilized and expended for the purposes of and in accordance with the Redevelopment Plan, including any amendments or modifications thereto, including any "community redevelopment" as that term is defined in Section 163.340(9), Florida Statutes, under the Plan and as consistent with the Interlocal Agreement.

Section 4. The monies to be allocated to and deposited into the Trust Fund shall be used to finance "community redevelopment" in accordance with the Redevelopment Plan within the Redevelopment Area according to increment revenues attributed to the Redevelopment Area, which shall be appropriated by the Agency. The Agency shall utilize the funds and revenues paid into and earned by the Trust Fund for community redevelopment purposes as provided in the Redevelopment Plan and as permitted by law and the Interlocal Agreement. The Trust Fund shall exist for the duration of the "community redevelopment" undertaken by the Agency pursuant to the Redevelopment Plan to the extent permitted by the Act and the Interlocal Agreement as stated in the Redevelopment Plan. Monies shall be held in the Trust Fund by the City, for and on behalf of the Agency, and disbursed from the Trust Fund as provided by the Agency.

Section 5. There shall be paid into the Trust Fund each year beginning in October, 2024 but no later than January 1, 2025, and annually thereafter through and including October, 2053 by each of the "taxing authorities" (City of Green Cove Springs and Clay County), as that term is defined in Section 163.340(24) Florida Statutes levying the amounts of ad valorem taxes in the Redevelopment Area as calculated in accordance with Section 7 of this Ordinance, the Interlocal Agreement and Section 163.387(1)(a) of the Act, based on the base year established in Section 6 of this Ordinance (such annual sum being hereinafter referred to as the "tax increment").

Section 6. The most recent assessment roll used in connection with the taxation of

property prior to the effective date of this Ordinance shall be the preliminary assessment roll of taxable real property in Clay County, Florida, prepared by the Property Appraiser of Clay County, Florida, and certified pursuant to Section 193.122, Florida Statutes reflecting valuation of real property for purposes of ad valorem taxation as of January 1, 2023("base year value") and all deposits into the Trust Fund shall be in the amount of tax increment calculated as provided in Section 7 hereof based upon the increases in valuation of taxable real property in the Area, prepared by the Property Appraiser of Clay County, Florida, filed with the Department of Revenue pursuant to Section 193.1142, Florida Statutes.

Section 7. The annual funding of the Trust Fund shall be in an amount not less than that tax increment from the City and County in connection with the undertaking and carrying out of community redevelopment. Such increment shall be determined annually as set forth below:

(a) City of Green Cove Springs shall appropriate and deposit ninety-five percent (95%) of an amount based on the calculation of increment using the City's millage in the applicable year into the Trust Fund in accordance with the Act.

(b) Clay County shall appropriate and deposit ninety percent (90%) of the tax increment funds as defined in Section 4.B.(3) of the Interlocal Agreement and derived from the Redevelopment Area in the applicable year into the Trust Fund for years one through twenty (through and including October, 2043). For years twenty-one through thirty (October, 2044 through and including October, 2053), the County shall appropriate and deposit eighty percent (80%) of the tax increment funds as defined in the Interlocal Agreement from the Redevelopment Area in the applicable year into the Trust Fund.

Section 8. The taxing authorities shall annually appropriate to and cause to be deposited in the Trust Fund the tax increment revenue determined pursuant to the Act and Section 7 of this Ordinance at the beginning of each fiscal year thereof as provided in the Act. The obligation of each taxing authority to annually appropriate the tax increment for deposit in the Trust Fund shall commence immediately upon the effective date of this Ordinance and continue to the extent permitted by the Act and the Interlocal Agreement so long as any indebtedness pledging "tax increment revenue" is to be paid and so long as the Redevelopment Plan is in effect.

Section 9. The Trust Fund shall be maintained as a separate trust fund by the City so that the Trust Fund may be promptly and effectively administered and utilized expeditiously and without undue delay for its statutory purpose pursuant to the Redevelopment Plan.

Section 10. The governing body of the Agency shall be the trustee of the Trust Fund and shall be responsible for the receipt, custody, disbursement, accountability, management, investment and proper application of all monies paid into the Trust Fund.

Section 11. The Agency shall provide for an audit of the Trust Fund each fiscal year

and a report of such audit to be prepared by an independent certified public accountant or firm in accordance with the Act. Such report shall describe the amount and source of deposits into, and the amount and purpose of withdrawals from, the Trust Fund during such fiscal year and the amount of principal and interest paid during such year on any indebtedness to which increment revenues are pledged and the remaining amount of the indebtedness. The Agency shall provide by registered mail a copy of the report to each applicable taxing authority. The Agency shall also comply with all applicable provisions of Chapter 189.016, Florida Statutes.

Section 12. The issuance of revenue bonds, notes or other obligations shall not create a pledge of the faith and credit of the County or City, but shall be payable solely from the increment revenues deposited in the Trust Fund together with any other non ad valorem revenues of the City or Agency as provided in the Plan.

Section 13. The City Clerk of the City is hereby authorized and directed to send a certified copy of this Ordinance to each of the taxing authorities and to the Property Appraiser of Clay County, Florida.

Section 14. Conflict.

(a) All Ordinances or parts of Ordinances insofar as they are inconsistent or in conflict with the provisions of this Ordinance are hereby repealed to the extent of any conflict.

(b) In the event of conflict between this Ordinance, the Act or the Interlocal Agreement, the provisions of the Interlocal Agreement shall control.

Section 15. Severability. If any provision of this Ordinance or the application thereof to any person or circumstance is held invalid, such invalidity shall not affect any other provision or application of this Ordinance which can be given effect without the invalid provision or application.

Section 16. Effective Date. This Ordinance shall take effect immediately upon its final adoption by the City Council.

INTRODUCED AND APPROVED AS TO FORM ONLY ON THE FIRST READING BY THE CITY COUNCIL OF GREEN COVE SPRINGS, FLORIDA, ON THIS 16th DAY OF MAY, 2023.

CITY OF GREEN COVE SPRINGS, FLORIDA

By: _____

Constance W. Butler, Mayor

ATTEST: _____
Erin West, City Clerk

PASSED ON SECOND AND FINAL READING BY THE CITY COUNCIL OF GREEN COVE SPRINGS, FLORIDA, THIS 6th DAY OF JUNE, 2023.

CITY OF GREEN COVE SPRINGS, FLORIDA

By: _____
Constance W. Butler, Mayor

ATTEST: _____
Erin West, City Clerk

APPROVED AS TO FORM:

_____
L. J. Arnold III, City Attorney

STAFF REPORT

CITY OF GREEN COVE SPRINGS, FLORIDA

TO: City Council **MEETING DATE:** May 16, 2023

FROM: Michael Daniels, Planning and Zoning Director

SUBJECT: City Council approval of Nominees for Planning & Zoning Board Seats 1 and 2. ***Michael Daniels***

BACKGROUND

Board Members Brian Cook and Richard Hobbs have reached the term end date.

Council Member Gaw will appoint Seat 1 and Council Member Johnson will appoint Seat 2.

STAFF RECOMMENDATION

Approve the recommended nominees to the Planning and Zoning Board.

STAFF REPORT

CITY OF GREEN COVE SPRINGS, FLORIDA

TO: Regular Session **MEETING DATE:** May 16, 2023

FROM: Legal Department

SUBJECT: Approval of Resolution R-08-2023 as authorized by City Ordinance No. O-14-2023 authorizing conveyance of City owned real property

BACKGROUND

The City is exchanging real estate with D. R. Horton, Inc. or its assignee Rookery Investors, LLC, a Florida limited liability company to allow the Rookery Development to have better access to their 2,000 plus lot residential development recently annexed into the City. The size and value of the two parcels is similar, and there appears to be no downside to the City in this transaction.

FISCAL IMPACT

Very little impact to the City other than the positives of receiving a significant new tax base within the City and other contributions by the owners of the Rookery development to the City.

RECOMMENDATION

Motion to approve City Resolution R-08-2023 .

RESOLUTION NO. R-08 -2023

A RESOLUTION OF THE CITY COUNCIL OF GREEN COVE SPRINGS, FLORIDA, PROVIDING TERMS AND CONDITIONS FOR THE TRANSFER OF CITY OWNED REAL PROPERTY AS AUTHORIZED IN CITY ORDINANCE NO. O-14-2023; PROVIDING FOR REPEALER, CONFLICTS; AND SETTING AN EFFECTIVE DATE.

WHEREAS, the City Council has duly adopted City Ordinance No. O-14-2023 which authorized the City to convey property described in said ordinance to D. R. Horton, Inc. or its assignee, Rookery Investors, LLC, a Florida limited liability company in exchange for the transfer to the City of similar sized and valued property as shown on the attached special Warranty Deed labeled Exhibit "1".

NOW, THEREFORE, BE IT ENACTED BY THE CITY COUNCIL OF THE CITY OF GREEN COVE SPRINGS, FLORIDA, AS FOLLOWS:

SECTION 1. The Mayor and City Clerk are hereby authorized to execute and deliver to D. R. Horton, Inc. or Rookery Development, LLC a Special Warranty Deed conveying the real property described to City Ordinance No. O-14-2023.

SECTION 2. The delivery of the aforementioned deed shall be conditioned upon delivery to the City of Special Warranty Deed attached hereto as Exhibit "1".

SECTION 3. SEVERABILITY. The various parts, sections and clauses of this Resolution are hereby declared severable. If any part, sentence, paragraph, section or clause is adjudged unconstitutional or invalid by a court of competent jurisdiction, the remainder of the Resolution shall not be affected thereby.

SECTION 4. REPEALER. Any Resolutions or parts thereof in conflict with the provisions of this Resolution are hereby repealed

SECTION 8. EFFECTIVE DATE. This Resolution shall take effect immediately upon its passage and adoption.

DONE AND RESOLVED BY THE CITY COUNCIL OF THE CITY OF GREEN COVE SPRINGS, FLORIDA, IN REGULAR SESSION THIS 16TH DAY OF MAY, 2023.

CITY OF GREEN COVE SPRINGS, FLORIDA

_____

Constance W. Butler, Mayor

ATTEST:

_____

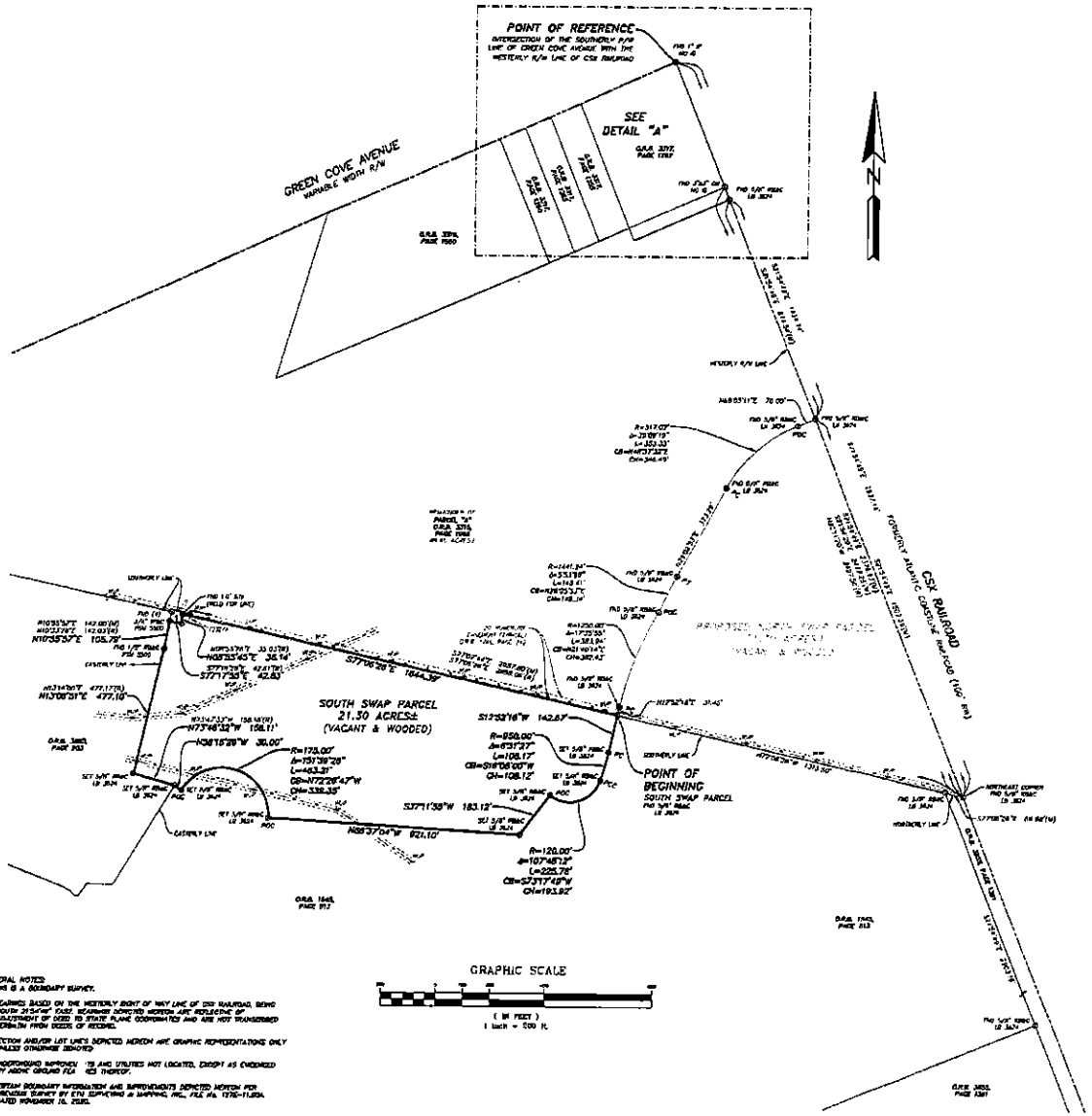
Erin West, City Clerk

APPROVED AS TO FORM ONLY:

_____

L. J. Arnold, III, City Attorney

EXHIBIT "1"



MAP SHOWING BOUNDARY SURVEY OF

A PORTION OF SECTION 38 OF THE GEORGE I.F. CLARKE GRANT, TOWNSHIP 6 SOUTH, RANGE 26 EAST, CLAY COUNTY, FLORIDA, BEING A PORTION OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 1545, PAGE 513, OF THE PUBLIC RECORDS OF SAID COUNTY,

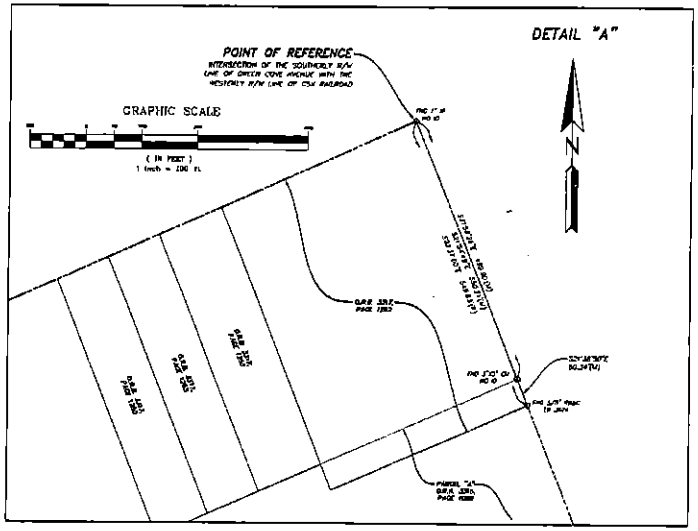
SURVEYOR'S DESCRIPTION

A portion of Section 38 of the George I.F. Clarke Grant, Township 6 South, Range 26 East, Clay County, Florida, being a portion of those lands described and recorded in Official Records Book 1545, page 513, of the Public Records of said county, being more particularly described as follows:

For a Point of Reference, commence at the intersection of the Southerly right of way line of Green Cove Avenue, a variable width right of way as presently established, with the Westerly right of way line of CSX Railroad, a 100 foot right of way as presently established; thence South 21°54'48" East, along said Westerly right of way line, 2927.14 feet to the Northeast corner of those lands described and recorded in Official Records Book 3053, page 1391, of said Public Records; thence North 77°16'26" West, departing said Westerly right of way line and along the Northerly line of last said lands and along the Southerly line of those lands described as Parcel "A" and recorded in Official Records Book 3316, page 1088, of said Public Records, 1313.50 feet to the Point of Beginning.

From said Point of Beginning, thence South 12°32'16" West, departing said Southerly line, 142.87 feet to the point of curvature of a curve concave Westerly having a radius of 950.00 feet; thence Southerly along the arc of said curve, through a central angle of 06°31'27", an arc length of 108.17 feet to a point of reverse curvature, said arc being subtended by a chord bearing and distance of South 16°08'00" West, 108.12 feet; thence Westerly along the arc of a curve concave Northerly having a radius of 120.00 feet, through a central angle of 107°48'12", an arc length of 225.78 feet to a point on said curve, said arc being subtended by a chord bearing and distance of South 73°17'48" West, 193.92 feet; thence South 27°11'39" West, along a non-tangent line, 183.12 feet; thence North 88°37'04" West, 827.10 feet to a point on a non-tangent curve concave Southerly having a radius of 175.00 feet; thence Westerly along the arc of said curve, through a central angle of 151°39'28", an arc length of 463.21 feet to a point on said curve, said arc being subtended by a chord bearing and distance of North 73°26'47" West, 338.35 feet; thence North 38°16'28" West, along a non-tangent line, 30.00 feet to a point lying on the Easterly line of those lands described and recorded in Official Records Book 3053, page 202, of said Public Records; thence Westerly and Northerly along said Easterly line the following 3 courses: Course 1, thence North 73°48'32" West, 156.11 feet; Course 2, thence North 13°08'01" East, 477.10 feet; Course 3, thence North 10°35'57" East, 105.79 feet to a point lying on said Southerly line of Parcel "A"; thence Westerly along said Southerly line the following 3 courses: Course 1, thence South 77°17'35" East, 42.83 feet; Course 2, thence North 08°35'43" East, 36.14 feet; Course 3 thence South 77°06'26" East, 1644.30 feet to the Point of Beginning.

Containing 21.30 acres, more or less.



GENERAL NOTES:
1) THIS IS A BOUNDARY SURVEY.
2) BEARINGS BASED ON THE WESTERLY RIGHT OF WAY LINE OF CSX RAILROAD, BEING SOUTH 21°54'48" EAST, MEASURED (DEPICTED HEREON ARE) REFLECTIVE OF ADJUSTMENT OF DEED TO STATE PLANE COORDINATES AND ARE NOT TRANSFERRED WITHIN OR FROM DEEDS OF RECORD.
3) SECTION AND/OR LOT LINES DEPICTED HEREON ARE GRAPHIC REPRESENTATIONS ONLY UNLESS OTHERWISE DENOTED.
4) UNDERGROUND IMPROVEMENTS AND UTILITIES NOT LOCATED, EXCEPT AS CHECKED BY ARCHIE GROUND FLA 1-(0) THEREOF.
5) CERTAIN BOUNDARY INFORMATION AND IMPROVEMENTS DEPICTED HEREON FOR PREVIOUS SURVEY BY ETM SURVEYING & MAPPING, INC., FILE No. 1270-11.00A, DATED NOVEMBER 10, 2020.

LEGEND
O.R.B. OFFICIAL RECORDS BOOK
R/W RIGHT OF WAY
POB POINT ON BASIS
POBEG POINT OF BEGINNING (SURVEYING)
POC POINT OF COMMENCE
Δ DELTA
A CENTRAL ANGLE
R RADIUS
CH CHORD BEARING
CB CHORD DISTANCE
C.R. COUNTY ROAD
F.D.O.T. FLORIDA DEPARTMENT OF TRANSPORTATION
S.R. STATE ROAD
S.R.D. STATE ROAD DEPARTMENT

ETM Surveying & Mapping, Inc.
VISION • EXPERIENCE • RESULTS
4477-A Old St. Augustine Road, Jacksonville, FL 32207
Tel: (904) 642-8550 Fax: (904) 642-4761
Certificate of Authorization No. LB 3624

THIS ITEM HAS BEEN ELECTRONICALLY SIGNED AND SEALED USING A DIGITAL SIGNATURE. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SHA-1 HAC MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

Dana Spradley
for Bob L.
Pearson P.S.M.

SCALE 1"=200'
DATE DECEMBER 1, 2021

BOB L. PEARSON
PROFESSIONAL SURVEYOR AND MAPPER
STATE of FLORIDA PSM No.

CAD FILE: ...
FIELD BOOK: 1191/26, 27, 28
DRAWN BY: JMD
CHECKED BY: BLP
COUNTY: CLAY
ORDER NO.: 20-270.04
FILE NO.: 12-11.00

VISION • EXPERIENCE • RESULTS

www.etminc.com
tel 904-642-8550 • fax 904-642-4165
14775 Old St. Augustine Road • Jacksonville, Florida 32258

February 14, 2022
Page 1 of 2

Work Order No. 20-355.07
File No. 127H-15.07A

Ayrshire South Swap Parcel

A portion of Section 38 of the George I.F. Clarke Grant, Township 6 South, Range 26 East, Clay County, Florida, being a portion of those lands described and recorded in Official Records Book 1545, page 513, of the Public Records of said county, being more particularly described as follows:

For a Point of Reference, commence at the intersection of the Southerly right of way line of Green Cove Avenue, a variable width right of way as presently established, with the Westerly right of way line of CSX Railroad, a 100 foot right of way as presently established; thence South 21°54'49" East, along said Westerly right of way line, 2927.14 feet to the Southeast corner of those lands described as Parcel "A" and recorded in Official Records Book 3316, page 1098, of said Public Records; thence North 77°06'26" West, departing said Westerly right of way line and along the Southerly line of said Parcel "A", 1313.50 feet to the Point of Beginning.

From said Point of Beginning, thence South 12°52'16" West, departing said Southerly line, 142.67 feet to the point of curvature of a curve concave Westerly having a radius of 950.00 feet; thence Southerly along the arc of said curve, through a central angle of 06°31'27", an arc length of 108.17 feet to a point of compound curvature, said arc being subtended by a chord bearing and distance of South 16°08'00" West, 108.12 feet; thence Southwesterly along the arc of a curve concave Northwesterly having a radius of 120.00 feet, through a central angle of 87°21'29", an arc length of 182.96 feet to a point on said curve, said arc being subtended by a chord bearing and distance of South 63°04'27" West, 165.75 feet; thence South 31°37'11" West, along a non-tangent line, 86.00 feet; thence South 60°40'11" East, 35.15 feet; thence South 27°02'28" West, 20.00 feet; thence South 49°36'09" West, 172.16 feet; thence North 77°07'44" West, 945.04 feet to a point on a non-tangent curve concave Southwesterly having a radius of 175.00 feet; thence Northwesterly along the arc of said curve, through a central angle of 67°09'24", an arc length of 205.12 feet to a point on said curve, said arc being subtended by a chord bearing and distance of North 51°03'13" West, 193.58 feet; thence North 05°22'04" East, along a non-tangent line, 24.76 feet to a point on a non-tangent curve concave Southerly having a radius of 198.38 feet; thence Westerly along the arc of said curve, through a central angle of 47°45'50", an arc length of 165.38 feet to a point on said curve, said arc being subtended by a chord bearing and distance of South 73°41'49" West, 160.63 feet; thence South 41°22'44" East, along a non-tangent line, 29.96 feet to a point on a non-tangent curve concave Southeasterly having a radius of 175.00 feet; thence Southwesterly along the arc of said curve, through a central angle of 16°53'45", an arc length of 51.61 feet to a point on said curve, said arc being subtended by a chord bearing and distance of South 40°10'24" West, 51.42 feet; thence North 58°16'29" West, along a non-tangent line, 30.00 feet to a point lying on the Westerly line of those lands described and recorded in Official Records Book 3863, page 203, of said Public Records; thence Westerly and Northerly along said Westerly

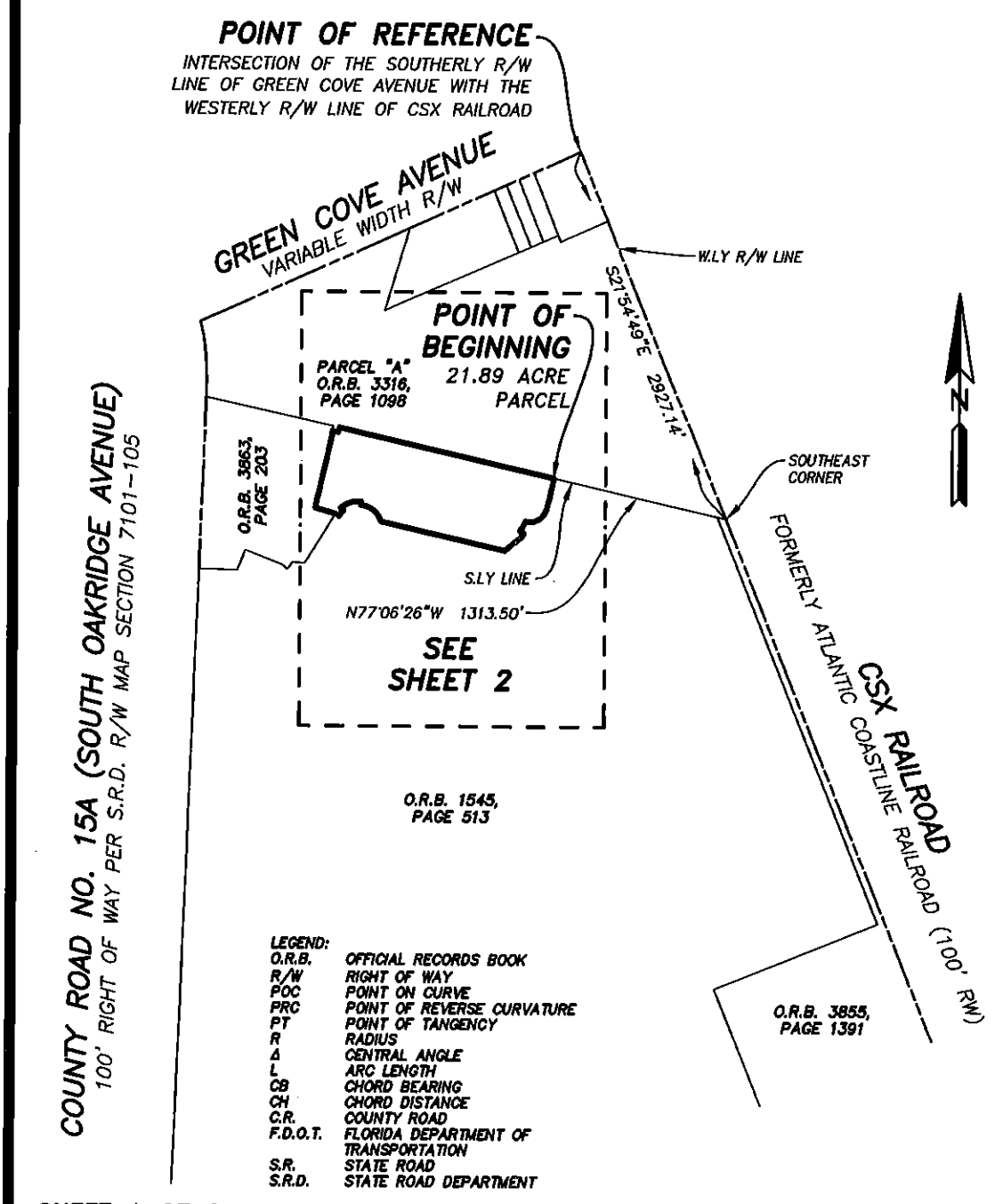
Ayrshire South Swap Parcel

line the following 3 courses: Course 1, thence North 73°46'32" West, 158.11 feet; Course 2, thence North 13°06'51" East, 477.10 feet; Course 3, thence North 10°55'57" East, 105.79 feet to a point lying on said Southerly line of Parcel "A"; thence Easterly along said Southerly line the following 3 courses: Course 1, thence South 77°17'55" East, 42.83 feet; Course 2, thence North 08°55'45" East, 36.14 feet; Course 3, thence South 77°06'26" East, 1644.39 feet to the Point of Beginning.

Containing 21.89 acres, more or less.

SKETCH TO ACCOMPANY DESCRIPTION OF

A PORTION OF SECTION 38 OF THE GEORGE I.F. CLARKE GRANT, TOWNSHIP 6 SOUTH, RANGE 26 EAST, CLAY COUNTY, FLORIDA, BEING A PORTION OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 1545, PAGE 513, OF THE PUBLIC RECORDS OF SAID COUNTY, BEING MORE PARTICULARLY DESCRIBED IN SEPARATE ATTACHMENT.



LEGEND:	
O.R.B.	OFFICIAL RECORDS BOOK
R/W	RIGHT OF WAY
POC	POINT ON CURVE
PRC	POINT OF REVERSE CURVATURE
PT	POINT OF TANGENCY
R	RADIUS
Δ	CENTRAL ANGLE
L	ARC LENGTH
CB	CHORD BEARING
CH	CHORD DISTANCE
C.R.	COUNTY ROAD
F.D.O.T.	FLORIDA DEPARTMENT OF TRANSPORTATION
S.R.	STATE ROAD
S.R.D.	STATE ROAD DEPARTMENT

SHEET 1 OF 2

GENERAL NOTES:
1) THIS IS NOT A SURVEY.
2) BEARINGS BASED ON THE WESTERLY RIGHT OF WAY LINE OF CSX RAILROAD, BEING SOUTH 21°54'49" EAST.

0 500 1000 2000
GRAPHIC SCALE IN FEET
1"= 1000

ETM
Surveying & Mapping, Inc.
VISION • EXPERIENCE • RESULTS
14775 Old St. Augustine Road, Jacksonville, FL. 32258
Tel: (904) 642-8550 Fax: (904) 642-4165
Certificate of Authorization No.: LB 3624

THIS ITEM HAS BEEN ELECTRONICALLY SIGNED AND SEALED USING A DIGITAL SIGNATURE. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

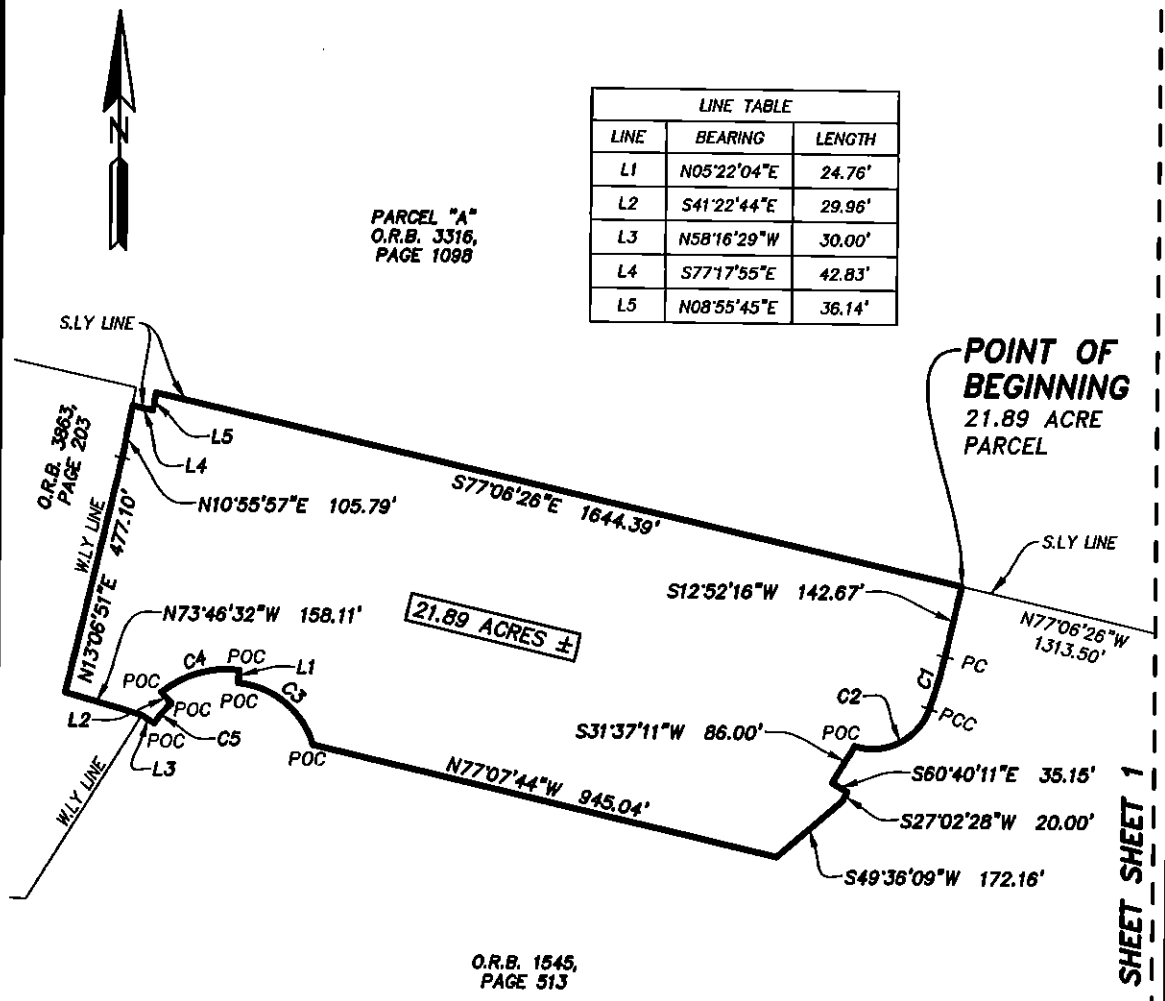
Digital Signature by: Bob L. Piltman, P.S.M.

BOB L. PITTMAN
PROFESSIONAL SURVEYOR AND MAPPER
STATE of FLORIDA PSM No. 4827

SCALE: 1"=1000'
DATE: FEBRUARY 14, 2022

JOB NO. 20-355.07 DWG NO. 127H-15.07A DRAWN BY: JMB CAD FILE: I:\Survey\RWApprof\Gustafsons\Sketches\RW LAND SWAP SKETCHES\21.89 ACRE SWAP PARCEL.dwg

A PORTION OF SECTION 38 OF THE GEORGE I.F. CLARKE GRANT, TOWNSHIP 6 SOUTH, RANGE 26 EAST, CLAY COUNTY, FLORIDA, BEING A PORTION OF THOSE LANDS DESCRIBED AND RECORDED IN OFFICIAL RECORDS BOOK 1545, PAGE 513, OF THE PUBLIC RECORDS OF SAID COUNTY,



LINE TABLE		
LINE	BEARING	LENGTH
L1	N05°22'04"E	24.76'
L2	S41°22'44"E	29.96'
L3	N58°16'29"W	30.00'
L4	S77°17'55"E	42.83'
L5	N08°55'45"E	36.14'

CURVE TABLE					
CURVE	RADIUS	CENTRAL ANGLE	ARC LENGTH	CHORD BEARING	CHORD DISTANCE
C1	950.00'	6°31'27"	108.17'	S16°08'00"W	108.12'
C2	120.00'	87°21'29"	182.96'	S63°04'27"W	165.75'
C3	175.00'	67°09'24"	205.12'	N51°03'13"W	193.58'
C4	198.38'	47°45'50"	165.38'	S73°41'49"W	160.63'
C5	175.00'	16°53'45"	51.61'	S40°10'24"W	51.42'

LEGEND:

O.R.B.	OFFICIAL RECORDS BOOK
R/W	RIGHT OF WAY
POC	POINT ON CURVE
PRC	POINT OF REVERSE CURVATURE
PT	POINT OF TANGENCY
R	RADIUS
Δ	CENTRAL ANGLE
L	ARC LENGTH
CB	CHORD BEARING
CH	CHORD DISTANCE
C.R.	COUNTY ROAD
F.D.O.T.	FLORIDA DEPARTMENT OF TRANSPORTATION
S.R.	STATE ROAD
S.R.D.	STATE ROAD DEPARTMENT

0 150 300 600

GRAPHIC SCALE IN FEET
1"= 300'

PREPARED BY:
ETM SURVEYING & MAPPING, INC.
14775 OLD ST. AUGUSTINE ROAD
JACKSONVILLE, FL 32258 (904) 642-8550
CERTIFICATE OF AUTHORIZATION NO. LB 3624

SHEET 2 OF 2

ORDER NO.: 20-355.07 FILE NO.:127H-15.07A DRAWN BY: JMB CAD FILE: I:\Survey\RWAproj\Gustafsons\Sketches\RW LAND SWAP SKETCHES\21.89 ACRE SWAP PARCEL.dwg

CITY OF GREEN COVE SPRINGS POLICE DEPARTMENT

Chief E.J. Guzman ▪ 1001 Idlewild Avenue ▪ Green Cove Springs, FL 32043 ▪ Main (904) 297-7300 ▪ Fax (904) 284-1436 ▪ www.gcspd.com

The following is the official summary of activity conducted by members of the Green Cove Springs Police Department for the month of April 2023:

Total # Calls for Service: **1034**
Total # Arrests: **27 (-15)**
Total # Traffic Stops: **349 (-31)** Total # Citations: **134 (+5)** % Citations to stops: **38%**
Total # Building and business security checks: **1,329 (-113)**
Total # Police Related Services: **3,691 (-176)**
Response Times: Priority 1: **5Mins and 52Secs** Priority 2: **1Mins and 10Secs** Priority 3: **3Mins and 41Secs**
Dispatch Phone Communication: 911 calls: **384** Non-Emergency calls: **378** Walk-In: **21**

Marine Enforcement:

4/1 8 hours of patrol marine enforcement
4/2 7 hours of patrol Marine enforcement
4/6 Marine Unit taken in for 20-hour service
4/7 Burglary Investigation on a vessel
4/7 Call out Burglary in-progress
4/13 Trespass two subjects from the city pier
4/15 8 hours of patrol Marine Enforcement.

Red Light Camera Program:

Video Review:
Officer Gann reviewed 919 violations, approved 802 and rejected 117

Total violations reviewed for the month: **919** Approval Rating: **87.27%**
Total hours reviewing video: **22.82**

Off Duty/Security Details:

GCSPD officers worked **29** security and off duty details in April in addition to normal duties.

Traffic complaints received/completed:

Location	Issue	# Officer # Times	Traffic Stops	Traffic Citations	Traffic Warnings	Parking Citations	Issue Y/N
Green Cove Avenue	Speed	22	16	9	5		N
Operation Care	Gen Enforcement	74	18	7			N

***When evaluating traffic complaints, low numbers of stops/citations are a good indication that the issue may not be as prevalent as the citizen believes.17*

Notable Arrests:

2023-000853	Possession of Methamphetamine
2023-000975	Habitual Traffic Offender
2023-001051	Driving under the influence of alcohol
2023-000892	Domestic Battery
2023-000894	Arson / False ID to Law Enforcement
2023-000882	Disorderly Intoxication
2023-000947	Disorderly Intoxication
2023-000996	Domestic Battery/Resisting Arrest
2023-000847	Fugitive from Justice
2023-000992	Auto Theft
2023-000817	Possession of Marijuana
2023-001007	Habitual Traffic Offender
2023-000859	Probation Violation
2023-001015	No Driver's License
2023-000883	Simple Battery
2023-000825	Out of County Warrant

Notable Community Involvement Initiatives:

Sergeant Graham handed out Pelican's gift coins to children who had never tried ice cream/snow cones before.

K9 Officer Babcock and Grit took photos with High School students on prom night. The photo was posted on our Facebook page.

Sergeant Hess assisted a stranded couple and their two children from Duval County after they had a catastrophic tire blow out on Idlewild Avenue. They were stranded with no jack or lug wrench. He retrieved the floor jack from the PD and used his lug wrench to assist them in changing their tire. They were extremely grateful for his assistance and even stated that the police in Duval County would never have taken the time to assist in the way he did.

Officer Lee Played football at Spring Park with a group of juveniles.

Sergeant Vineyard has continued to assist Command Staff with training and investigations while in a light-duty capacity.

Officer Newton played basketball with a group of juveniles in the 400 block of Melrose Avenue

Officer Mares assisted/volunteered at Carl Pugh Park with field preparation prior to their games and handed out Police Department stickers to children who were in attendance.

Officer Mares attended Food Truck Friday and interacted with attendees who were at the event.

Sergeant Perry attempted to get services for a couple of homeless people that we deal with on a regular basis and they both refused services.

Officer Reichenbach gave out stickers to children and let them tour his police car during several events and off duty details.

Officer. Rulon visited with a juvenile at Green Cove Jr High. Ofc. Rulon mentored the student when he was a Youth Resource Officer at the elementary School.

Officer Rulon interacted with several youths while he was conducting a traffic detail in the school zone.

Officer Van Hof and Ofc. Milliken played basketball with several teenage boys at Vera Francis Hall Park.

Officer Van Hof attended the Cala Vida event and watched the Switzerland Dance class perform at Spring Park.

Officer White and Officer Milliken interacted with children at Spring Park and passed out stickers and stuffed animals.

Notable Problem Oriented Policing Initiatives:

Sergeant Graham was informed of a power pole in desperate need of replacement in the 400 block of S. Highland Avenue. Sgt Graham located the pole and submitted a work order to have it replaced.

Sergeant Hess found several businesses that were not listed in the CAD rolodex. The information was relayed to Communications Supervisor Acres to have the businesses updated.

Officer. Newton is continuing to work with Code Enforcement reference living violations at McGee's Laundry building.

Officer Mares noticed that the new restaurant Mariachi's was still listed as the prior business name in the CAD rolodex. The information was relayed to Communications Supervisor Acres to have the business information updated.

Sergeant Perry and Officer White placed three No Trespassing signs on the property located at 800 N. Orange Avenue.

Sergeant Perry, Officer Rulon and Officer. White assisted in cleaning up a homeless camp at Melrose Avenue and Roberts Street. They took all the garbage to the curb for the City to pick up.

Officer Rulon cleaned up garbage left on the side of the road on Golfair Blvd.

Officer Rulon contacted Public Works in reference to a deceased dog on the side of the roadway.

Sergeant Perry has been working with the owner of Magnolia Layne Shopping Center to update No Trespassing signs placed at that business complex.

Officer Van Hof sent a work order to Public Works ref the Vietnam Memorial Statute in Spring Park having damage.

Officer Milliken filled out a work order in reference to the RxR crossing at Center Street. The crossing had an uneven pour and was extremely rough to drive over.

Notable Criminal Investigations Activity:

Open Cases: 10 Cases Cleared by Arrest: 0 Called out: 1 Background completed: 0

Significant Case Developments:
2023-000002 Armed Burglary to an Occupied Dwelling, False Imprisonment. Currently working leads.
2023-000793 Working with ATF on case to obtain an arrest warrant for an individual illegally attempting to purchase firearms.
2023-000392 Case with Officer Mares involving two firearms that were recovered.
2023-000918 Conducted multiple interviews in this case. It was determined the victim is a juvenile.
2023-000865 Worked a joint operation with ABT and attempted an underage purchase of tobacco products from establishment from within the City Limits.
2023-000768 Composite drawing complete, possible suspect ID'd. Stage 1 Geo Fence Warrant Submitted.

Notable K-9 Activity:

Apprehensions: 0 Training Sessions: 9 Total Time Training: 24.0 Hrs
K9 Searches: 0 #Finds: 2 #No Finds: 4
Mutual Aid Calls: 0

Narcotics Finds: 0

Officer Babcock assisted FHP Commercial Vehicle Enforcement with an inspection on a concrete truck. The trooper showed Officer Babcock how to complete the inspection.

K-9 Grit and Officer Babcock performed foot patrol around Charles E Bennett Elementary after locating a suspicious vehicle at the school.

K-9 Grit and Officer Babcock performed a building search at The Sheik during an alarm call with an open window.

K-9 Grit and Officer Babcock performed a tactical deployment at 1314 East Street during a burglary in progress call.

K-9 Grit and Officer Babcock have been preparing for narcotic detection certifications which will take place in the month of May.

Notable SRO Activity:

School Resource Officer Henderson gave two gave two first-grade students gifts for their birthday, a second-grade student a gift for her birthday, a third-grade student a gift for his birthday, and a sixth-grade student a gift for his birthday. She also attended a Code Red Drill, Fire Drill and Threat Assessment Meeting at Charles E. Bennett Elementary. Officer Henderson has also started teaching D.A.R.E. to her students. She has completed the D.A.R.E program curriculum for this year and has already chosen the essay winner. Officer Henderson attended the 3rd grade awards ceremony, school talent show, and Science Night.

School Resource Officer. Reichenbach continues to interact with the kids in his school and mentor them. During events and off duty details he has given out numerous stickers and allowed children to tour his patrol car.

Notable Activity for the Chief of Police:

Chief Guzman attended the following meetings and/or events:

- Criminal Justice Advisory Council meeting at the St. Johns River State College criminal justice academy.
- Public Safety Coordinating Council meeting at the County Administration Building.
- Riverfest meeting.
- Elk's Lodge Dinner/Memorial Ceremony.
- FLDE Florida Leadership Academy Graduation ceremony for Sergeant Graham.
- Clay County Board of County Commissioners law enforcement recognition.
- Dani-Lynn Fundraiser at the Corner Pocket.
- GCSPD Golf Tournament meeting

Training:

Sergeant Graham completed the FDLE Florida Leadership Training.

Roll Call Training for all officers with new Stalker Radar Systems

ELECTRIC DEPARTMENT

Significant activities for the month of April 2023

- 5 Streetlights repaired
- 4 Permanent meter installed
- 3 Meter replaced
- 1 Reverse solar meter installed
- 3 Temporary meters installed
- 9 Poles replaced
- 19 Poles removed
- 1 New pole installed
- 4 Voltage check

In addition to the activities listed above, the Electric Department also:

- Conducted daily morning safety meetings.
- Conducted daily truck inspections.
- Trimmed limbs and vines from power lines and poles.
- Unloaded transformers and supplies when they came in.
- Inspect/locate ROW permits.
- Conduct warehouse inventory/order supplies.
- Orange Ave. & Center St., car hit a traffic cross walk pedestal.
- 3682 Colonial Dr., replaced a bad transformer and pulled new wire.
- Chapman Substation, switched power load on transformer #3 for maintenance.
- 965 Worthington Ave., replaced crossarm.
- 1009 Bunker Ave., change out crossarm to fiberglass.
- 210 Walnut St., removed overhead primary, pole, tab, and services.
- Black Creek Marina, installed primary URD system and 3 phase transformer.
- 427 Walnut St., removed riser, service wire to meter and u-guard.
- 3248 Hwy 17- Unit B, installed URD service.

During the month of April, the Electric Department responded to the following outages:

04/03/2023 – Between 7:00 p.m. – 8:00 p.m., 1711 Martin L. King Jr Blvd., lightning blew transformer fuse, 2 customers affected.

04/04/2023 – Between 5:00 p.m. – 6:00 p.m., 101 Joey Dr., transformer fuse replaced, 9 customers affected.

04/09/2023 – Between 4:00 a.m. – 6:45 a.m., 226 Pringle Circle ., remove oak tree from wires and re-fused transformer, 3 customers affected.

04/14/2023 – Between 12:00 p.m. – 3:50 p.m., 987 Bunker Ave., repaired down line and re-energized primary, 1 customer affected.

04/25/2023 – Between 10:30 a.m. – 11:30 a.m., 655 S Highland Ave., blown transformer fuse by squirrel, 4 customers affected.

04/25/2023 – Between 7:30 p.m. – 9:30 p.m., 255 S Palmetto Ave., blown transformer fuse by squirrel, 1 customer affected.

04/26/2023 – Between 8:20 a.m. – 9:20 a.m., 3258 River Rd., blown transformer fuse by squirrel, 2 customers affected.

Electric Utility Top Consumption Customers (kwh/meter) for April:

NAME	SERVICE ADDRESS	KWH	AMOUNT
Clay County Jail	901 N. Orange Ave.	226,120	$ 29,181.22
Winn Dixie Stores, Inc	3260 Hwy. 17 N.	155,600	$ 21,480.00
St. Johns Landing	1408 N. Orange Ave.	152,400	$ 21,690.80
Kindred Health	801 Oak St.	112,800	$ 15,470.00
Permabase Building Products	1767 Wildwood Rd	110,720	$ 15,149.20
BD Of County Commissioner	825 N. Orange Ave.	110,000	$ 15,862.00
Clay County Court House	825 N. Orange Ave.	106,080	$ 13,908.40
BD Of Public Instruction	2025 State Road 16	86,600	$ 13,936.00
City of Green Cove Springs	1277 Harbor Road	79,440	$ 10,042.40
Wen South LLC/Wendy's FL.	3266 Highway 17	75,280	$ 10,733.60
Tamko Roofing Products	914 Hall Park Rd.	66,400	$ 11,752.40
City of Green Cove Springs	Set Street Lights	66,392	$ 9,638.84
Coral Ridge Foods	1165 N Orange Ave.	55,680	$ 7,446.00
Governors Creek #436	803 Oak St.	55,200	$ 8,438.00
Garber Realty/GMC	3340 Highway 17	54,880	$ 7,898.00
VAC-CON	954 Hall Park Rd.	47,840	$ 6,850.40
Clay Port, Inc.	972 Bulkhead Rd. (meter B)	46,920	$ 6,690.20
Pegasus Technologies	932 Pilot Dr Hanger 3 & 4	44,640	$ 6,326.00
Direct TV/ATT Services, Inc.	512 Center St.	44,480	$ 5,899.60
Ammcon Corp.	1503 County Road 315 Ste 201	39,600	$ 6,185.00
BD Of County Commissioner	477 Houston St (dmv)	39,200	$ 6,013.20
Race Trac Petroleum, Inc.	3106 Highway 17	38,240	$ 5,175.20
BD Of Public Instruction	Clay High School	35,280	$ 5,984.00
Hanson Pipe & Precast, Inc.	4190 Highway 17 S	33,520	$ 4,924.80

Electric Utility Department Capital Projects:

Pole top switch replacement

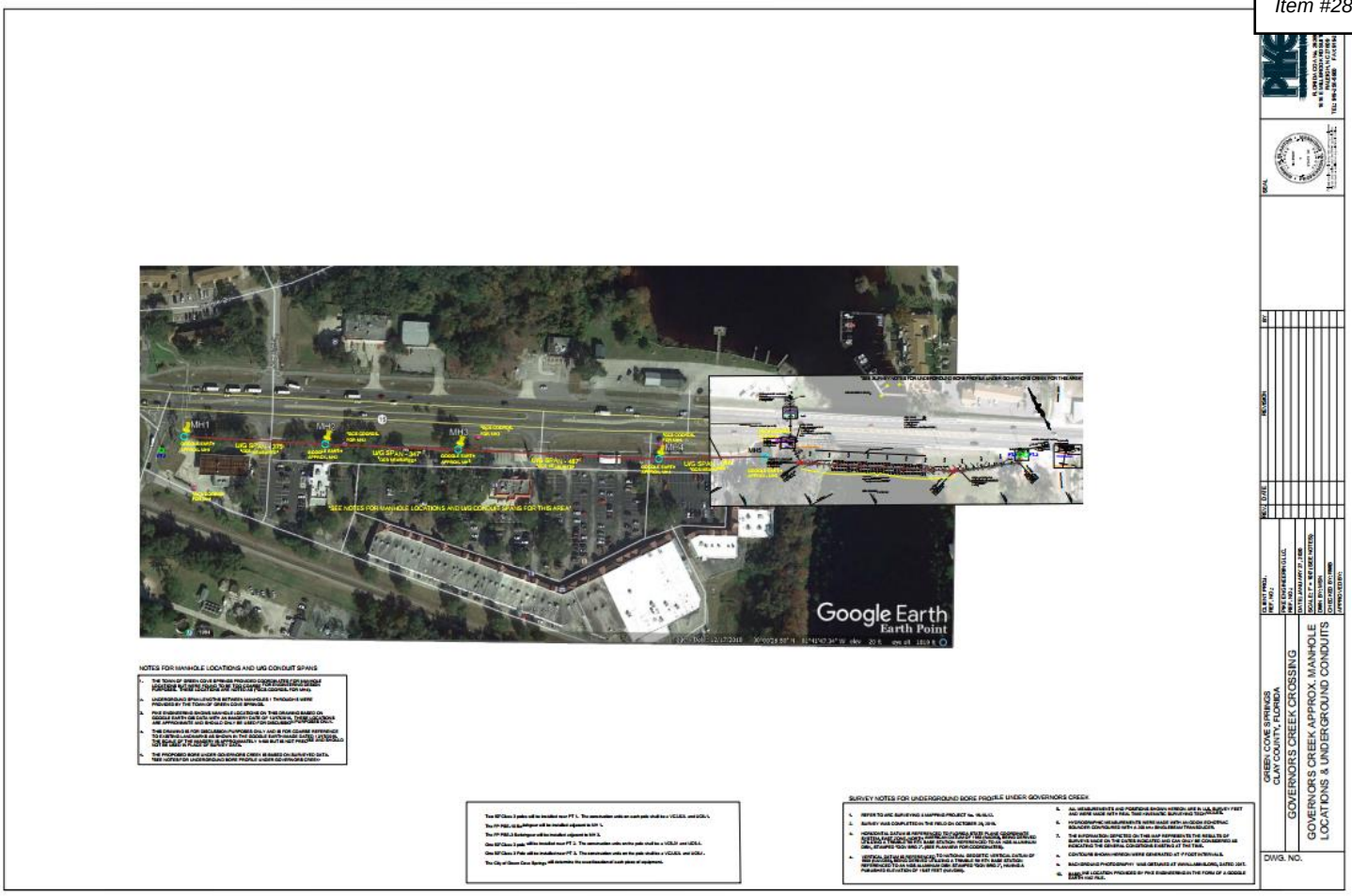
This project began 09-18-2019 with the installation of switches at Governors Creek for restoration plan if isolation of north feeder across Governors Creek Bridge during extreme emergencies. Project is now in the inspection and evaluation process involving Chapman 2 extension to Harbor Rd and load transfer of Chapman 1 to Chapman 2.

13kV to 23kv Conversion – US17 from Harbor Road to CR 315

Planning for this project has begun. This project will continue the Chapman 1 and Chapman 2 circuits north of Harbor Road to provide capacity and reliability for existing and future customers north of Governors Creek. Materials for this project are being funded by a DEO Grant. Materials have started arriving and we are installing the material as it arrives.

Governors Creek Hardening Project

This project will allow the overhead conductor crossing Governors Creek to be placed underground from Grove Street to Harbor Road. This project has been split into two phases: (1) design and permitting and (2) construction. It is being 75% funded by a FEMA HMGP grant. Phase 1 is complete. The project is now being evaluated by FDEM and FEMA funding for the construction phase. Once funding is in place and a contract is executed, bidding and construction should take approximately 9 months. This project will also support to extension of Chapman 1 and Chapman 2 circuits north of Governors Creek to provide additional capacity and reliability for all customers north of Governors Creek.



North and South Substation Improvements

North and South substation sub-station upgrades have begun with directional bore designs completed to install URD 23KV feeds to substation transformers eliminating the possibility of catastrophic failure in the event of lightning or material failure which could cause conductor to fall into existing bus work.

Public Works
Monthly Executive Summary
April 2023

Street Department

During the month of April, The Street Department has been busy throughout the city. Additional activities included:

- Trim back limbs and vegetation on the city rights-of-way.
- Assisted the Stormwater Department with completion of Olive Street repairs.
- Clean storm drains City Wide.
- Setup for traffic control for Food Truck Friday, April 7th.
- Setup for traffic control for Third Saturday Market in the Park, April 15th.
- Setup for traffic control for CalaVida, April 24th, 25th, 28th, and 29th.
- Prep Public Works Compound for construction.

The Street Department completed 20 additional work orders that pertained to street and stormwater issues.

Parks Department

During the month of April, the Parks Department mowed, trimmed, and edged all areas one time including the DOT rights-of-way, all City rights-of-way, City Parks, and FCT property. Additional activities included:

- Monthly playground equipment inspection and necessary repairs.
- Clean storm drains City Wide.
- Cleaned the pool 2 times.
- Began Spring Park preparation for Riverfest.
- Pressure-washed the pool deck and furniture to prepare for pool opening on May 5th.

The Parks Department completed 2 additional work orders outside of their normal daily work schedules**.**

Equipment Maintenance

The Equipment Maintenance Shop, as always, works hard to keep the equipment and vehicles going so the city can continue to provide our citizens with the exceptional service they are accustomed to. During the month of April, Danny, John, and Donald completed 74 work orders.

Tradesworker

During the month of April, 15 work orders were completed. Mike Kelley retired and a new tradesworker was hired.

Solid Waste Department

Cove Life, Litter Cleanup Program & New Services:

- Picked up everything around the rollout cans.
- Picked up as much loose trash, palm fronds, and sticks as possible on the streets, along the R.O.W. and ditches regardless of if it is near a container or not.
- Delivered 3 trash cans and 5 recycle bins to new customers.
- Delivered 8 recycle bins to current customers.
- Repaired 2 trash cans.
- Replaced 7 trash cans.

This month April, the city collected:

- **270.06** tons of Class I garbage (16% decrease)
- **15.98** tons of recycling (2.4% increase)
- **127.42** tons of yard waste (26% decrease)
- **9.34** tons of white goods and other junk
- **72.49** tons Sludge
- **0 tons Street Sweeping**

For comparison during April 2022, the city collected:

- **314.33**tons of Class I garbage
- **15.61** tons of recycling
- **161.03** tons of yard waste
- **11.84** tons of white goods and other junk
- **0 Sludge**
- **19.06 Street Sweeping**

Water/Wastewater

- W/WW crews/management had personal interaction with several citizens regarding water/sewer issues.
- Contacted all customers on water and irrigation "Highest Users" report that had unusual consumption (not usually on report)
- Staff continues to refine the scope and financials of the consolidated AWWTP, expanded reclaimed water system, wastewater collection system improvements and water system capital improvements to obtain maximum grant potential, optimize loan conditions and minimize impact to customers.
- W/WW/RW Projects;
    - Design of the improvements to the city's wastewater treatment system (all phases) is complete. In order to maximize grant opportunities, the initial construction phase was split into two pieces, for a total of four phases;
        - Phase I is construction of the on-site reclaimed water system (storage tanks, high service pumps, electrical) at the existing Harbor Road Facility, and rehabilitation of Master Lift Stations #2 and #4. This phase went out to bid in January in two parts – plant reclaimed water improvements & lift station #2 &

#4. **Construction was completed in June 2020**. The total Phase I cost is $6,120,600. Staff received $4,063,425.00 in "Principal Forgiveness" (grant) from FDEP (SRF).

- Phase II:
  - Construction of the new 1.25 million gallon per day (MGD) advanced wastewater treatment plant (AWWTP) at the Harbor Road site. **Construction approximately 75% complete**
- Phase III:
  - A new force main from Lift Station #2 diverting the sewage from the South Plant to Harbor Road (all sewage generated in the City will be treated at the new Harbor Road AWWTP).
  - Decommissioning and "mothballing" of the South Wastewater Treatment Plant. The permit will remain in place and the plant could be re-commissioned at a later date depending on future activities at the Reynolds site.
- Phase IV (future – determined by growth) is a second identical 1.25 MGD AWWTP built at the Harbor Road site. An alternative would be construction of this train at the South Plant site in Reynolds Park if the southern /Reynolds portion of our service territory is where significant growth occurs
- Phase V (future – determined by growth) is a third identical 1.25 MGD AWWTP built at the Harbor Road or Reynolds site.

- Sanitary Sewer Evaluation Survey (SSES) of the Core City wastewater collection system is **complete**, including Mittauer final report. Staff utilizes this data daily in evaluating collection system repairs and requests for sewer connections.
- Continuing to work with FDOT and Clay County on utility relocations associated with the First Coast Expressway and Clay County road expansions (CR 315 & CR 209 / Russel Road).

- **Senate Bill 64:** In 2021 the Florida Senate approved SB 64, which requires wastewater treatment plants to eliminate surface water discharges by 2035, which has become a significant financial burden to utilities. This requires the city to eliminate effluent discharge from the Harbor Road and South wastewater treatment plants to the St. Johns River. While the city has been implementing reclaimed water projects for several years, there are not enough uses to take all of the city's treated wastewater. In November 2021 the city submitted to FDEP a plan as to how surface water discharges will be eliminated.

Potable Water:

- Staff and Mittauer have completed a full review of the future capital needs of the water system. A comprehensive capital improvement program (CIP) has been developed as part of the Water Master Plan. As in the past, the timing of many of these improvements is driven by future activities in Reynolds Industrial Park and other areas of our service territory. The city has received an FDEP – SRF loan for Planning and Engineering of several of the CIP improvements so that as the need for the improvements occur, the City is ahead of the game and can apply very quickly to SRF for actual construction dollars as "shovel-ready" projects. The total design project cost is $356,800.00, with a $178,400.00 (50%) principal forgiveness (grant), leaving an actual loan of $180,100.00.
- Reynolds Water System Improvements:
  - New water mains along two primary streets to remedy fire hydrants that were inadequate.
  - New 12" water main crossing under SR 16 to replace aging mains that endanger the integrity of the road. This eliminated four existing crossings.

- New water main along Red Bay Road eliminating existing aging and leaking pipes. In addition remediating fire hydrants that were inadequate.
- New water main and sewer force main extension from Reynolds Park to and across the MOBRO complex. This extension is designed to supply water, fire protection & sewer needs to MOBRO and future developments to the east.
- **Completed September 2021**

South Service Territory Improvements:

- New 12" water main loop from US17 along CR 209 S to the existing 12" water main that terminated at 4600 CR 209 S. This also included a new 4" sewer force main from US 17 along CR 209 S to the First Coast Expressway crossing. **Completed September 2021**

- The City has received grants from the State of Florida Hazard Mitigation Grant Program (HMGP) to install auxiliary generators at 17 sewage lift stations, and install generators / raise infrastructure at four additional stations. The grant funds 75% of the improvements. **Approximately 99% complete**
- Continued remediation of malfunctioning or out-of-service hydrants.
- Operated and maintained the Harbor Rd. and South Wastewater Treatment Plants as well as the Harbor Rd. and Reynolds Water Treatment Plants to meet the requirements of Regulatory Agencies.
- Continued to make process control adjustments at the Harbor Rd. and South WWTP in efforts to further lower Total Nitrogen and Total Phosphorus levels being discharged to the St. Johns River.
- Continued landscape maintenance at Water and Wastewater Treatment Facilities as well as lift stations.
- Continued preventative maintenance on all treatment facility generators.
- Completed 2 new services.
- Completed 50 water related work orders.
- Completed 8 sewer related work orders.
- Responded to 160 utilities locate requests.

TOP 10 WATER CUSTOMERS APRIL 2023

Largest (By Consumption)		Largest (By Dollar Amount)	
Rank	CONSUMER	Rank	CONSUMER
1	Sheriff's Department	1	Sheriff's Department
2	Clay High	2	Clay High
3	Premier Surface Design LLC	3	Premier Surface Design LLC
4	Kindred Health	4	Kindred Health
5	Clay County Court House	5	Clay County Court House
6	Governors Creek#436	6	Governors Creek#436
7	Vac-Con	7	Vac-Con
8	Clay Port INC	8	Clay Port INC
9	Springs Coin Laundry	9	Diamond Assisted Living
10	City of Green Cove Springs	10	Spring Coin Laundry

TOP 10 IRRIGATION CUSTOMERS APRIL 2023

Largest (By Consumption)

Rank	CONSUMER
1	Clay County Court House
2	Sheriff's Department
3	Mobro Marine INC
4	AMH Development NON RES
5	Permabase Building Products
6	Magnolia PT Investments
7	Paul Safer
8	Ryan & Kimberly Laporte
9	Stephen Williams
10	K2W Real Estate Holding INC

Largest (By Dollar Amount)

Rank	CONSUMER
1	Clay County Court House
2	Sheriff's Department
3	Mobro Marine INC
4	AMH Development NON RES
5	Permabase Building Products
6	Magnolia Point Investments
7	Paul Safer
8	Ryan & Kimberly Laporte
9	Stephen Williams
10	K2W Real Estate Holding INC

TOP 10 SEWER CUSTOMERS APRIL 2023

Largest (By Consumption)

Rank	CONSUMER
1	St. John's Landing
2	Sheriff's Department
3	Clay High
4	Premier Surface Design LLC
5	Kindred Health
6	Clay County Court House
7	Governors Creek#436
8	Vac-Con
9	Clay Port INC
10	Springs Coin Laundry

Largest (By Dollar Amount)

Rank	CONSUMER
1	St John's Landing
2	Sheriff's Department
3	Clay High
4	Premier Surface Design LLC
5	Kindred Health
6	Clay County Court House
7	Governors Creek#436
8	Vac-Con
9	Clay Port INC
10	Diamond Assisted Living

Wastewater Plant Capacity Status

South Plant: TMDL Capacity 0.350 MGD*,

- Current Loading 0.251 MGD*, 72% Capacity (March 2023 Annual Average)
- Current & Committed (.065) Loading 0.316 MGD*, 90% Capacity
- Current, Committed (.065) & Requested (0.40) Loading 0.369 MGD*, 102% Capacity

Harbor Road: TMDL Capacity 0.650 MGD*

- Current Loading 0.483 MGD*, 75% Capacity (March 2023 Annual Average)
- Current & Committed (0) Loading 0.483 MGD*, 75% Capacity
- Current, Committed & Requested (0) Loading 0.483 MGD*, 75% Capacity

*MGD = Million Gallons per Day

Note: No Reynolds growth or loading projections included in above.