HIDEOUT, UTAH PLANNING COMMISSION
PUBLIC HEARING AND REGULAR MEETING
February 18, 2021
Revised Agenda

PUBLIC NOTICE IS HEREBY GIVEN that the Planning Commission of Hideout, Utah will hold its public hearing and regularly scheduled meeting electronically for the purposes and at the times as described below on Thursday, February 18, 2021

This meeting will be an electronic meeting without an anchor location pursuant to Planning Commission Chair Anthony Matyszczyk February 4, 2021 determination letter (attached)

All public meetings are available via ZOOM conference call and net meeting.
Interested parties may join by dialing in as follows:

Meeting URL: https://zoom.us/j/4356594739 To join by telephone dial: US: +1 408 638 0986
Meeting ID: 435 659 4739
YouTube Live Channel: https://www.youtube.com/channel/UCKdWnJad-WwvcAK75QjRb1w/

Regular Meeting
6:00 PM

I. Call to Order and Reading of Chair Matyszczyk's No Anchor Site Determination Letter
   1. February 4, 2021 No Anchor Site Determination Letter
II. Roll Call
III. Public Hearings
   1. Public Hearing for Shoreline Phase 3 Subdivision
IV. Approval of Meeting Minutes
   1. January 21, 2021 Planning Commission Minutes DRAFT
V. Agenda Items
   1. Recommendation of Dark Skies Ordinance for Town Council
   2. General Planning Updates
VI. Meeting Adjournment

Pursuant to the Americans with Disabilities Act, individuals needing special accommodations during the meeting should notify the Mayor or Town Clerk at 435-659-4739 at least 24 hours prior to the meeting.

File Attachments for Item:

1. February 4, 2021 No Anchor Site Determination Letter

February 4, 2021

DETERMINATION REGARDING CONDUCTING TOWN OF HIDEOUT PUBLIC MEETINGS
WITHOUT AN ANCHOR LOCATION

The Planning Commission Chair of the Town of Hideout hereby determines that conducting a meeting with an anchor location presents a substantial risk to the health and safety of those who may be present at the anchor location pursuant to Utah Code section 52-4-207(4) and Hideout Town Ordinance 2020-03. The facts upon which this determination is based include: The percent and number of positive COVID-19 cases in Utah has been over 16.5% of those tested since January 29, 2021. The seven-day average of positive cases has been over 1264 since February 3, 2021.

This meeting will not have a physical anchor location. All participants will connect remotely. All public meetings are available via YouTube Live Stream on the Hideout, Utah YouTube channel at: https://www.youtube.com/channel/UCKdWnJad-WwvcAK75QjRb1w/

Interested parties may join by dialing in as follows:

Meeting URL: https://zoom.us/j/4356594739
To join by telephone dial: US: +1 408-638-0986
Meeting ID: 435 659 4739

This determination will expire in 30 days on March 6, 2021.

BY:

Tony Matyszczyk,
Planning Commission Chair

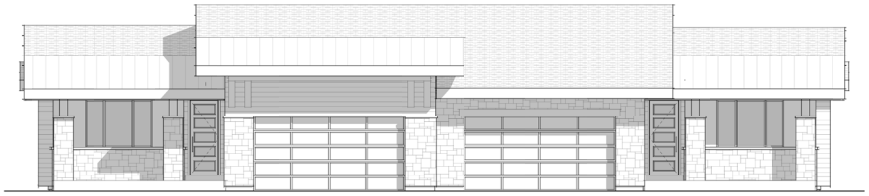
ATTEST:

Kathleen Hopkins, Deputy Town Clerk

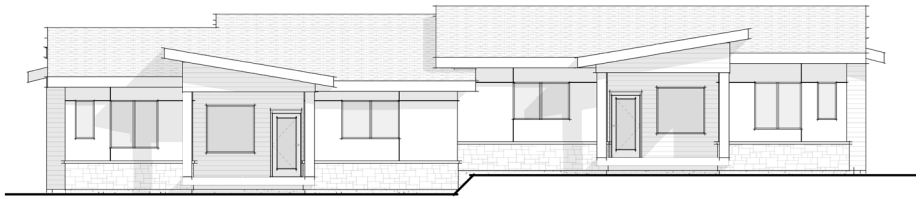
TOWN OF HIDEOUT CORPORATE Seal WASATCH COUNTY, UTAH

File Attachments for Item:

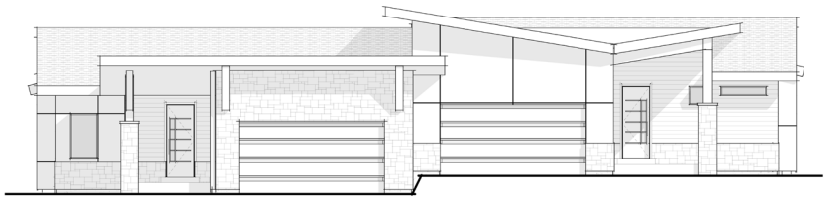
1. Public Hearing for Shoreline Phase 3 Subdivision



OPTION A



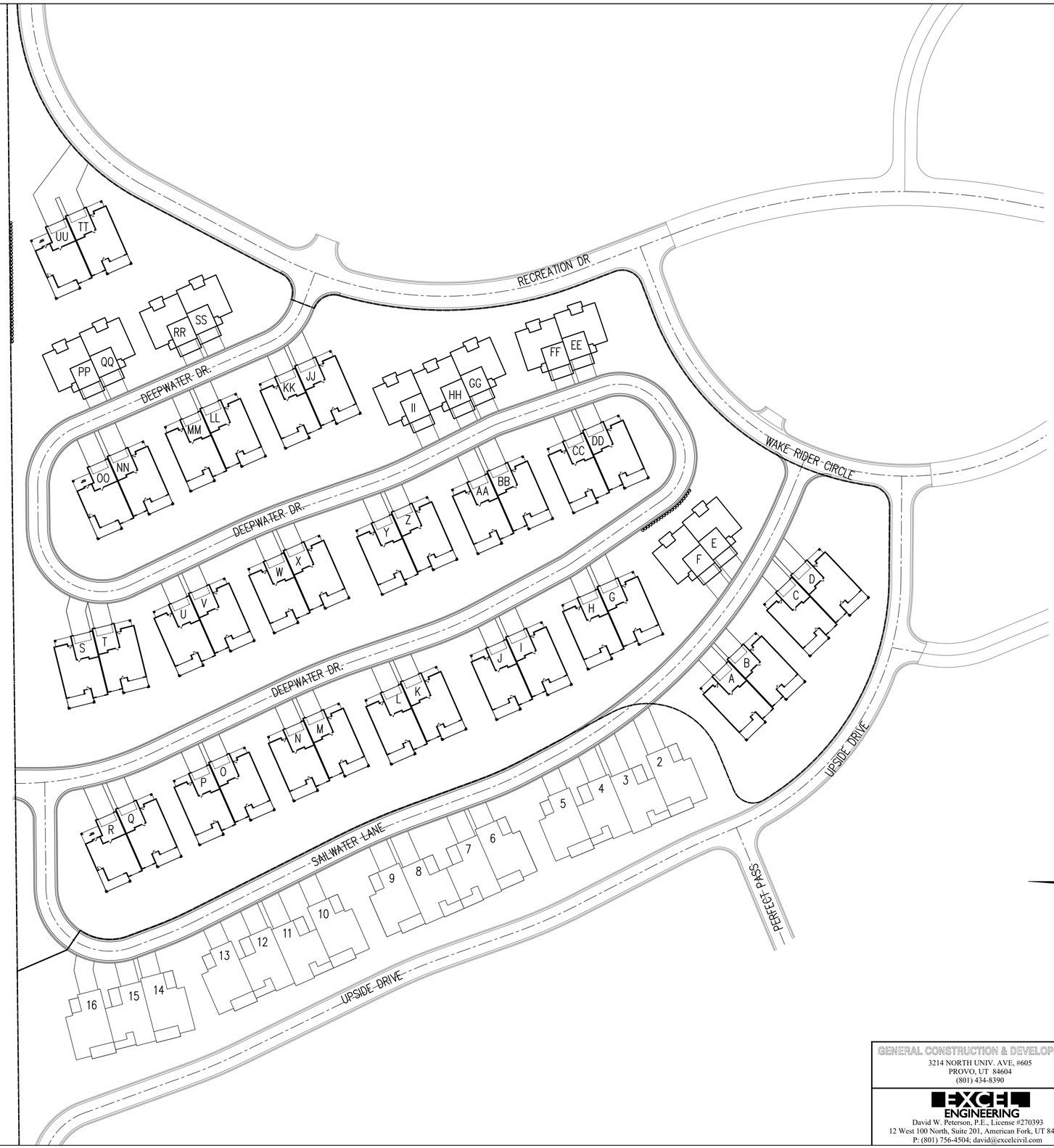
OPTION B



OPTION C

SHORELINE DEVELOPMENT | PHASE 3 | EXTERIOR CONCEPT ELEVATIONS

KNIGHTON ARCHITECTURE



GENERAL CONSTRUCTION & DEVELOPMENT
3214 NORTH UNIV. AVE, #605
PROVO, UT 84604
(801) 434-8390

EXCEL ENGINEERING
David W. Peterson, P.E., License #270393
12 West 100 North, Suite 201, American Fork, UT 84003
P: (801) 756-4504; david@excelcivil.com

SHORELINE

HIDEOUT PHASE 3 UTAH

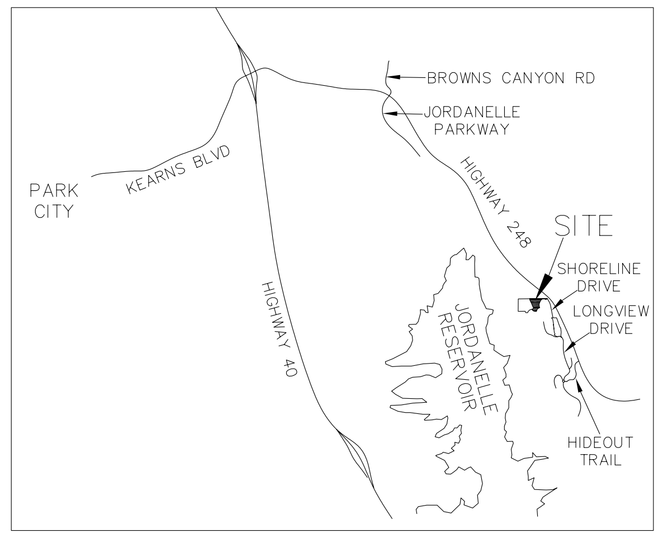
SITE PLAN

Drawn by:	G.J.Y.
Designed by:	G.J.Y.
Checked by:	D.W.P.
Scale:	1"=50'
Date:	12/21/20

SHORELINE PHASE 3, ALL PLATS

A PLANNED UNIT DEVELOPMENT

LOCATED IN THE NORTHWEST QUARTER
OF SECTION 17, T2S, R5E, SLB&M



VICINITY MAP

LINE TABLE		
LINE	LENGTH	BEARING
L1	41.41'	N67°33'54"E
L23	24.00'	S20°54'08"W
L24	26.49'	S67°55'55"E
L25	16.32'	N60°35'54"E
L26	33.39'	S89°23'57"W
L27	16.32'	S60°35'54"W
L28	26.49'	N67°55'55"W
L29	24.00'	S20°56'07"W
L30	99.84'	S21°00'21"E
L31	27.00'	N68°59'39"E
L32	31.44'	S68°59'39"W
L33	31.44'	N68°59'39"E
L34	24.00'	N33°41'31"E
L35	23.00'	N84°35'12"E
L36	23.53'	S68°00'30"E

CURVE TABLE						
CURVE	LENGTH	RADIUS	TANGENT	CHORD BEARING	CHORD LENGTH	DELTA
C1	115.41'	488.50'	57.98'	S34°44'28"E	115.14'	13°32'12"
C2	34.47'	20.00'	23.31'	S18°11'45"W	30.36'	98°44'19"
C95	254.61'	250.00'	139.59'	S60°21'01"E	243.75'	58°21'12"
C96	28.99'	20.00'	17.71'	N48°57'18"E	26.51'	83°02'10"
C97	280.95'	261.50'	155.75'	S38°12'56"W	267.63'	61°33'25"
C98	31.42'	20.00'	20.00'	N23°59'39"E	28.28'	90°00'00"
C99	234.89'	363.50'	121.71'	S02°29'37"E	230.83'	37°01'27"
C100	29.77'	20.00'	18.41'	N26°37'03"W	27.09'	85°16'19"
C101	29.72'	20.00'	18.38'	N68°10'08"E	27.06'	85°09'19"
C102	323.69'	220.00'	199.14'	S69°55'04"W	295.27'	84°18'02"
C103	122.62'	136.50'	65.80'	N86°19'59"E	118.54'	51°28'11"
C104	27.21'	24.00'	15.28'	N28°07'08"E	25.78'	64°57'32"
C105	104.10'	327.00'	52.49'	N20°16'54"W	103.66'	18°14'24"
C106	95.50'	300.00'	48.16'	N20°16'54"W	95.10'	18°14'24"
C107	37.70'	24.00'	24.00'	N74°24'06"W	33.94'	90°00'00"
C108	146.87'	163.50'	78.81'	N86°19'59"E	141.99'	51°28'11"
C109	283.96'	193.00'	174.70'	S69°55'04"W	259.04'	84°18'02"
C110	33.47'	20.00'	22.16'	S21°19'00"E	29.70'	95°52'25"
C111	33.42'	20.00'	22.11'	S62°52'50"W	29.66'	95°43'55"
C112	211.55'	336.50'	109.40'	S02°59'45"E	208.08'	36°01'13"
C113	31.42'	20.00'	20.00'	N66°00'21"W	28.28'	90°00'00"
C114	123.95'	238.50'	63.41'	S54°06'20"W	122.56'	29°46'38"
C115	16.67'	10.00'	11.01'	S08°32'44"E	14.81'	95°31'30"
C116	16.67'	10.00'	11.01'	S75°55'46"W	14.81'	95°31'30"
C117	139.78'	238.50'	71.96'	S11°22'37"W	137.79'	33°34'49"
C118	29.36'	20.00'	18.04'	N47°28'12"W	26.79'	84°06'49"
C119	36.61'	273.00'	18.33'	S85°41'08"E	36.58'	7°40'58"
C120	30.82'	20.00'	19.41'	S54°00'27"W	27.86'	88°17'48"
C121	27.69'	20.00'	16.58'	N29°48'06"W	25.53'	79°19'18"
C122	191.44'	273.00'	99.84'	S49°22'24"E	187.54'	40°10'41"
C123	205.18'	261.50'	108.20'	S52°39'45"E	199.96'	44°57'23"
C124	65.66'	261.50'	33.00'	S82°20'02"E	65.49'	14°23'10"
C125	28.31'	250.00'	14.17'	S02°10'07"E	28.30'	6°29'21"
C126	296.35'	250.00'	168.37'	S35°02'06"W	279.30'	67°55'05"
C127	297.94'	350.00'	158.67'	S03°22'51"W	289.02'	48°46'24"
C128	303.83'	206.50'	186.92'	S69°55'04"W	277.15'	84°18'02"
C129	134.75'	150.00'	72.30'	N86°19'59"E	130.26'	51°28'11"
C130	99.80'	313.50'	50.33'	N20°16'54"W	99.38'	18°14'24"
C131	6.74'	336.50'	3.37'	S27°11'38"W	6.74'	1°08'50"
C132	13.81'	363.50'	6.90'	S26°40'46"W	13.81'	2°10'34"
C133	47.99'	50.00'	26.02'	S06°54'34"W	46.17'	54°59'35"
C134	59.03'	61.50'	32.01'	S06°54'34"W	56.79'	54°59'35"
C135	70.07'	73.00'	38.00'	S06°54'34"W	67.41'	54°59'35"
C136	37.44'	345.50'	18.74'	S23°41'29"E	37.42'	6°12'31"
C137	38.68'	357.00'	19.36'	S23°41'29"E	38.67'	6°12'31"
C138	39.93'	368.50'	19.98'	S23°41'29"E	39.91'	6°12'31"
C139	76.57'	654.50'	38.33'	S23°26'38"E	76.53'	6°42'12"
C140	75.23'	643.00'	37.66'	S23°26'38"E	75.18'	6°42'12"
C141	73.88'	631.50'	36.98'	S23°26'38"E	73.84'	6°42'12"
C142	50.68'	368.50'	25.38'	S24°01'57"E	50.64'	7°52'49"
C143	49.10'	357.00'	24.59'	S24°01'57"E	49.06'	7°52'49"
C144	47.52'	345.50'	23.80'	S24°01'57"E	47.48'	7°52'49"

ADDRESSES

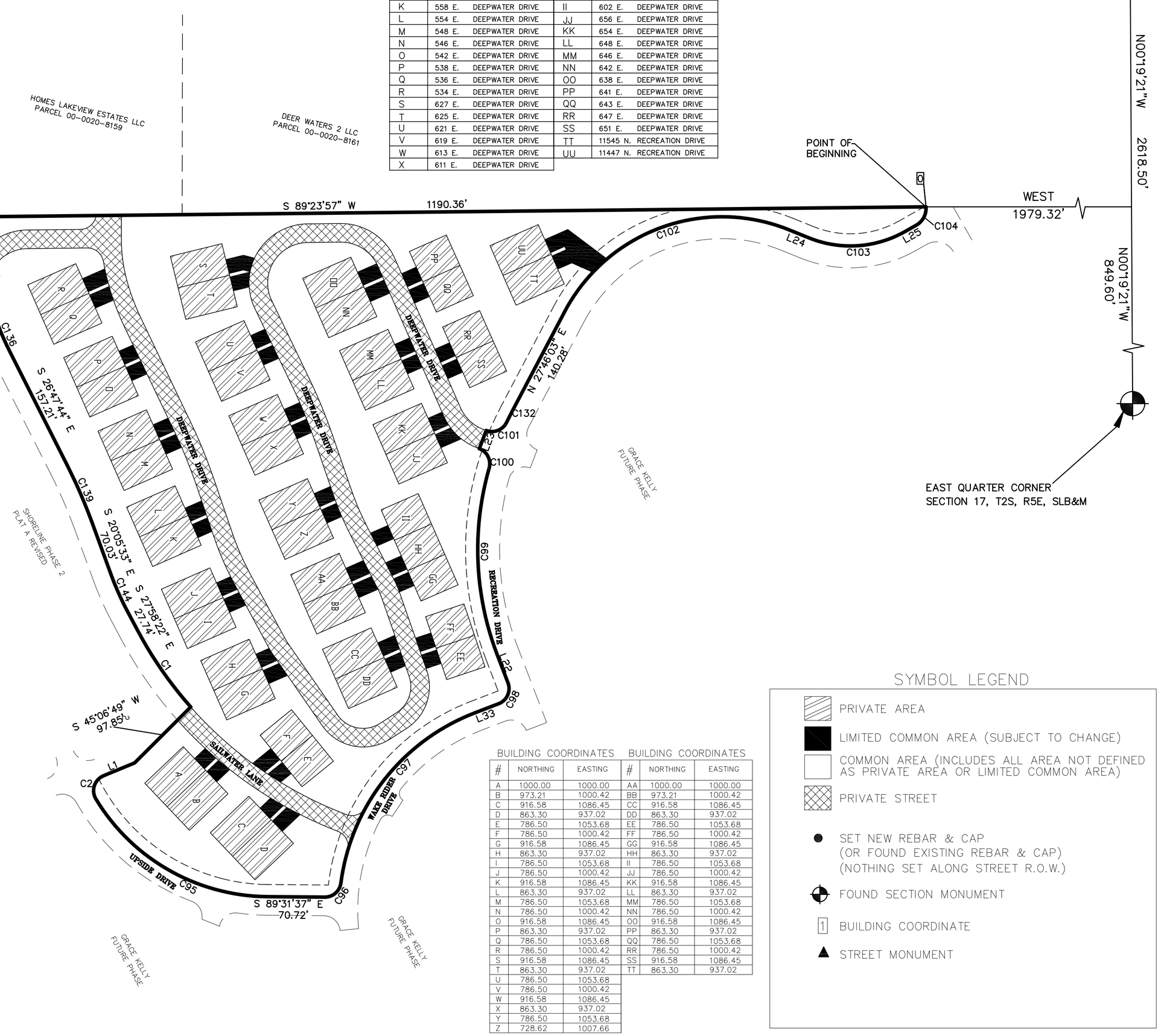
UNIT #	ADDRESS	UNIT #	ADDRESS
A	11467 N. SAILWATER LANE	Y	605 E. DEEPWATER DRIVE
B	11461 N. SAILWATER LANE	Z	603 E. DEEPWATER DRIVE
C	11451 N. SAILWATER LANE	AA	599 E. DEEPWATER DRIVE
D	11447 N. SAILWATER LANE	BB	597 E. DEEPWATER DRIVE
E	578 E. SAILWATER LANE	CC	593 E. DEEPWATER DRIVE
F	576 E. SAILWATER LANE	DD	591 E. DEEPWATER DRIVE
G	572 E. DEEPWATER DRIVE	EE	588 E. DEEPWATER DRIVE
H	568 E. DEEPWATER DRIVE	FF	592 E. DEEPWATER DRIVE
I	564 E. DEEPWATER DRIVE	GG	596 E. DEEPWATER DRIVE
J	562 E. DEEPWATER DRIVE	HH	598 E. DEEPWATER DRIVE
K	558 E. DEEPWATER DRIVE	II	602 E. DEEPWATER DRIVE
L	554 E. DEEPWATER DRIVE	JJ	656 E. DEEPWATER DRIVE
M	548 E. DEEPWATER DRIVE	KK	654 E. DEEPWATER DRIVE
N	546 E. DEEPWATER DRIVE	LL	648 E. DEEPWATER DRIVE
O	542 E. DEEPWATER DRIVE	MM	646 E. DEEPWATER DRIVE
P	538 E. DEEPWATER DRIVE	NN	642 E. DEEPWATER DRIVE
Q	536 E. DEEPWATER DRIVE	OO	638 E. DEEPWATER DRIVE
R	534 E. DEEPWATER DRIVE	PP	641 E. DEEPWATER DRIVE
S	627 E. DEEPWATER DRIVE	QQ	643 E. DEEPWATER DRIVE
T	625 E. DEEPWATER DRIVE	RR	647 E. DEEPWATER DRIVE
U	621 E. DEEPWATER DRIVE	SS	651 E. DEEPWATER DRIVE
V	619 E. DEEPWATER DRIVE	TT	11545 N. RECREATION DRIVE
W	613 E. DEEPWATER DRIVE	UU	11447 N. RECREATION DRIVE
X	611 E. DEEPWATER DRIVE		

GRAPHIC SCALE

80 0 40 80 160 320

(IN FEET)
1 inch = 80 ft.

NORTH



BUILDING COORDINATES			BUILDING COORDINATES		
#	NORTHING	EASTING	#	NORTHING	EASTING
A	1000.00	1000.00	AA	1000.00	1000.00
B	973.21	1000.42	BB	973.21	1000.42
C	916.58	1086.45	CC	916.58	1086.45
D	863.30	937.02	DD	863.30	937.02
E	786.50	1053.68	EE	786.50	1053.68
F	786.50	1000.42	FF	786.50	1000.42
G	916.58	1086.45	GG	916.58	1086.45
H	863.30	937.02	HH	863.30	937.02
I	786.50	1053.68	II	786.50	1053.68
J	786.50	1000.42	JJ	786.50	1000.42
K	916.58	1086.45	KK	916.58	1086.45
L	863.30	937.02	LL	863.30	937.02
M	786.50	1053.68	MM	786.50	1053.68
N	786.50	1000.42	NN	786.50	1000.42
O	916.58	1086.45	OO	916.58	1086.45
P	863.30	937.02	PP	863.30	937.02
Q	786.50	1053.68	QQ	786.50	1053.68
R	786.50	1000.42	RR	786.50	1000.42
S	916.58	1086.45	SS	916.58	1086.45
T	863.30	937.02	TT	863.30	937.02
U	786.50	1053.68			
V	786.50	1000.42			
W	916.58	1086.45			
X	863.30	937.02			
Y	786.50	1053.68			
Z	728.62	1007.66			

SYMBOL LEGEND

- PRIVATE AREA
- LIMITED COMMON AREA (SUBJECT TO CHANGE)
- COMMON AREA (INCLUDES ALL AREA NOT DEFINED AS PRIVATE AREA OR LIMITED COMMON AREA)
- PRIVATE STREET
- SET NEW REBAR & CAP (OR FOUND EXISTING REBAR & CAP) (NOTHING SET ALONG STREET R.O.W.)
- FOUND SECTION MONUMENT
- 1 BUILDING COORDINATE
- STREET MONUMENT

SURVEYOR'S CERTIFICATE

I, DAVID F. HUNT, DO HEREBY CERTIFY THAT I AM A PROFESSIONAL LAND SURVEYOR, AND THAT I HOLD CERTIFICATE NO. 5243543-2201 AS PRESCRIBED UNDER THE LAWS OF THE STATE OF UTAH. I FURTHER CERTIFY BY AUTHORITY OF THE OWNERS, I HAVE MADE A SURVEY OF THE TRACT OF LAND SHOWN ON THIS PLAT AND DESCRIBED BELOW, AND HAVE SUBDIVIDED SAID TRACT OF LAND INTO LOTS, BLOCKS, STREETS, AND EASEMENTS AND THE SAME HAS BEEN CORRECTLY SURVEYED AND STAKED ON THE GROUND AS SHOWN ON THIS PLAT AND THAT THIS PLAT IS TRUE AND CORRECT.

BOUNDARY DESCRIPTION

BEGINNING AT A POINT LOCATED NORTH 00°19'21" WEST ALONG THE SECTION LINE 849.60 FEET AND WEST 1979.32 FEET FROM THE EAST QUARTER CORNER OF SECTION 17, TOWNSHIP 2 SOUTH, RANGE 5 EAST, SALT LAKE BASE AND MERIDIAN; THENCE SOUTH 89°23'57" WEST 1190.36 FEET; THENCE SOUTH 23°18'02" EAST 52.08 FEET; THENCE SOUTH 55°35'38" EAST 23.00 FEET, THENCE ALONG THE ARC OF A 50.00-FOOT RADIUS CURVE TO THE LEFT 47.99 FEET (CHORD BEARS S 06°54'34" W 46.17 FEET); THENCE SOUTH 20°35'14" EAST 27.41 FEET; THENCE ALONG THE ARC OF A 345.50-FOOT RADIUS CURVE TO THE LEFT 37.44 FEET (CHORD S 23°41'29" E 37.42 FEET); THENCE SOUTH 26°47'44" EAST 157.21 FEET; THENCE ALONG THE ARC OF A 654.50-FOOT RADIUS CURVE TO THE RIGHT 76.57 FEET (CHORD BEARS S 23°26'38" E 76.53 FEET); THENCE SOUTH 20°05'33" EAST 70.03 FEET; THENCE ALONG THE ARC OF A 345.50-FOOT RADIUS CURVE TO THE LEFT 47.52 FEET (CHORD BEARS S 24°01'57" E 47.48 FEET); THENCE SOUTH 27°58'22" EAST 27.74 FEET; THENCE ALONG THE ARC OF A 488.50-FOOT RADIUS CURVE TO THE LEFT 115.41 FEET (CHORD BEARS S 34°44'28" E 115.14 FEET); THENCE SOUTH 45°06'49" WEST 97.85 FEET; THENCE SOUTH 67°33'54" WEST 41.41 FEET; THENCE ALONG THE ARC OF A 20.00-FOOT RADIUS CURVE TO THE LEFT 34.47 FEET (CHORD BEARS S 18°11'45" W 30.36 FEET); THENCE ALONG THE ARC OF A 250.00-FOOT RADIUS CURVE TO THE LEFT 254.61 FEET (CHORD BEARS S 60°21'01" E 243.75 FEET); THENCE SOUTH 89°31'37" EAST 70.72 FEET; THENCE ALONG THE ARC OF A 20.00-FOOT RADIUS CURVE TO THE LEFT 28.99 FEET (CHORD BEARS N 48°57'18" E 26.51 FEET); THENCE ALONG THE ARC OF A 261.50-FOOT RADIUS CURVE TO THE RIGHT 280.95 FEET (CHORD BEARS N 38°12'56" E 267.63 FEET); THENCE NORTH 68°59'39" EAST 31.44 FEET; THENCE ALONG THE ARC OF A 20.00-FOOT RADIUS CURVE TO THE LEFT 31.42 FEET (CHORD BEARS N 23°59'39" E 28.28 FEET); THENCE NORTH 21°00'21" WEST 36.84 FEET; THENCE ALONG THE ARC OF A 363.50-FOOT RADIUS CURVE TO THE RIGHT 234.89 FEET (CHORD BEARS N 02°29'37" W 230.83 FEET); THENCE ALONG THE ARC OF A 20.00-FOOT RADIUS CURVE TO THE LEFT 29.77 FEET (CHORD BEARS N 26°37'03" W 27.09 FEET); THENCE NORTH 20°54'08" EAST 24.00 FEET; THENCE ALONG THE ARC OF A 20.00-FOOT RADIUS CURVE TO THE LEFT 29.72 FEET (CHORD BEARS N 68°10'08" E 27.06 FEET); THENCE ALONG THE ARC OF A 363.50-FOOT RADIUS CURVE TO THE RIGHT 13.81 FEET (CHORD BEARS N 26°40'26" E 13.81 FEET); THENCE NORTH 27°46'03" EAST 140.28 FEET; THENCE ALONG THE ARC OF A 220.00-FOOT RADIUS CURVE TO THE RIGHT 323.69 FEET (CHORD BEARS N 69°55'04" E 295.27 FEET); THENCE SOUTH 67°55'55" EAST 26.49 FEET; THENCE ALONG THE ARC OF A 136.50-FOOT RADIUS CURVE TO THE LEFT 122.62 FEET (CHORD BEARS N 86°19'59" E 118.54 FEET); THENCE NORTH 60°35'54" EAST 16.32 FEET; THENCE ALONG THE ARC OF A 24.00-FOOT RADIUS CURVE TO THE LEFT 27.21 FEET (CHORD BEARS N 28°07'08" E 25.78 FEET)TO THE POINT OF BEGINING.

AREA = 9.7142 ACRES

46 UNITS

01-04-21 — DATE
David F. Hunt — SURVEYOR

BASIS OF BEARING:

NORTH 00°44'20" WEST ALONG THE SECTION LINE FROM THE SOUTHEAST CORNER TO THE EAST QUARTER CORNER OF SECTION 17, TOWNSHIP 2 SOUTH, RANGE 5 EAST, SALT LAKE BASE & MERIDIAN.

OWNER'S DEDICATION

KNOW ALL MEN BY THESE PRESENTS THAT WE, ALL OF THE UNDERSIGNED OWNERS OF ALL OF THE PROPERTY DESCRIBED IN THE SURVEYOR'S CERTIFICATE HEREON AND SHOWN ON THIS MAP,AND SUBJECT TO ANY CONDITIONS AND RESTRICTIONS STATED HEREON, HAVE CAUSED THE SAME TO BE SUBDIVIDED INTO LOTS, BLOCK, STREETS, AND EASEMENTS AND DO HEREBY DEDICATE THE STREETS AND OTHER PUBLIC AREAS AS INDICATED HEREON FOR PERPETUAL USE OF THE PUBLIC.

IN WITNESS HEREOF WE HAVE HEREUNTO SET OUR HANDS THIS ____ DAY OF _____, A.D. 20__.

ACCEPTANCE OF LEGISLATIVE BODY

THE TOWN OF HIDEOUT, COUNTY OF WASATCH, APPROVES THIS SUBDIVISION SUBJECT TO THE CONDITIONS AND RESTRICTIONS STATED HEREON, AND HEREBY ACCEPTS THE DEDICATION OF ALL STREETS, EASEMENTS AND OTHER PARCELS OF LAND INTENDED FOR THE PUBLIC PURPOSE OF THE PERPETUAL USE OF THE PUBLIC THIS ____ DAY OF _____ A.D. 20 .

MAYOR — ATTEST: TOWN CLERK (See Seal Below)

TOWN OF HIDEOUT PLANNING COMMISSION

APPROVED THIS ____ DAY OF _____ A.D. 20___ BY THE _____ PLANNING DIRECTOR.

CHAIRMAN, PLANNING COMMISSION

TOWN OF HIDEOUT ENGINEERING

APPROVED THIS ____ DAY OF _____ A.D. 20___ WITH THE FOLLOWING CONDITIONS:

DIRECTOR, ENGINEERING DEPARTMENT (See Seal Below)

APPROVAL AS TO FORM

APPROVED THIS ____ DAY OF _____ A.D. 20___ BY THE HIDEOUT TOWN ATTORNEY.

ATTORNEY, TOWN OF HIDEOUT

COUNTY SURVEYOR

APPROVED AS TO FORM THIS ____ DAY OF _____ A.D. 20___

COUNTY SURVEYOR

PHASE 3

SHORELINE

A PLANNED UNIT DEVELOPMENT

TOWN OF HIDEOUT _____ WASATCH COUNTY, UTAH

SCALE: 1" = 80 FEET

SHEET 1 OF 1

PREPARED BY:

LEVEL OF FOCUS, INC
1334 East 1150 South
Spanish Fork, Utah 84660
(801) 319-5441

OWNERS

GCD, INC.
3214 NORTH UNIVERSITY AVE.
PROVO, UT 84604

STATE OF UTAH S.S.
COUNTY OF WASATCH

ACKNOWLEDGEMENT (CORPORATE)

ON THE ___DAY OF _____ A.D. 20__, PERSONALLY APPEARED BEFORE ME_____ AND_____, WHO BEING BY ME DULY SWORN DID SAY EACH FOR HIMSELF, THAT HE, THE SAID_____IS THE PRESIDENT AND HE THE SAID_____IS THE SECRETARY OF _____CORPORATION, AND THAT THE WITHIN AND FOREGOING INSTRUMENT WAS SIGNED IN BEHALF OF SAID CORPORATION BY AUTHORITY OF A RESOLUTION OF ITS BOARD OF DIRECTORS AND SAID_____AND_____,EACH DULY ACKNOWLEDGE TO ME THAT SAID CORPORATION EXECUTED THE SAME AND THAT THE SEAL AFFIXED IS THE SEAL OF SAID CORPORATION.

MY COMMISSION EXPIRES

NOTARY PUBLIC

RESIDING AT

NOTARY PUBLIC SEAL

TOWN CLERK SEAL

CLERK-RECORDER SEAL

CORPORATE SEAL

SURVEYOR'S SEAL
PROFESSIONAL LAND SURVEYOR
01-04-21
DAVID F. HUNT
LICENSE NO. 5243543-2201
STATE OF UTAH

COUNTY RECORDER

ENTRY # _____ DATE _____ TIME

FEE _____ BOOK _____ PAGE

FOR _____

BY _____

WASATCH COUNTY RECORDER

Intermountain GeoEnvironmental Services, Inc.
12429 South 300 East, Suite 100, Draper, Utah, 84020
Phone (801) 748-4044 | Fax (801) 748-4045
www.igesinc.com

Geotechnical and Geologic Hazard Investigation
Shoreline Development, Phase 3
Perfect Pass Lane
Hideout, Utah
IGES Project No. 00733-022

July 7, 2020

Prepared for

General Construction and Development (GCD)
3214 North University Ave. #605
Provo, Utah 84640

Geotechnical and Geologic Hazard Investigation
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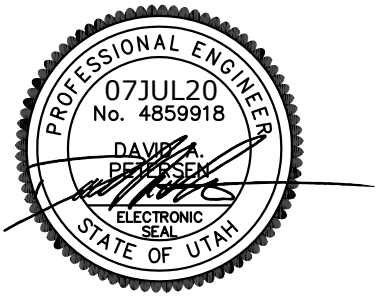
Prepared by:



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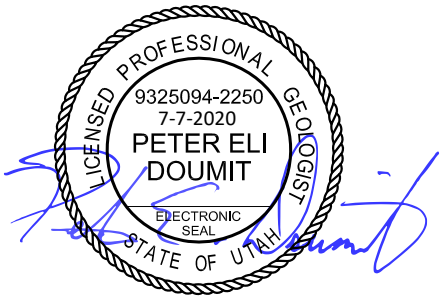

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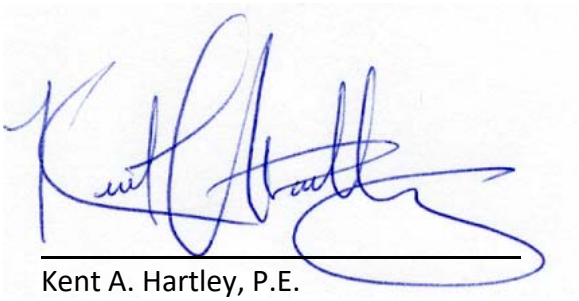

Kent A. Hartley, P.E.
Principal

TABLE OF CONTENTS

APPENDICES

1.0 EXECUTIVE SUMMARY

This report presents the results of a geotechnical investigation conducted for the Shoreline Development, Phase 3 in Hideout, Utah. Based on the subsurface conditions encountered, the subject site is suitable for the proposed construction provided that the recommendations presented in this report are complied with. A brief summary of the critical observations, conclusions, and recommendations is included below:

- Based on our observations the site is covered by topsoil extending up to 24 inches below existing grade and is comprised of Sandy Lean CLAY (CL). The topsoil was underlain by Sandy Lean CLAY (CL).
- No groundwater was encountered in any test pits completed for our investigation.
- Geologic hazards are not anticipated to adversely impact the proposed development, and the property is considered buildable from a geologic hazard perspective.
- Shallow spread or continuous wall footings should be established entirely on undisturbed native soils or entirely on a zone of structural fill extending to undisturbed native soils or bedrock.
- Recommendations for moisture protection and surface drainage contained in Section 6.9 of this report should be implemented to minimize the potential for water to infiltrate into the underlying soils.
- Shallow spread or continuous wall footings constructed as described above may be proportioned utilizing a maximum net allowable bearing pressure of **2,400 pounds per square foot (psf)** for dead load plus live load conditions if founded on undisturbed native soils or properly placed and compacted structural fill extending to suitable native soils.
- Flexible pavement section of 3.5/8 (inches of asphalt/road base) constructed on undisturbed, proof-rolled native soils is recommended for the residential roadways. A rigid pavement section of 5/8 (inches of concrete/road base) is recommended for heavy traffic areas.

Recommendations for general site grading, design of foundations, slabs-on-grade, moisture protection and soil corrosivity as well as other aspects of construction are included in this report.

NOTE: The scope of services provided within this report is limited to the assessment of the subsurface conditions at the subject site. The executive summary is provided solely for purposes of overview and is not intended to replace the report of which it is part and should not be used separately from the report.

2.0 INTRODUCTION

2.1 PURPOSE AND SCOPE OF WORK

This report presents the results of a geotechnical and geologic hazard investigation conducted for the Shoreline Development, Phase 3 in Hideout, Utah. The purposes of this investigation were to assess the nature and engineering properties of the subsurface soils; to provide recommendations for design and construction of foundations, slabs-on-grade, and pavement; to assess settlement, and lateral earth pressures; and to identify other geotechnical issues such as fill, shallow bedrock, collapsible soils, and groundwater. The potential for geologic hazards to adversely impact the property was also evaluated.

The scope of work completed for this study included a subsurface exploration, soil sampling, laboratory testing, engineering analyses, and preparation of this report. Our services were performed in accordance with our proposal and signed authorization.

The recommendations presented in this report are subject to the limitations presented in the **Limitations** section of this report (Section 7.1).

2.2 PROJECT DESCRIPTION

The subject property is approximately 900 feet west of Highway 248 and 2,000 feet east of Jordanelle Reservoir located in Hideout, Utah (see Figure A-1, *Site Vicinity Map*). Our understanding of the project is based on information provided by the Client. The property has an area of approximately 10 acres. The site is currently undeveloped, with the exception of an unpaved access road on the east side of the project site. Based on review of the proposed grading plan, the existing slope has a gentle slope of approximately 9H:1V and fill is planned to be placed across the majority of the site, with areas as thick as 16 feet. IGES understands that the majority of, if not all of the structural fill, will be comprised of soil coming from various projects in the area. The proposed grading shows that, at its steepest point, the slope will be 3H:1V. It is our understanding that this phase of the development will consist of 40 new townhomes with associated residential roads. The site plan provided to us was dated April 6, 2020. Based on conversations with the Client, the structures will be one to three-story, lightly loaded metal- or wood-framed residences with basements, founded on conventional strip and spread footings.

3.0 METHODS OF STUDY

3.1 FIELD INVESTIGATION

As a part of this investigation, a site reconnaissance was performed and subsurface soil conditions were explored by excavating 6 exploratory test pits to as deep as 12.5 feet below the existing site grade, with the majority of the test pits terminating at a depth of 10 to 11 feet. The approximate locations of the explorations are shown on Figures A-2a (*Aerial Image*) and A-2b (*Geotechnical and Local Geology Map*) in Appendix A. A selection of photos taken at the time of our site reconnaissance is included on Figure A-3. Exploration points were placed to provide optimum coverage of the site. Logs of the subsurface conditions as encountered in the explorations were recorded at the time of excavation by a member of our technical staff; these are presented as Figures A-4 through A-9 in Appendix A. A *Key to Soil Symbols and Terminology* used for the test pit logs is included as Figure A-10.

The test pits were completed using a CAT 323F track-hoe. Soil sampling was completed to collect representative samples of the various lithologic units observed at the site. Disturbed samples were placed in plastic baggies and relatively undisturbed soil samples were collected with the use of a 6-inch long brass tube attached to a hand sampler driven with a 2-lb sledge hammer. All samples were transported to our laboratory to evaluate the engineering properties of the various earth materials observed. The soils were classified in accordance with the *Unified Soil Classification System* (USCS) by our field personnel. Classifications for the individual soil units are shown on the attached test pit logs (Figures A-4 through A-9).

3.2 LABORATORY INVESTIGATION

Geotechnical laboratory tests were conducted on selected relatively undisturbed and bulk soil samples obtained during our field investigation. The laboratory testing program was designed to evaluate the engineering characteristics of onsite earth materials. Laboratory tests conducted during this investigation include:

- Water Content (ASTM D7263)
- Unit Weight (ASTM D2216)
- Atterberg Limits (ASTM D4318)
- Particle Size Distribution (ASTM D6913)
- Maximum dry density and optimum moisture content (ASTM D698)
- CBR (ASTM D1883)
- Percent Collapse (ASTM D4546)
- Direct Shear (ASTM D3080)

- Corrosion Testing-sulfate and chloride concentrations, pH and resistivity (ASTM D4972, D4327, D4327, C1580 and EPA 300.0)

The results of the laboratory tests are presented on the test pit logs in Appendix A (Figures A-4 through A-9) and the laboratory test results presented in Appendix B.

3.3 ENGINEERING ANALYSIS

Engineering analyses were performed using soil data obtained from the laboratory test results and empirical correlations from material density, depositional characteristics and classifications. Analyses were performed using formulas, calculations and software that represent methods currently accepted by the geotechnical industry. These methods include settlement, bearing capacity, lateral earth pressures, trench stability and pavement design. Appropriate factors of safety were applied to the results consistent with industry standards and the accepted standard of care.

4.0 GENERALIZED SITE CONDITIONS

4.1 SURFACE CONDITIONS

The subject site has a maximum elevation of 6,435 and a minimum elevation of 6,372 feet above mean sea level, with the site sloping down to the west towards Jordanelle Reservoir. The site has an east-west trending drainage directly to the north of the project site and a smaller drainage located on the south side of the project site creating some topographic relief across the property. The site is covered by native grass, sage brush and scrub oak.

4.2 SUBSURFACE CONDITIONS

4.2.1 Earth Materials

Based on our observations the site is covered by topsoil extending down 1 to 2 feet below existing grade comprised of Sandy Lean CLAY (CL). The topsoil was underlain by Sandy Lean CLAY (CL) with deposits of Gravel (GC and GP-GM) in the vicinity of TP-1 and TP-2. A description of each unit and the depths it can be found is presented below.

Topsoil – Sandy Lean CLAY (CL)

Topsoil was observed in all of the test pits. The topsoil was typically comprised of sandy lean CLAY (CL) and is distinguished by its dark brown color, loamy character, and frequent fine roots. The Topsoil typically extends down 1 to 2 feet below existing grade. It was generally medium stiff and moist.

Sandy Lean CLAY (CL) with gravel

The Sandy Lean CLAY (CL) with gravel was observed in all of the test pits from 1 foot up to 12.5 feet below existing grade. This soil unit was typically medium stiff to very stiff, moist, dark brown to light brown, and trace fine pinholes.

Gravel (GC and GP-GM)

Below the Sandy Lean CLAY, Poorly Graded GRAVEL with silt, sand, cobbles, and boulders (GP-GM) and Clayey GRAVEL with sand, cobbles and boulders (GC), was observed in TP-1 and TP-2 at depths from 7 to 10.5 feet below existing grade, where the test pit was terminated. It was generally dense to very dense, slightly moist to dry, light brown, with 1- to 3-inch gravel being typical, with gravel being subrounded to subangular.

The stratification lines shown on the enclosed exploratory logs represent the approximate boundary between soil types (Figures A-4 to A-9). The actual in-situ transition may be gradual. Due to the nature and depositional characteristics of the native soils, care should

be taken in interpolating subsurface conditions between and beyond the exploration locations. Additional descriptions of these soil units are presented on the test pits logs.

4.2.2 Groundwater

Groundwater was not encountered in the test pits completed for this site. However, localized perched groundwater may be encountered at the mouth of the local drainages. Seasonal fluctuations in precipitation, surface runoff from adjacent properties, or other on or offsite sources may increase moisture conditions. Groundwater conditions can be expected to rise or fall several feet seasonally depending on the time of year. Based on our field investigation, we anticipate that groundwater will likely not impact the proposed construction.

4.2.3 Strength of Earth Materials

Two direct shear tests were completed on remolded samples. Undisturbed samples were unable to be obtained for testing due to the high gravel content. The results are presented in Table 4.2.3 below.

Table 4.2.3
Direct Shear Summary Results

Location	Depth (ft)	Friction Angle (deg)	Cohesion (psf)
TP-3	7.0	47	426
TP-4	3.0	30	272

4.2.4 Collapse Potential

One Collapse Potential test was completed on a representative sample of Sandy Lean CLAY (CL) obtained from TP-6 at a depth of 4 feet. The test results indicate a collapse potential of 5.8%.

4.2.5 Chemical Testing

Chemical testing was completed as a part of this investigation on a representative sample of the near-surface soils. The test result indicated that the sample tested has a minimum resistivity of 1,193 OHM-cm, soluble chloride content of 32.3 ppm, soluble sulfate content of 332 ppm and a pH of approximately 8.39.

5.0 GEOLOGIC CONDITIONS

5.1 GEOLOGIC SETTING

Biek (2017) provides the most recent published geologic mapping across the property. This 1:24,000-scale map serves as the base map for Figure A-11, *Regional Geology Map*. According to Biek (2017; see Figure A-11), the majority of the property is mapped as being underlain by undivided young and middle fan alluvium (map unit Qafy), though an outcrop of Lava Flows of Todd Hollow (map unit Tkt) is mapped along the northern margin of the property.

The undivided young and middle fan alluvium (map unit Qafy) is described by Biek (2017) as Holocene to upper Pleistocene-aged deposits that are "Similar to young fan alluvium (Qaf_1), but forms both active depositional surfaces (Qaf_1 equivalent) and low-level, typically inactive surfaces incised by small streams; deposited principally as debris flows and debris floods, but colluvium locally constitutes a significant part adjacent to range fronts; upper parts of fans are commonly incised; probably less than 40 feet (12 m) thick."

The Lava Flows of Todd Hollow (map unit Tkt) are described by Biek (2017) as lower Oligocene-aged "Medium-gray andesite porphyry lava flows and minor volcanic mudflow breccia; contains 20 to 30% phenocrysts of plagioclase as much as 5 mm in size and minor small hornblende phenocrysts in a fine-grained groundmass…interfingers with volcanic mudflow breccia of Silver Creek (Tksc); map patterns suggest a thickness of as much as 1000 feet (300 m), but it appears to thin and pinch out northward."

Site reconnaissance performed by an IGES licensed professional geologist confirmed that the majority of the property is underlain by the Qafy deposits mapped by Biek (2017). However, these deposits were interpreted to reflect the middle fan alluvium described as exhibiting "low-level, typically inactive surfaces incised by small streams", as multiple west-trending small gullies were observed across the property but with limited incision (up to four feet deep), and there was an absence of debris-flow levees or surficial morphology consistent with Holocene-aged debris-flow deposition. These deposits were observed on the surface and in exposed road cuts to be comprised of a dense Clayey SAND with gravel (SC), with subangular to subrounded clasts of medium dark gray andesite and light gray rhyodacite of the Tkt unit up to 8 feet in diameter observed, though most commonly approximately 4 inches in diameter. Minor angular clasts of the reddish brown to reddish-orange, finely laminated Nugget Sandstone (map unit JT_Rn, which outcrops to the southeast of the property) were also observed.

Similarly, the site reconnaissance confirmed the presence of the volcanic bedrock in the north-central portion of the property along the property margin. However, this outcrop was interpreted to be a rhyodacitic lava flow of the map unit Tkt, as the outcrop exposed a hard, massive, light gray to medium light gray rhyodacite that contained common euhedral phenocrysts of hornblende and biotite.

5.2 GEOLOGIC HAZARD ASSESSMENT

Geologic hazard assessments are necessary to determine the potential risk associated with particular geologic hazards that are capable of adversely affecting a proposed development area. As such, they are essential in evaluating the suitability of an area for development and provide critical data in both the planning and design stages of a proposed development. The geologic hazard assessment discussion below is based upon a qualitative assessment of the risk associated with a particular geologic hazard, based upon the data reviewed and collected as part of this investigation.

A “low” hazard rating is an indication that the hazard is either absent, is present in such a remote possibility so as to pose limited or little risk or is not anticipated to impact the project in an adverse way. Areas with a low-risk determination for a particular geologic hazard do not require additional site-specific studies or associated mitigation practices with regard to the geologic hazard in question.

A “moderate” hazard rating is an indication that the hazard has the capability of adversely affecting the project at least in part, and that the conditions necessary for the geologic hazard are present in a significant, though not abundant, manner. Areas with a moderate-risk determination for a particular geologic hazard may require additional site-specific studies, depending on location and construction specifics, as well as associated mitigation practices in the areas that have been identified as the most prone to susceptibility to the particular geologic hazard.

A “high” hazard rating is an indication that the hazard is very capable of adversely affecting or currently does adversely affect the project, that the geologic conditions pertaining to the particular hazard are present in abundance, and/or that there is geologic evidence of the hazard having occurred at the area in the historic or geologic past. Areas with a high-risk determination always require additional site-specific hazard investigations and associated mitigation practices where the location and construction specifics are directly impacted by the hazard. For areas with a high-risk geologic hazard, simple avoidance is often considered.

The following is a summary of the geologic hazard assessment for the Shoreline Development, Phase 3 property.

5.2.1 Seismicity and Faulting

Surface-fault-rupture is a vertical or horizontal offset of the ground surface during and after a seismic event. The Quaternary Fault and Fold Database of the United States (USGS and UGS, 2006) shows the Bald Mountain Fault trace to trend southwest-northeast approximately 3 miles southwest of the property. The fault is classified as being undifferentiated Quaternary-aged with an average slip-rate of less than 0.2 mm/year. Deposits mapped within the boundaries of the fault are unfaulted within deposits less than 125,000 years old (Hecker, 1993). Therefore, the Bald Mountain Fault is considered to be inactive.

Similarly, an inactive (bedrock) northeast-southwest trending fault trace is mapped by Biek (2017; see Figure A-11) and shown to be concealed by the Qafy unit approximately 300 feet southeast of the southern margin of the property.

The closest mapped active (Holocene-aged) fault to the property is the Salt Lake Segment of the Wasatch Fault Zone, located approximately 20 miles west of the property (USGS and UGS, 2006). Given this information, the risk associated with surface-fault-rupture for the property is considered low.

Following the criteria outlined in the 2018 International Building Code (IBC, 2018), spectral response at the site was evaluated for the risk-targeted *Maximum Considered Earthquake* (MCE_R), which represents the spectral response accelerations in the direction of maximum horizontal response represented by a 5% damped acceleration response spectrum that equates to a 1% probability of building collapse within a 50-year period. The MCE_R spectral accelerations were determined based on the location of the site using the *ASCE-7 Hazard Tool*; this software incorporates seismic hazard maps depicting probabilistic ground motions and spectral response data developed for the United States by the U. S. Geological Survey. These maps have been incorporated into the *International Building Code* (IBC) (International Code Council, 2018).

To account for site effects, site coefficients that vary with the magnitude of spectral acceleration and *Site Class* are used. Site Class is a parameter that accounts for site amplification effects of soft soils and is based on the average shear wave velocity of the upper 100 feet (30 meters, Vs_{30}); site classifications are identified in Table 3.3.1.

Table 5.2.1.1
Site Class Categories

Site Class	Earth Materials	Shear Wave Velocity Range (Vs_{30}) m/s
A	Hard Rock	>1,500
B	Rock	760-1,500
C	Very Dense Soil/Soft Rock	360-760
D	Stiff Soil	180-360
E	Soft Soil	<180
F	Special Soils Requiring Site-Specific Evaluation (e.g. liquefiable)	n/a

Based on our field exploration and our understanding of the geology in this area, the native soils at the site (middle fan alluvium) are underlain by Tertiary-age volcanic deposits (primarily andesite and rhyodacite lava flows) and would likely classify as Site Class B. However, lacking site-specific shear wave velocity measurements, IBC requires a conservative approach, thus an *assumed* value of Site Class C has been adopted. Based on the assumed Site Class C site coefficients, the short- and long-period *Design Spectral Response Accelerations* are presented in Table 5.2.1.2. For geotechnical practice, the geo-mean peak ground acceleration (PGA_M) is presented in Table 5.2.1.3.

It should be noted that, for certain structures, particularly those with a longer fundamental natural period, a site-specific seismic hazard analysis may be required; the Structural Engineer should review ASCE-7-16 11.4.8 to assess whether Exception #2 is applicable for their structure. If the simplified approach and mapped spectral accelerations as allowed by Exception #2 are not applicable to this project, IGES should be contacted regarding the completion of a site-specific seismic hazard analysis, which would necessarily include on-site shear wave velocity measurements.

Table 5.2.1.2
Spectral Accelerations for MCE, Risk-Targeted Values (Structural)

Mapped B/C Boundary S_a (g)		Site Coefficient (Site Class D*)		Design Sa (g)		
Ss	S_1	F_a	F_v	PGA	S_{DS}	S_{D1}
0.529	0.188	1.288	1.50	0.182	0.454	0.188

*assumed
1) T_L=8
2) Exception #2 taken, see ASCE-7-16 11.4.8-2, a site-specific ground-motion hazard analysis may be required for some structures

Table 5.2.1.3
Spectral Accelerations for MCE, Geo-Mean Values (Geotechnical)

Mapped B/C Boundary PGA (g)	Site Coefficient F_{PGA} (Site Class C*)	PGA_M (g)
0.233	1.2	0.279

*assumed

5.2.2 Debris-Flow and Alluvial Fan Flooding

Debris-flows typically deposit on existing alluvial fans located at the mouth of active canyons, while flooding typically occurs in drainage channels and lowland areas within a drainage basin. Though the property largely contains mapped alluvial fan deposits on the property (map unit Qafy; see Figure A-11), these deposits were interpreted to be middle (Pleistocene-aged) fan alluvium rather than young (Holocene-aged) fan alluvium due to poor incision of modern drainages, the absence of debris-flow levees exposed at the surface, and a subdued surficial fan morphology. Additionally, no debris-flow or flooding hazards have been identified in association with the property in previous geologic hazard mapping (Hylland, et al., 1995).

Several southwest-trending ephemeral drainages do exist on the subject property. However, these drainages are largely cut off from their source areas by Highway 248 to the east. During the site reconnaissance, three culverts extending beneath Highway 248 and onto the property were observed; two of these were 36 inches in diameter (these corresponded to the larger drainages along the northern and southern margins of the property), and one was 18 inches in diameter (corresponding to a smaller middle drainage). These culverts already limit the amount of debris and water that could potentially pass through the property in association with these drainages. Additionally, the drainages themselves were observed to be small and poorly incised, with the maximum drainage dimensions observed being approximately 7 feet wide and 4 feet deep, and more often appeared as gullies only a couple feet wide and a foot deep rather than stream drainages. In some places, existing human disturbance and temporary road construction has also cut across the small drainages, precluding continuity of the drainages. Given these conditions, the debris-flow and flooding hazard risk associated with the property is considered to be low. Nevertheless, the drainages should be considered in the general planning stages, and an adequate grading and drainage plan should further reduce the flood hazard risk.

5.2.3 Rockfall

The property is on a gradual slope down to the west, and no bedrock outcrops are located immediately upslope of the property. Though a bedrock outcrop is located along the northern margin of the property, this outcrop does not extend above the ground surface enough to pose a serious rockfall threat. As such, the rockfall hazard associated with the property is considered to be low.

5.2.4 Avalanche

Avalanches are flows of snow that occur when there is a mechanical failure of either wet or dry snow. They can occur as clouds of moving material or as sliding slabs of snow. Avalanches are typically initiated on slopes of 30 to 45 degrees. Though the two larger drainages that straddle the property on the northern and southern ends have slopes greater than 30 degrees upslope of the property, the thick fill slope associated with Highway 248 will act as a barrier to potential avalanches emanating from the drainages. Additionally, no obvious evidence of recent avalanches or avalanche paths were observed on the property. Therefore, the avalanche potential associated with the property is considered to be low.

5.2.5 Landslides

No landslides have been mapped on the subject property (Biek, 2017; Elliott and Harty, 2010), and Hylland, et al. (1995) shows the property to be designated as having a low landslide hazard risk. No evidence of landsliding was observed on the surface or in the subsurface of the property as part of this investigation. Given this data, the risk associated with landslides is considered to be low.

5.3 GEOLOGIC CONCLUSIONS AND RECOMMENDATIONS

5.3.1 Conclusions

Based upon the data collected and reviewed as part of this assessment, IGES makes the following conclusions regarding the geologic hazards present at the Shoreline Development, Phase 3 property:

- The property does not appear to have geological hazards that would adversely affect the development as currently proposed. As such, the property is considered suitable for development, provided that the recommendations provided in this report are incorporated into the design and construction of the structures.

- The existing surface geology on the property is consistent with what was previously mapped by Biek (2017), being largely middle fan alluvium and some rhyodacite lava flows associated with the Keetley Volcanics.

- The geologic hazard risk associated with surface-fault-rupture, rockfall, debris-flow, flooding, avalanche, and landslide hazards is considered to be low for the proposed development.

5.3.2 Recommendations

Given the findings of the geologic hazards assessment, IGES recommends the following:

- An IGES engineering geologist should observe all construction cuts to assess the exposed bedrock and evaluate them for potential adverse impacts to roadways and other aspects of the proposed development.

- Appropriate grading and drainage associated with the small ephemeral drainages across the property should be implemented to further reduce the risk of flooding in the rare occasion the drainages flow with water.

6.0 ENGINEERING CONCLUSIONS AND RECOMMENDATIONS

6.1 GENERAL CONCLUSIONS

Based on the subsurface conditions encountered at the site, the subject site is suitable for the proposed development provided that the recommendations presented in this report are incorporated into the design and construction of the project. We recommend that as part of the site grading process any undocumented fill, topsoil or otherwise unsuitable soils currently present at the site be removed from beneath proposed footings and areas of fill or that footings be deepened to extend below the unsuitable soils. We also recommend that IGES be on site at key points during construction to see that the recommendations in this report are implemented. Shallow spread or continuous wall footings should be established entirely on undisturbed native soils, entirely on bedrock or entirely on structural fill extending to undisturbed native soil or bedrock. The client should closely follow the moisture protection and surface drainage recommendations contained in Section 6.9 of this report to minimize the potential for water to infiltrate underlying soils.

The following sub-sections present our recommendations for general site grading, design of foundations, slabs-on-grade, lateral earth pressures, moisture protection and preliminary soil corrosion.

6.2 EARTHWORK

Prior to the placement of foundations, general site grading is recommended to provide proper support for foundations, exterior concrete flatwork, and concrete slabs-on-grade. Site grading is also recommended to provide proper drainage and moisture control on the subject property.

6.2.1 General Site Preparation

Within the areas to be graded (below proposed structures, fill sections, concrete flatwork, or pavement sections), any existing surface vegetation, debris, or undocumented fill should be removed, and the upper 12 to 24 inches should be grubbed to remove the majority of the roots and organic matter. Any existing utilities should be re-routed or protected in-place. The exposed native soils should then be proof-rolled with heavy rubber-tired equipment such as a loader; if undocumented fill soils are encountered, they should be completely removed if below footings and removed and/or reworked as recommended herein if below pavement or concrete slabs-on-grade. Any soft/loose areas identified during proof-rolling should be removed and replaced with structural fill or stabilized as recommended in Section 6.2.5. An IGES representative should observe the

site preparation and grading operations to assess whether the recommendations presented in this report have been complied with.

In the area of TP-6 soil with a moderate collapse potential was observed. It is recommended that soil with pinholes or having a low unit weight be removed prior to building. Based on the test pit log, it is likely that an excavation to 5 feet, or greater, in depth will be needed to remove all of the soil with a moderate collapse potential.

6.2.2 Excavations

Undocumented fill, soft, porous, or otherwise unsuitable soils beneath foundations or concrete flatwork may need to be over-excavated and replaced with structural fill. The excavations should extend a minimum of 1-foot laterally for every foot of depth of over-excavation. Excavations should extend laterally at least two feet beyond slabs-on-grade. Structural fill recommendations are presented in this report (Section 6.2.4).

While bedrock was not encountered in any of the test pits completed for this project, based on our experience in the area, it is possible that bedrock may be encountered while excavating at this site.

6.2.3 Excavation Stability

The contractor is responsible for site safety, including all temporary slopes and trenches excavated at the site and design of any required temporary shoring. The contractor is responsible for providing the "competent person" required by OSHA standards to evaluate soil conditions. Soil types are expected to consist of *Type A* soils (sandy lean clay with unconfined compressive strength greater than 1.5 tsf) in the top 10 feet. Close coordination between the competent person and IGES should be maintained to facilitate construction while providing safe excavations.

Based on Occupational Safety and Health (OSHA) guidelines for excavation safety, trenches with vertical walls up to 5 feet in depth may be occupied. Where very moist soil conditions or groundwater is encountered, or when the trench is deeper than 5 feet, we recommend a trench-shield or shoring be used as a protective system to workers in the trench. Sloping of the sides at 1H:1V (45 degrees) in *Type A* soils may be used as an alternative to shoring or shielding.

6.2.4 Structural Fill and Compaction

All fill placed for the support of structures, flatwork or pavements, should consist of structural fill. Structural fill may consist of the on-site native soils or an approved imported material. IGES understands that structural fill to be used at the site will be coming from

several different sites in the general area and that the composition may vary from site to site. Due to the potential for varied structural fill to be used at the site, IGES should regularly assess imported soils, especially if not considered engineered fill prior to being used at the site. Structural fill should be free of vegetation and debris and contain **no rocks larger than 4 inches in nominal size** (6 inches in greatest dimension). Topsoil may not be used as structural fill; this material must be kept segregated from other soils intended to be used as structural fill.

All structural fill should be placed in maximum 6-inch loose lifts if compacted by small hand-operated compaction equipment, maximum 8-inch loose lifts if compacted by light-duty rollers, and maximum 12-inch loose lifts if compacted by heavy duty compaction equipment that is capable of efficiently compacting the entire thickness of the lift. These values are *maximums*; the Contractor should be aware that thinner lifts may be necessary to achieve the required compaction criteria. We recommend that all structural fill be compacted on a horizontal plane, unless otherwise approved by IGES. IGES understands that areas of the site may have as much as 16 feet of fill. Structural fill placed beneath footings and pavements should be compacted to at least 95 percent of the maximum dry density (MDD) as determined by ASTM D-1557 if less than 6 feet in thickness. Areas with 6 feet of fill or more should be compacted to 96 percent of the MDD. The moisture content should be at or slightly above the optimum moisture content (OMC) for all structural fill – compacting dry of optimum is discouraged. Any imported fill materials should be approved by IGES prior to importing. Also, prior to placing any fill, the excavations should be observed by IGES to confirm that unsuitable materials have been removed. In addition, proper grading should precede placement of fill, as described in the General Site Preparation and Grading subsection of this report.

All utility trenches backfilled below pavement sections, curb and gutter and concrete flatwork, should be backfilled with structural fill compacted to at least 95 percent of the MDD as determined by ASTM D-1557. All other trenches, including landscape areas, should be backfilled and compacted to a minimum of 90 percent of the MDD (ASTM D-1557).

Backfill around foundation walls should be placed in 12-inch loose lifts or thinner and compacted to 90 percent of the MDD at or slightly above the OMC as determined by ASTM D1557. Failure to properly moisture-condition and compact foundation wall backfill may result in settlements of up to several inches.

Specifications from governing authorities having their own precedence for backfill and compaction should be followed where applicable.

6.2.5 Soft Soil Stabilization

Soft soils may be encountered at the site due to the presence of fine-grained soils and high moisture contents. These soils may cause equipment mobility problems and may make it difficult to place and properly compact structural fill overlying the soft soils; conditions can be worsened following precipitation and/or during winter. If encountered, we recommend stabilizing these soils prior to placing structural fill, constructing pavement sections or foundation elements such as footings.

Stabilization can be accomplished by placing a woven geotextile over the soft subgrade; seams should be overlapped a minimum of 18 inches or as recommended by the manufacturer. The geotextile should be covered with a minimum of 18 inches of crushed, angular ¾- to 4-inch diameter rock. Structural fill (Section 6.2.4) may then be placed and compacted as recommended in this report. The woven geotextile should consist of TenCate Mirafi HP370 or an approved equivalent. The geotextile should be placed to cover the entire excavation bottom.

Alternatively, stabilization of soft or pumping subgrade can be accomplished using a clean, coarse angular material worked into the soft subgrade. We recommend the material be greater than 3 inches in nominal diameter, but less than 6 inches. The stabilization material should be worked (pushed) into the soft subgrade soils until a relatively firm and unyielding surface is established. Once a relatively firm and unyielding surface is achieved, the area may be brought to final design grade using structural fill. The area should be wheel-rolled with heavy equipment to evaluate whether a firm working surface has been achieved and that soft/pumping soils have been “bridged” to the greatest extent reasonably possible based on existing subsurface conditions. An IGES representative should be present during this evaluation.

The area of stabilization should extend a minimum of 3 feet beyond the footings and/or footprint of the structure, whichever is greater.

6.3 FOUNDATIONS

Shallow spread or continuous wall footings should be established below topsoil, collapsible soils and undocumented fill soils established *entirely* on undisturbed native soils or *entirely* on structural fill extending to suitable native soils. Suitable soils include all native soils observed at the site except for the soils with pinholes observed in TP-6 that have a moderate potential for collapse (Section 4.2.4). We anticipate footings or structural fill will need to be extended to a minimum depth of 5 feet to avoid the collapsible soils in this area. All footing excavations should be observed by IGES or other qualified geotechnical engineer prior to constructing footings.

Shallow spread or continuous wall footings constructed on native soils or structural fill as described previously may be proportioned utilizing a maximum net allowable bearing pressure of **2,400 pounds per square foot (psf)** for dead load plus live load conditions. A one-third increase may be used for transient wind and seismic loads. If required, all fill beneath the foundations should consist of structural fill/reworked native soils and should be placed and compacted in accordance with our recommendations presented in Section 6.2.4 of this report.

All foundations exposed to the full effects of frost should be established at a minimum depth of 42 inches below the lowest adjacent final grade. Interior footings, not subjected to the full effects of frost (i.e., a continuously heated structure), may be established at higher elevations, however, a minimum depth of embedment of 12 inches is recommended for confinement purposes. The minimum recommended footing width is 20 inches for continuous wall footings and 36 inches for isolated spread footings.

6.4 SETTLEMENT

Static settlement of properly designed and constructed conventional foundations, founded as described above, are anticipated to be on the order of 1 inch or less. Differential settlement is expected to be half of total settlement over a distance of 30 feet.

6.5 EARTH PRESSURES AND LATERAL RESISTANCE

Lateral forces imposed upon conventional foundations due to wind or seismic forces may be resisted by the development of passive earth pressures and friction between the base of the footing and the supporting soils. In determining the frictional resistance, a coefficient of friction of 0.37 should be used for concrete in contact with native sandy lean clay soil or imported granular structural fill (Sand and Gravel).

Ultimate lateral earth pressures from backfill acting against retaining walls and buried structures may be computed from lateral pressure coefficients or equivalent fluid densities. In general, foundation and other walls that are fixed at the top should be designed using at-rest lateral earth pressures. Foundation walls for buried or partially buried structures may also be designed for active pressures if no more than 8 feet of the wall extends below grade and laterally supported by flexible diaphragms. Retaining walls allowed to rotate at the top (unfixed) can be designed for active pressures based on the International Building Code (IBC, 2018).

Based on an internal angle of friction of 30 degrees, the ultimate lateral earth pressures for native sandy lean clay acting against buried structures and footings may be computed from the lateral pressure coefficients or equivalent fluid densities presented in Table 4.6.5:

Table 4.6.5 – Recommended Lateral Earth Pressure Coefficients for Static Conditions

Condition	Lateral Pressure Coefficient	Equivalent Fluid Density (pounds per cubic foot)
Active*	0.33	42
At-rest**	0.50	63
Passive*	3.00	375

* Based on Coulomb's equation

** Based on Jaky

These values should be used with an appropriate factor of safety against overturning and sliding. A value of 1.5 is typically used. Additionally, if passive resistance is calculated in conjunction with frictional resistance, the passive resistance should be reduced by ½.

The coefficients and densities presented in the table above for static conditions assume no buildup of hydrostatic pressures, a vertical wall face and flat back slope. The force of the water should be added to the presented values if hydrostatic pressures are anticipated. Proper grading and other drainage recommendations provided previously in this report will help to reduce the potential for buildup of hydrostatic pressures if implemented.

Clayey soils drain poorly and may swell upon wetting, thereby greatly increasing lateral pressures acting on earth retaining structures; therefore, clayey soils with a potential for swelling should not be used as retaining wall backfill. Backfill should consist of soil with an Expansion Index (EI) less than 20.

6.6 RETAINING WALLS

The soils data provided in this report may be used for retaining wall design. Retaining wall design would ordinarily be presented in a separate submittal (*design package*) that contains construction drawings and specifications for each specific wall. The design package should include elevation (profile) drawings, stationing, section drawings and construction specifications for the particular wall type and planned accessories such as fencing. Drawings should be completed so that accurate construction layout can be provided.

6.7 CONCRETE SLAB-ON-GRADE CONSTRUCTION

To minimize settlement and cracking of slabs, and to aid in drainage beneath the concrete floor slabs, all concrete slabs should be founded on a minimum 4-inch layer of clean gravel overlying properly prepared subgrade. If undocumented fill soils are encountered below areas of slab-on-grade construction, they should be removed to a minimum depth of 18 inches and replaced with structural fill as recommended in Section 6.2.4. Before structural fill is placed, the exposed subgrade should be moisture conditioned to within 2 percent of the OMC and compacted to at least 90 percent of the MDD (modified proctor). The 4-inch layer of gravel should consist of free-draining gravel with no more than 5 percent passing the No. 200 mesh sieve that should be vibrated in place for densification.

All concrete slabs should be designed to minimize cracking as a result of shrinkage. Consideration should be given to reinforcing the slab with a welded wire fabric, re-bar, or fiber mesh. Slab reinforcement should be designed by the structural engineer; however, as a minimum, slab reinforcement should consist of 4'' × 4'' (W4.0×W4.0) welded wire mesh within the middle third of the slab. We recommend that concrete be tested to assess that the slump and/or air content are in compliance with the plans and specifications. We recommend that concrete be placed in general accordance with the requirements of the American Concrete Institute (ACI). A Modulus of Subgrade Reaction of **125 psi/inch** may be used for design.

Our experience indicates that use of reinforcement in slabs and foundations can generally reduce the potential for cracking resulting from drying and shrinkage. However, some cracking can be expected as the concrete cures. Minor cracking is considered normal; however, it is often aggravated by a high water/cement ratio, high concrete temperature at the time of placement, small nominal aggregate size, and rapid moisture loss due to hot, dry, and/or windy weather conditions during placement and curing. Cracking due to temperature and moisture fluctuations can also be expected. The use of low slump concrete can reduce the potential for shrinkage cracking; saw cuts in the concrete at strategic locations can help to control and reduce undesirable shrinkage cracks.

6.8 PAVEMENT

Based on a CBR value of 6.6 obtained in our laboratory, near-surface soils at the site can be expected to provide fair pavement support. Anticipated traffic volumes were not available at the time this report was prepared, however, IGES has assumed an equivalent single axle load (ESAL) of 150,000 over a 30-year design life; IGES has assumed that the majority, if not all, of construction traffic has already occurred. Based on the information provided, the above-mentioned assumptions and our analysis, IGES has prepared the following pavement section to be used to support anticipated traffic loads for the parking

lot and are summarized in the following table. IGES recommends at the time of subbase preparation, a member of our technical staff observe the subbase

Table 6.8.1
Flexible (Asphalt) Pavement Section

Asphalt Concrete (in.)	Untreated Base Course (in.)	Zone of Reworked Native Soils or Structural Fill (in.)
3.5	**11**	**8**

Asphalt has been assumed to be a high stability plant mix; base course material should be composed of crushed stone with a minimum CBR of 70. Asphalt should be compacted to a minimum density of 96% of the Marshall value; base course, granular borrow, reworked native soil and all structural fill placed below pavement should be compacted to at least 95% of the MDD and within 2% of the optimum moisture content as determined by ASTM D-1557 (Modified Proctor). An 8-inch zone of reworked native soil should be completed to minimize any collapse potential.

If undocumented soils are encountered, they should be removed to a minimum depth of 12 inches prior to constructing the pavement section. The exposed soils should be compacted to at least 90% of the MDD as determined by ASTM D-1557. A zone of structural fill with a minimum thickness of 12 inches should then be placed and compacted to 95% of the MDD as determined by ASTM D-1557 before constructing the pavement section described above.

It is our experience that pavement in areas where vehicles frequently turn around, stop, backup, load and unload, including the entrance and exit areas and dumpster areas often experience more distress. If the owner wishes to prolong the life of the pavement in these areas, consideration should be given to using a Portland cement concrete (rigid) pavement in these areas. IGES recommends that the follow pavement section be used for the high traffic areas:

Table 6.8.2
Rigid Pavement Section – Heavy Traffic Areas

Concrete (in.)	Untreated Base Course (in.)	Zone of Reworked Native Soils or Structural Fill (in.)
5	**12**	**8**

Concrete should consist of a low slump, low water cement ratio mix, with a minimum 28-day compressive strength of 4,000 psi. The base course should be compacted to at least 95% of the MDD as determined by ASTM D-1557.

The pavement section thicknesses above assume that there is no mixing over time between the road base and structural fill or native subgrade below. To promote better pavement performance, and thereby prolong the life of the pavement section, we recommend that at a minimum, a lightweight non-woven geotextile be placed between the native soils and the granular borrow. We recommend that a product such as TenCate Mirafi 160N or an IGES-approved equivalent be used.

6.9 MOISTURE PROTECTION AND SURFACE DRAINAGE

As part of good construction practices, moisture should not be allowed to infiltrate into the soils in the vicinity of the foundations. As such, design strategies to minimize ponding and infiltration near the structure should be implemented as follows:

1. Backfill around foundations should consist of native soils placed in maximum 12-inch loose lifts, moisture conditioned to within 2 percent of the optimum moisture content and compacted to approximately 90 percent of the maximum dry density as established by the Modified Proctor (ASTM D1557) in landscaped areas and a minimum of 95 percent beneath concrete slabs or other structural elements. Compacting by means of injecting water or “jetting” is not recommended.
2. Rain gutters should be installed around the entire perimeter of the structures to collect and discharge all roof runoff a minimum of 10-feet from foundation elements or as far away as is practically possible. If 10-feet cannot be achieved then a pipe, swale or other conveyance feature should be installed to carry the water immediately away from the foundation.
3. The ground surface within 10-feet of the foundations should be sloped to drain away from structure with a minimum fall of 6 inches (5%). If 10-feet cannot be achieved, then the ground surface should be sloped to the property line or as far as practical and a conveyance feature used to carry the water to the front or rear of the property.

All pressurized irrigation lines and valves should be placed outside the limits of the foundation backfill. It is recommended that Desert landscaping or xeriscaping be used in this zone. Landscaping and irrigation should be planned in accordance with the localscapes website (http://localscapes.com).

6.10 PRELIMINARY SOIL CORROSION POTENTIAL

Chemical testing was completed as a part of this investigation on a representative sample of the near-surface soils. The test results are presented in Section 4.2.5 of this report.

Based on this data the corrosion potential of native soils on site, with respect to steel, can be characterized as ***Severely corrosive.*** IGES recommends that a corrosion engineer be consulted to assess sacrificial thicknesses or cathodic protection for steel in contact with native soils. Native soils in contact with concrete can be characterized as having a ***Moderate*** sulfate attack potential**.** Type II cement should be used for all concrete in contact with native soils at this project site.

7.0 CLOSURE

7.1 LIMITATIONS

The concept of risk is a significant consideration of geotechnical analyses. The analytical means and methods used in performing geotechnical analyses and development of resulting recommendations do not constitute an exact science. Analytical tools used by geotechnical engineers are based on limited data, empirical correlations, engineering judgment and experience. As such the solutions and resulting recommendations presented in this report cannot be considered risk-free and constitute IGES's best professional opinions and recommendations based on the available data and other design information available at the time they were developed. IGES has developed the preceding analyses, recommendations and designs, at a minimum, in accordance with generally accepted professional geotechnical engineering practices and care being exercised in the project area at the time our services were performed. No warrantees, guarantees or other representations are made.

The information contained in this report is based on limited field testing and understanding of the project. The subsurface data used in the preparation of this report were obtained largely from the explorations made for this project. It is very likely that variations in the soil, rock, and groundwater conditions exist between and beyond the points explored. The nature and extent of the variations may not be evident until construction occurs and additional explorations are completed. If any conditions are encountered at this site that are different from those described in this report, IGES must be immediately notified so that we may make any necessary revisions to recommendations contained in this report. In addition, if the scope of the proposed construction or grading changes from those described in this report, our firm must also be notified.

This report was prepared for our client's exclusive use on the project identified in the foregoing. Use of the data, recommendations or design information contained herein for any other project or development of the site not as specifically described in this report is at the user's sole risk and without the approval of IGES, Inc. It is the client's responsibility to see that all parties to the project including the designer, contractor, subcontractors, etc. are made aware of this report in its entirety. The use of information contained in this report for bidding purposes should be done at the contractor's option and risk.

We recommend that IGES be retained to review the final design plans, grading plans and specifications to determine if our engineering recommendations have been properly incorporated in the project development documents. We also recommend that IGES be retained to evaluate, construction performance and other geotechnical aspects of the projects as construction initiates and progresses through its completion.

8.0 REFERENCES CITED

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APPENDIX A

Base Maps:
USGS Park City East
7.5-Minute Quadrangle Topographic Map

0' 1000' 2000'

SCALE 1:24,000
Contour Interval – 40 feet

N

MAP LOCATION

IGES®

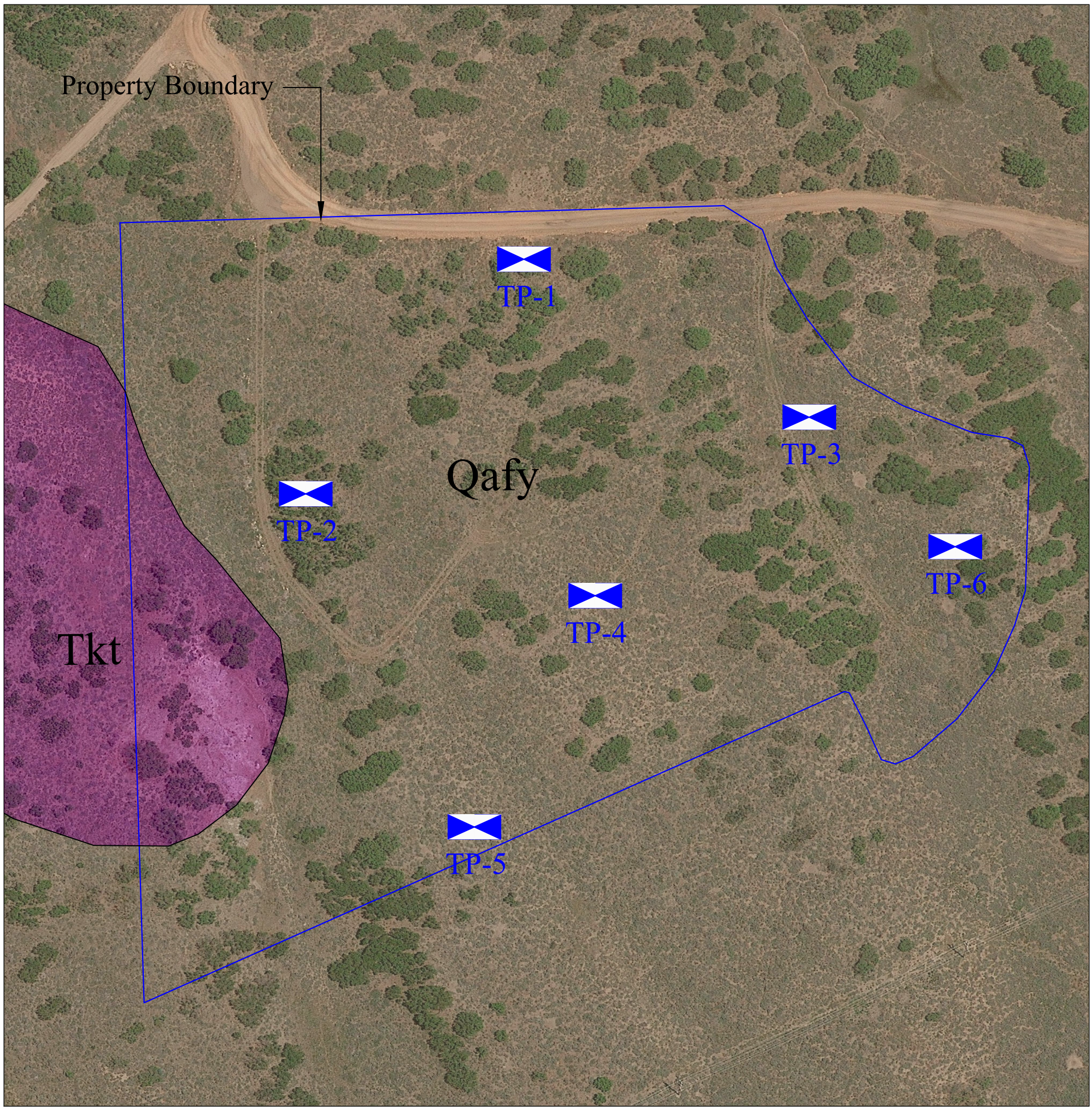
Project Number 00733-022

Geotechnical and Geologic Hazards Investigation
Shoreline Development, Phase 3
Perfect Pass Lane
Hideout, Utah

SITE VICINITY MAP

Figure

A-1



Base Map: Google Earth Imagery, accessed from Utah AGRC (dated: 6-22-2017)

Legend

Qafy Young and Middle Fan Alluvium (Holocene to Pleistocene)

Tkt Lava Flows of Todd Hollow (lower Oligocene)

Approximate Test Pit Location

TP-6 Test Pit Number

N

0 100 200

FEET

SCALE 1" = 100'
(11"x17" ONLY)

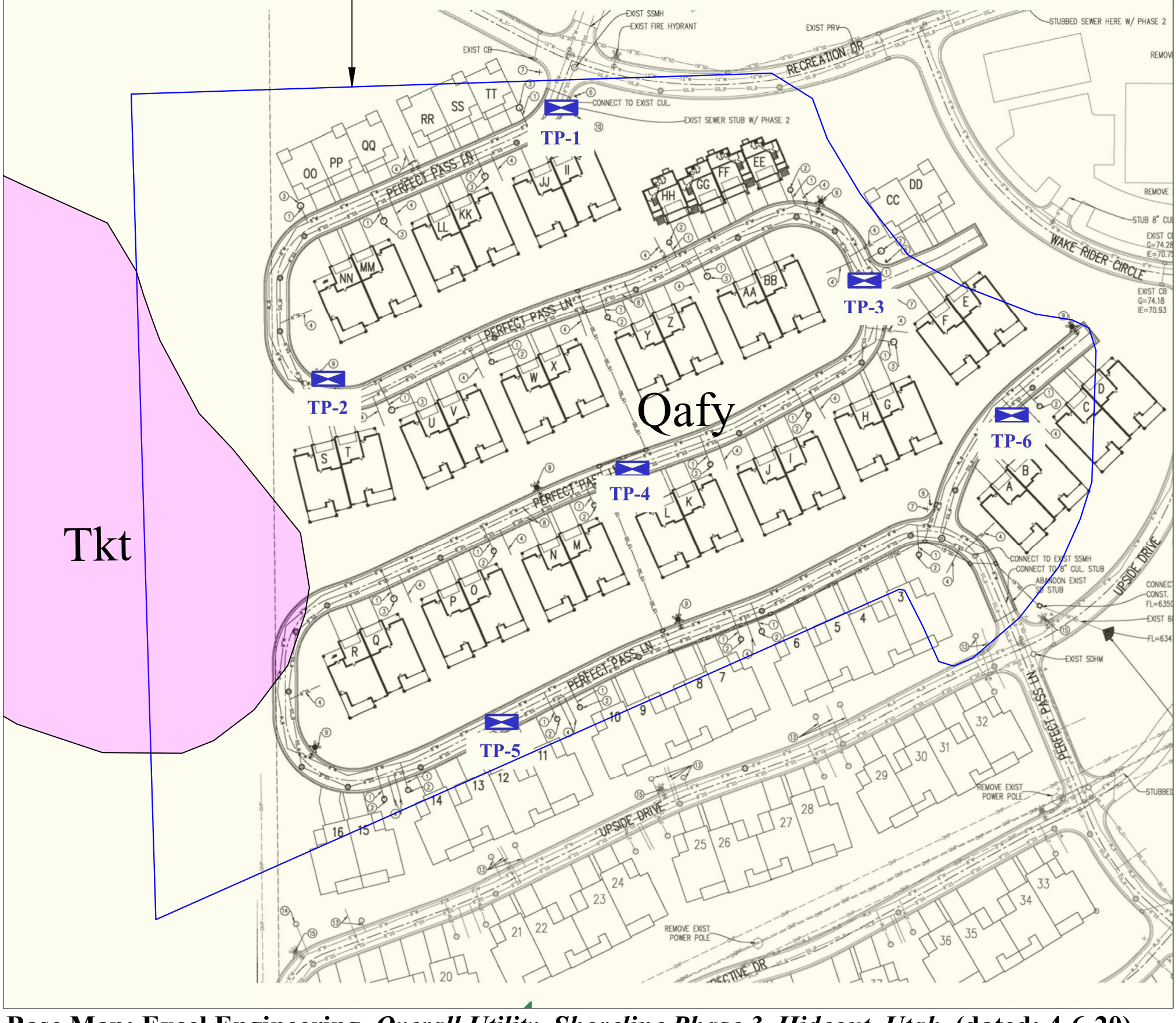
IGES®

Project Number: 00733-022

Geotechnical Investigation
Shoreline Phase III
Perfect Pass Lane
Hideout, Utah

Aerial Image

Figure
A-2a



Base Map: **Excel Engineering, *Overall Utility, Shoreline Phase 3, Hideout, Utah*, (dated: 4-6-20)**

Legend

Qafy Young and Middle Fan Alluvium (Holocene to Pleistocene)

Tkt Lava Flows of Todd Hollow (lower Oligocene)

Approximate Test Pit Location

TP-6 Test Pit Number

N

0 100 200
FEET

SCALE 1" = 100'
(11"x17" ONLY)

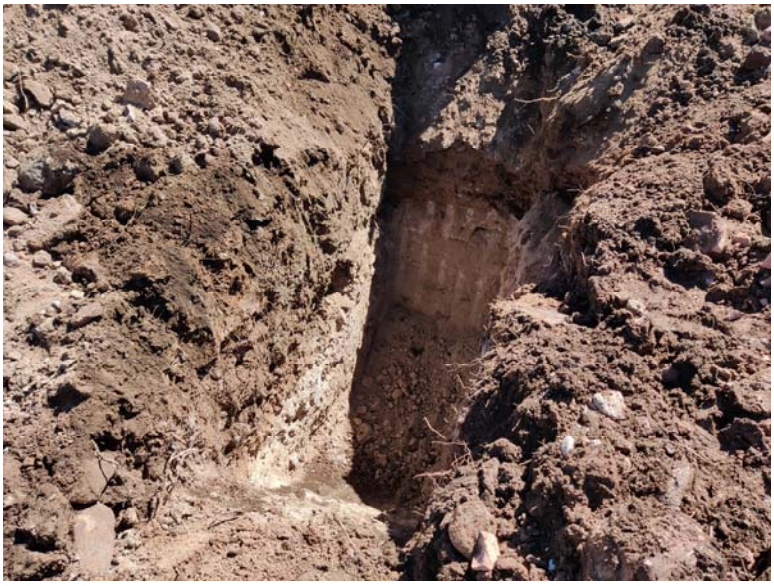
IGES®

Project Number: 00733-022

Geotechnical Investigation
Shoreline Phase III
Perfect Pass Lane
Hideout, Utah

Geotechnical and Local Geology Map

Figure
A-2b



IGES®

Project Number 00733-022

Geotechnical Investigation
Shoreline Phase III
Perfect Pass Lane
Hideout, Utah

SITE PHOTOS
June 9, 2020

Figure

A-3

DATE
STARTED: 6/9/20
COMPLETED: 6/9/20
BACKFILLED: 6/9/20

Geotechnical Investigation
Shoreline Phase III
Perfect Pass Lane
Hideout, Utah
Project Number 00733-022

IGES Rep: DJS
Rig Type: Track Hoe

TEST PIT NO:
TP-1
Sheet 1 of 1

LOCATION
LATITUDE LONGITUDE ELEVATION (ft)

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					Topsoil - Clayey GRAVEL with sand and occasional cobbles - soft to medium dense, moist, dark to reddish brown 2 to 3 inches typical					
					CL	Native - Sandy Lean CLAY with occasional gravel and cobbles - medium stiff to stiff, moist, moderate brown occasional roots, no visible pinholes					
1											
	5						84.8	13.9			
						- 18 inch boulder					
2						- more gravel, occasional boulders					
					GC	Clayey GRAVEL with sand, cobbles and boulders - dense, moist, moderate to reddish brown 2 to 4 inches typical, sub-angular to sub-rounded		18.1	33.3		
3	10					No groundwater observed Bottom of test pit @ 10.5 Feet					
4											

Moisture Content and Atterberg Limits
Plastic Limit — Moisture Content — Liquid Limit
10 20 30 40 50 60 70 80 90

LOG OF TEST PITS (A) - (4 LINE HEADER) GINT 00733-022.GPJ IGES.GDT 6/23/20

IGES®

SAMPLE TYPE
- GRAB SAMPLE
- 3" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:
Location and elevation are approximate and not survey grade

Figure A - 4

DATE
STARTED: 6/9/20
COMPLETED: 6/9/20
BACKFILLED: 6/9/20

Geotechnical Investigation
Shoreline Phase III
Perfect Pass Lane
Hideout, Utah
Project Number 00733-022

IGES Rep: DJS
Rig Type: Track Hoe

TEST PIT NO:
TP-2
Sheet 1 of 1

LOCATION
LATITUDE LONGITUDE ELEVATION (ft)

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					Topsoil - Sandy Lean CLAY with gravel - medium stiff, moist, dark to moderate brown					
					CL	Native - Sandy Lean CLAY with gravel and occasional cobbles - medium stiff to stiff, moist, moderate brown		20.2	80.4		
1											
	5										
2											
					GP-GM	Poorly Graded GRAVEL with silt, sand, cobbles and occasional boulders - dense to very dense, slightly moist, light brown to tan, 1 to 3 inches typical, sub-rounded to sub-angular		6.6	10.6		
3	10					- very dense to hard					
						No groundwater observed Bottom of test pit @ 10.5 Feet					
4											

Moisture Content and Atterberg Limits
Plastic Limit — Moisture Content — Liquid Limit
10 20 30 40 50 60 70 80 90

LOG OF TEST PITS (A) - (4 LINE HEADER) GINT 00733-022.GPJ IGES.GDT 6/23/20

IGES®

SAMPLE TYPE
- GRAB SAMPLE
- 3" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:
Location and elevation are approximate and not survey grade

Figure A - 5

DATE
STARTED: 6/9/20
COMPLETED: 6/9/20
BACKFILLED: 6/9/20

Geotechnical Investigation
Shoreline Phase III
Perfect Pass Lane
Hideout, Utah
Project Number 00733-022

IGES Rep: DJS
Rig Type: Track Hoe

TEST PIT NO:
TP-3
Sheet 1 of 1

LOCATION
LATITUDE LONGITUDE ELEVATION (ft)

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					Topsoil - Sandy Lean CLAY - medium stiff, moist, dark brown moderate organics					
					CL	Native - Sandy Lean CLAY - medium stiff to stiff, moist, dark to moderate brown shiney, little to no pinholes					
1								24.8		46	25
	5					- moderate to light brown					
2							98.3	20.2			
						- with occasional gravel					
3	10					- with occasional cobbles, little to no pinholes					
						No groundwater observed					
4						Bottom of test pit @ 11.5 Feet					

Moisture Content and Atterberg Limits
Plastic Limit | Moisture Content | Liquid Limit
10 20 30 40 50 60 70 80 90

LOG OF TEST PITS (A) - (4 LINE HEADER) GINT 00733-022.GPJ IGES.GDT 6/23/20

IGES®

SAMPLE TYPE
- GRAB SAMPLE
- 3" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:
Location and elevation are approximate and not survey grade

Figure A - 6

DATE
STARTED: 6/9/20
COMPLETED: 6/9/20
BACKFILLED: 6/9/20

Geotechnical Investigation
Shoreline Phase III
Perfect Pass Lane
Hideout, Utah
Project Number 00733-022

IGES Rep: DJS
Rig Type: Track Hoe

TEST PIT NO:
TP-4
Sheet 1 of 1

LOCATION
LATITUDE LONGITUDE ELEVATION (ft)

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					Topsoil - Sandy Lean CLAY - medium stiff, moist, dark brown					
					CL	Native - Sandy Lean CLAY - very stiff, moist, moderate brown no visible pinholes, shiny					
1							95.8	20.8			
						- less shiney					
	5					- occasional gravel, hard, no visible pinholes, blocky		14.1	61.4		
2											
						- no visible pinholes					
3	10					- more sand, no visible pinholes					
4						No groundwater observed					
						Bottom of test pit @ 12.5 Feet					

Moisture Content and Atterberg Limits
Plastic Limit | Moisture Content | Liquid Limit
10 20 30 40 50 60 70 80 90

IGES®

SAMPLE TYPE
- GRAB SAMPLE
- 3" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:
Location and elevation are approximate and not survey grade

Figure A - 7

DATE
STARTED: 6/9/20
COMPLETED: 6/9/20
BACKFILLED: 6/9/20

Geotechnical Investigation
Shoreline Phase III
Perfect Pass Lane
Hideout, Utah
Project Number 00733-022

IGES Rep: DJS
Rig Type: Track Hoe

TEST PIT NO:
TP-5
Sheet 1 of 1

LOCATION
LATITUDE LONGITUDE ELEVATION (ft)

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					Topsoil - Sandy lean CLAY - medium stiff, moist, dark brown						
					CL	Native - Sandy Lean CLAY - stiff, moist, moderate to reddish brown no visible pinholes						
1												
	5					- very stiff to hard, occasional fine pinholes						
2						- with occasional gravel, slightly moist						
						- trace fine pinholes						
3	10					No groundwater observed						
						Bottom of test pit @ 10 Feet						
4												

SAMPLE TYPE
- GRAB SAMPLE
- 3" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:
Location and elevation are approximate and not survey grade

Figure A - 8

DATE
STARTED: 6/9/20
COMPLETED: 6/9/20
BACKFILLED: 6/9/20

Geotechnical Investigation
Shoreline Phase III
Perfect Pass Lane
Hideout, Utah
Project Number 00733-022

IGES Rep: DJS
Rig Type: Track Hoe

TEST PIT NO:
TP-6
Sheet 1 of 1

LOCATION
LATITUDE LONGITUDE ELEVATION (ft)

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					Topsoil - Sandy Lean CLAY - medium stiff, moist, dark brown moderate organics					
					CL	Native - Sandy Lean CLAY - medium stiff to stiff, moist, moderate to light brown moderate fine pinholes					
1							88.4	9.9			
	5					- light brown, less pinholes					
2											
						- stiff, with occasional gravel, moderate fine pinholes					
3	10					- blocky, less pinholes					
						No groundwater observed					
4						Bottom of test pit @ 11.5 Feet					

Moisture Content and Atterberg Limits
Plastic Limit — Moisture Content — Liquid Limit
10 20 30 40 50 60 70 80 90

SAMPLE TYPE
- GRAB SAMPLE
- 3" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:
Location and elevation are approximate and not survey grade

Figure A - 9

LOG OF TEST PITS (A) - (4 LINE HEADER) GINT 00733-022.GPJ IGES.GDT 6/23/20

UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS			USCS SYMBOL	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS (More than half of material is larger than the #200 sieve)	GRAVELS (More than half of coarse fraction is larger than the #4 sieve)	CLEAN GRAVELS WITH LITTLE OR NO FINES	GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE OR NO FINES
			GP	POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE OR NO FINES
		GRAVELS WITH OVER 12% FINES	GM	SILTY GRAVELS, GRAVEL-SILT-SAND MIXTURES
			GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
	SANDS (More than half of coarse fraction is smaller than the #4 sieve)	CLEAN SANDS WITH LITTLE OR NO FINES	SW	WELL-GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE OR NO FINES
			SP	POORLY-GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE OR NO FINES
		SANDS WITH OVER 12% FINES	SM	SILTY SANDS, SAND-GRAVEL-SILT MIXTURES
			SC	CLAYEY SANDS SAND-GRAVEL-CLAY MIXTURES
FINE GRAINED SOILS (More than half of material is smaller than the #200 sieve)	SILTS AND CLAYS (Liquid limit less than 50)		ML	INORGANIC SILTS & VERY FINE SANDS, SILTY OR CLAYEY FINE SANDS, CLAYEY SILTS WITH SLIGHT PLASTICITY
			CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
			OL	ORGANIC SILTS & ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS (Liquid limit greater than 50)		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILT
			CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH	ORGANIC CLAYS & ORGANIC SILTS OF MEDIUM-TO-HIGH PLASTICITY
HIGHLY ORGANIC SOILS			PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

LOG KEY SYMBOLS

BORING SAMPLE LOCATION

TEST-PIT SAMPLE LOCATION

WATER LEVEL (level after completion)

WATER LEVEL (level where first encountered)

CEMENTATION

DESCRIPTION	DESCRIPTION
WEAKELY	CRUMBLES OR BREAKS WITH HANDLING OR SLIGHT FINGER PRESSURE
MODERATELY	CRUMBLES OR BREAKS WITH CONSIDERABLE FINGER PRESSURE
STRONGLY	WILL NOT CRUMBLE OR BREAK WITH FINGER PRESSURE

OTHER TESTS KEY

C	CONSOLIDATION	SA	SIEVE ANALYSIS
AL	ATTERBERG LIMITS	DS	DIRECT SHEAR
UC	UNCONFINED COMPRESSION	T	TRIAXIAL
S	SOLUBILITY	R	RESISTIVITY
O	ORGANIC CONTENT	RV	R-VALUE
CBR	CALIFORNIA BEARING RATIO	SU	SOLUBLE SULFATES
COMP	MOISTURE/DENSITY RELATIONSHIP	PM	PERMEABILITY
CI	CALIFORNIA IMPACT	-200	% FINER THAN #200
COL	COLLAPSE POTENTIAL	Gs	SPECIFIC GRAVITY
SS	SHRINK SWELL	SL	SWELL LOAD

MODIFIERS

DESCRIPTION	%
TRACE	<5
SOME	5 - 12
WITH	>12

MOISTURE CONTENT

DESCRIPTION	FIELD TEST
DRY	ABSENCE OF MOISTURE, DUSTY, DRY TO THE TOUCH
MOIST	DAMP BUT NO VISIBLE WATER
WET	VISIBLE FREE WATER, USUALLY SOIL BELOW WATER TABLE

STRATIFICATION

DESCRIPTION	THICKNESS	DESCRIPTION	THICKNESS
SEAM	1/16 - 1/2"	OCCASIONAL	ONE OR LESS PER FOOT OF THICKNESS
LAYER	1/2 - 12"	FREQUENT	MORE THAN ONE PER FOOT OF THICKNESS

GENERAL NOTES

1. Lines separating strata on the logs represent approximate boundaries only. Actual transitions may be gradual.
2. No warranty is provided as to the continuity of soil conditions between individual sample locations.
3. Logs represent general soil conditions observed at the point of exploration on the date indicated.
4. In general, Unified Soil Classification designations presented on the logs were evaluated by visual methods only. Therefore, actual designations (based on laboratory tests) may vary.

APPARENT / RELATIVE DENSITY - COARSE-GRAINED SOIL

APPARENT DENSITY	SPT (blows/ft)	MODIFIED CA. SAMPLER (blows/ft)	CALIFORNIA SAMPLER (blows/ft)	RELATIVE DENSITY (%)	FIELD TEST
VERY LOOSE	<4	<4	<5	0 - 15	EASILY PENETRATED WITH 1/2-INCH REINFORCING ROD PUSHED BY HAND
LOOSE	4 - 10	5 - 12	5 - 15	15 - 35	DIFFICULT TO PENETRATE WITH 1/2-INCH REINFORCING ROD PUSHED BY HAND
MEDIUM DENSE	10 - 30	12 - 35	15 - 40	35 - 65	EASILY PENETRATED A FOOT WITH 1/2-INCH REINFORCING ROD DRIVEN WITH 5-LB HAMMER
DENSE	30 - 50	35 - 60	40 - 70	65 - 85	DIFFICULT TO PENETRATED A FOOT WITH 1/2-INCH REINFORCING ROD DRIVEN WITH 5-LB HAMMER
VERY DENSE	>50	>60	>70	85 - 100	PENETRATED ONLY A FEW INCHES WITH 1/2-INCH REINFORCING ROD DRIVEN WITH 5-LB HAMMER

CONSISTENCY - FINE-GRAINED SOIL		TORVANE	POCKET PENETROMETER	FIELD TEST
CONSISTENCY	SPT (blows/ft)	UNTRAINED SHEAR STRENGTH (tsf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	
VERY SOFT	<2	<0.125	<0.25	EASILY PENETRATED SEVERAL INCHES BY THUMB. EXUDES BETWEEN THUMB AND FINGERS WHEN SQUEEZED BY HAND.
SOFT	2 - 4	0.125 - 0.25	0.25 - 0.5	EASILY PENETRATED ONE INCH BY THUMB. MOLDED BY LIGHT FINGER PRESSURE.
MEDIUM STIFF	4 - 8	0.25 - 0.5	0.5 - 1.0	PENETRATED OVER 1/2 INCH BY THUMB WITH MODERATE EFFORT. MOLDED BY STRONG FINGER PRESSURE.
STIFF	8 - 15	0.5 - 1.0	1.0 - 2.0	INDENTED ABOUT 1/2 INCH BY THUMB BUT PENETRATED ONLY WITH GREAT EFFORT.
VERY STIFF	15 - 30	1.0 - 2.0	2.0 - 4.0	READILY INDENTED BY THUMBNAIL.
HARD	>30	>2.0	>4.0	INDENTED WITH DIFFICULTY BY THUMBNAIL.

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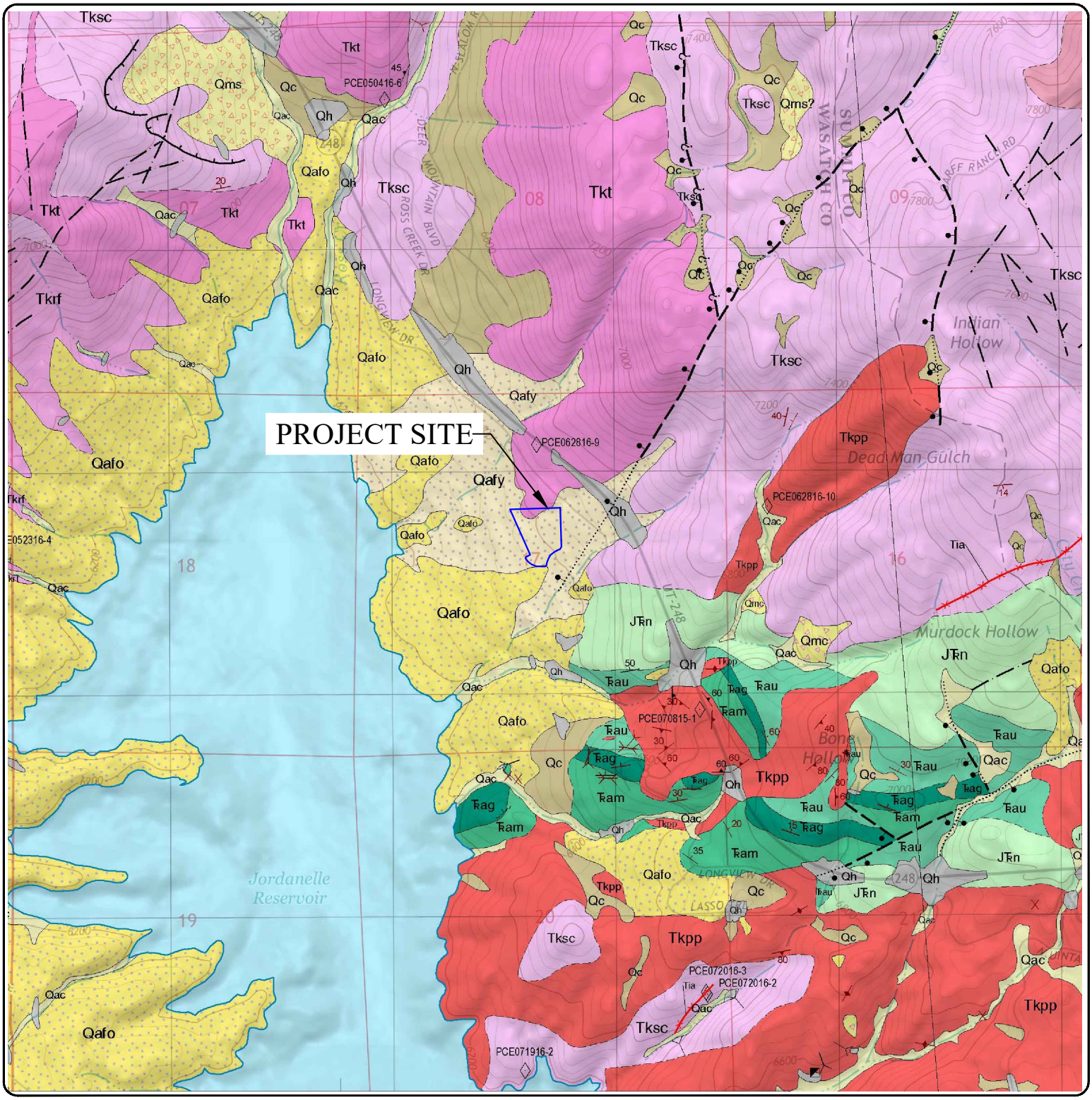
Figure A-10

Key to Soil Symbols and Terminology



Base Map:
UGS Interim Park City East, 7.5' Geologic Quadrangle, Biek (2017)

* Map Legend on Figure A-11b.

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Project Number: 00733-022

Geotechnical Investigation
Shoreline Phase III
Perfect Pass Lane
Hideout, Utah

Regional Geology Map

Figure
A-11a

MAP LEGEND

Qh **Artificial fill** (Historical) – Engineered fill and general borrow material used mostly for major highways and secondary roads that cross small drainages; includes large area of fill and disturbed land near the intersection of Utah Highway 248 and Browns Canyon Road; fill of variable thickness and composition should be anticipated in all developed or disturbed areas; mapped only where fill is typically 6 feet (2 m) or more thick.

Qafy **Young and middle fan alluvium, undivided** (Holocene to upper Pleistocene) – Similar to young fan alluvium (Qaf_1), but forms both active depositional surfaces (Qaf_1 equivalent) and low-level, typically inactive surfaces incised by small streams; deposited principally as debris flows and debris floods, but colluvium locally constitutes a significant part adjacent to range fronts; upper parts of fans are commonly incised; probably less than 40 feet (12 m) thick.

Qafo **Old fan alluvium** (upper to middle Pleistocene) – Poorly to moderately sorted, weakly to non-stratified, clay- to boulder-size sediment deposited principally as debris flows and debris floods; deeply incised by modern drainages, but still exhibits characteristic fan morphology; upper parts of fans locally receive debris-flow and colluvial sediment from adjacent slopes; characterized by well-developed secondary calcium carbonate in upper part of deposit; exposed thickness as much as several tens of feet.

Tkt **Lava flows of Todd Hollow** (lower Oligocene) – Medium-gray andesite porphyry lava flows and minor volcanic mudflow breccia; contains 20 to 30% phenocrysts of plagioclase as much as 5 mm in size and minor small hornblende phenocrysts in a fine-grained groundmass; north of Todd Hollow, upper part includes pale-red latite porphyry lava flow with plagioclase, pyroxene, and hornblende phenocrysts (1–2 mm in size) and medium-gray, finer grained andesite porphyry with conspicuous hornblende phenocrysts (as much as 1 mm in size); interfingers with volcanic mudflow breccia of Silver Creek (Tksc); map patterns suggest a thickness of as much as 1000 feet (300 m), but it appears to thin and pinch out northward.

Tksc **Volcanic mudflow breccia of Silver Creek** (lower Oligocene to upper Eocene) – Andesitic to rhyodacitic volcanic mudflow breccia and minor interbedded lava flows and ash-flow tuff; typically heterolithic, but locally monolithic, the reverse of that reported in Woodfill's (1972) otherwise good work; clasts are andesite and rhyodacite by field classification but chemically range from latite and trachyte to andesite and dacite (Bromfield and others, 1977); weathers to rounded hills, typically with a deep regolith and poor exposure, and commonly covered with a lag of volcanic boulders; locally exhibits prominent lineaments on aerial photographs, the larger ones of which are mapped; some of the best exposures are in Threemile Canyon near the north edge of the map area; similar to and at least in part correlative with the volcanic breccia of Coyote Canyon east of Heber City (Biek and others, 2003); represents deposition as lahars (debris flows of volcanic material) on the distal flanks of stratovolcanoes that once towered over the eastern stocks of the Wasatch intrusive belt; map patterns suggest thicknesses of as much as 1000 feet (300 m) in the southeast part of this map area and at least 1400 feet (430+ m) thick southeast of Heber City (Biek and others, 2003).

MAP SYMBOLS

———— Contact, dashed where approximately located

———.....? Normal fault – dashed where approximately located, dotted where concealed; queried where existence uncertain; bar and ball on down-thrown side

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Project Number: 00733-022

Geotechnical Investigation
Shoreline Phase III
Perfect Pass Lane
Hideout, Utah

Regional Geology Map

Figure
A-11b

APPENDIX B

Particle-Size Distribution (Gradation) of Soils Using Sieve Analysis

(ASTM D6913)

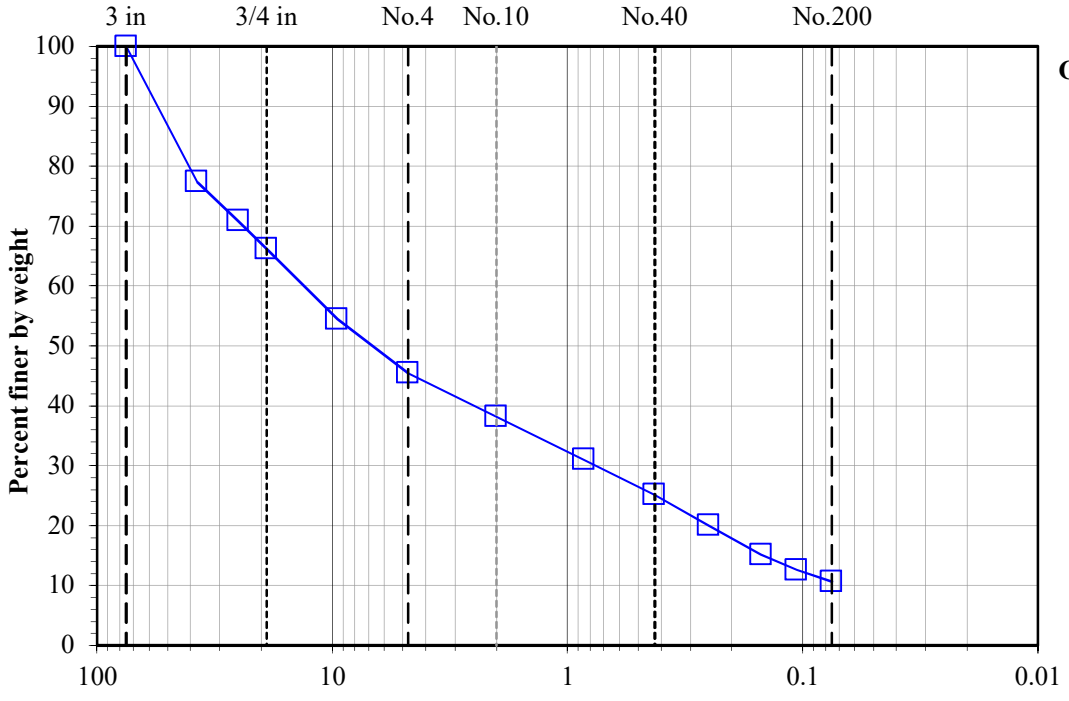
Project: Shoreline PH 3 GTI
No: 00733-022
Location: Hideout
Date: 6/17/2020
By: JP

Boring No.: TP-2
Sample:
Depth: 9.0'
Description: Brown gravel with silt and sand

	Moist	Dry
Split:	Yes	
Split sieve:	3/8"	
Total sample wt. (g):	3990.27	3744.89
+3/8" Coarse fraction (g):	1761.90	1705.42
-3/8" Split fraction (g):	332.06	303.91
Split fraction:	0.545	

Water content data	C.F.(+3/8")	S.F.(-3/8")
Moist soil + tare (g):	2497.23	455.01
Dry soil + tare (g):	2440.77	426.86
Tare (g):	735.86	122.95
Water content (%):	3.3	9.3

Sieve	Accum. Wt. Ret. (g)	Grain Size (mm)	Percent Finer	
6"	-	150	-	
4"	-	100	-	
3"	-	75	100.0	
1.5"	847.52	37.5	77.4	
1"	1090.62	25	70.9	
3/4"	1265.17	19	66.2	
3/8"	1705.42	9.5	54.5	←Split
No.4	50.26	4.75	45.5	
No.10	90.85	2	38.2	
No.20	130.82	0.85	31.0	
No.40	163.62	0.425	25.1	
No.60	192.42	0.25	20.0	
No.100	219.43	0.15	15.1	
No.140	233.68	0.106	12.6	
No.200	244.50	0.075	10.6	



Gravel (%): 54.5
Sand (%): 34.8
Fines (%): 10.6

Comments:
These results are in nonconformance with Method D6913 because the minimum dry mass was not met.

Entered by:_____
Reviewed:_____

Particle-Size Distribution (Gradation) of Soils Using Sieve Analysis

(ASTM D6913)

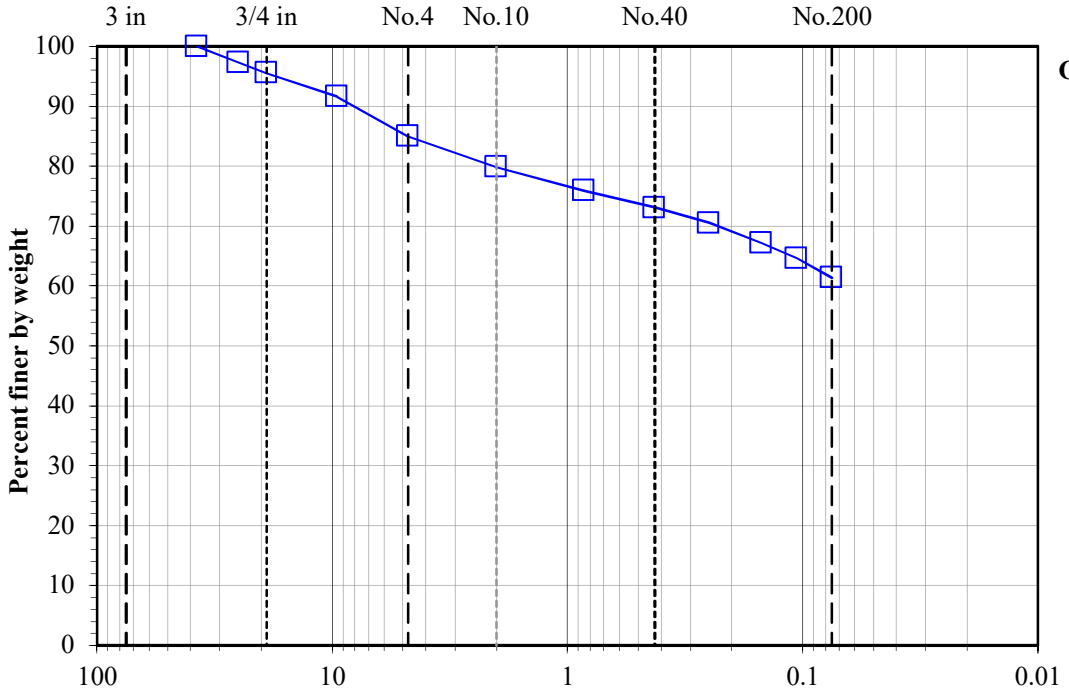
Project: Shoreline PH 3 GTI
No: 00733-022
Location: Hideout
Date: 6/17/2020
By: JP

Boring No.: TP-4
Sample:
Depth: 5.0'
Description: Brown sandy clay with gravel

Split:	Yes	
Split sieve:	3/8"	
	Moist	Dry
Total sample wt. (g):	1919.77	1681.83
+3/8" Coarse fraction (g):	146.26	141.36
-3/8" Split fraction (g):	236.00	204.99
Split fraction:	0.916	

Water content data	C.F.(+3/8")	S.F.(-3/8")
Moist soil + tare (g):	273.75	359.05
Dry soil + tare (g):	268.85	328.04
Tare (g):	127.55	123.05
Water content (%):	3.5	15.1

Sieve	Accum. Wt. Ret. (g)	Grain Size (mm)	Percent Finer	
6"	-	150	-	
4"	-	100	-	
3"	-	75	-	
1.5"	-	37.5	100.0	
1"	45.17	25	97.3	
3/4"	75.27	19	95.5	
3/8"	141.36	9.5	91.6	←Split
No.4	14.85	4.75	85.0	
No.10	26.32	2	79.8	
No.20	35.18	0.85	75.9	
No.40	41.54	0.425	73.0	
No.60	47.29	0.25	70.5	
No.100	54.65	0.15	67.2	
No.140	60.41	0.106	64.6	
No.200	67.62	0.075	61.4	



Gravel (%): 15.0
Sand (%): 23.6
Fines (%): 61.4

Comments:
These results are in nonconformance with Method D6913 because the minimum dry mass was not met.

Entered by:_____
Reviewed:_____

Laboratory Compaction Characteristics of Soil

(ASTM D698 / D1557)

Project: Shoreline PH 3 GTI
No: 00733-022
Location: Hideout
Date: 6/14/2020
By: BF/DKS

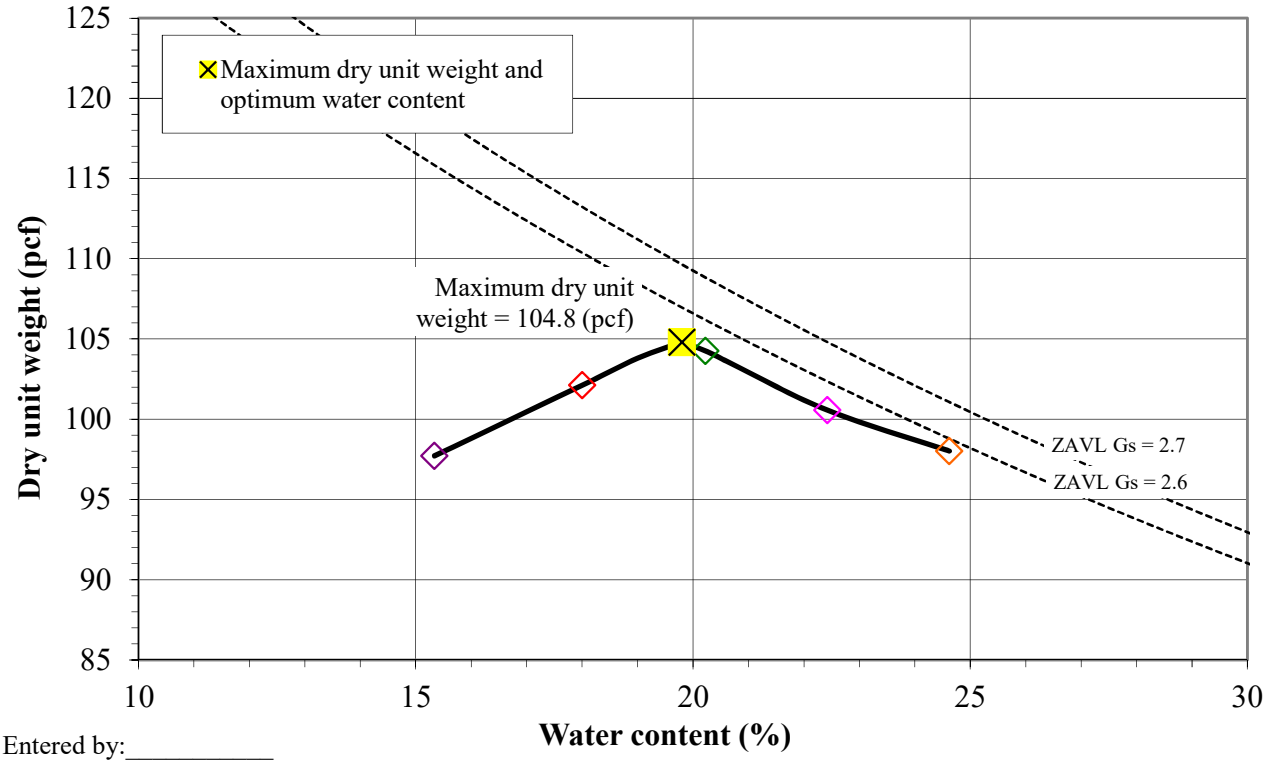
Boring No.: TP-5
Sample:
Depth: 3.0'
Sample Description: Brown clay
Engineering Classification: Not requested
As-received water content (%): Not requested

Method: ASTM D698 B
Mold Id. INC 1
Mold volume (ft^3): 0.0333

Preparation method: Moist
Rammer: Mechanical-circular face
Rock Correction: No

Optimum water content (%): 19.8
Maximum dry unit weight (pcf): 104.8

Point Number	As Is	+2%	+4%	+6%	+8%			
Wt. Sample + Mold (g)	5931.3	6049.2	6122.5	6088.7	6074.2			
Wt. of Mold (g)	4228.8	4228.8	4228.8	4228.8	4228.8			
Wet Unit Wt., γ_m (pcf)	112.7	120.5	125.4	123.1	122.2			
Wet Soil + Tare (g)	1681.35	1796.82	2080.13	818.76	989.91			
Dry Soil + Tare (g)	1486.41	1556.62	1766.38	700.18	827.34			
Tare (g)	215.37	222.24	215.02	171.26	167.08			
Water Content, w (%)	15.3	18.0	20.2	22.4	24.6			
Dry Unit Wt., γ_d (pcf)	97.7	102.1	104.3	100.6	98.0			



Entered by:_____

Reviewed:_____

California Bearing Ratio

(ASTM D 1883)

Project: Shoreline PH 3 GTI
Number: 00733-022
Location: Hideout
Date: 6/22/2020
By: BSS/JP

Boring No.: TP-5
Sample:
Depth: 3.0'
Original Method: ASTM D698 B
Engineering Classification: Not requested
Condition of Sample: Soaked
Scalp and Replace: No

Maximum Dry Unit Weight (pcf): 104.8
Optimum Water Content (%): 19.8
Relative Compaction (%): 99.9
0.1 in. CBR (%): 7.5
0.2 in. CBR (%): 6.6

As Compacted Data			Before	After
Mold Id.	A	Wet Soil + Tare (g)	747.96	949.31
Wt. of Mold + Sample (g)	11519.8	Dry Soil + Tare (g)	659.97	828.03
Wt. of Mold (g)	7242.1	Tare (g)	223.50	219.41
Dry Unit Weight (pcf)	104.7	Water Content (%)	20.2	19.9
After Soaking Data			**Average**	**Top 1 in.**
Wt. of Mold + Sample (g)	11584.9	Wet Soil + Tare (g)	1653.61	684.69
Dry Unit Weight (pcf)	104.0	Dry Soil + Tare (g)	1432.23	586.02
		Tare (g)	393.02	168.13
		Water Content (%)	21.3	23.6

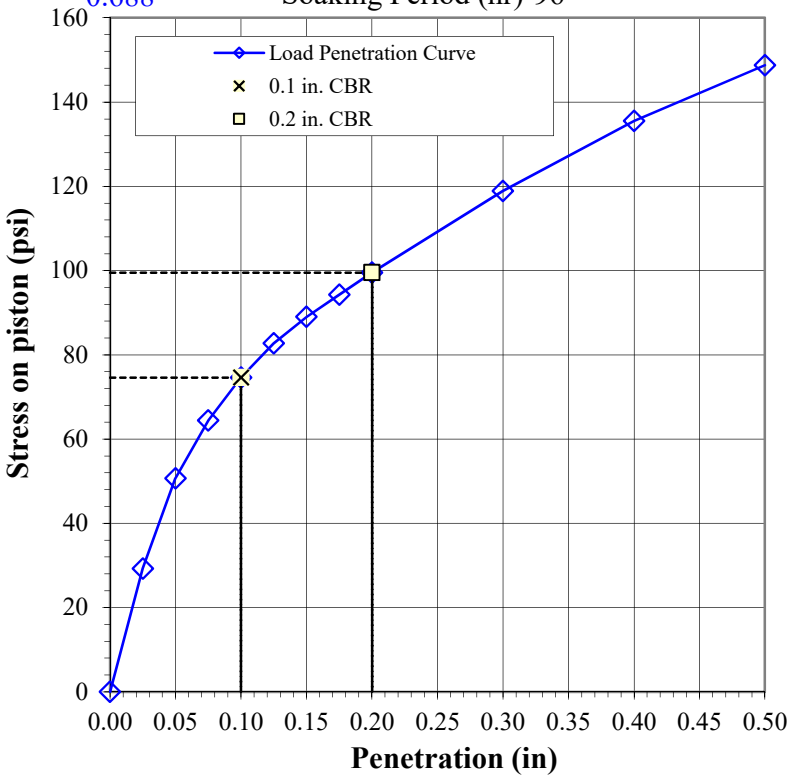
Swell Data

Date	Time	Dial	
6/15/2020	11:00	0.656	Surcharge (psf) 50
6/19/2020	11:00	0.688	Swell (%) 0.70
			Soaking Period (hr) 96

Penetration Data	Piston ID	CBR T1

Zero load (lb) = 0
Area of Piston (in^2) = 3.0

Penetration (in.)	Raw Load (lb)	Piston Stress (psi)	Std. Stress (psi)
0.000	0	0	
0.025	88	29	
0.050	152	51	
0.075	193	64	
0.100	224	75	1000
0.125	248	83	1125
0.150	267	89	1250
0.175	283	94	1375
0.200	298	99	1500
0.300	357	119	1900
0.400	407	135	2300
0.500	446	149	2600



Entered By:_____
Reviewed:_____

Collapse/Swell Potential of Soils

(ASTM D4546 Method B)

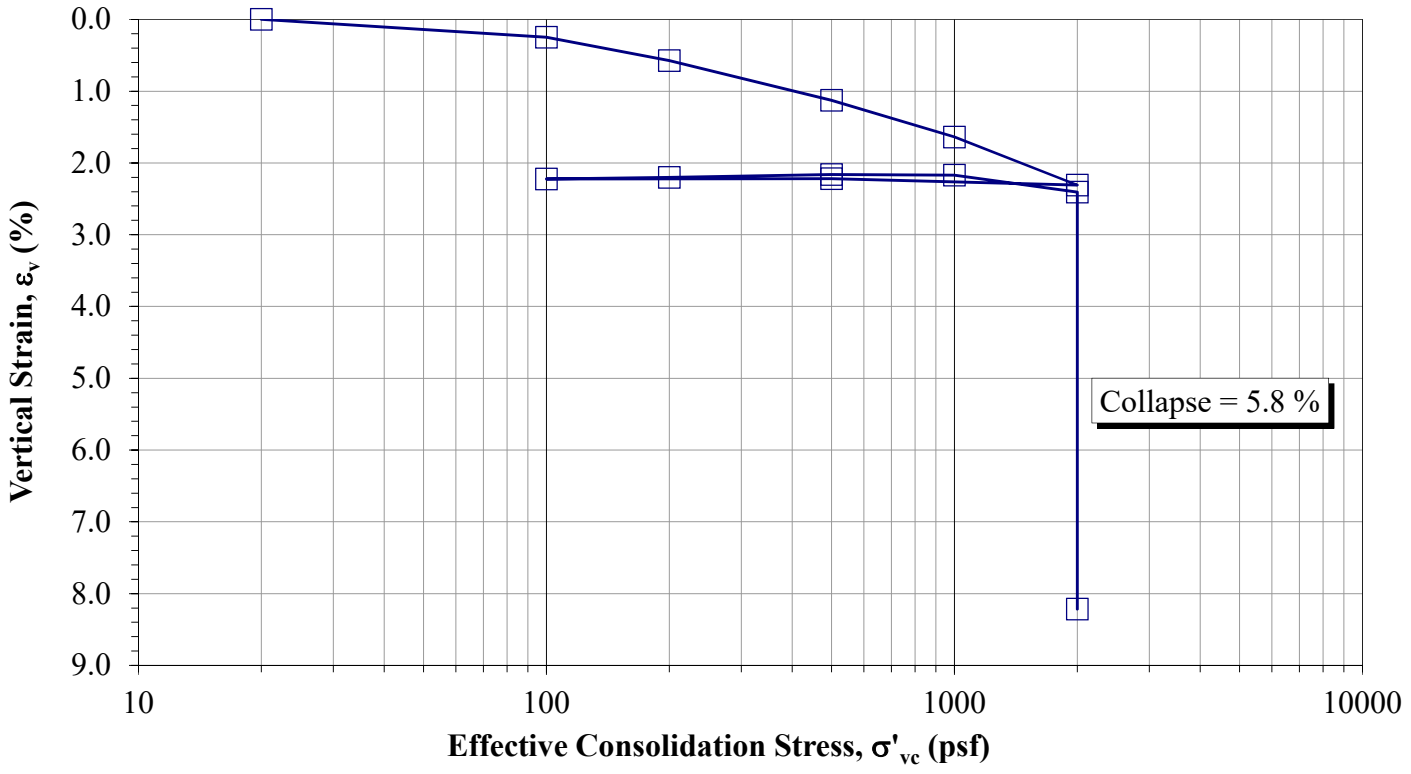
Project: Shoreline PH 3 GTI
No: 00733-022
Location: Hideout
Date: 6/15/2020
By: JP

Boring No.: TP-6
Sample:
Depth: 4.0'
Sample Description: Dark brown clay with sand
Engineering Classification: Not requested
Sample type: Undisturbed-trimmed from thin-wall

Consolidometer No.:	5	
Specific gravity, G_s	2.65	Assumed
Collapse (%)	5.8	
Collapse stress (psf)	2000	
Water type used for inundation	Tap	

	Initial (o)	Final (f)
Sample height, H (in.)	0.917	0.842
Sample diameter, D (in.)	2.423	2.423
Mass rings + wet soil (g)	150.03	164.34
Mass rings/tare (g)	42.16	42.16
Moist unit wt., γ_m (pcf)	97.19	119.93
Wet soil + tare (g)	327.42	247.39
Dry soil + tare (g)	309.47	223.78
Tare (g)	128.40	127.38
Water content, w (%)	9.9	24.5
Dry unit wt., γ_d (pcf)	88.4	96.3
Saturation	30.2	90.5

Stress (psf)	Dial (in.)	1-D ε_v (%)	H_c (in.)	e
Seating	0.00000	0.00	0.9170	0.871
20	0.00000	0.00	0.9170	0.871
100	0.00230	0.25	0.9147	0.866
200	0.00525	0.57	0.9118	0.860
500	0.01035	1.13	0.9067	0.850
1000	0.01505	1.64	0.9020	0.840
2000	0.02115	2.31	0.8959	0.828
500	0.02035	2.22	0.8967	0.829
100	0.02040	2.22	0.8966	0.829
200	0.02020	2.20	0.8968	0.830
500	0.01980	2.16	0.8972	0.831
1000	0.01990	2.17	0.8971	0.830
2000	0.02205	2.40	0.8950	0.826
2000	0.07535	8.22	0.8417	0.717



Entered: _____
Reviewed: _____

Direct Shear Test for Soils Under Drained Conditions

(ASTM D3080)

Project: Shoreline PH 3 GTI
No: 00733-022
Location: Hideout
Date: 6/19/2020
By: EH

Boring No.: TP-3
Sample:
Depth: 7.0'
Sample Description: Reddish brown clay with sand
Sample type: Undisturbed-trimmed from thin-wall

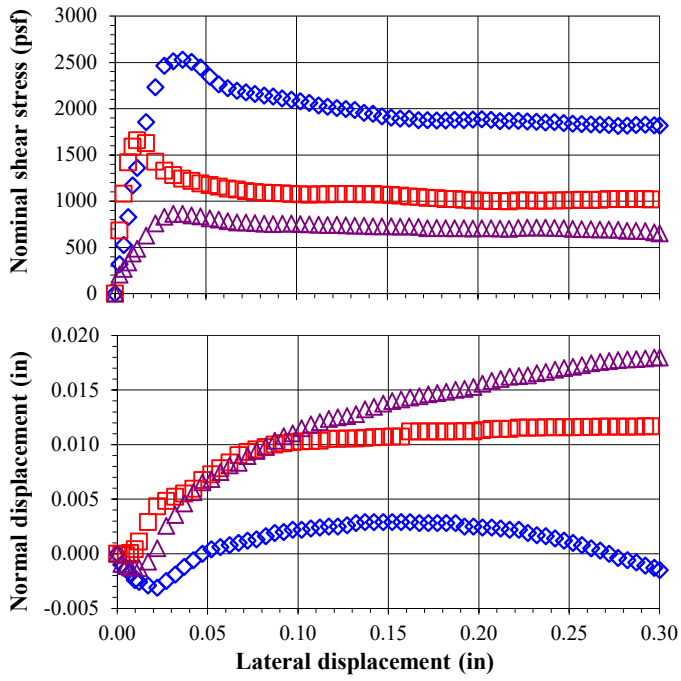
Test type: Inundated
Lateral displacement (in.): 0.3
Shear rate (in./min): 0.0010
Specific gravity, Gs: 2.70 Assumed

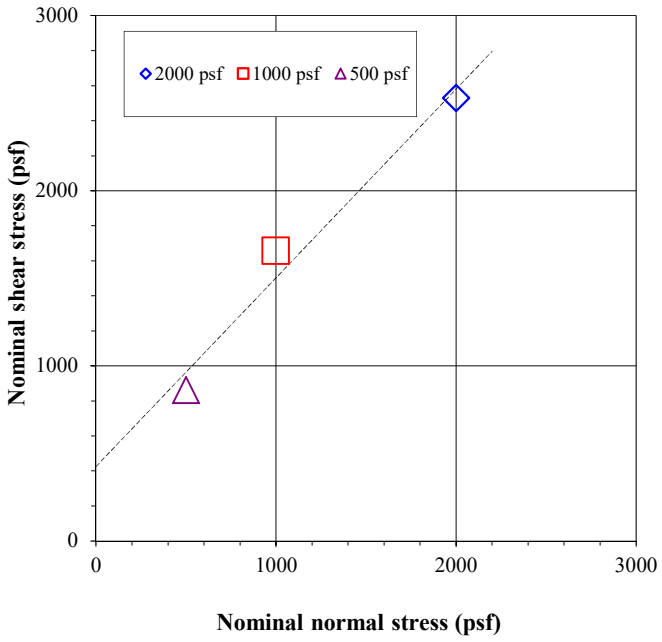
	Sample 1		Sample 2		Sample 3	
Nominal normal stress (psf)	2000		1000		500	
Peak shear stress (psf)	2529		1657		862	
Lateral displacement at peak (in)	0.037		0.012		0.032	
Load Duration (min)	286		291		279	
	Initial	Pre-shear	Initial	Pre-shear	Initial	Pre-shear
Sample height (in)	0.998	0.971	0.993	0.990	1.001	0.987
Sample diameter (in)	2.416	2.416	2.417	2.417	2.415	2.415
Wt. rings + wet soil (g)	187.28	192.47	190.45	195.62	183.91	192.16
Wt. rings (g)	45.10	45.10	45.08	45.08	45.74	45.74
Wet soil + tare (g)	215.13		215.13		215.13	
Dry soil + tare (g)	200.34		200.34		200.34	
Tare (g)	127.28		127.28		127.28	
Water content (%)	20.2	24.6	20.2	24.5	20.2	27.4
Dry unit weight (pcf)	98.5	101.2	101.1	101.4	95.5	96.8
Void ratio, e, for assumed Gs	0.71	0.67	0.67	0.66	0.77	0.74
Saturation (%)*	76.8	100.0	81.9	100.0	71.4	100.0

ϕ' (deg)	47
c' (psf)	426

Average of 3 samples	Initial	Pre-shear
Water content (%)	20.2	25.5
Dry unit weight (pcf)	98.3	99.8

*Pre-shear saturation set to 100% for phase calculations





Comments:
Test specimens #1 and #2 swelled at 125 and 250 psf load steps.

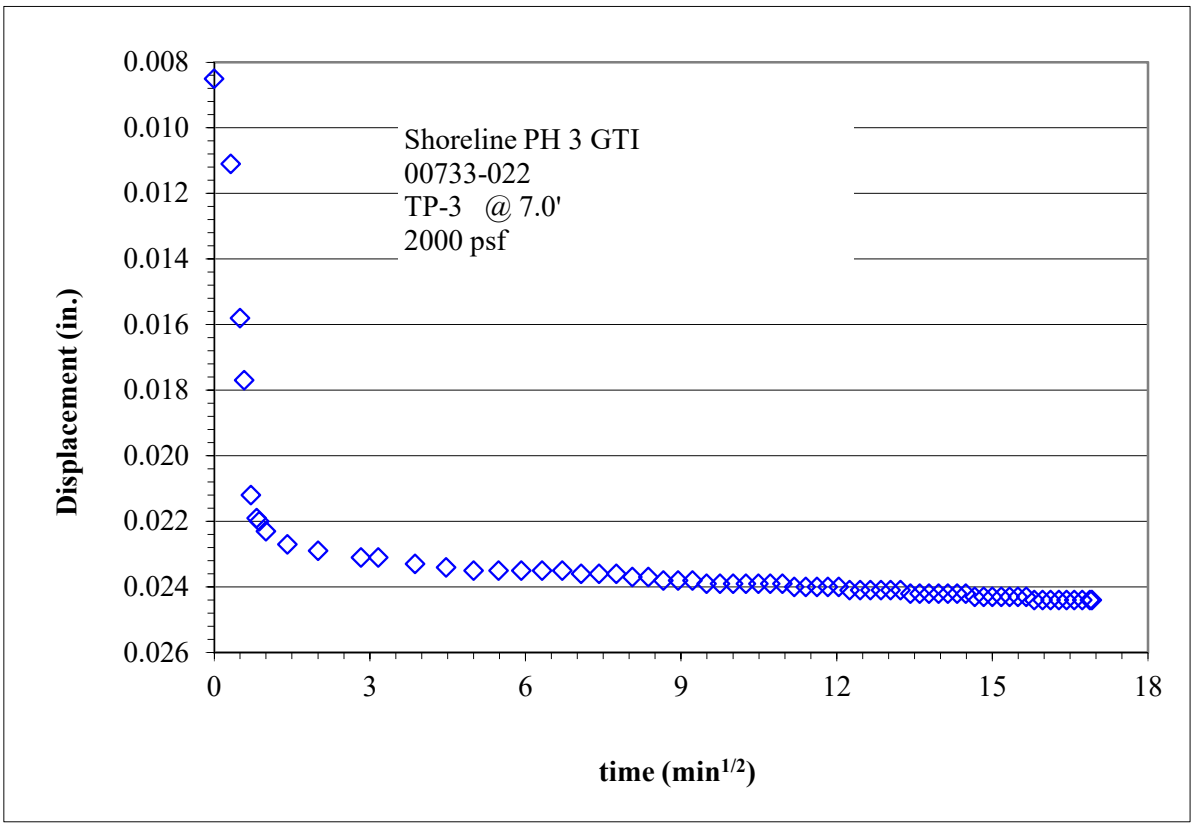
Entered by:_____
Reviewed:_____

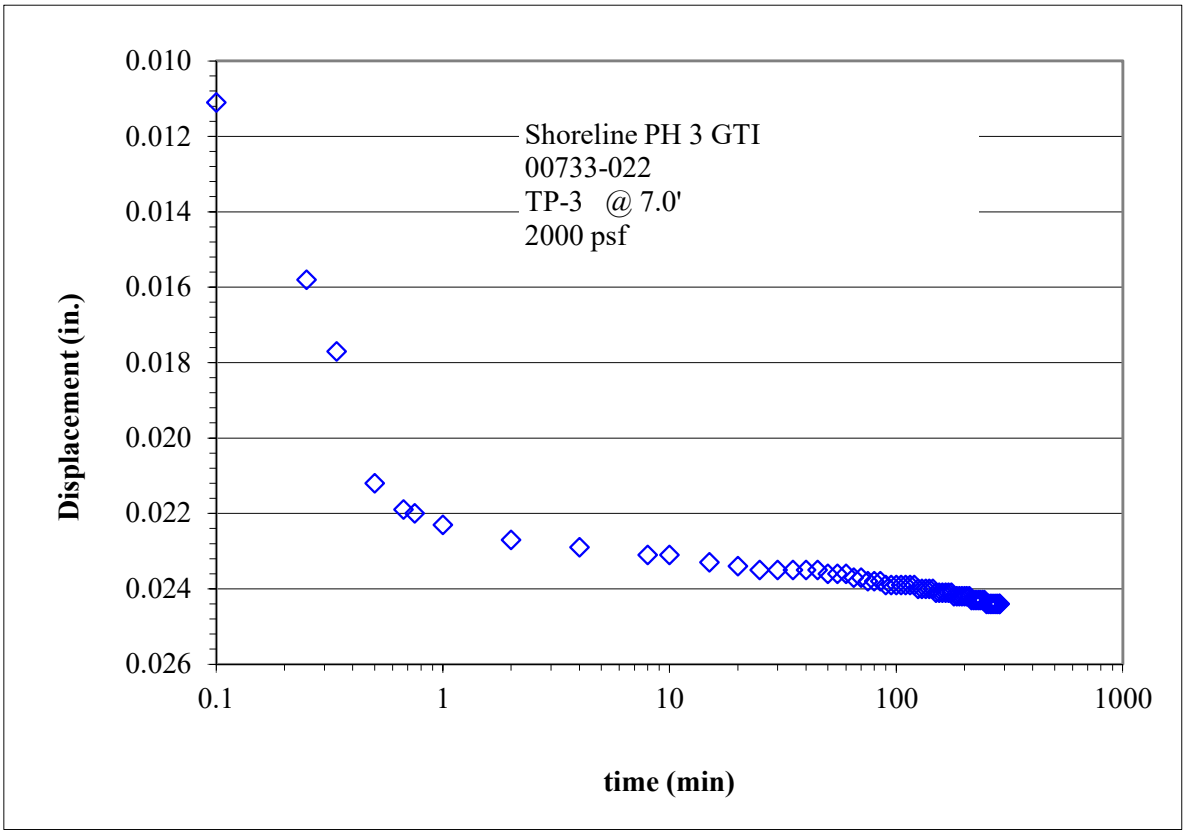
Direct Shear Test for Soils Under Drained Conditions

(ASTM D3080)

Project: Shoreline PH 3 GTI
No: 00733-022
Location: Hideout

Boring No.: TP-3
Sample:
Depth: 7.0'





Direct Shear Test for Soils Under Drained Conditions

(ASTM D3080)

Project: Shoreline PH 3 GTI
No: 00733-022
Location: Hideout
Date: 6/22/2020
By: EH

Boring No.: TP-4
Sample:
Depth: 3.0'
Sample Description: Brown clay
Sample type: Undisturbed-trimmed from thin-wall

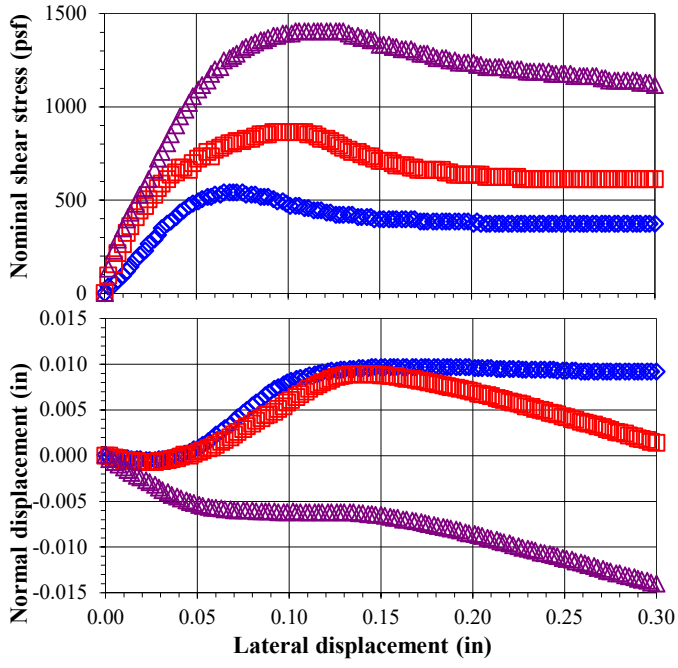
Test type: Inundated
Lateral displacement (in.): 0.3
Shear rate (in./min): 0.0010
Specific gravity, Gs: 2.70 Assumed

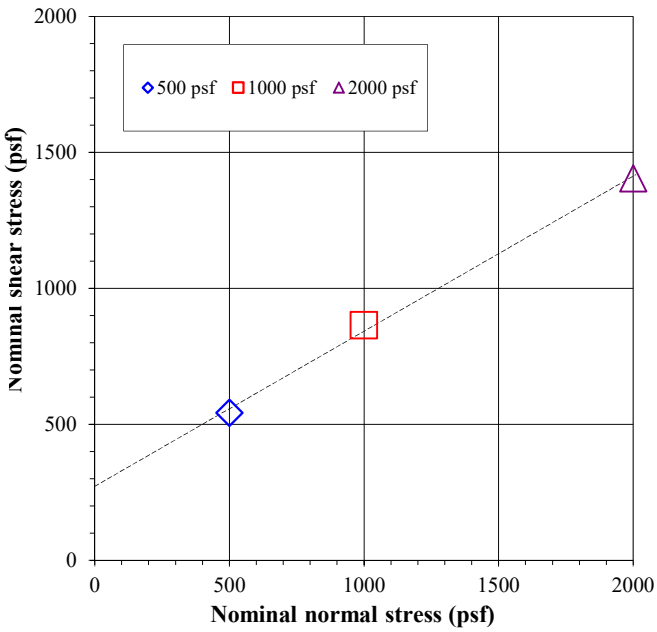
	Sample 1		Sample 2		Sample 3	
Nominal normal stress (psf)	500		1000		2000	
Peak shear stress (psf)	542		865		1405	
Lateral displacement at peak (in)	0.065		0.092		0.104	
Load Duration (min)	300		1290		2730	
	Initial	Pre-shear	Initial	Pre-shear	Initial	Pre-shear
Sample height (in)	0.999	0.972	0.998	0.970	0.998	0.939
Sample diameter (in)	2.412	2.412	2.415	2.415	2.415	2.415
Wt. rings + wet soil (g)	184.38	190.55	184.24	190.52	183.26	187.51
Wt. rings (g)	45.31	45.31	45.30	45.30	44.96	44.96
Wet soil + tare (g)	349.77		349.77		349.77	
Dry soil + tare (g)	311.38		311.38		311.38	
Tare (g)	126.85		126.85		126.85	
Water content (%)	20.8	26.2	20.8	26.3	20.8	24.5
Dry unit weight (pcf)	96.1	98.7	95.8	98.6	95.4	101.4
Void ratio, e, for assumed Gs	0.75	0.71	0.76	0.71	0.77	0.66
Saturation (%)*	74.5	100.0	74.0	100.0	73.3	100.0

ϕ' (deg)	30
c' (psf)	272

*Pre-shear saturation set to 100% for phase calculations

Average of 3 samples	Initial	Pre-shear
Water content (%)	20.8	25.6
Dry unit weight (pcf)	95.8	99.6





Comments:
Time rate data are limited due to equipment error during data collection.

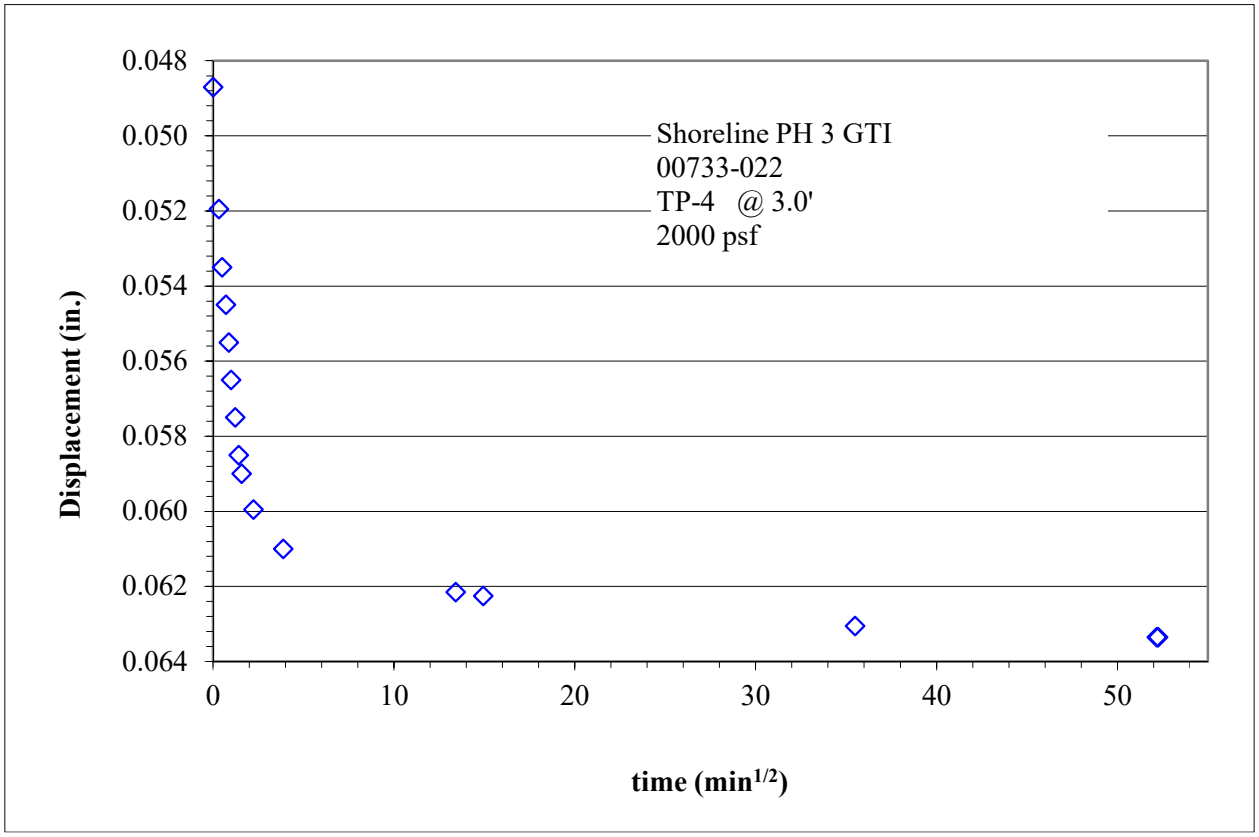
Entered by:_____
Reviewed:_____

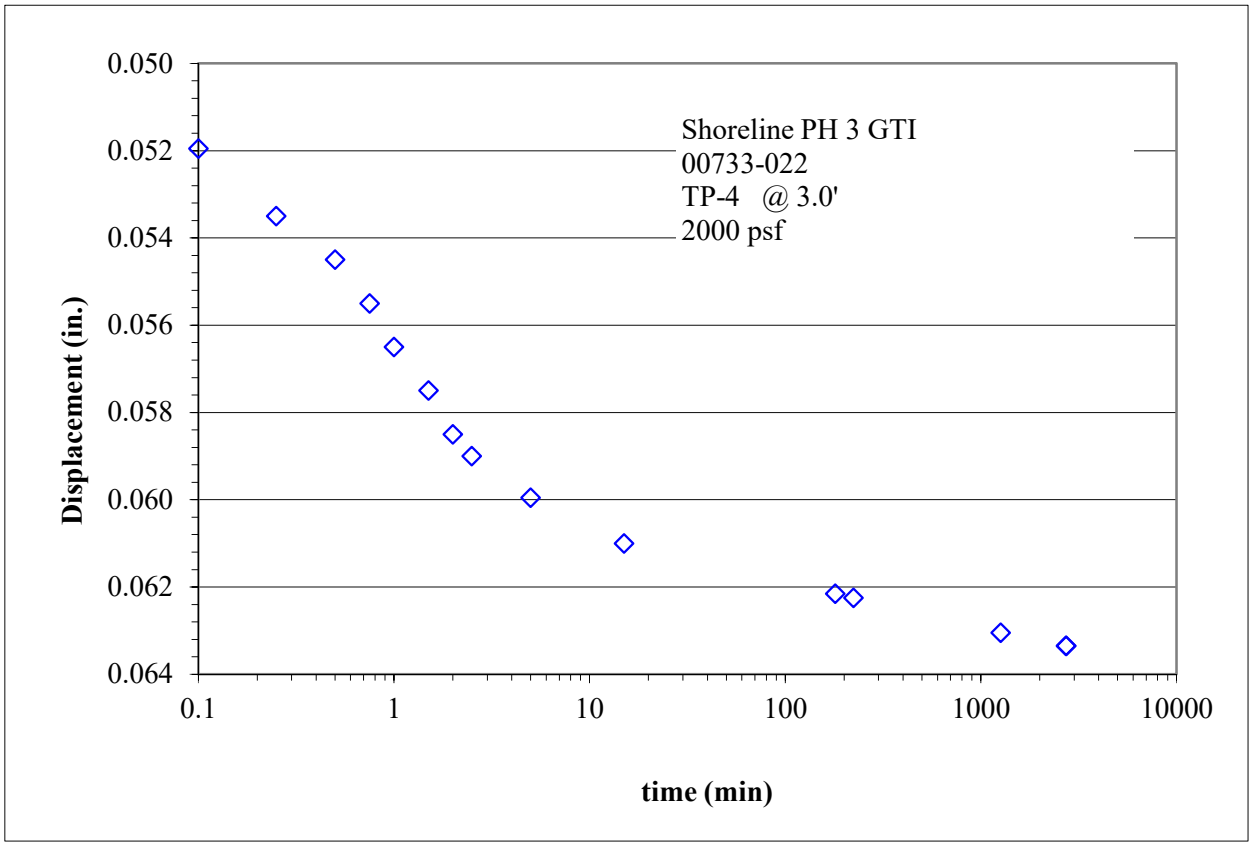
Direct Shear Test for Soils Under Drained Conditions

(ASTM D3080)

Project: Shoreline PH 3 GTI
No: 00733-022
Location: Hideout

Boring No.: TP-4
Sample:
Depth: 3.0'





Minimum Laboratory Soil Resistivity, pH of Soil for Use in Corrosion Testing, and Ions in Water by Chemically Suppressed Ion Chromatography *(AASHTO T 288, T 289, ASTM D4327, and C1580)*

Project: **Shoreline PH 3 GTI**
No: **00733-022**
Location: Hideout
Date: 6/17/2020
By: LJ

Sample info.	Boring No.	TP-5							
	Sample								
	Depth	3.0'							
Water content data	Wet soil + tare (g)	99.14							
	Dry soil + tare (g)	88.97							
	Tare (g)	23.48							
	Water content (%)	15.5							
Chem. data	pH*	8.39							
	Soluble chloride* (ppm)	32.3							
	Soluble sulfate** (ppm)	332							
Resistivity data	Pin method	2							
	Soil box	Miller Small							
		Approximate Soil condition (%)	Resistance Reading (Ω)	Soil Box Multiplier (cm)	Resistivity (Ω-cm)	Approximate Soil condition (%)	Resistance Reading (Ω)	Soil Box Multiplier (cm)	Resistivity (Ω-cm)
		As Is	7934	0.67	5316				
		+3	2995	0.67	2007				
		+6	1910	0.67	1280				
		+9	1781	0.67	1193				
		+12	1853	0.67	1242				
	Minimum resistivity (Ω-cm)	**1193**							

* Performed by AWAL using EPA 300.0

** Performed by AWAL using ASTM C1580

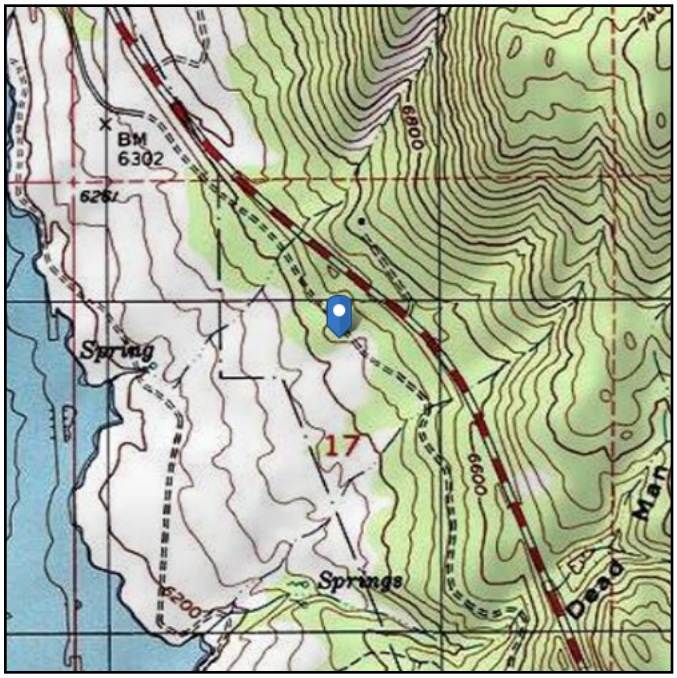
Entered by:_____
Reviewed:_____

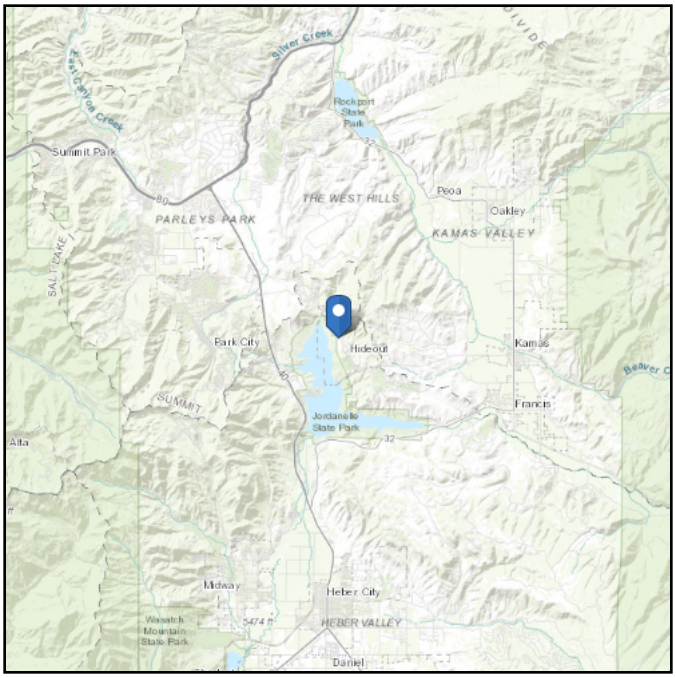
APPENDIX C

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard:	ASCE/SEI 7-16	**Elevation:**	6447.38 ft (NAVD 88)
Risk Category:	II	**Latitude:**	40.649034
Soil Class:	C - Very Dense Soil and Soft Rock	**Longitude:**	-111.405778





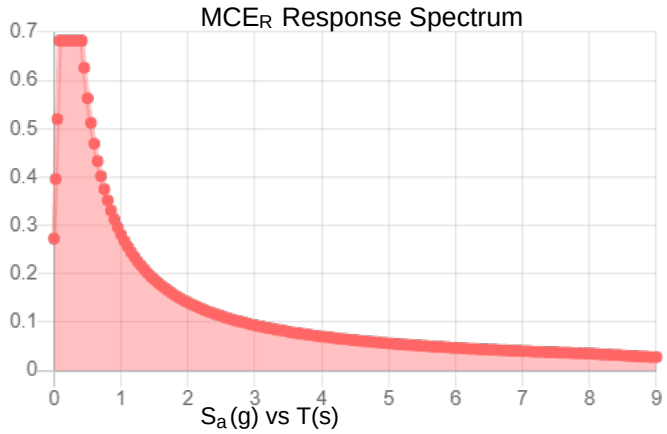
Seismic

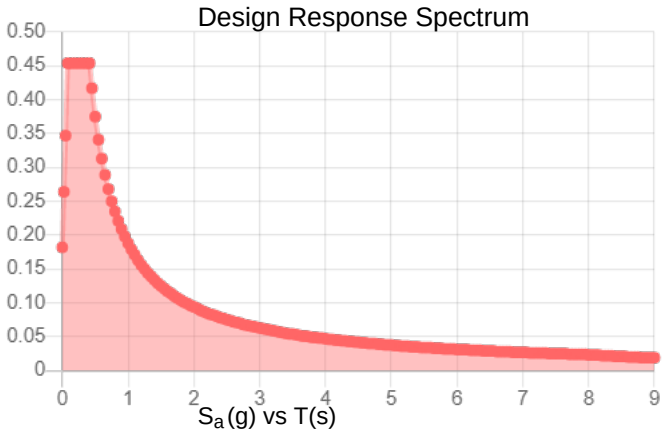
Site Soil Class: C - Very Dense Soil and Soft Rock

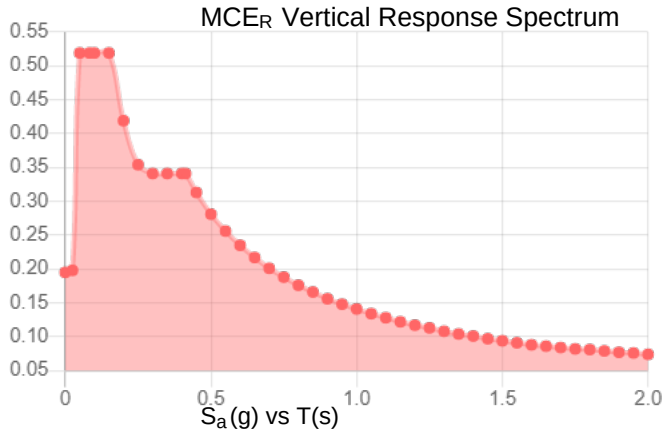
Results:

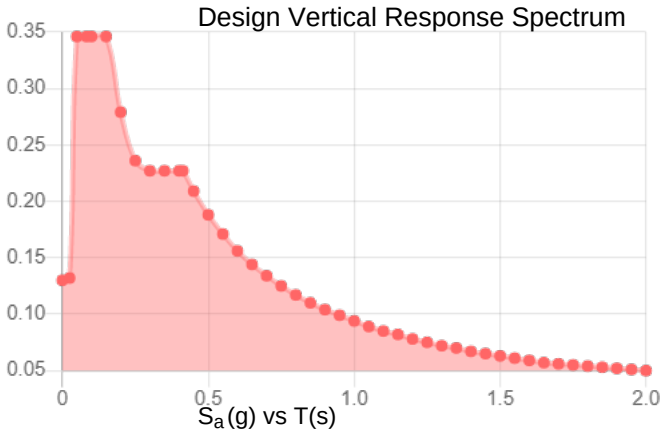
S_S :	0.529	S_{D1} :	0.188
S_1 :	0.188	T_L :	8
F_a :	1.288	PGA :	0.233
F_v :	1.5	PGA_M :	0.279
S_{MS} :	0.682	F_{PGA} :	1.2
S_{M1} :	0.281	I_e :	1
S_{DS} :	0.454	C_v :	0.953

Seismic Design Category C









Data Accessed: Tue Jun 23 2020

Date Source: USGS Seismic Design Maps based on ASCE/SEI 7-16 and ASCE/SEI 7-16 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-16 Ch. 21 are available from USGS.

The ASCE 7 Hazard Tool is provided for your convenience, for informational purposes only, and is provided “as is” and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE 7 standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

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From: Kip Freeman
Sent: Wednesday, February 17, 2021 11:04 PM
To: hideoututah <hideoututah@hideoututah.gov>
Subject: Public Comments Town Council & Planning Commission

2/17/2021

To the Mayor, Town Council, and Planning Commission of Hideout

I am writing to request the town put a 30 day moratorium on approval of any new developments or construction in town to provide time for the Town Engineer and committees to review the current process for reviewing and approving construction, performing intermediary inspections, and then issuing occupancy permits. The following is a list of deficiencies that I am aware in my own neighborhood and that suggest a widespread problem in the town processes. A stand down to review the process and institute corrective actions and mitigations is warranted.

Within our Shoreline development at least 4 homes have had repeated sewer backups cause flooding in basements or filling bathtubs. Some of the findings suggest material failure of the pipes and valves and others are still under investigation. The town should investigate and determine if they approved original plans that were deficient in design or material requirements, if there were deficiencies missed during inspections, or if there some other cause for what appears to be a non-random systemic issue.

Within our development the utilities were not installed per the plan approved by the town. There are manholes and electric junction/distribution boxes placed in areas that were originally identified as parking pads in the neighborhood. Even the irrigation water lines were run in a manner inconsistent with the approved plans. The town should review it's rules and processes to ensure developers follow the approved plans or update their plans for approval prior to deviating from them.

I also understand there are concerns of low water pressure in areas of town as well as a non-sensical routing that sewer follows from developments back to the main line along 248.

From a more personal perspective, my own home was issued a certificate of occupancy with the main electrical power box hanging off a couple 2x4 boards (not even pressure treated) as opposed to being mounted appropriately to the house. The vanity light in my bathroom also has no electrical box, but just wires dangling in the wall. I have been there almost 2 years and both remain that way. At best a CO should not have been issued, and at a minimum only a temporary CO should have been issued with a bond posted in the event it had not been fixed prior the temporary CO expiring.

I think a stand down period is warranted to update and fix the policies, procedures, and checklists, for approving building plans and performing inspections. I happen to be a vocal advocate for the annexation plan the town has been pursuing. However, I will struggle to support the annexation, which is predicated on a much more complex development if we don't undertake a thorough review to make our development approval and inspection process much more robust. We need to ensure this more complex development is safe and successful.

If during the review, the town finds specific developers to be the root cause of many deficiencies, I suggest that the town then put a moratorium for approvals or inspections on that developer for 30

days. The moratorium should only be lifted when the developer returns with their own corrective action plans to fix their internal processes for ensuring conformance with approved plans and codes.

Thank you,
Kip Freeman

File Attachments for Item:

1. January 21, 2021 Planning Commission Minutes DRAFT

Town of Hideout
10860 N. Hideout Trail
Hideout, UT 84036
PLANNING COMMISSION REGULAR MEETING
January 21, 2021
6:00 P.M.

The Planning Commission of Hideout, Wasatch County, Utah met in Regular Meeting on January 21, 2021 at 6:00 PM via Zoom meeting.

Regular Meeting

I. Call to Order and Reading of Chair Matyszczyk's No Anchor Site Determination Letter

Chair Tony Matyszczyk called the meeting to order at 6:01 p.m. and read the No Anchor Site Determination letter dated January 7, 2021 in its entirety. All attendees were present electronically.

II. Roll Call

PRESENT:	Chair Tony Matyszczyk
	Commissioner Ryan Sapp (joined at approximately 6:15 p.m.)
	Commissioner Glynnis Tihansky
	Commissioner Bruce Woelfle
	Commissioner Rachel Cooper (alternate)
ABSENT:	Commissioner Donna Turner
STAFF PRESENT:	Thomas Eddington, Town Planner
	Polly McLean, Town Attorney
	Alicia Fairbourne, Town Clerk
	Kathleen Hopkins, Deputy Town Clerk

OTHERS IN ATTENDANCE: Jason Gyllenskog and others who may not have signed in using proper names via Zoom.

III. Approval of Meeting Minutes

December 17, 2020 Planning Commission Minutes

Commissioner Tihansky noted two small corrections to the draft minutes. Deputy Clerk Kathleen Hopkins noted her comments and agreed to have them reflected in the approved minutes.

Motion: Commissioner Woelfle made the motion to approve the December 17, 2020 Planning Commission Minutes with Commissioner Tihansky's comments reflected. Commissioner Cooper made the second. Voting Aye: Commissioners Cooper, Matyszczyk, Turner and Woelfle. Voting Nay: None. The motion carried.

IV. Agenda Items

1. Discussion and possible recommendation for rezone of Gyllenskog property

Mr. Thomas Eddington, Town Planner and Mr. Jason Gyllenskog, property owner, joined the meeting to discuss this matter. Mr. Eddington noted the matter was being presented to the Planning Commission for discussion purposes only. He shared the map which denoted Mr. Gyllenskog's property located off SR-248, below Golden Eagle development. The property was currently zoned as Mountain Residential, with two buy right units which Mr. Gyllenskog would like to convert to four units. Mr. Eddington noted there was a single point of ingress/egress to the property, shared with Golden Eagle.

Mr. Gylleskog stated he would like to develop four homes on the two-acre property, each lot to be approximately 0.45 acres. He noted the two owners of the contiguous properties may not have plans to develop their lots in the foreseeable future and he did not want to wait indefinitely to develop his lots. He noted his proposed development units would all have access from Golden Eagle Drive and acknowledged the secondary access road considerations impacting his development were the same as those impacting the Golden Eagle development. He requested the secondary road access issues to be addressed in conjunction with the Golden Eagle development. Mr. Gyllenskog stated he had owned the property prior to the incorporation of the Town of Hideout when it was part of the Wasatch County Master Plan. He also noted he had obtained commitment for four water rights and noted his proposed development would have similar density as the Golden Eagle development, but with smaller homes of approximately 3,500 square feet.

Mr. Eddington stated he would work with the Town Engineer to assess safety concerns regarding the shared single access road with Golden Eagle.

Ms. Polly McLean, Town Attorney, asked if Mr. Gyllenskog was requesting a rezone for commercial use. Mr. Gyllenskog stated no, his property was not large enough to consider development beyond the four single family homes he was contemplating. Mr. Eddington stated he had been in discussions with owners of the surrounding properties which could potentially be developed for some level of small commercial usage.

Commissioner Woelfle stated the proposal seemed reasonable but noted he would like to see the property in person before any formal approvals were considered. Mr. Eddington offered to schedule on-site visits to the property at each Commissioner's convenience.

Mr. Eddington noted his concerns for setting any precedents regarding the secondary access road needs without consideration of the surrounding properties and potential future annexations. Mr. Gyllenskog thanked the Commissioners for their consideration, and was excused from the meeting at 6:40 p.m.

2. Discussion regarding Dark Skies Initiative draft proposal

Commissioners Woelfle and Sapp led the discussion regarding the proposed Dark Skies Ordinance. All of the Commissioners shared their comments on each section of the proposed Ordinance, and Commissioner Woelfle agreed to provide an updated draft for the February Planning Commission meeting to consider a formal proposal for the Town Council.

V. Meeting Adjournment

There being no further business, Chair Matyszczyk asked for the meeting to be adjourned.

Motion: Commissioner Tihansky made the motion to adjourn the meeting. Commissioner Woelfle made the second. Voting Aye: Commissioners Cooper, Matyszczyk, Sapp, Tihansky and Woelfle. Voting Nay: None. The motion carried.

The meeting adjourned at 8:05 p.m.

_____

Kathleen Hopkins, Deputy Town Clerk

File Attachments for Item:

1. Recommendation of Dark Skies Ordinance for Town Council

10.16 DARK SKIES LIGHTING

10.16.02 PURPOSE

It is the purpose and intent of this code to balance the goals of Hideout, to maintain its small-town character with the need to limit glare and light trespass, reduce night sky glow, conserve energy, provide safe lighting practices, and promote Dark Skies initiatives, while protecting individual property rights.

1. The use of outdoor lighting is often necessary for adequate nighttime safety and utility, but common lighting practices can also interfere with other legitimate public concerns. Principal among these concerns are:
    a. The degradation of the nighttime visual environment by production of unsightly and dangerous glare.
    b. Lighting practices that interfere with the health and safety of Hideout's citizens and visitors.
    c. Unnecessary waste of energy and resources in the production of too much light or wasted light.
    d. Interference in the use or enjoyment of property which is not intended to be illuminated at night, and the loss of the scenic view of the night sky due to increased urban sky glow.
2. The concerns of safety, utility and aesthetic appearance need not compete. Good modern lighting practices can provide adequate light for safety and utility without excessive glare or light pollution. In nearly all cases, careful attention to when, where and how much nighttime lighting is needed will lead to better lighting practices.
3. Accordingly, it is the intent of this code to require lighting practices and systems which will minimize or eliminate light pollution, glare, light trespass, and conserve energy while maintaining nighttime safety, utility, security and productivity.
4. In support of dark skies, events will be held 2 times per year to educate our community both about the value of this effort as well as about the sky itself. These events will be coordinated by the town of Hideout and may include visiting speakers and the creation of a dark skies community club or committee.
5. Enforcement of this effort will be conducted by the enforcement officer under the direction of the mayor.

10.16.04 DEFINITIONS

Correlated color temperature (CCT): the temperature at which a blackbody emits radiant energy competent to evoke a color the same as that evoked by radiant energy from a given source (such as a lamp).

Dark sky fixture or fully shielded: any light fixture that is designed or shielded in such a manner that all light rays emitted by the fixture, either directly from the lamps or indirectly from the fixture are projected below a horizontal plane running through the lowest point of the shield.

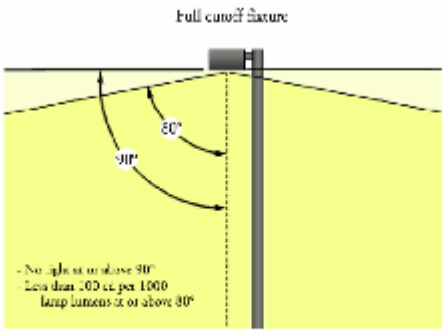
The lights on the left are non-conforming. Those on the right can be used in most cases. Depending on the mounting height and proximity to the property line, additional shielding may be necessary to prevent the luminous elements from being visible from any other property.

Dark sky shield: anything that is used to shield a light fixture so that it behaves as a fully shielded fixture. These include but are not limited to, for example, fixtures outfitted with caps or housings or installed under canopies, building overhangs, roof eaves or shielded by other structures, objects or devices.

Electronic messenger system (EMS): electronic messenger system with scrolling messages.

Emergency lighting: lighting as required by civil officers, agents, utilities and officials to perform their duties to maintain the public health, safety and welfare.

Full Cut-off Fixtures: fixtures, as installed, that are designed or shielded in such a manner that all light rays emitted by the fixture, either directly from the lamps or indirectly from the fixture, are projected below a horizontal plane running through the lowest point on the fixture where light is emitted.



Full cutoff fixtures do not allow any light to be emitted above the fixture. The fixture controls glare by limiting the light output at 10 degrees below the horizontal.

Holiday lighting: temporary lighting for a specific celebration which may be one of the following types:

a. Festoon type low-output lamps, limited to small individual bulbs on a string.
b. Low-output lamps used to internally illuminate yard art.
c. Flood or spotlights producing less than 2000 lumens each whose light source is not visible from any other property.

Kelvin: relating to, conforming to, or having a thermometric scale on which the unit of measurement equals the Celsius degree and according to which absolute zero is equal to –273 degrees Celsius.

Light fixture: any device intended to produce outdoor illumination.

Light trespass: light emitted from fixtures designed or installed in a manner that unreasonably causes light to fall on a property other than the one where the light is installed, in a motor vehicle driver's eyes, or upwards toward the sky.

Lumen: a unit of luminous flux equal to the light emitted in a unit solid angle by a uniform point source of one candle intensity.

Major addition: enlargement of 25% or more of the buildings gross floor area, seating capacity, or parking spaces, either with a single construction project or cumulative series of construction projects after the enactment of this ordinance. The term also includes replacement of 25% or more of installed outdoor lighting.

Minor addition: enlargement of less than 25% of the buildings gross floor area, seating capacity or parking spaces, either with a single construction project or cumulative series of construction projects after the enactment of this ordinance. The term also includes replacement of less than 25% of installed outdoor lighting.

Motion sensor: any device that turns a light fixture on when it detects motion and off when motion stops or very shortly thereafter (5-10 minutes).

Nits (candela): the base unit of luminous intensity in the International System of Units that is equal to the luminous intensity in a given direction of a source which emits monochromatic radiation.

Switch: any device that can be manually controlled by a person to turn a light fixture on and off. For the purpose of this chapter, switches include motion sensors, but switches do not include light sensors or timers.

Temporary: refers to lighting as required by citizens to carry out legally approved activities for durations as specified in the permits for those activities. These include but are not limited to, for example, activities such as nighttime agricultural operations, construction work lighting, and seasonal decorations, but in no case for more than a period of 60 days without an exemption granted by the town of Hideout.

10.16.06 APPLICABILITY AND EXEMPTIONS

All exterior outdoor lighting installed after the effective date hereof in the town shall conform to the requirements established by this chapter. This chapter does not apply to indoor lighting. However, light trespass from interior lighting that negatively impacts adjacent properties is also prohibited.

1. Exemptions.
    a. Temporary lighting for decoration/seasonal, theatrical, television, performance areas, and construction sites, except as allowed by permit at the discretion of the town council.
    b. Underwater lighting in swimming pools and other water features.
    c. Lighting that is only used under emergency conditions.
    d. Lighting required by federal, state, county or city ordinances and regulations.
    e. Outdoor recreational facilities are exempt from lumen cap and shielding but must comply with 3,000 degrees Kelvin temperature requirement. Lights must be extinguished promptly after a sponsored event.

10.16.08 OUTDOOR LIGHTING STANDARDS.

1. Temperature of Lamps. Lamps shall not exceed a maximum correlated color temperature (CCT) of 3,000 degrees Kelvin.
2. Lamp and Shielding. All light fixtures over 1,500 lumens are required to be fully shielded and installed so that the shielding complies with the definition of a fully shielded light fixture.
3. Light Trespass Standard. All light fixtures, including motion sensing fixtures and security lighting, shall be aimed and shielded so that the direct illumination shall be confined to the property boundaries of the source, including any public or private street or road.
4. Signs:
    a. Front Lit: Any light with the intention to illuminate a sign must be oriented from the top and shine down.
    b. Back Lit:
        I. The sign design may not contain any more than 10 percent white, including lettering.
        II. Transparent or clear materials are not allowed.
        III. Nonface portions of the sign (e.g., background and sides) shall be made of completely opaque material.
        IV. Internal lights must not exceed 3,000 degrees Kelvin if greater than or equal to 1,500 lumens.

c. Neon: Any sign consisting of more than three feet of neon must be extinguished no more than four hours after sundown during daylight savings and six hours during regular mountain time.
d. Electronic:
    I. EMS signs are for public safety purposes only and prohibited for private or commercial use.
    II. Luminance levels for operation after sundown and until sunrise shall not exceed 100 nits (candela per square meter) as measured under conditions of a full white display.
    III. Messages appearing on Electronic Messenger Systems (EMS) shall not be displayed for less than 30 seconds and require no longer than 0.25 seconds to transition from one message to another. Moving text is prohibited.
    IV. The luminous surface area of an individual EMS shall not exceed 50 square feet.
    V. EMSs shall not be placed within 1,500 feet (300 meters) of other off-premises changeable electronic variable message sign on the same side of the highway, regardless of face orientation.
    VI. EMSs shall not be placed within 1,500 feet (300 meters) of residential areas.
    VII. The device owner or the permit holder shall continuously monitor signs 24 hours per day, including monitoring the reliability of hardware, software, network and other support infrastructure.
    VIII. Signs shall contain a default mechanism so that in the event 10 percent or more of an EMS's LED emitters have failed, the sign will immediately revert to an unlit black screen and remain in such condition until the malfunction is corrected.

5. Parking Lots:
    a. Spot or flood lighting of parking lots from a building or other structure is prohibited.
    b. The overall height of any light post used to illuminate parking lots in commercial zones shall not exceed 20 feet. All post mounted parking lot lights shall be set back from property lines a distance that is determined appropriate by the planning commission.
    c. The overall height of any light post used to illuminate parking lots in residential zones shall not exceed 16 feet.
    d. The lighting in commercial parking lots must be turned down by at least 75% of all light fixtures (or 75% of total light emitted) two (2) hours after closing time in the evening or from 10pm to 6am, whichever is the most restrictive.
    e. All parking lot lighting shall use full cutoff fixtures.
6. Gas Station Canopies. Gas station canopies may be illuminated, provided all light fixtures are mounted on the undersurface of the canopy, all light fixtures are full cutoff and diffusers are not visible from locations off the property. Except for directed beam lighting, merely placing the fixtures on the underside of the canopy does not qualify as fully shielding the light fixture. Directed beam lighting mounted under the canopy is allowed, provided the light source cannot be seen from outside the property boundaries.
7. Total Outdoor Light Output Standards – Nonresidential and Multifamily Uses.

a. Total outdoor light output shall not exceed 15,000 lumens per net acre for all development except single-family residential uses. This cap is not intended to be achieved in all cases or as a design goal. Instead, design goals should be the lowest levels of lumens necessary to meet the lighting requirements of the site. Of the 15,000 lumens, 10,000 lumens minimum must be fully shielded with 5,000 maximum unshielded.
b. Seasonal decorations are not counted toward this limit.

8. Total Outdoor Light Output Standards – Single-Family Residential Uses:
    a. Outdoor lighting for single-family residential uses is subject to a lumen per net acre cap of 10,000 lumens net.
    b. Outdoor lighting for single-family residential uses is subject to the lamp fixture and shielding requirements.
9. Roadway/Streetlights. Streetlights are allowable as recommended by the public works administrator or town council. All streetlights shall utilize lamp types that are energy efficient and minimize sky glow and other negative impacts of artificial lighting. They shall not exceed 10,000 lumens per net acre. Lighting shall meet safety concerns with a goal of using the lowest levels of lumens necessary.
10. New Public Lighting – Streetlights/Public Property and Rights-of-Way:
    a. All new streetlights are allowed as recommended by public works administrator and town council. They will adhere to all standards as indicated including energy efficient lighting which minimizes sky glow. They shall not exceed 10,000 lumens per net acre. Lighting shall meet safety concerns with a goal of using the lowest levels of lumens necessary.
    b. Public Property. Properties owned by Hideout such as parks and other community gathering spaces will adhere to all standards as indicated. They will adhere to all standards as indicated including energy efficient lighting which minimizes sky glow. Lighting shall meet safety concerns with a goal of using the lowest levels of lumens necessary.
    c. Rights-of-Way. All rights-of-way will adhere to all standards as indicated including energy efficient lighting which minimizes sky glow. Lighting shall meet safety concerns with a goal of using the lowest levels of lumens necessary.
    d. All new public lighting will be part of the planning and zoning process in which public buildings, public property and rights-of-way lighting is determined. This will be incorporated as part of the zoning process moving forward to ensure compliance with this chapter.
11. Prohibited Lighting:
    a. Up lighting to illuminate buildings, other structures or vegetation.
    b. Flashing, blinking, intermittent or other lights that move or give the impression of movement, not including temporary holiday lighting.
    c. Floodlights or spotlights affixed to buildings for the purpose of lighting parking lots or sales display lot areas.
    d. Searchlights, laser source lights or any similar high intensity light.
    e. Except when used in window signage pursuant to subsection (10.16.06 (4.C) of this section, neon or luminous tube lighting, either when outdoor mounted or indoor mounted, if visible beyond the property boundaries.

10.16.10 LIGHTING CONTROL.

1. Light fixtures with motion sensors and/or timers are required to minimize the duration of nighttime lighting from midnight to 6 a.m.
2. Fully shielded fixtures are required where any lights, even those below 1,500 lumens, are mounted on structures or poles higher than the first level above ground level to protect the view of the night sky, minimize ground reflection, and reduce light scatter beyond the property line.
3. Statuary and flags shall be lit from above to minimize sky glow.

10.16.12 IMPLEMENTATION.

1. New Uses, Buildings and Major Additions or Modifications: All building permit applications must include an outdoor lighting plan which includes the following information:
    a. The location of all existing and proposed light fixtures (may be included on site plan).
    b. Specification sheets for all existing and proposed light fixtures.
    c. Acknowledgement that the Applicant has received notification of this Article.
    d. Verification that a residential or commercial construction project requiring a building permit application has complied with the provisions of this code section shall occur during the final electrical inspection done by the towns designated building inspector.
2. Minor Additions or modifications: If the work requires a permit than the procedures shall be the same as for a Major addition.
3. New Lighting. Any new lighting on the site shall meet the requirements of this code with regard to shielding and lamp type; the total outdoor light output after the modifications are complete shall not exceed that on the site before the modification, or that permitted by this code, whichever is larger.
4. Resumption of Use after Abandonment. If a property or use with nonconforming lighting is abandoned, then all outdoor lighting shall be reviewed and brought into compliance with this code before the use is resumed.
5. Existing Lighting: On or before three years, all outdoor lighting shall comply with this code. This may be done through replacement or retrofitting.
6. Public Roadways:
    a. In general, this code does not apply to county and state rights-of-way. However, all new streetlights on such roadways or rights-of-ways must be fully shielded.

10.16.14 ENFORCEMENT AND PENALTIES.

All code, including lighting code, requires enforcement. Lighting code enforcement is essential to achieving a sustained reduction of light pollution and conservation of the night sky.

1. The penalty for violation of any portion of this chapter shall be:
    a. First Notice. A notice to the property owner requesting compliance within three months.
    b. Second Notice. If after three months the violation exists a notice will be given to appear before the Hideout town council to discuss options to come into compliance.
    c. Third Notice. If after six months a violation of the provisions of this chapter shall be an infraction punishable by penalties up to $2,000 per residential/commercial unit.

2. Violations regarding 10.16.10 lighting control (not withstanding 10.16.14.1) :
    a. First notice. A notice to the property owner requesting compliance within 72 hours.
    b. Second notice. If after 72 hours a violation of this light control shall be an infraction punishable by penalties up to $50 per day until compliance.

10.16.16 CONFLICTS.

Where any provision of federal, state, county, or city statutes, codes, or laws conflicts with any provision of this code, the most restrictive shall govern unless otherwise regulated by law. If any provision of the Hideout Town Code should conflict with the provisions of this chapter, this chapter shall supersede and be the controlling and enforceable provision.