CITY of CLOVIS

AGENDA • PLANNING COMMISSION

Council Chamber, 1033 Fifth Street, Clovis, CA 93612 (559) 324-2340

www.cityofclovis.com

May 28, 2020 6:00 PM Council Chamber

*** SPECIAL NOTICE REGARDING PUBLIC PARTICIPATION DUE TO COVID-19***

Given the current Shelter-in-Place Order covering the State of California and the Social Distance Guidelines issued by Federal, State, and Local Authorities, the City is implementing the following changes to participate in Planning Commission meetings until notified otherwise. The Council chambers will be open to the public but we will be implementing social distancing policies and will limit the number of people who may be in the Council chambers. We are encouraging residents to participate virtually following the directions below. If you are sick, please do not attend the meeting. Any member of the Planning Commission may participate from a remote location by teleconference.

- The meeting will be webcast and accessed at: https://cityofclovis.com/planning-and-development/planning/planning-commission/planning-commission-agendas/

Written Comments

- Members of the public are encouraged to submit written comments at: https://cityofclovis.com/planning-and-development/planning/planning-commission/planning-commission-agendas/ at least one (1) hour before the meeting (5:00 p.m.). You will be prompted to provide:
    - Planning Commission Meeting Date
    - Item Number
    - Name
    - Email
    - Comment (please limit to 300 words or 3 minutes)

SCAN ME

- Please submit a separate form for each item you are commenting on.
- A copy of your written comment will be provided to the Planning Commission noting the item number. Your written comment will be made part of the record.
- Please specify if you would like to have your written comment read into the record. If so, your comment will be read into the record during the public comment portion when the item is heard. Any portion of your comment extending past three (3) minutes may not be read aloud due to time restrictions, but will be made part of the record of proceedings.

- Please be aware that any written comments received that do not specify a particular agenda item will be marked for the general public comment portion of the agenda.

- If a written comment is received after 5:00 p.m. on the day of the meeting, efforts will be made to provide the comment to the Planning Commission during the meeting. However, staff cannot guarantee that written comments received after 5:00 p.m. will be provided to the Planning Commission during the meeting. All written comments received prior to the end of the meeting will be made part of the record of proceedings.

Verbal Comments

- If you wish to speak to the Commission on the item by telephone, you must contact the Deputy City Planner, Orlando Ramirez, at (559) 324-2345 no later than 5:00 p.m. the day of the meeting.

- You will be asked to provide your name, phone number, and your email. You will be emailed instructions to log into Webex to participate in the meeting. Staff recommends participants log into the Webex at 5:30 p.m. the day of the meeting to perform an audio check.

- All callers will be placed on mute, and at the appropriate time for your comment your microphone will be unmuted.

- You will be able to speak to the Planning Commission for up to three (3) minutes.

Webex Participation

- Reasonable efforts will be made to allow written and verbal comment from a participant communicating with the host of the virtual meeting. To do so, a participant will need to chat with the host and request to make a written or verbal comment. The host will make reasonable efforts to make written and verbal comments available to the Planning Commission. Due to the new untested format of these meetings, the City cannot guarantee that these written and verbal comments initiated via chat will occur. Participants desiring to make a verbal comment via chat will need to ensure that they accessed the meeting with audio transmission capabilities.

Commission Members: Amy Hatcher Chair, Paul Hinkle Chair Pro Tem, Alma Antuna, Brandon Bedsted, Mike Cunningham

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CALL TO ORDER

FLAG SALUTE

ROLL CALL

APPROVAL OF MINUTES

1 Planning Commission Minutes for the Meeting of April 23rd, 2020.

COMMISSION SECRETARY COMMENTS

PLANNING COMMISSION MEMBER COMMENTS

BUSINESS FROM THE FLOOR

This is an opportunity for the members of the public to address the Planning Commission on any matter that is not listed on the Agenda.

PUBLIC HEARINGS

2 Consider items associated with approximately 38.50 acres of land located at the northwest corner of Shepherd and N. Clovis Avenues. 6050 Enterprises, LP., owner/applicant; Harbour and Associates, representative.

a. Consider Approval - Res. 20-___, A request to approve an environmental finding of a Mitigated Negative Declaration for Prezone R2016-10 & Vesting Tentative Tract Map TM6050.

b. Consider Approval - Res. 20-___, R2016-10, A request to prezone from the County AE-20 (Exclusive Agricultural) Zone District to the Clovis R-1-PRD (Planned Residential Development) Zone District.

c. Consider Approval - Res. 20-___, TM6050, A request to approve a vesting tentative tract map for a 255-lot single-family planned residential development.

Staff: George González, MPA, Associate Planner
Recommendation: Approve

3 Consider Approval - Res. 20-___, General Plan Consistency Finding for the Proposed 2020-2021 Community Investment Program.

Staff: Thad Avery, Supervising Civil Engineer
Recommendation: Approve

ADJOURNMENT

MEETINGS & KEY ISSUES

Regular Planning Commission Meetings are held at 6 P.M. in the Council Chamber. The following are future meeting dates:

June 25, 2020

July 23, 2020

August 27, 2020

CLOVIS PLANNING COMMISSION MINUTES
April 23, 2020

A modified meeting of the Clovis Planning Commission was called to order at 6:00 p.m. by Chair Hatcher in the Clovis Council Chamber.

Flag salute led by Chair Hatcher

Present: Commissioners Antuna, Bedsted (via Webex), Cunningham, Hinkle, Chair Hatcher

Absent: None

Staff: Dave Merchen, City Planner
Orlando Ramirez, Deputy City Planner
Lily Cha, Assistant Planner
Sean Smith, Supervising Civil Engineer

MINUTES

1. The Commission approved the April 9, 2020, minutes by a vote of 5-0.

COMMISSION SECRETARY

Deputy City Planner Orlando Ramirez had no additional comments.

City Planner Dave Merchen expressed appreciation for the Planning Commission continuing to conduct hearings in these troubled times and detailed upcoming protocol changes being initiated to provide additional access to the public, encouraging the commissioners to watch the next few City Council meetings.

PLANNING COMMISSION MEMBERS COMMENTS

None.

COMMUNICATIONS AND REFERRALS

Commissioner Antuna received a copy of the Brown Act.

BUSINESS FROM THE FLOOR

None.

CONSENT CALENDAR

None.

PUBLIC HEARINGS

2. Consider Approval Res. 20-__, **CUP2020-002**, A request to allow for an on-site brewery production operation with associated inside and outside consumption within an existing building located at 527 Park Creek Drive. Gary Shahbazian, owner; Central California Brewing Company, applicant; Don Anderson, representative.

Assistant Planner Lily Cha presented the staff report.

Commissioner Antuna inquired as to whether the applicant foresees possibly changing the proposed hours of operation in the future or if the hours are set. Assistant Planner Cha responded that the applicant did not foresee such a change when this issue had been previously discussed. Deputy City Planner Ramirez elaborated that this is a family-run business and that extending the operating hours would be not only a challenge but also a detriment for the family.

Commissioner Cunningham sought and received confirmation that the packaged snacks mentioned in the operational statement would be typical bar snacks and would not be manufactured onsite.

Commissioner Cunningham expressed understanding that the applicant intends to use food trucks in order to have a food element without having to pay for a more expensive type of Alcoholic Beverage Control license then inquired as to the placement of the food trucks. Assistant Planner Cha explained the proposed locations.

Commissioner Cunningham followed up by seeking and receiving confirmation that the applicant will not run afoul of Department of Alcoholic Beverage Control regulations with this proposed course of action.

Commissioner Hinkle sought and received confirmation that any expansion to the tasting room operational hours during weekdays would require the applicant coming before the Planning Commission again, though they had indicated no interest in doing so at this time. Assistant Planner Cha further explained the reasoning behind the tasting room operational hours, the opening hour in particular.

At this point, the Chair opened the floor to the applicant.

Don Anderson expressed appreciation for the Commission’s time under these conditions and provided background on the project.

At this point, the Chair opened the floor to those in favor.

There being none, the Chair opened the floor to those in opposition.

There being none, the Chair closed the public portion.

Commissioner Bedsted inquired as to whether there is direct access to the trail from the business park. Assistant Planner Cha responded that though there is not at this time, there is such an access planned for the future. Supervising Civil Engineer Sean Smith confirmed this as well as the location for the future access.

Commissioner Bedsted informed that he finds this to be an interesting venue as presented, the proximity of the trail is a good feature, and he appreciates the applicant promoting the use of it.

Commissioner Antuna requested elaboration regarding Condition #18, seeking and receiving confirmation that review of the project could be made mandatory. She expressed her support for this type of business as well as her positive opinion regarding both the location and this business having opposite hours from the existing businesses. She does not anticipate there being parking problems, but acknowledges that they will not know that for sure until the use has been in operation for some time. Therefore, she wishes to make it mandatory for the project to return before the Planning Commission for review in one year.

Deputy City Planner Ramirez clarified that Condition #18 was incorporated by the City Attorney's office and that Condition #17 allows the ability to review at any time. He also provided details regarding the parking requirements.

At this point, a motion was made by Commissioner Hinkle and seconded by Commissioner Antuna to approve CUP2020-002 with modification to Condition #14. The motion was approved by a vote of 5-0.

OLD BUSINESS
None.

NEW BUSINESS
None.

ADJOURNMENT AT 6:32 P.M. UNTIL the Planning Commission meeting on May 28, 2020.

_____
Amy Hatcher, Chair

AGENDA ITEM NO.2

CITY of CLOVIS

REPORT TO THE PLANNING COMMISSION

TO: Clovis Planning Commission

FROM: Planning and Development Services

DATE: May 28, 2020

SUBJECT: Consider items associated with approximately 38.50 acres of land located at the northwest corner of Shepherd and N. Clovis Avenues. 6050 Enterprises, LP., owner/applicant; Harbour and Associates, representative.

a) Consider Approval - Res. 20-___, A request to approve an environmental finding of a Mitigated Negative Declaration for Prezone R2016-10 & Vesting Tentative Tract Map TM6050.

b) Consider Approval - Res. 20-___, R2016-10, A request to prezone from the County AE-20 (Exclusive Agricultural) Zone District to the Clovis R-1-PRD (Planned Residential Development) Zone District.

c) Consider Approval - Res. 20-___, TM6050, A request to approve a vesting tentative tract map for a 255-lot single-family planned residential development.

Staff: George González, MPA, Associate Planner
Recommendation: Approve

ATTACHMENTS:

1. Location Map
2. Conditions of Approval TM6050
3. Initial Study & Mitigated Negative Declaration
4. Draft Resolution CEQA
5. Draft Resolution R2016-10
6. Draft Resolution TM6050
7. Correspondence from Commenting Agencies
8. Applicant's Development Standards – Chadwick Product
9. Applicant's Development Standards – Elev8ions Product
10. Vesting Tentative Tract Map TM6050
11. Conceptual Quarter Section Plan
12. Floor & Elevation Plans

CONFLICT OF INTEREST
None.

RECOMMENDATION
Staff recommends that the Planning Commission:

- Approve an environmental finding of a mitigated negative declaration for Prezone R2016-10 & Vesting Tentative Tract Map TM6050;
- Approve Prezone R2016-10;
- Approve Vesting Tentative Tract Map TM6050, subject to the conditions of approval listed as Attachment 2; and
- Make a finding of consistency that the dedication toward public right-of-way is proportionate to the development being requested.

EXECUTIVE SUMMARY
The applicant is proposing the development of a 255-lot gated single-family planned residential development (PRD) with private streets, increased lot coverage and reduced building setbacks on approximately 38.50 acres of property within the Heritage Grove area (formerly the Northwest Urban Growth Area). The proposal is within the City's Sphere of Influence and will require annexation into the City before development can proceed. Additionally, the applicant is requesting to prezone the Project site from the County AE-20 (Exclusive Agricultural) Zone District to the Clovis R-1-PRD (Planned Residential Development) Zone District. The applicant is proposing a Homeowner's Association with this project. Approval of this Project would allow the developer to continue processing a residential site plan review entitlement and development drawings.

BACKGROUND

- General Plan Designation: Medium Density Residential (4.1 - 7.0 units per acre)
- Existing Zoning: County AE-20 (Exclusive Agricultural) Zone District
- Lot Size: One property totaling approximately 38.50 acres
- Current Land Use: Vacant land
- Adjacent Land Uses:
    - North: Agricultural
    - South: Single-Family Residential
    - East: Single-Family Residential
    - West: Rural Residential and Agricultural

On December 5, 2016, the City Council approved the Heritage Grove Design Guidelines for the Heritage Grove area, formally known as the Northwest Urban Growth Area (see **Figure 1** below). The approved design guidelines memorialized specific development standards, circulation plan, thematic street sections, landscape framework, and plant palette for this area. The intent of this document is to build upon the distinctive culture and agricultural richness of this area. The guidelines established an overall theme and design elements, such as architecture and landscape to help identify an authentic sense of place for the approximately 30,000 citizens that will call this area their home. On December 15, 2015, the City Council officially adopted the name "Heritage Gove" and associated logo for the four-square-mile area bounded by Willow Avenue to the west, Shepherd Avenue to the south, Copper Avenue to the north, and Sunnyside Avenue to the east.

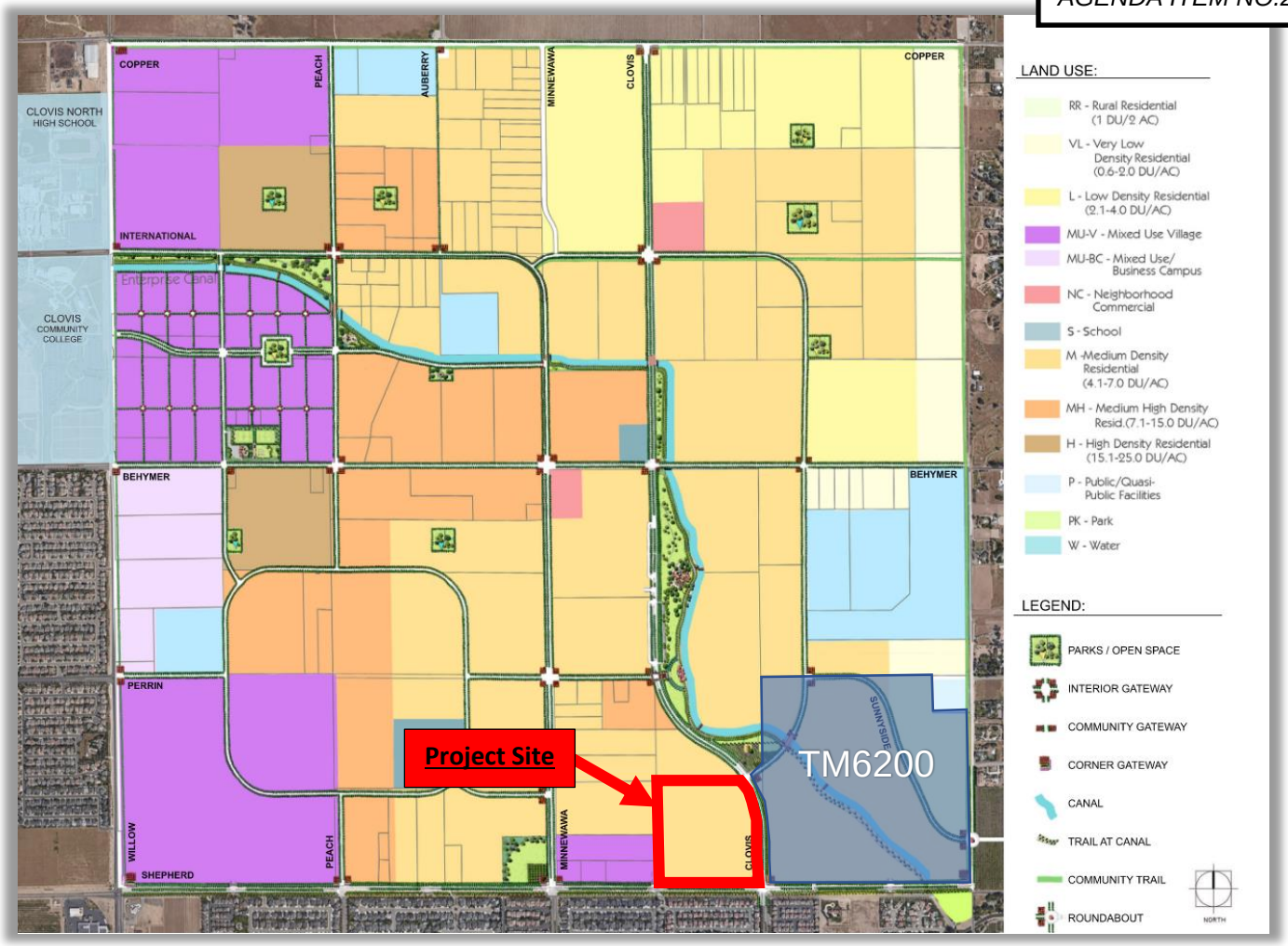

Figure 1

PROPOSAL AND ANALYSIS

Prezone

The applicant is requesting to prezone approximately 38.50 acres from the County AE-20 (Exclusive Agricultural) Zone District to the Clovis R-1-PRD (Planned Residential Development) Zone District (see **Figure 2** below). The R-1-PRD District will be applied to the proposed subdivision property and will allow the development of the 255 lots (6.94 units per acre) as requested by the applicant. The R-1-PRD District is consistent with the Medium Density Residential (4.1 – 7.0 DU/Ac) General Plan land use designation on the Project site. Pursuant to state law, property requires prezoning prior to annexation.


R2016-10
(County AE-20 to Clovis R-1-PRD)
Location Map
City Limits
R2016-10
5/13/2020
1 " = 400 '

Figure 2

Development Standards

The applicant is requesting approval of a gated, detached single-family PRD with private streets and no interior sidewalks. In addition, the request includes reduced setbacks and increased lot coverage. The applicant is proposing a Homeowner's Association with this project.

The project will follow the standards of the R-1-PRD Zone District and the Planned Development Standards and Guidelines. The Development Code permits the applicant to propose their own project-specific setbacks and lot coverage standards. The applicant has provided a list of standards, as follows, which are also provided in **Attachment 8 & 9**:

Large Lot Product (Chadwick, Attachment 8)

Setbacks	Front (Garage)	Front (house)	Garage Side	Corner Street Sides	Rear
Plan 2277 (one-story)	20'	10'	5'	8'	10'
Plan 2378 (one-story)	20'	10'	5'	8'	10'
Plan 2399 (two-story)	20'	10'	5'	8'	10'
Plan 2404 (one-story)	20'	10'	5'	8'	10'
Plan 2528 (one-story)	20'	10'	5'	8'	10'
Plan 2700 (one-story)	20'	10'	5'	8'	10'
Plan 3522 (two-story)	20'	10'	5'	8'	10'
Plan 3912 (two-story)	20'	10'	5'	8'	10'

Lot Coverage:	55% Max
Maximum Height:	2-stories not to exceed 35 feet
Minimum Lot Size:	6,100 square feet
Minimum Parcel Width:	61 feet
Minimum Curved Parcel Width:	50 feet
Minimum Corner Parcel Width:	66 feet
Minimum Parcel Depth:	110 feet
Reversed Corner Street Side Setback:	8 feet
Corner Street Side Fence Setback:	3 feet
Interior Side Yard Setback (opposite from garage):	4 feet
Setback to Projections and/or Porch/Patio:	10 feet
Garages:	20'x20' interior dimension (**2-car**) 29.5'x20' interior dimension/20'x20' minimum with 10'x15' minimum tandem (**3-car**)

Per the PRD standards, 2-car garages shall have a minimum inside dimension of 20'x20' and 1-car garages shall have a minimum inside dimension of 10'x20'. The applicant may request reduced parking standards with the planned residential development process; however, the applicant proposes garage sizes in compliance with the PRD standards. The Code allows the Planning Commission and City Council to reduce standards if the proposed parking meets the intent of the Code.

The applicant's planned residential development provides specific development standards that include front yard setbacks that move the living areas and front porches into the 20-foot front yard area. The use of the PRD Ordinance is appropriate in this case as it provides for a

pedestrian feel to the subdivision by placing living areas closer to the street and placing less emphasis on the garages.

The applicant proposes R-1-PRD zoning for the Project which permits homes up to two and one-half stories and as high as 35 feet. This is consistent with adjacent properties which also permit two and one-half stories.

Small Lot Product (Elev8ions, Attachment 9)

Setbacks	Front (Garage)	Front (house)	Garage Side	Corner Street Sides	Rear
Plan 1212 (two-story)	5’	4’	5’	3’	4’
Plan 1245 (two-story)	5’	4’	5’	3’	4’
Plan 1390 (two-story)	5’	4’	5’	3’	4’
Plan 1413 (two-story)	5’	4’	5’	3’	4’
Plan 1648 (two-story)	5’	4’	5’	3’	4’
Plan 1660 (two-story)	5’	4’	5’	3’	4’

Lot Coverage:	65% Max
Maximum Height:	2-stories not to exceed 35 feet
Minimum Lot Size:	1,800 square feet
Minimum Parcel Width:	36 feet
Minimum Curved Parcel Width:	36 feet
Minimum Cul-De-Sac or Corner Parcel Width:	36 feet
Minimum Parcel Depth:	50 feet
Reversed Corner Street Side Setback:	3 feet
Interior Side Yard Setback (opposite from garage):	3 feet
Setback to Projections and/or Porch/ Patio:	4 feet
Garages:	20’x20’ interior dimension or tandem 10’x38’ minimum (**2-car**) 10’x16’ interior dimension (**1-car**)

Models

The applicant is proposing five (5) one-story models and three (3) two-story models with three exterior options for each within the larger lot section of the development. The lot sizes range from 6,100 square feet to 16,625 square feet. Additionally, the applicant is proposing six (6) two-story models with three exterior options for each with the smaller lot section of the development. The lot sizes range from 1,800 square feet to 3,783 square feet. The average lot size within TM6050 is 4,071 square feet.

Homeowners Association (HOA)

The Project includes private streets and pedestrian access gates at various points along the Shepherd Avenue frontage of the Project site. The pedestrian access gates will connect to the trail on the north side of Shepherd Avenue and allow the residents to access the community trail, which will eventually connect to Willow Avenue to the west and the Enterprise Canal to the east (see **Figure 3** below). A HOA is also proposed to maintain the open space areas, median island on De Witt Avenue and provide parking enforcement within the PRD.

Figure 3

Vesting Tentative Tract Map
The project includes a Vesting Tentative Tract Map TM6050. The map includes 255 lots and is consistent with the requirements of the Subdivision Map Act.

Circulation
The Project is accessible from three main entries, two (2) along the De Witt Avenue frontage and one (1) along the N. Clovis Avenue frontage. Both N. Clovis Avenue and Shepherd Avenue are designated arterial streets in the circulation diagram of the Clovis General Plan and Community Boulevards within the Heritage Grove Design Guidelines. Traffic circulation is carefully evaluated and addressed during the initial review process of the project. The Project circulation was analyzed by JLB Traffic Engineering, Inc., in cooperation with the County of Fresno Department of Public Works and Planning, City of Fresno and Caltrans (see page 713 of **Attachment 3**). The report concluded that the Project will contribute to increased traffic in the vicinity streets; however, the circulation system identified in the Clovis General Plan can accommodate the proposed increase in traffic (see pages 53-56 of **Attachment 3**). The Project includes 37-foot wide private streets with no sidewalks. All of the proposed streets follow the City standards and Codes regarding street widths. The private streets within the Project boundaries will allow for parking on both sides of the streets. The Project will also include an exit-only gate located along the N. Clovis Avenue street frontage for the residents and will also be utilized as a Fire Apparatus Access Road (FAAR) for the Clovis Fire Department.

Setbacks and Building Height
The applicant's planned residential development proposes specific development standards. The proposed front yard setbacks would permit models with standard garages, moving the living areas and front porches into the 20-foot front yard area.

The use of the PRD Ordinance is appropriate in this case as it provides for a pedestrian feel to the subdivision by placing living areas closer to the street and placing less emphasis on the garages.

The applicant proposes R-1 zoning for the Project which permits homes up to two and one-half stories and as high as 35 feet. This is consistent with adjacent properties which also permit two and one-half stories.

Thematic Elements

The Project will implement the community design and development standards of the Heritage Grove Design Guidelines. The design guidelines established thematic street sections and landscape framework that will build upon the existing agricultural and cultural heritage of this area. The guidelines will also direct the intended architectural, landscape and site elements of each proposed development to reaffirm the theme for this important urban growth area (see **Figure 4** below). The developer will provide these details for review during the Residential Site Plan Review (RSPR) process.

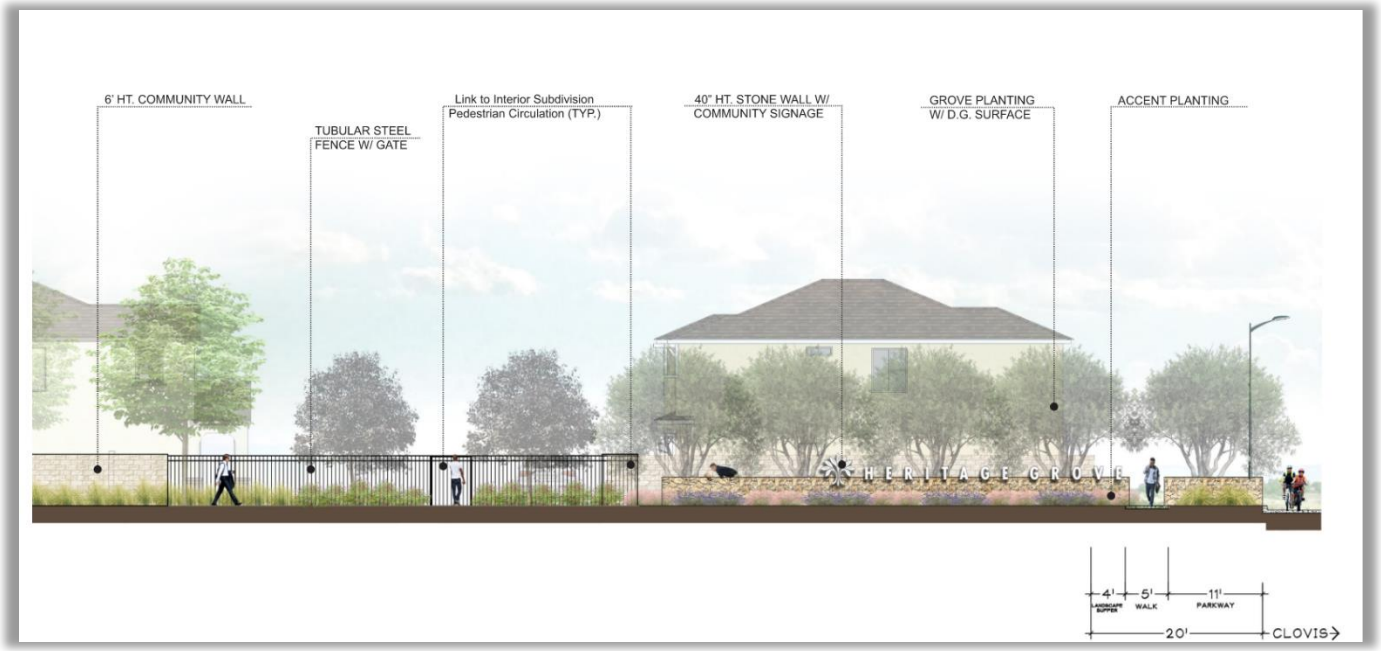

Figure 4

Amenities

Planned Residential Developments are required to provide a program of amenities in proportion to the request. In return for the reduced lot sizes, reduced setbacks, increased lot coverage, and non-standard garages, the applicant proposes to contribute a shade structure over playground equipment at an existing neighborhood park located within the Herndon-Shepherd Specific Plan area. These shade structures are a substantial public amenity, as the construction cost for each structure exceeds $40,000. Furthermore, the applicant will provide enhanced landscaping area on the east side of De Witt Avenue and trail furniture, including benches and trash receptacles along Shepherd Avenue.

Landscape Setbacks

The Heritage Grove Design Guidelines adopted specific street section designs for arterial streets within this area. As a Community Boulevard, N. Clovis Avenue is proposed to have a 20-foot landscape/pedestrian setback, with an 11-foot parkway, 5-foot sidewalk, and 4-foot landscape buffer setback. Shepherd Avenue is also considered a Community Boulevard in the design guidelines and is proposed to have a 30-foot landscape/pedestrian setback, with a 10-foot parkway, 12-foot trail, and an 8-foot landscape buffer setback (see **Figure 5** below).

Figure 5

Community Gateway

The Heritage Grove Design Guidelines incorporates community themed development that includes a strong sense of character to the Heritage Grove environment. Inclusive of that vision is the incorporation of street design features that give a sense of arrival. The Project site requires a community gateway treatment at the northwest corner of Shepherd and N. Clovis Avenues. The specific details of the required treatment shall be reviewed during the Residential Site Plan Review (RSPR) process.

Residential Site Plan Review

A subsequent RSPR will follow these entitlements in order to allow staff to review landscaping, amenities, open space, architecture, elevations, community gateway, and specific plot plans within TM6050.

Public Comments

A public notice was sent to area residents within 600 feet of the property boundaries. Staff has not received comments or concerns from the public upon finalization of this report.

Conceptual Quarter Section Plan

The General Plan requires that projects proposed within an Urban Center, such as Heritage Grove, include a conceptual master plan to show how the project could related to possible future development of adjacent and nearby properties. Conceptual master plans typically consider approximately 160 acres, or a "quarter section." The conceptual lotting and circulation plan provided by the applicant is for representation purposes only (see **Attachment 11**). The attached quarter section plan is provided to represent development potential and verify that the development configuration proposed by the current subdivision map does not unduly limit future development on surrounding properties. This does not imply that these properties must develop in the manner shown. Though the General Plan also suggests that conceptual master plans address additional topics such as design themes and open space layouts, these features are covered by the Heritage Grove Design Guidelines, which provide direction for the entire Urban Center.

Review and Comments from Agencies

The Project was distributed to all City Divisions as well as outside agencies, including Caltrans, Clovis Unified School District, Fresno Irrigation District, Fresno Metropolitan Flood Control District, AT&T, PG&E, San Joaquin Valley Air Pollution Control District, State Department of Fish and Wildlife, County of Fresno, and the Fresno Local Agency Formation Commission (LAFCo).

Comments received are attached only if the agency has provided concerns, conditions, or mitigation measures (see **Attachment 7**). Routine responses and comment letters are placed in the administrative record and provided to the applicant for their records.

Consistency with General Plan Goals and Policies

Staff has evaluated the Project in light of the goals and policies of the General Plan and vision and intent of the Heritage Grove Design Guidelines. The following goals and policies reflect Clovis' desire to maintain Clovis' tradition of responsible planning and well managed growth to preserve the quality of life in existing neighborhoods and ensure the development of new neighborhoods with an equal quality of life.

General Plan

Goal 3: Orderly and sustainable outward growth into three Urban Centers with neighborhoods that provide a balanced mix of land uses and development types to support a community lifestyle and small town character.

Policy 3.2 **Individual development project.** When projects are proposed in an Urban Center, require a conceptual master plan to show how a proposed project could relate to possible future development of adjacent and nearby properties. The conceptual master plan should generally cover about 160 acres or the adjacent area bounded by major arterials, canals, or other major geographical features. The conceptual master plan should address:

A. Compliance with the comprehensive design document
B. A consistent design theme
C. A mix of housing types
D. Adequate supply and distribution of neighborhood parks
E. Safe and direct pedestrian and bicycle linkages between residential areas and school sites, parks, and community activity centers

Policy 3.5 **Fiscal sustainability.** The City shall require establishment of community facility districts, lighting and landscaping maintenance districts, special districts, and other special funding or financing tools in conjunction with or as a condition of development, building or permit approval, or annexation or sphere of influence amendments when necessary to ensure that new development is fiscally neutral or beneficial.

Goal 5: A city with housing, employment, and lifestyle opportunities for all ages and incomes of residents.

Policy 5.1: **Housing variety in developments.** The Clovis General Plan has been planned to provide a variety of housing product types suitable to each stage of a person's life. Each development should contribute to a diversity of housing sizes and types within the standards appropriate to the land use designation. This policy does not apply to projects smaller than five acres.

Heritage Grove Design Guidelines

Purpose

- Establish an overall theme and quality for Heritage Grove.
- Illustrate and direct the intended architectural, landscape and site elements to reinforce the theme and quality.
- Provide criteria and examples of expected design qualities and treatments.
- Refine and implement the goals and objectives of the Clovis General Plan.

Community Facilities District

The fiscal analysis of the Southeast Urban Center Specific Plan identified possible long-term funding shortfalls in the City's operating and maintenance costs. To address this issue, the City of Clovis is implementing a Community Facilities District. Community Facilities Districts (CFD's) are a means of providing additional funding for the provision of public facilities and services for public safety, parks and recreation services, and other important municipal services in newly developing areas of the community where the City would not otherwise be able to afford to continue to provide an adequate level of service as the City continues to grow. The use of CFD's is fairly common among cities in California experiencing high rates of growth during this past decade, such as Clovis, due to significant losses of local revenue from tax shifts authorized by the State of California and the need to continue to provide an adequate level of service as growth occurs.

A condition of approval has been added to this tentative map requiring participation of this Project in the CFD.

California Environmental Quality Act (CEQA)

The City of Clovis has completed an environmental review (an assessment of the project's impact on natural and manmade environments) of the proposed project, as required by the State of California. The City Planner has recommended approval of a mitigated negative declaration (a written statement announcing that this project will not have a significant effect on the environment). Recommendation of a proposed mitigated negative declaration does not necessarily mean this project will be approved.

The City published notice of this public hearing in *The Business Journal* on Wednesday, May 6, 2020.

Annexation

The Project consists of an annexation to the City of Clovis, prezoning to a single-family residential designation and vesting tentative tract map for a 255-lot gated single-family planned residential development. An application for annexation has been submitted and identified as the Shepherd-Clovis Northwest Reorganization (RO303). The annexation area includes one property located at the northwest corner of Shepherd and N. Clovis Avenues.

The annexation is brought to the Commission's attention to provide context for the prezoning and vesting tentative tract map. The Commission is not required to take action on this request, which will be considered by the City Council and if supported, the Council will take proponency action to apply to LAFCO as the applicant.

The Commission is encouraged to ask any questions about annexation related to the prezoning and vesting tentative tract map project (see **Figure 6** below).

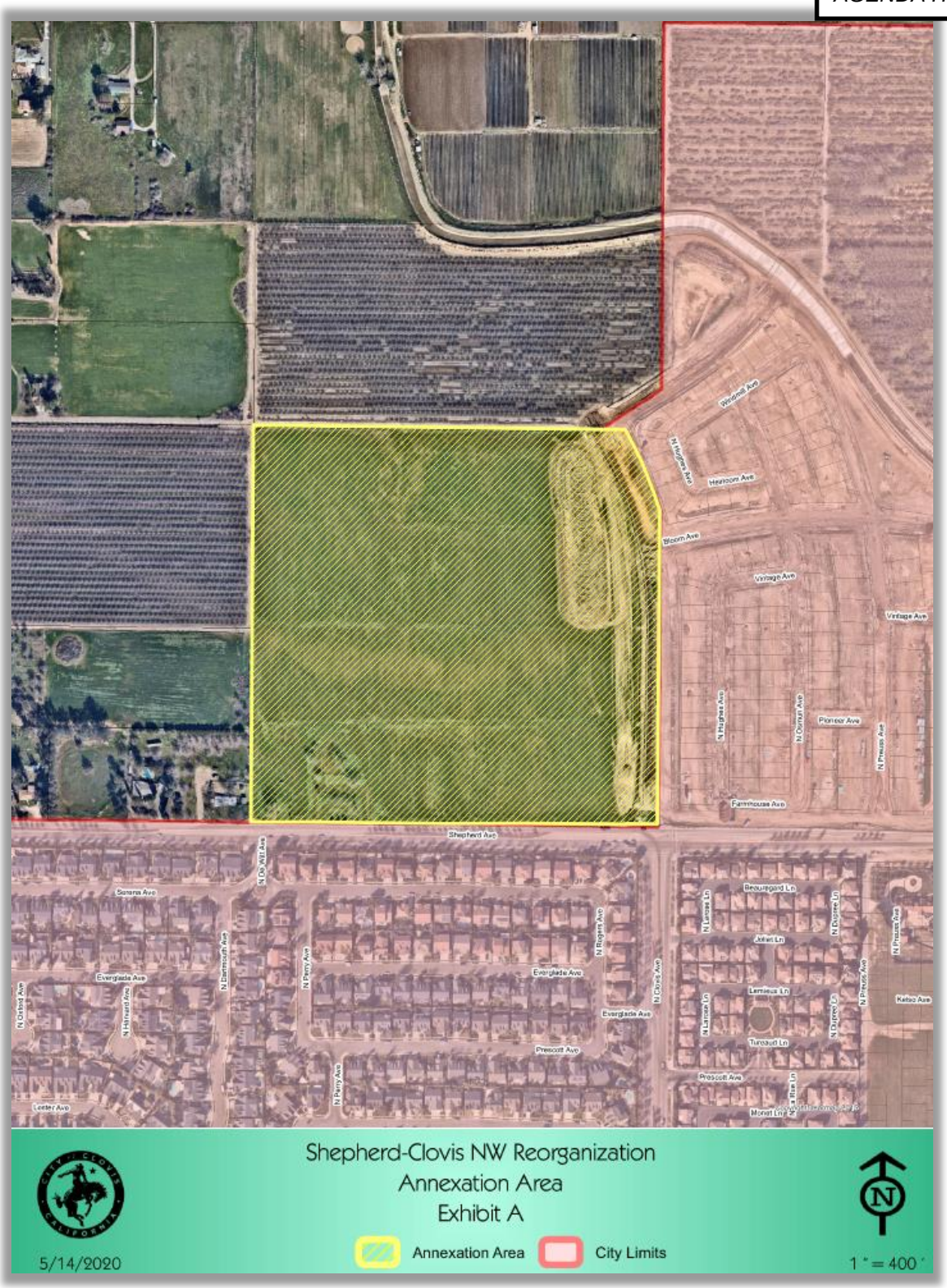

Figure 6

REASON FOR RECOMMENDATION

The proposal will provide a diversity in housing types and a quality residential environment for this area as envisioned by the Clovis General Plan and Heritage Grove Design Guidelines. The Project does not substantially impact sewer, water and other public services and will contribute a proportionate share of infrastructure and open space. The proposed vesting tentative tract

map is consistent with the goals and policies of the General Plan, vision and intent of the Heritage Grove Design Guidelines and Development Code. Staff therefore recommends that the Planning Commission approve R2016-10 and TM6050, subject to the conditions of approval attached as **Attachment 2**.

The findings to consider when making a decision on a prezone application include:

1. The proposed amendment is consistent with the goals, policies, and actions of the General Plan.

   The proposed amendment is consistent with several goals, and policies of the 2014 Clovis General Plan, including those identified above under the section of this staff report titled "Consistency with General Plan Goals and Policies." Furthermore, as described throughout this staff report, the Project is consistent with the existing General Plan land use designation of Medium Density Residential and the vision and intent of the Heritage Grove Design Guidelines.

2. The proposed amendment would not be detrimental to the public interest, health, safety, convenience, or general welfare of the City.

   The Project has been reviewed by public safety and utility providers and appropriate conditions have been incorporated to ensure that the applicable standards are adhered to. The proposed amendment will be subject to the Community Facilities District (CFD) funding annexation, which provides additional funding for the provision of public facilities and services for public safety, parks and recreation services, and other important municipal services. Therefore, this finding can be made based on the proposed Project.

3. The parcel is physically suitable (including absence of physical constraints, access, compatibility with adjoining land uses, and provision of utilities) for the requested zoning designations and anticipated land uses/projects.

   The proposed amendment affects approximately 38.50 acres of land, suitable for the development of the 255-lot gated single-family planned residential development. Therefore, the project site is physically suitable for the requested zoning designations.

4. The Planning Commission considered the CEQA analysis outlined in the staff report and elsewhere in the Administrative Record and approves a mitigated negative declaration for the project pursuant to CEQA guidelines.

   The Planning Commission has independently reviewed, evaluated, and considered the initial study, mitigated negative declaration and all comments, written and oral, received from persons who reviewed the mitigated negative declaration, or otherwise commented on the Project. Additionally, the mitigated negative declaration has been prepared, circulated, and made available for public comment pursuant to the California Environmental Quality Act ("CEQA"), Public Resources Code, section 21000, et seq., and Guidelines for implementation of CEQA, 14 California Code of Regulations, sections 15000, et seq. Staff recommends approval of the mitigated negative declaration.

5. The Planning Commission does recommend approval of prezone R2016-10.

   The Planning Commission considered testimony and information received at the public hearing and the oral and written reports from City staff, as well as other documents contained in the record of proceedings ("Administrative Record") relating to prezone R2016-10. The facts and evidence in the Administrative Record support approval of prezone R2016-10.

The findings to consider when making a decision on a tentative subdivision map application are as follows:

1. The proposed map, subdivision design, and improvements are consistent with the General Plan and any applicable specific plan.

   The proposed amendment is consistent with several goals, and policies of the 2014 Clovis General Plan, including those identified above under the section of this staff report titled "Consistency with General Plan Goals and Policies." Furthermore, as described throughout this staff report, the Project is consistent with the existing General Plan land use designation of Medium Density Residential and the vision and intent of the Heritage Grove Design Guidelines.

2. The site is physically suitable for the type and proposed density of development.

   The proposed tentative tract map affects approximately 38.50 acres of land with a density of 6.94 unit per acre. The average lot size within TM6050 will be 4,071 square feet. Therefore, the site is physically suitable for the proposed density of TM6050.

3. The design of the subdivision and the proposed improvements are not likely to cause substantial environmental damage or substantially and avoidably injure fish or wildlife or their habitat.

   As indicated in the Initial Study, the proposed project and associated improvements would not result in any significant impacts with implementation of mitigation measures prescribed in the Initial Study. Therefore, the Project will not cause substantial environmental damage or injury to fish and wildlife.

4. The design of the subdivision or type of improvements is not likely to cause serious public health or safety problems.

   The design of the subdivision will adhere to the Fire Department standards, Clovis Development Code and Building Code regulations for public health and safety compliance.

5. The design of the subdivision or the type of improvements will not conflict with easements acquired by the public at large for access through or use of property within the proposed subdivision. This finding may also be made if the review authority finds that alternate easements for access or use will be provided, and that they will be substantially equivalent to ones previously acquired by the public. This finding shall

apply only to easements of record, or to easements established by judgment of a court of competent jurisdiction, and no authority is hereby granted to the review authority to determine that the public at large has acquired easements of access through or use of property within the proposed subdivision.

All easements acquired by the public at large will be identified during the review process of the final map through the City's Engineering Division. If necessary, alternative easements will be provided that will be substantially equivalent to ones previously acquired for access through the proposed TM6050.

6. The discharge of sewage from the proposed subdivision into the community sewer system will not result in violation of existing requirements prescribed by the California Regional Water Quality Control Board.

   The City Engineer has concluded that the City has capacity to accommodate the Project. Installation of sewer lines through the proposed subdivision and outside its boundaries will be done in compliance with requirements of the California Regional Water Quality Control Board.

7. The design of the subdivision provides, to the extent feasible, passive or natural heating and cooling opportunities.

   The proposed subdivision will comply with the Clovis Development Code and California Building Code requirements as it relates to heating and cooling opportunities within TM6050.

8. The proposed subdivision, its design, density, and type of development and improvements conform to the regulations of this Development Code and the regulations of any public agency having jurisdiction by law.

   The proposed subdivision is proposing a density of 6.94 units per acre, which is consistent with the Clovis General Plan and Heritage Grove Design Guidelines. The proposed subdivision is single-family product type as required by the Clovis General Plan for residential developments.

9. The proposed project has been reviewed in compliance with the provisions of the California Environmental Quality Act (CEQA) and to this end the Planning Commission does approve a mitigated negative declaration for the project pursuant to CEQA guidelines.

   The Planning Commission has independently reviewed, evaluated, and considered the initial study, mitigated negative declaration and all comments, written and oral, received from persons who reviewed the mitigated negative declaration, or otherwise commented on the Project. Additionally, the mitigated negative declaration has been prepared, circulated, and made available for public comment pursuant to the California Environmental Quality Act ("CEQA"), Public Resources Code, section 21000, et seq., and Guidelines for implementation of CEQA, 14 California Code of Regulations, sections 15000, et seq.

10. Without the conditions of approval (**Attachment 2** of this resolution), the Planning Commission could not make the findings necessary for approval of vesting tentative tract map TM6050 (attached and labeled **Attachment 10)**.

11. The basis for the findings is detained in the May 28, 2020, staff report, which is hereby incorporated by reference, as well as the evidence and comments presented during the Public Hearing.

In light of court decisions, it is appropriate for the City to make findings of consistency between the required dedications and the proposed development. Every dedication condition needs to be evaluated to confirm that there is a rough proportionality, or that a required degree of connection exists between the dedication imposed and the proposed development. The City of Clovis has made a finding that the dedication of property for this project satisfies the development's proportionate contribution to the City's circulation system. The circulation system directly benefits the subject property by providing access and transportation routes that service the site. Further, the circulation system also enhances the property's value.

ACTIONS FOLLOWING APPROVAL
This Project will continue on to the City Council for final consideration.

NOTICE OF HEARING
Property owners within 600 feet notified: 148
Interested individuals notified: 10

Prepared by: George González, MPA, Associate Planner

Reviewed by: _____
Dave Merchen
City Planner

R2016-10 & TM6050

AGENDA ITEM NO.2

ATTACHMENT 1

Conditions of Approval - TM6050
Planning Division Comments
(George González, MPA, Associate Planner – 559-324-2383)

1. This Project is subject to the development standards of the Heritage Grove Design Guidelines.

2. The applicant shall notify all property owners within the annexation boundary and along streets where new water and sewer utilities will be constructed to determine if they wish to purchase a lateral connection per City policy.

3. The applicant shall obtain City approval in advance of temporary and permanent subdivision signs through separate sign review, consistent with the development criteria of the Clovis Municipal Code Sign Ordinance.

4. The developer shall repair and or replace any broken or damaged irrigation lines, valves, and other equipment on their properties which are intended to serve adjacent or downstream properties.

5. Prezone R2016-10 approves an R-1-PRD (Planned Residential Development) Zone District permitting the development of a single-family product. Density shall be consistent with the Clovis General Plan and not exceed 7.0 dwelling units per acre.

6. No more than two of the same unit type (floor layout and exterior materials package) shall be repeated side by side. When two of the same units are repeated side by side, they shall be different colors. These identical provisions may be waived by the City Planner on a specific lot basis within the project when the size or configuration of a lot would otherwise prevent compliance with the above requirements of any other siting or setback/yard requirements established under this application. If such a waiver is requested, the developer and City Planner shall work together to ensure that any sitings of units not in compliance with the above requirements shall be of different materials and elevations in order to minimize any adverse visual impacts that may result.

7. TM6050 is subject to the development standards of the R-1-PRD Zone District and Planned Development Standards and Guidelines.

8. Setbacks shall be measured to the exterior face of the framing of the structure. Exceptions to the setbacks are identified in §9.24.100, of the Clovis Municipal Code.

9. Maximum lot coverage for the larger lot section of TM6050 is 55% unless specifically approved through a residential site plan review or variance.

10. Maximum lot coverage for the smaller lot section of TM6050 is 65% unless specifically approved through a residential site plan review or variance.

ATTACHMENT 2

11. The developer shall construct a fence along the property line of adjacent rural residential properties that will not impact the existing and/or permitted animals.

12. All transformers for this subdivision shall be located underground. Pad mounted transformers may be considered through approval of an administrative use permit.

13. The developer shall utilize street lights within the development consistent with the Heritage Grove Design Guidelines and a model that will shield the light from up lighting.

14. The developer shall utilize Heritage Grove Design Guidelines thematic lighting along local and private streets.

15. The developer shall record a Covenant regarding a "right to farm," for adjacent property owners. Such agreement shall be disclosed to all future home buyers.

16. Maximum building (main structure) height shall not exceed thirty-five (35) feet.

17. Setbacks for the larger lot section of TM6050 shall be as follows:

Setbacks	Front (Garage)	Front (house)	Garage Side	Corner Street Sides	Rear
Plan 2277 (one-story)	20'	10'	5'	8'	10'
Plan 2378 (one-story)	20'	10'	5'	8'	10'
Plan 2399 (two-story)	20'	10'	5'	8'	10'
Plan 2404 (one-story)	20'	10'	5'	8'	10'
Plan 2528 (one-story)	20'	10'	5'	8'	10'
Plan 2700 (one-story)	20'	10'	5'	8'	10'
Plan 3522 (two-story)	20'	10'	5'	8'	10'
Plan 3912 (two-story)	20'	10'	5'	8'	10'

Lot Coverage:	55% Max
Maximum Height:	2-stories not to exceed 35 feet
Minimum Lot Size:	6,100 square feet
Minimum Parcel Width:	61 feet
Minimum Curved Parcel Width:	50 feet
Minimum Corner Parcel Width:	66 feet
Minimum Parcel Depth:	110 feet
Reversed Corner Street Side Setback:	8 feet
Corner Street Side Fence Setback:	3 feet
Interior Side Yard Setback (opposite from garage):	4 feet
Setback to Projections and/or Porch/ Patio:	10 feet
Garages:	20'x20' interior dimension (**2-car**) 29.5'x20' interior dimension/20'x20' minimum with 10'x15' minimum tandem (**3-car**)

18. Setbacks for the smaller lot section of TM6050 shall be as follows:

Setbacks	Front (Garage)	Front (house)	Garage Side	Corner Street Sides	Rear
Plan 1212 (two-story)	5’	4’	5’	3’	4’
Plan 1245 (two-story)	5’	4’	5’	3’	4’
Plan 1390 (two-story)	5’	4’	5’	3’	4’
Plan 1413 (two-story)	5’	4’	5’	3’	4’
Plan 1648 (two-story)	5’	4’	5’	3’	4’
Plan 1660 (two-story)	5’	4’	5’	3’	4’

Lot Coverage:	65% Max
Maximum Height:	2-stories not to exceed 35 feet
Minimum Lot Size:	1,800 square feet
Minimum Parcel Width:	36 feet
Minimum Curved Parcel Width:	36 feet
Minimum Cul-De-Sac or Corner Parcel Width:	36 feet
Minimum Parcel Depth:	50 feet
Reversed Corner Street Side Setback:	3 feet
Interior Side Yard Setback (opposite from garage):	3 feet
Setback to Projections and/or Porch/ Patio:	4 feet
Garages:	20’x20’ interior dimension or tandem 10’x38’ minimum (**2-car**) 10’x16’ interior dimension (**1-car**)

19. Landscape plans shall be reviewed and approved separately by the landscape review committee for tree and landscape type and location.

20. Prior to the submittal of civil plan review, the applicant shall submit a tree plan showing all existing trees with their variety. A tree removal/protection plan shall be reviewed and approved by the Director. Trees shall not be removed without approval from the Director.

21. Clovis Avenue shall have a 20-foot landscape/pedestrian setback, with an 11-foot parkway, 5-foot sidewalk, and 4-foot landscape buffer setback.

22. Shepherd Avenue shall have a 30-foot landscape/pedestrian setback, with a 10-foot parkway, 12-foot trail, and 8-foot landscape buffer setback.

23. Upon final recordation of this vesting tentative tract map, it shall be the applicant’s responsibility to furnish to the Planning Department an electronic (PDF) copy of the original map obtained from the Fresno County Recorder’s Office.

24. The applicant shall relay all conditions of approval for Vesting Tentative Tract Map TM6050 to all subsequent purchasers of individual lots, if applicable, and/or to subsequent purchasers of this entire tract map development.

25. The applicant shall record a Notice of Nonconformance dealing with any structure used for model homes where the garage is converted for the use as a sales office.

26. The applicant shall contribute a proportionate share towards the development of a trail system in this quarter section as required by the General Plan land use diagram.

27. All lighting shall be screened from direct view from the public right-of-way and adjacent residential properties.

28. All landscaping (open space and private yards) shall conform to the City of Clovis Water Efficient Landscape Ordinance.

29. The developer shall comply with all mitigation measures identified in the initial study mitigated negative declaration prepared for the Project, included as **Attachment 3** to the staff report.

30. This vesting tentative tract map is approved per **Attachment 10** of this report.

31. This Project requires the submittal and approval of a residential site plan review entitlement. Specific color and materials of the models, walls, amenities, landscaping, and fencing will be evaluated.

32. The applicant shall provide an all-weather surface for the placement and storage of trash receptacles.

33. The developer shall construct a minimum six-foot high solid split face masonry wall along the Shepherd and Clovis Avenue frontages. The masonry wall along Shepherd Avenue shall incorporate tubular steel fencing with pedestrian gates. The masonry walls shall incorporate angled corners at entries, and columns at the corners and ends.

34. Shepherd and Clovis Avenues shall be improved per the Heritage Grove Plan right-of-way requirements.

35. The developer shall install pedestrian bollard lighting along the community trail on Shepherd Avenue, consistent with TM6200 to the east. Spacing will be evaluated during residential site plan review.

36. As an amenity for the Project, the developer shall contribute a shade structure over playground equipment at the neighborhood park located within the Herndon-Shepherd Specific Plan area. The applicant will provide additional landscaping area on the east side of De Witt Avenue and trail furniture, including benches and trash receptacles along Shepherd Avenue.

37. The developer shall incorporate the Gateway Plans as prescribed in the Heritage Grove Design Guidelines.

38. Gateways and Paseo entries shall be of adequate size and shall be reviewed through the Residential Site Plan Review process.

Police Department Conditions
(Scott Borsch, Department Representative - 324-3464)

39. Construction work shall be limited to the hours set forth in the Clovis Municipal Code. (CMC § 5.18.15.)

40. It shall be the responsibility of the property owner to maintain the structures and adjoining fences to the project free of graffiti. All forms of graffiti shall be removed within 72 hours. (CMC §§ 5.18.02(r), 5.18.06 (b).)

41. Emergency phone numbers for responsible parties shall be kept current during the building phase of the project.

42. All construction materials shall be located within a secured area or monitored by security staff during non-construction hours.

Fire Department Conditions
(Gary Sawhill, Department Representative - 324-2224)

43. **Street Width:** Fire apparatus access width shall be determined by measuring from "base of curb" to "base of curb" for roadways that have curbs. When roadways do not have curbs, the measurements shall be from the edge of the roadway surface (approved all weather surface).

44. **Street Width for Single Family Residences:** Shall comply with Clovis Fire Standard #1.1.

45. **Street Width for Single Family Residences:** Minimum Access Road Width of 36 feet for Single Family Residences. Roads 36 feet or wider allow for Parking on both sides of street.

46. **Security Gates:** All security gates shall comply with Clovis Fire Department Gates Standard #1.5. Plans shall be submitted for review and permits issued by Fire Department prior to installation.

47. **Two Points of Access:** Any development to this parcel will require a minimum of two (2) points of access to be reviewed and approved by the Clovis Fire Department. All required access drives shall remain accessible during all phases of construction which includes paving, concrete work, underground work, landscaping, perimeter walls. Second point of access at out lots N and O and the north end of DeWitt Ave. shall require OptiCom and bypass Fire Lock Box for Fire Department access per Fire Dept. Standard #1.5.

48. **Turning Radius:** All access way roads constructed shall be designed with a minimum outside turning radius of forty-five feet (45').

49. **All Weather Access & Water Supply:** The applicant shall provide all weather access to the site during all phases of construction to the satisfaction of the approved Clovis Fire Department Standard #1.2.

50. **Residential Fire Hydrant:** The applicant shall install _15_ 4 ½" x 2 ½" approved Residential Type fire hydrant(s) and "Blue Dot" hydrant locators, paint fire hydrant(s) yellow with blue top and caps, and paint the curb red as specified by the adopted Clovis Fire Department Standard #1.4. Plans shall be submitted to the Clovis Fire Department for review and approval prior to installation. The hydrant(s) shall be charged and in operation prior to any framing or combustible material being brought onto the site.

51. **Vehicle Impact Protection:** The applicant must install protection posts that meet the City of Clovis specifications according to Clovis Fire Department Standard #1.7. These may be required at locations next to parking stalls and trash enclosures.

52. **Looped Water Main:** The applicant shall install approved looped water main capable of the necessary flow of water for adequate fire protection and approved by the Clovis Fire Department.

53. This project was reviewed by the fire department only for requirements related to water supply, fire hydrants, and fire apparatus access to the building(s) on site.

ENGINEERING / UTILITIES / SOLID WASTE DIVISION CONDITIONS

(Sean Smith, Engineering Division Representative – 324-2363)
(Paul Armendariz, Department Representative – 324-2649)

Maps and Plans

54. The conditions of this tract map are written under the assumption that all dedications and improvements have been completed by the adjacent TM 6200 development, and that these dedications and improvements have been accepted by the City. Additional conditions shall be required at the discretion of the City Engineer, if the improvements and dedications by TM 6200 have not been accepted by the City.

55. The applicant shall have a final tract map prepared, in the form prescribed by the Subdivision Map Act and City of Clovis Municipal Code. The final tract map shall be submitted to the City of Clovis Engineering Division, and should include, but not be limited to, final tract map, the current filing fee, closure calculations, current preliminary title report, legal descriptions and drawings of required dedications.

56. The applicant shall submit separately to the City of Clovis Engineering Division, a set of construction plans on 24" x 36" sheets with City standard title block for all required

improvements and a current preliminary title report. These plans shall be prepared by a registered civil engineer, and shall include a grading plan, landscape plan, a site plan showing trash enclosure locations and an overall site utility plan showing locations and sizes of sewer, water, storm drain, and irrigation mains, laterals, manholes, meters, valves, hydrants, fire sprinkler services, other facilities, etc. Plan check and inspection fees per City of Clovis Resolution No. 18-61 shall be paid with the first submittal of said plans. All plans shall be submitted at or before the time the building plans are submitted to the Building Division and shall be approved by the City and all other involved agencies prior to the release of any development permits.

57. Prior to the initial submittal of the improvement plans, the applicant shall contact Sean Smith at (559) 324-2363 to setup a coordination meeting (Pre-submittal Meeting).

58. Upon approval of improvement plans, the applicant shall provide the City with the appropriate number of copies. After all improvements have been constructed and accepted by the City, the applicant shall submit to the City of Clovis Engineering Division (1) digital copy to the City in PDF format of the approved set of construction plans revised to accurately reflect all field conditions and revisions and marked "AS-BUILT" for review and approval. Upon approval of the AS-BUILTs by the City, and prior to granting of final occupancy or final acceptance, the applicant shall provide (1) digital copy to the City in PDF format.

General Provisions

59. The applicant shall pay all applicable development fees at the rate in effect at the time of payment and prior to final map approval by Council or have the fees payable directly to the City through a separate escrow account at the time of recordation of the map.

60. The applicant is advised that, pursuant to California Government Code, Section 66020, any party may protest the imposition of fees, dedications, reservations, or other exactions imposed on a development project by a local agency. Protests shall be filed in accordance with the provisions of the California Government Code and shall be filed within 90 days after conditional approval of this application is granted. The 90 day protest period for this project shall begin on the “date of approval” as indicated on the “Acknowledgment of Acceptance of Conditions” form.

61. All reimbursement requests shall be prepared and submitted in accordance with the requirements of the current version of the “Developer Reimbursement Procedures” a copy of which may be obtained at the City Engineer’s Office.

62. The applicant shall install all improvements within public right-of-way and easements in accordance with the City of Clovis standards, specifications, master plans, and record drawings in effect at the time of improvement plan approval.

63. The applicant shall address all conditions, and be responsible for obtaining encroachment permits from the City of Clovis for all work performed within the City's right-of-way and easements.

64. The applicant shall submit a soils report or a waiver of soils report to the City of Clovis Engineering Division for approval by the City Engineer.

65. The applicant shall provide and pay for all geotechnical services per City policy.

66. The applicant shall comply with the requirements of the local utility, telephone, and cable companies. It shall be the responsibility of the applicant to notify the local utility, telephone, and cable companies for the removal or relocation of utility poles where necessary. The City shall not accept first submittals without proof that the applicant has provided the improvement plans and documents showing all proposed work to the utility, telephone, and cable companies. All utility vaults in which lids cannot be sloped to match proposed finished grading, local utilities have 5% max slope, shall be located in sidewalk areas with pedestrian lids so the lid slope matches sidewalk cross slope.

67. All existing overhead and new utility facilities located on-site or within the street right-of-way along the streets adjacent to this tract shall be undergrounded unless otherwise approved by the City Engineer.

68. The applicant shall contact and address all requirements of the United States Postal Service Clovis Office for the location and type of mailboxes to be installed. The location of the facilities shall be approved by the City Engineer prior to approval of improvement plans or any construction.

69. The applicant shall contact and address Caltrans requirements. The applicant shall be required to mitigate impacts to State Highway facilities as determined by the City Engineer.

Dedications and Street Improvements

70. The applicant shall provide right-of-way acquisition or dedicate free and clear of all encumbrances and/or improve the following streets to City standards. The street improvements shall be in accordance with the City's specific plans and shall match existing improvements. The applicant's engineer shall be responsible for verifying the type, location, and grades of existing improvements.

    a. North Clovis Avenue – Along frontage, dedicate to provide right-of-way acquisition for 58' (exist varies) west of centerline, and improve with curb, gutter, sidewalk, drive approaches, curb return ramps, street lights, landscaping and irrigation, permanent paving and overlay as necessary to match the existing permanent pavement, and transitional paving as needed.

b. North Clovis Avenue – Along frontage, median island openings shall not be allowed without approval of the City Engineer.

c. Shepherd Avenue – Along frontage, dedicate to provide right-of-way acquisition for 78' (exist varies') north centerline, and improve with curb, gutter, sidewalk, curb return ramps, street lights, landscaping and irrigation, permanent paving and overlay as necessary to match the existing permanent pavement, and transitional paving as needed.

d. Shepherd Avenue – Along frontage, median island openings shall not be allowed without approval of the City Engineer.

e. Gated Developments – Provide ample vehicle stacking area outside the travel lanes of North DeWitt and North Clovis Avenues that will allow vehicles to wait as vehicles are accessing the control panel to open the security gates. Design a turn-a-round to allow vehicles that cannot enter the complex to return to the street without backing the vehicle up. Provide the Solid Waste Division with remote controls that will allow access for all solid waste and recycling vehicles.

f. Interior Streets – Dedicate to provide for 50’ or 54’ of right-of-way in conformance with the City policy on street widths, and improve with curb, gutter, 5’ sidewalk adjacent to the curb, drive approaches, curb return ramps, streetlights, permanent paving, and all transitional paving as needed.

g. Interior streets shall be private. For two-way traffic with no parking on both sides, the minimum travel width shall be 25’ with a clear width of 30’. For two-way traffic with parking on one side, the minimum travel width shall be 32’. For two-way traffic with parking on both sides, the minimum travel width shall be 36’.

h. Entry feature streets with median islands shall have a minimum of 22’ wide travel lanes in each direction with parking or without parking.

i. Cul-De-Sacs - dedicate to provide for 52' radius and improve with curb, gutter, sidewalk, street lights, 43' permanent paving and all transitional paving as needed.

j. The applicant shall dedicate and provide for a corner gateway at Shepherd and North Clovis Avenues.

k. The applicant shall dedicate and provide for a trail along Shepherd Avenue.

71. The applicant shall provide a dedication for a 10' public utility easement, where applicable, along all frontages or alternate widths approved by the utilities companies.

72. The applicant shall remove and repair all damaged or broken concrete improvements. The City Engineer may require the repair of additional improvements if they are damaged prior to occupancy.

73. The applicant shall not install any fences, temporary or permanent in public right-of-way.

74. The applicant shall obtain "R Value" tests in quantity sufficient to represent all street areas, and have street structural sections designed by a registered civil engineer based on these "R Value" tests.

75. The applicant shall, at the ends of any permanent pavement abutting undeveloped property, install 2" x 6" redwood header boards that shall be placed prior to the street surfacing.

76. Standard barricades with reflectors shall be installed at ends of streets abutting undeveloped property and any other locations to be specified by the City Engineer.

Sewer

77. The applicant shall identify and abandon all septic systems to City standards.

78. The applicant shall install sanitary sewer mains of the size and in the locations indicated below, prior to occupancy. The sewer improvements shall be in accordance with the City's master plans and shall match existing improvements. The applicant's engineer shall be responsible for verifying the size, location, and elevations of existing improvements. Any alternative routing of the mains shall require approval of the City Engineer and shall be supported by appropriate calculations.
    a. Shepherd Avenue – install 8" force main along frontage.
    b. Shepherd Avenue – install 16" force main along frontage.
    c. Interior Private Streets – install 8" mains.

79. The applicant shall provide dedication of a 15' wide utility easement for all on-site sewer mains, not located in otherwise dedicated rights-of-way.

80. The applicant shall install one (1) 4" sewer service house branch to each lot within the tentative tract.

81. All existing sewer services that will not be used with this development shall be abandoned by cutting and capping the service at the right-of-way line.

Water

82. The applicant shall identify and abandon all water wells to City standards.

83. The applicant shall install water mains of the sizes and in the locations indicated below, and provide an adequately looped water system prior to occupancy. The water improvements shall be in accordance with the City's master plans and shall match existing improvements. The applicant's engineer shall be responsible for verifying the size, location, and elevations of existing improvements. Any alternative routing of the mains shall require approval of the City Engineer and shall be supported by appropriate calculations.
    a. Interior Private Streets – install 8" mains.

84. The applicant shall install water improvements to maintain the pressure zone boundary along the Street 'D' alignment per the April 2017 City of Clovis Water Master Plan Update Phase III. Looped water systems shall be designed such that connections do not cross the pressure zone boundary and the looped water system is entirely within one zone and not dependent on another pressure zone for redundancy.

85. The applicant shall provide dedication of 15-foot wide utility easements for all on-site water mains, hydrants, and water meters not located in otherwise dedicated rights-of-way.

86. The applicant shall install a City standard water service to each lot of the proposed subdivision. Water services shall be grouped at property lines to accommodate automatic meter reading system, including installation of connecting conduit. The water meter shall be placed in the sidewalk and not in planters or driveways.

87. Prior to recording a final map of any phase, the applicant shall demonstrate to the satisfaction of the City Fire Chief and City Engineer that there is adequate water pressure to serve the units to be constructed. The applicant shall work with the City Engineer to determine the adequacy of water supply/pressure for the proposed development.

Recycled Water

88. The applicant shall install recycled water mains of the sizes and in the locations indicated below. The recycled water improvements shall be in accordance with the City's master plans and shall match existing improvements. All areas utilizing recycle water for irrigation shall be clearly marked on the improvement plans. The applicant's engineer shall be responsible for verifying the size, location, and elevations of existing improvements. Any alternative routing of the mains shall require approval of the City Engineer and may require appropriate calculations.
    a. Shepherd Avenue – install 10" main along the property frontage.

Grading and Drainage

89. The applicant shall contact the Fresno Metropolitan Flood Control District (FMFCD) and address all requirements, pay all applicable fees required, obtain any required

NPDES permit, and implement Best Available Technology Economically Achievable and Best Conventional Pollutant Control Technology to reduce or eliminate storm water pollution. Plans for these requirements shall be included in the previously required set of construction plans, and shall be submitted to and approved by FMFCD prior to the release of any development permits.

90. In the event permanent storm drainage facilities are not available, the applicant shall provide temporary on-site retention basins for storm water disposal and provide a cash deposit for each basin to offset the City's cost of maintaining the basins. The size and design shall be in accordance with the requirements of the City Engineer and may change based on design calculations and access requirements for maintenance. The temporary pond maintenance deposit shall be based on size, depth, expected maintenance schedule, etc. However, the property owner shall be responsible for periodic cleaning of toxic material. The temporary basin is solely for the convenience of the subdivision.

91. The owner of the property on which the temporary basin(s) are located shall backfilled said basin(s) within ninety (90) days after notice is given by the City that the basin(s) are no longer needed. In the event the owner fails to backfill said basin(s) within said 90 days, the City may cause the basin to be backfilled. A lien to cover the cost of the work will be placed on the property, including the costs to prepare and enforce the lien. A covenant shall be prepared and recorded on the lot on which the basin(s) is/are located.

92. Grade differentials between lots and adjacent properties shall be adequately shown on the grading plan and shall be treated in a manner in conformance with City of Clovis Standard Drawing No. M-4 as modified by the City Council. Any retaining walls required on-site or in public right of way shall be masonry construction. All retaining walls shall be designed by a registered civil engineer.

Irrigation and Landscaping Facilities

93. The applicant, as a portion of the required tract improvements, shall provide landscaping and irrigation as required herein. The landscaping and irrigation shall be installed in public right-of-way and the area reserved for landscaping. The irrigation and landscape improvements shall be in accordance with the City's master plans and shall match existing improvements. The applicant's engineer shall be responsible for verifying the size, location, and elevations of existing improvements. Plans for the required landscaping and irrigation systems shall be prepared by an appropriately registered professional at the applicant's expense and shall be approved by the City of Clovis Planning and Development Services Department and Public Utilities Department prior to the beginning of construction or the recording of the final tract map, whichever occurs first. Landscape and irrigation facilities that the City Landscape Maintenance District shall maintain: the mini-park, paseos, paseo lights, interior street lights, entry features, landscape strips along North Clovis Avenue and

the trail along Shepherd Avenue. The landscape strip around the planned unit development may be maintained by a perpetual maintenance covenant.

94. All park and landscape improvements shall be installed, accepted for maintenance by the City prior to issuance of 40% of the Tract's building permits. If the park improvements are not constructed on the Outlot for any reason within two (2) years of the recordation of the final map of Tract, City shall have the right to request from surety and receive upon City's demand, sufficient funding to complete the construction of improvements for the park. The two year period may be extended at City's sole option and discretion and upon such conditions as City shall determine.

95. The owner shall request annexation to and provide a covenant for the Landscape Maintenance District. The property owner acknowledges and agrees that such request serves as a petition pursuant to California State Proposition 218 and no further election shall be required for the establishment of the initial assessment. The assessment for each lot shall be obtained from the City for the tax year following the recordation of the final map. The estimated annual assessment per average sized lot is $428.00, which is subject to change prior to issuance of building permit or final tract map approval and is subject to an annual change in the range of the assessment in the amount of the Consumer Price Index, U.S. City Average, All Urban Consumers (CPI Index), plus two percent (2%). The additional landscaping enhancements that exceed the City norms and are specific benefit to the property, such as the entry feature, columns, monuments, interior median islands, round-a-bouts, special street lights, etc, if determined to be maintained by the Landscape Maintenance District, shall be maintained by an additional landscape maintenance assessment. The applicant shall provide construction costs and deposit with the City an amount equal to 50% of the value of the enhanced landscaping hardscape features, or an alternate amount approved by the City Engineer, such as columns, monuments, and special street lights, that exceeds the City norms. The applicant shall provide the City with an estimate of the annual maintenance for the special lighting and landscaping enhancements that exceeds the City norms. The owner/developer shall notify all potential lot buyers before they actually purchase a lot that this tract is a part of a Landscape Maintenance District and shall inform potential buyers of the assessment amount. Said notification shall be in a manner approved by the City. The owner/developer shall supply all pertinent materials for the Landscape Maintenance District.

96. The applicant shall comply with the City of Clovis Water Efficient Landscape Requirements Ordinance.

97. The applicant shall contact and address all requirements of the Fresno Irrigation District (FID). This may include dedicating easements, piping or relocating any existing FID canals and ditches, replacing any existing irrigation piping, concrete lining or improving any existing canals, construction or reconstruction of any canals, culverts, and bridge crossings. Plans for these requirements and improvements shall be included as in the previously required set of construction plans, and shall be

submitted to and approved by FID prior to the release of any development permits or recording of the final tract map. If a FID or private irrigation line is to be abandoned, the applicant shall provide waivers from all downstream users.

98. The applicant shall indicate on construction drawings the depth, location and type of material of any existing Fresno Irrigation District's irrigation line along the proposed or existing street rights-of-way or onsite. Any existing canals shall be piped. The material of the existing pipe shall be upgraded to the proper class of rubber gasket pipe at all locations unless otherwise approved by the City Engineer.

99. The applicant shall apply to the Fresno Irrigation District (FID) for transfer of irrigation water rights to the City of Clovis, if the property has not already been removed from FID and transferred to the City. The applicant shall execute a "Request for Change of Relative Value" that can be obtained and processed through FID. The applicant shall provide a copy of the completed form to the City.

100. All existing agricultural irrigation systems either on-site or in public right of way, whether FID or privately owned, shall be identified prior to any construction activity on the site. Service to all downstream users of irrigation water shall be maintained at all times through preservation of existing facilities or, if the existing facilities are required to be relocated, the relocation and replacement of the existing facilities. It is the intent that downstream users not bear any burden as a result of development of the site. Therefore, the applicant shall pay all costs related to modification, relocation, or repair of any existing irrigation facilities resulting from or necessitated by the development of the site. The applicant shall identify on site plans and construction plans, all existing irrigation systems and their disposition (abandonment, repair, relocation, and/or piping). The applicant shall consult with the Fresno Irrigation District for any additional requirements for lines to be abandoned, relocated, or piped. The applicant shall provide waivers from all users in order to abandon or modify any irrigation pipelines or for any service interruptions resulting from development activities.

101. The applicant shall provide a landscape and irrigation perpetual maintenance covenant recorded for landscaping installed in the public right-of-way behind the curb including easements that will not be maintained by the Clovis Landscape Maintenance District. A recordable covenant shall be submitted to and approved by the City of Clovis City Engineer prior to final map approval.

102. The applicant shall provide a perimeter wall perpetual maintenance covenant on all properties that have a perimeter wall that is installed on private property. A recordable covenant shall be submitted to and approved by the City of Clovis City Engineer prior to final map approval.

Miscellaneous

103. The applicant shall construct eight (8) City of Clovis standard Type V trash enclosure (M-2 and M-3) including solid metal gates. Grease barrel enclosures shall be required

for all grease producing businesses. The applicant shall provide paved access to and from the trash enclosure that must be accessible between 6 a.m. to 2:30 p.m. on the day(s) of service. The solid waste collection vehicles shall not be required to backup to service the trash enclosure. The trash enclosure shall be positioned to have front loading solid waste vehicle access. The concrete pad shall be inspected by the City prior to pouring of concrete. All access driveways to and from the trash enclosure shall be a minimum of 26' in width with large turn radius. Trash enclosures shall be setback a minimum of 5' from all driveways to minimize impact of gates left open and mitigate any visibility issues.

104. The applicant shall install seventy (70) street lights per the attached street light exhibit. Street lights along the major streets shall be installed on metal poles to local utility provider's standards at the locations designated by the City Engineer. Street light locations shall be shown on the utility plans submitted with the final map for approval. Street lights at future traffic signal locations shall be installed on approved traffic signal poles, including all conduits and pull boxes. Street lights along the major streets shall be owned and maintained by local utility providers. Proof of local utility provider's approval shall be provided. The applicant may install thematic lighting, as approved by the City Engineer. If the applicant chooses to install thematic lighting, the applicant shall provide a conceptual lighting plan identifying adjacent properties that may be incorporated with thematic lights to create a neighborhood effect. Thematic lighting owned by the City shall be maintained by an additional landscape maintenance assessment.

105. Any existing section corner or property corner monuments damaged by this development shall be reset to the satisfaction of the City Engineer. A licensed land surveyor or civil engineer licensed to perform land surveying shall certify the placement of all required monumentation prior to final acceptance. Brass caps required for installation of new monuments or replacement of existing monuments shall be provided by the contractor/the applicant and approved by City prior to installation. Within five days after the final setting of all monuments has been completed, the engineer or surveyor shall give written notice to the City Engineer that the final monuments have been set. Upon payment to the engineer or surveyor for setting the final monuments, the applicant shall present to the City Engineer evidence of the payment and receipt thereof by the engineer or surveyor.

106. A deferment, modification, or waiver of any engineering conditions shall require the express written approval of the City Engineer.

107. The conditions given herein are for the entire development. Additional requirements for individual phases may be necessary pending review by the City Engineer.

Fresno Irrigation District
(Laurence Kimura, FID Representative – 233-7161)

108. The applicant shall refer to the attached Fresno Irrigation District correspondence. If the list is not attached, please contact the FID for the list of requirements.

County of Fresno Health Department Conditions
(Kevin Tsuda, County of Fresno Health Department Representative – 600-3271)

109. The applicant shall refer to the attached Fresno County Health Department correspondence. If the list is not attached, please contact the Health Department for the list of requirements.

Caltrans
(Jamaica Gentry, Caltrans Representative – 488-7307)

110. The applicant shall refer to the attached Caltrans correspondence. If the list is not attached, please contact the Caltrans for the list of requirements.

Clovis Unified School District
(Denver Stairs, CUSD Representative – 327-9000)

111. The applicant shall refer to the attached CUSD correspondence. If the list is not attached, please contact the CUSD for the list of requirements.

San Joaquin Valley Air Pollution Control District
(Carol Flores, SJVAPCD Representative – 230-5935)

112. The applicant shall refer to the attached SJVAPCD correspondence. If the list is not attached, please contact the SJVAPCD for the list of requirements.

Fresno Metropolitan Flood Control District
(Peter Sanchez or Robert Villalobos, FMFCD Representative – 456-3292)

113. The applicant shall refer to the attached FMFCD correspondence. If the list is not attached, please contact the FMFCD for the list of requirements.

Administration Department Conditions
(John Holt, Department Representative – 324-2072)

114. Prior to approval, recordation or filing of an annexation, final map, or site plan, the property covered by the Project shall be included within or annexed to a Community Facilities District (CFD), established by the City for the provision of public facilities and services, for which proceedings have been consummated, and shall be subject to the special tax approved with the formation or annexation to the CFD. The CFD applies only to residential projects.

115. The applicant and the property owner acknowledge and agree that if the Project were not part of a CFD, the City might lack the financial resources to operate facilities and provide public services, such as police protection, fire protection, emergency medical services, park and recreation services, street maintenance and public transit. Absent the requirement for inclusion of the Project within a CFD, the City might not be able to make the finding that the Project is consistent with the General Plan and relevant specific plans and might not be able to make the findings supporting approval of the Project as required by the Subdivision Map Act and the California Environmental Quality Act, and the City might be required to deny the application for the Project.

116. The owner/developer shall notify all potential lot buyers prior to sale that this Project is a part of a Community Facilities District and shall inform potential buyers of the special tax amount. Said notification shall be in a manner approved by the City. This requirement may be waived at the discretion of the City Council if, at the time of the approval, recordation or filing of the Project, the City Council has determined that it is not necessary that the Project be included in the CFD.

117. The applicants shall reimburse the City for any expense associated with the transition agreement for fire services with the Fresno County Fire Protection District that would apply to this proposal.

6050 Enterprises, LP
R2016-10, TM6050 & RO303
Initial Study and Mitigated Negative Declaration

April 2020

PREPARED BY:

George González, MPA
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Planning & Development Services
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CITY of CLOVIS
PLANNING & DEVELOPMENT
1033 FIFTH STREET • CLOVIS, CA 93612

ATTACHMENT 3

INITIAL STUDY

This Initial Study was prepared pursuant to the California Environmental Quality Act (CEQA) Public Resources Code Sections 21000 *et seq*., CEQA Guidelines Title 14, Section 15000 et seq. of the California Code of Regulations.

PROJECT TITLE:	6050 Enterprises, LP (R2016-10, TM6050 & RO303)
LEAD AGENCY NAME AND ADDRESS:	City of Clovis Planning & Development Services 1033 Fifth Street Clovis, CA 93612
CONTACT PERSON AND PHONE NUMBER:	George González, MPA, Associate Planer (559) 324-2383 georgeg@cityofclovis.com
PROJECT LOCATION:	Northwest corner of Shepherd and N. Clovis Avenues in the County of Fresno, California APN: 556-050-38, 37, 10, & 08
PROJECT SPONSOR'S NAME AND ADDRESS:	Jeff Harris 6050 Enterprises, LP 7550 North Palm Avenue, Suite 102 Fresno, CA 93711
LAND USE DESIGNATION:	See page 9 of this Initial Study
ZONING DESIGNATION:	See page 9 of this Initial Study
PROJECT DESCRIPTION	See page 9 of this Initial Study
SURROUNDING LAND USES AND SETTING:	See page 9 of this Initial Study
REQUIRED APPROVALS:	See page 11 of this Initial Study
HAVE CALIFORNIA NATIVE AMERICAN TRIBES REQUESTED CONSULTATION? IF SO, HAS CONSULTATION BEGUN?	No.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

A. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, as indicated by the checklist and corresponding discussion in this Initial Study.

☒ Aesthetics	☒ Agriculture & Forestry Resources	☒ Air Quality
☒ Biological Resources	☒ Cultural Resources	☒ Energy
☒ Geology & Soils	☒ Greenhouse Gas Emissions	☒ Hazards & Hazardous Materials
☒ Hydrology & Water Quality	☒ Land Use/Planning	☐ Mineral Resources
☒ Noise	☒ Population/Housing	☒ Public Services
☒ Recreation	☒ Transportation	☒ Tribal Cultural Resources
☒ Utilities & Service Systems	☒ Wildfire	☒ Mandatory Findings of Significance

Determination

On the basis of this initial evaluation:

☐ I find that the proposed Project COULD NOT have a significant effect on the environment and a NEGATIVE DECLARATION will be prepared.

☒ I find that, although the proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponents. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed Project MAY have a significant effect on the environmental, and an ENVIRONMENTAL IMPACT REPORT (EIR) will be prepared.

☐ I find that the proposed Project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environmental, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed Project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately analyzed in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed Project, nothing further is required.

Prepared By:

George González, MPA, Associate Planner
City of Clovis Planning & Development Services

5/4/2020
Date

Approved By:

Dwight Kroll, AICP, Director
City of Clovis Planning & Development Services

5.4.20
Date

B. PROJECT OVERVIEW

6050 Enterprises, LP proposes the construction of a gated 255-lot single-family planned residential development with private streets on approximately 38.50 acres of land located at the northwest corner of Shepherd and N. Clovis Avenues in the County of Fresno, California, herein referred to throughout the document as "proposed Project" and/or "Project." The project includes a prezone from the County AE-20 (Exclusive Agricultural) Zone District to the Clovis R-1-PRD (Planned Residential Development) Zone District. The proposed 255-lot single-family planned residential development (TM6050) is proposing larger lots with a minimum lot area of 6,100 square feet (4.25 DU/Ac) on 87 lots and smaller lots with a minimum lot area of 1,800 square feet (10.13 DU/Ac) on 168 lots. The smaller lots (Elev8ions) are being proposed on the southern half of the project boundaries and the larger lots (Chadwick) on the northern half. The project will be accessible from two main entries along the De Witt and N. Clovis Avenue street frontages. The proposed Project density is 6.94 dwelling units per acre, consistent with the current land use designation of Medium Density Residential (4.1-7.0 DU/Ac).

Additionally, the Project includes an annexation request to annex approximately 40.60 acres to the City of Clovis and detach from the Fresno County Fire Protection District and the Kings River Conservation District. The Project area is currently vacant land with two small accessory structures, trees and shrubs. The applicant will process a Residential Site Plan Review (RSPR) entitlement that will memorialize the project design elements, including amenities, landscaping and product elevations. Furthermore, the Project includes the Fresno Local Agency Formation Commission (LAFCo) as a responsible agency.

C. PROJECT LOCATION

As shown in Figure 1 below, the Project is located at the northwest corner of Shepherd and N. Clovis Avenues and consists of four (4) parcels totaling approximately 40.60 acres. Assessor's Parcel Number (APN) 556-050-38 is approximately 38.50 acres; APN 556-050-37 is approximately 1.95 acres; APN 556-050-10 is approximately 0.14 acres; and APN 556-050-08 is approximately 0.01 acres. The Project site is bound by the City of Clovis limit lines and Lennar's single-family residential development (TM6200) currently under construction to the east, City of Clovis limit lines and urban residential development to the south, County rural residential parcels and agricultural uses to the west, and County agricultural uses to the north.

D. EXISTING SETTING

This section describes the existing conditions, surrounding conditions, as well as the General Plan land use and zoning designations.

1. EXISTING CONDITIONS

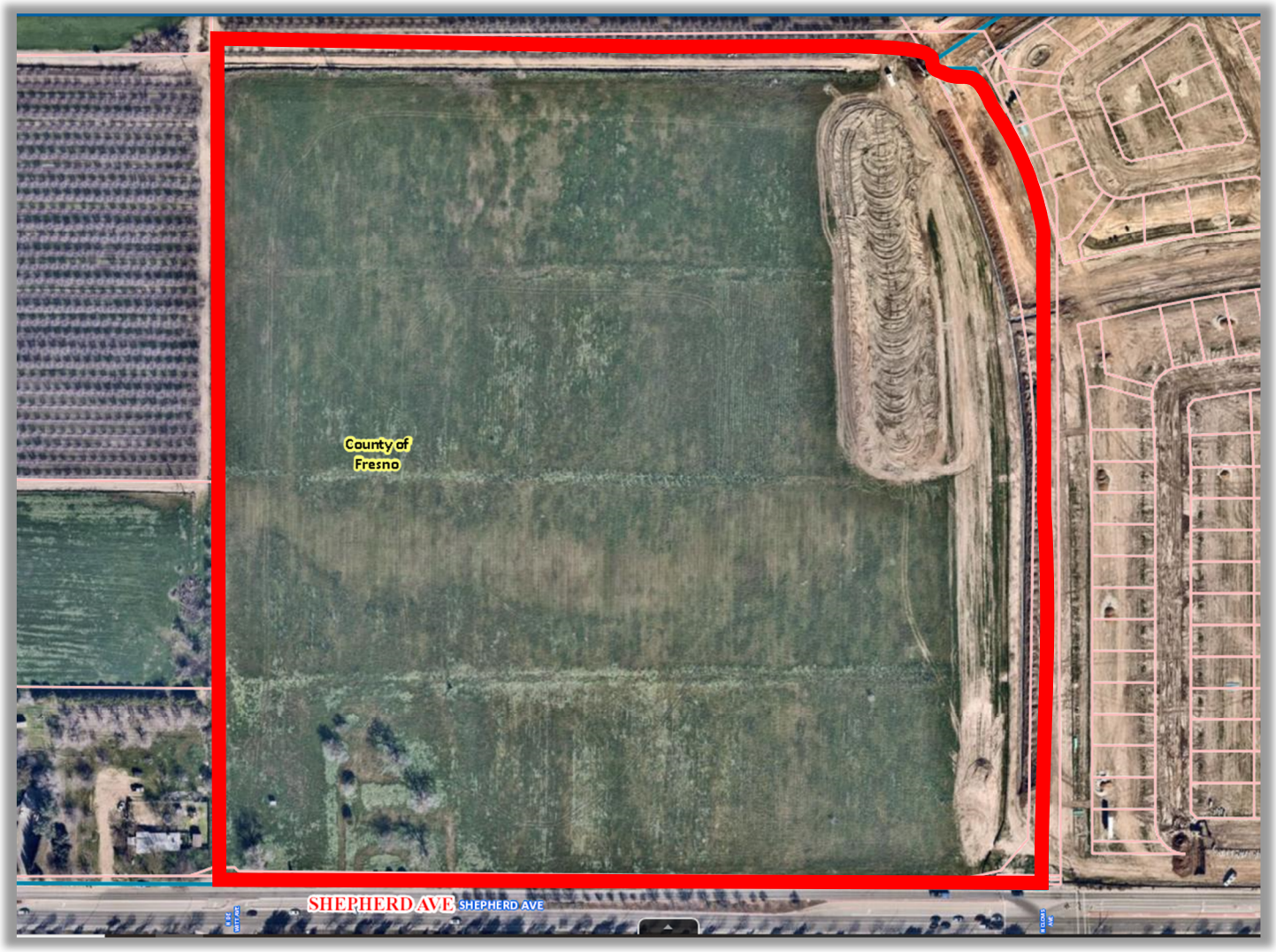
As shown in Figure 2 below, the existing Project area is currently vacant land and generally flat with two small accessory structures, clustered shrubs and trees near the southwest corner of the project site. Currently, the project area does not have any pedestrian or vehicle circulation infrastructure per City standards and a portion of the Behymer No. 427 Private Canal is located along the northern property line of the proposed 255-lot gated, single-family planned residential development. A portion of the Behymer No. 427 Private Pipeline is located along the western property line of the proposed residential development. The Fresno Irrigation District's Dottie Brown No. 439 Pipeline is located at the southeast corner of the proposed project and runs westerly along the south side of Shepherd Avenue.

Figure 1: Project Location

= Project Site (approximate limits)

N

Figure 2: Aerial of Project Site



= Project Site (approximate limits)

N

2. SURROUNDING CONDITIONS

As referenced in Table 1 below, and shown on Figure 2, the Project site is surrounded by the City of Clovis limits to the south and east, rural residential and agricultural uses to the west, and agricultural uses to the north.

Table 1: Surrounding Land Uses

	Land Use Designation*	Zoning**	Existing Land Use
North	Medium Density Residential & Park	County AE-20	Agricultural Uses
East	Medium Density Residential	Clovis R-1	Urban Residential Homes Under Construction (Lennar's TM6200)
South	Medium Density Residential & Low Density Residential	Clovis R-1 & R-1-7500	Urban Residential Homes
West	Medium Density Residential & Mixed Use Village	County AE-20	Rural Residential Homes & Agricultural Uses

Notes:
*Low Density Residential (2.1 – 4.0 DU/Ac), Medium Density Residential (4.1 – 7.0 DU/Ac), Park, and Mixed Use Village
**R-1 (Single-Family Residential – 6,000 Sq. Ft.), R-1-7500 (Single-Family Residential – 7,500 Sq. Ft.) and County AE-20 (Exclusive Agricultural)

3. LAND USE DESIGNATION

As shown on Figure 3, the Project area has an existing General Plan Land Use designation of Medium Density Residential, which allows for 4.1 to 7.0 dwelling units per acre of land. According to the 2014 Clovis General Plan, the Medium Density Residential designation is intended for detached and attached single-family homes, patio homes or zero lot line homes.

4. ZONING DESIGNATION

As shown on Figure 4, the Project area is currently zoned County AE-20 (Exclusive Agricultural) Zone District. The project area is part of the Northwest Urban Center Growth Area and within the boundaries of the Heritage Grove Design Guidelines.

E. PROJECT DESCRIPTION

This section describes the components of the proposed Project in more detail, including site preparation, proposed structures, and on- and off-site improvements.

1. PROJECT CONSTRUCTION

The Project is anticipated to begin construction August 2020, with full buildout by December 2024. Furthermore, the building occupancy is expected to occur in March 2021. This schedule is an estimation only and is contingent upon entitlements, and the market, among other factors.

2. SITE PREPARATION

Site preparation would include typical grading activities to ensure a level surface. Part of the preparation would include the removal of two small accessory structures, trees, shrubs, and weeds. Other site preparation activities would include minor excavation for the installation of utility infrastructure, for conveyance of water, sewer, stormwater, and irrigation.

3. PROJECT COMPONENTS

This section describes the overall components of the Project, such as the proposed building(s), landscape, vehicle and pedestrian circulation, and utilities.

DEMOLITION

As mentioned above under the "Site Preparation" section, there are two existing small accessory structures on the Project site that would be demolished as part of the Project. Additional entitlements, such as demolition permits may be required as part of the removal of the existing accessory/ancillary structures.

SITE LAYOUT AND CIRCULATION

As shown in Figure 5, the Project proposes a 255-lot gated single-family planned residential development with private streets within the interior of the subdivision. The Project is not proposing to utilize sidewalks within the gated development. The lot sizes within the planned residential development will range from approximately 1,800 square-feet to 6,100 square-feet, with an average lot size of approximately 4,071 square-feet. The Project proposes a 10,122 square-foot lot for private open space within the larger lots section of the Project and a 16,462 square-foot lot for a pool and recreational area within the smaller lots section of the development.

Additionally, the Project will be improving and completing the west side of N. Clovis Avenue and the north side of Shepherd Avenue,[1] per City standards and the Heritage Grove Design Guidelines. The Project will be accessible from two main entries along the De Witt and N. Clovis Avenue street frontages. Primary vehicular access for the Elev8ions section of the Project will be provided from De Witt Avenue. A second access for the Elev8ions section is also proposed along the N. Clovis Avenue frontage for emergency vehicles and will allow residents to exit the planned residential development. Vehicular access for the Chadwick section of the Project will be provided from N. Clovis Avenue and De Witt Avenue. Both of the Chadwick access points will allow residents to enter and exit the planned residential development. All vehicle electric gates will be comply with Clovis Fire Department standards and will have Opticom devices installed per Fire Department requirements.

PLANNED RESIDENTIAL DEVELOPMENT

As indicated above, the applicant is requesting approval of a gated detached single-family planned residential project with private streets and no interior sidewalks. The applicant is proposing a Homeowner's Association with this Project.

The Project will follow the standards of the R-1-PRD Zone District and the Planned Development Standards/ Guidelines. The Code permits the applicant to propose their own project specific setbacks and lot coverage standards to encourage innovative developments which are difficult under a standard zone district. The applicant has provided the development standards for the Chadwick and Elev8ions products as Figure 6.

HERITAGE GROVE DESIGN GUIDELINES

The Project area will implement the community design and development standards of the Heritage Grove Design Guidelines. The design guidelines established thematic street sections and landscape framework that will build upon the existing agricultural and cultural heritage of this area. The guidelines will also direct the intended architectural, landscape and site elements of each proposed development to reaffirm the theme for this important urban growth area.

PARKING

Per the Development Code, the proposed 255-lot gated single-family planned residential development will be required to provide a minimum of two (2) covered spaces for each dwelling unit with garages having minimum interior dimensions of 20-feet by 20-feet.[2]

1 2016 Heritage Grove Design Guidelines, Street Sections, Figure 2.9, Shepherd Avenue (Community Blvd.).

2 City of Clovis Municipal Code, Chapter, 9.32, Parking and Loading, Section 9.32.040, Number of Parking Spaces Requires, Table 3-12, Parking Requirements by Land Use, September 5, 2018.

PROJECT DESIGN

Conceptual design of the units are shown in Figure 7; however, it is important to note that at this stage of the process, these designs are conceptual only. The overall footprint, height limit and placement of the structures would generally remain the same. However, the color palette and design details are subject to change throughout the Residential Site Plan Review (RSPR) process, which typically occurs later on in the entitlement process.

LANDSCAPE

The Project area will include landscaping in the front yard setback of each home and along the street side yard setback. The proposed open space areas within the Project will also include landscaping. The proposed landscaping plans are typically provided at a later date, at which time the plans will be reviewed to ensure compliance with the City's water efficient landscape requirements and guidelines.

UTILITIES

Utilities for the site would consist of water, sewer, electric, cable, gas, and storm water infrastructure. Trenching and digging activities would be required for the installation of necessary pipelines typical of residential developments. All utility plans would be required to be reviewed and approved by the appropriate agency, and/or department to ensure that installation occurs to pertinent codes and regulations. Other infrastructure would include new fire hydrants as required by the City of Clovis Fire Department.

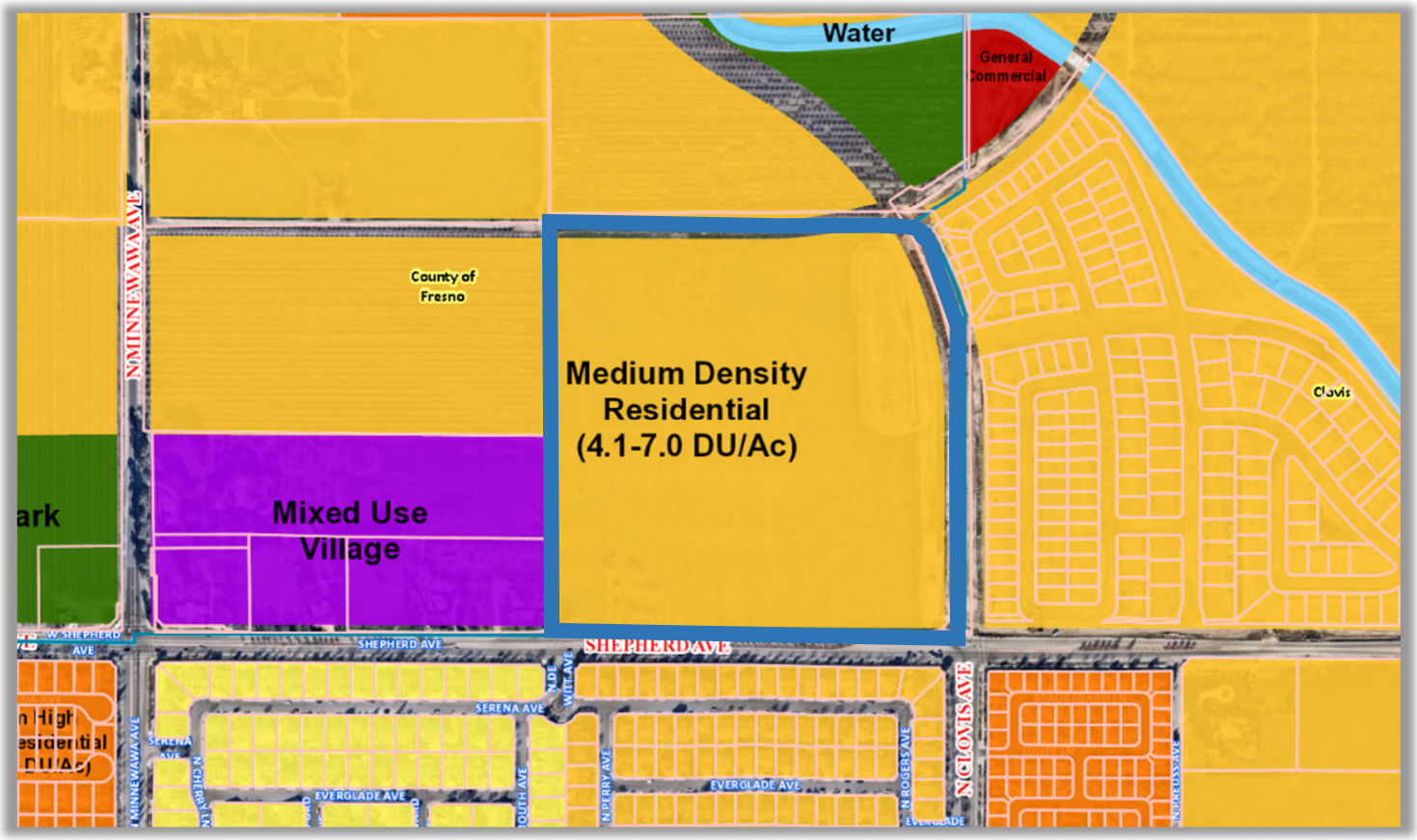
Utilities are provided by and managed from a combination of agencies, including FID which provides the City's water supply, Fresno Metropolitan Flood Control District (FMFCD) which has responsibility for storm water management, and the City's public utilities department which provides for solid waste collection, and sewer collection services. Pacific Gas & Electric (PG&E) provides electricity and natural gas within the City of Clovis.

F. REQUIRED PROJECT APPROVALS

The City of Clovis requires the following review, permits, and/or approvals for the proposed Project; however, other approvals not listed below may be required as identified throughout the entitlement process:

- Prezone
- Vesting Tentative Tract Map
- Annexation/Reorganization
- Residential Site Plan Review
- Grading Permit(s)
- Building Permit(s)

Figure 3: Land Use Designation

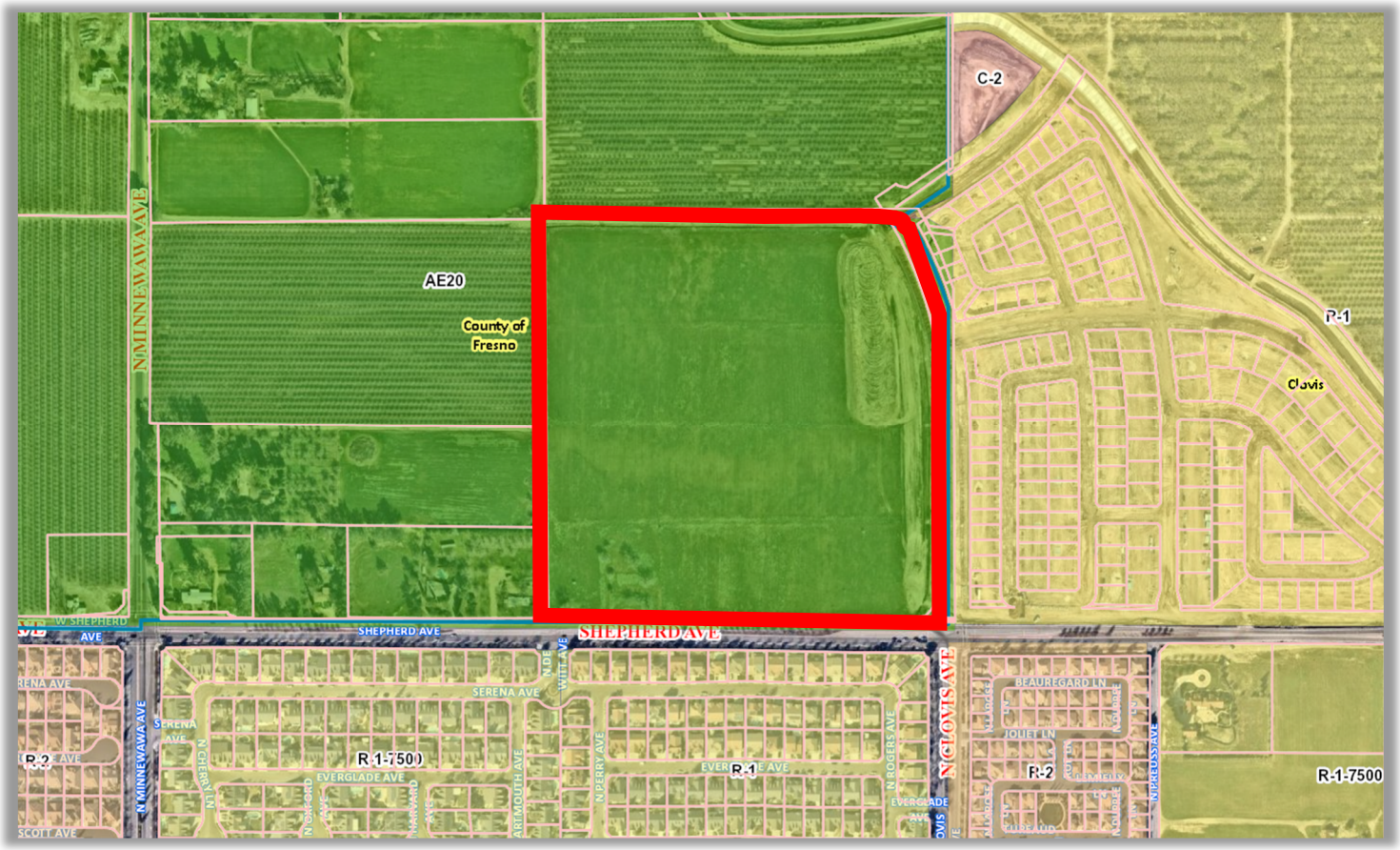


= Project Site (approximate limits)

N

EXISTING LAND USE:
M – Medium Density Residential (4.1-7.0 DU/Ac)

Figure 4: Zoning District



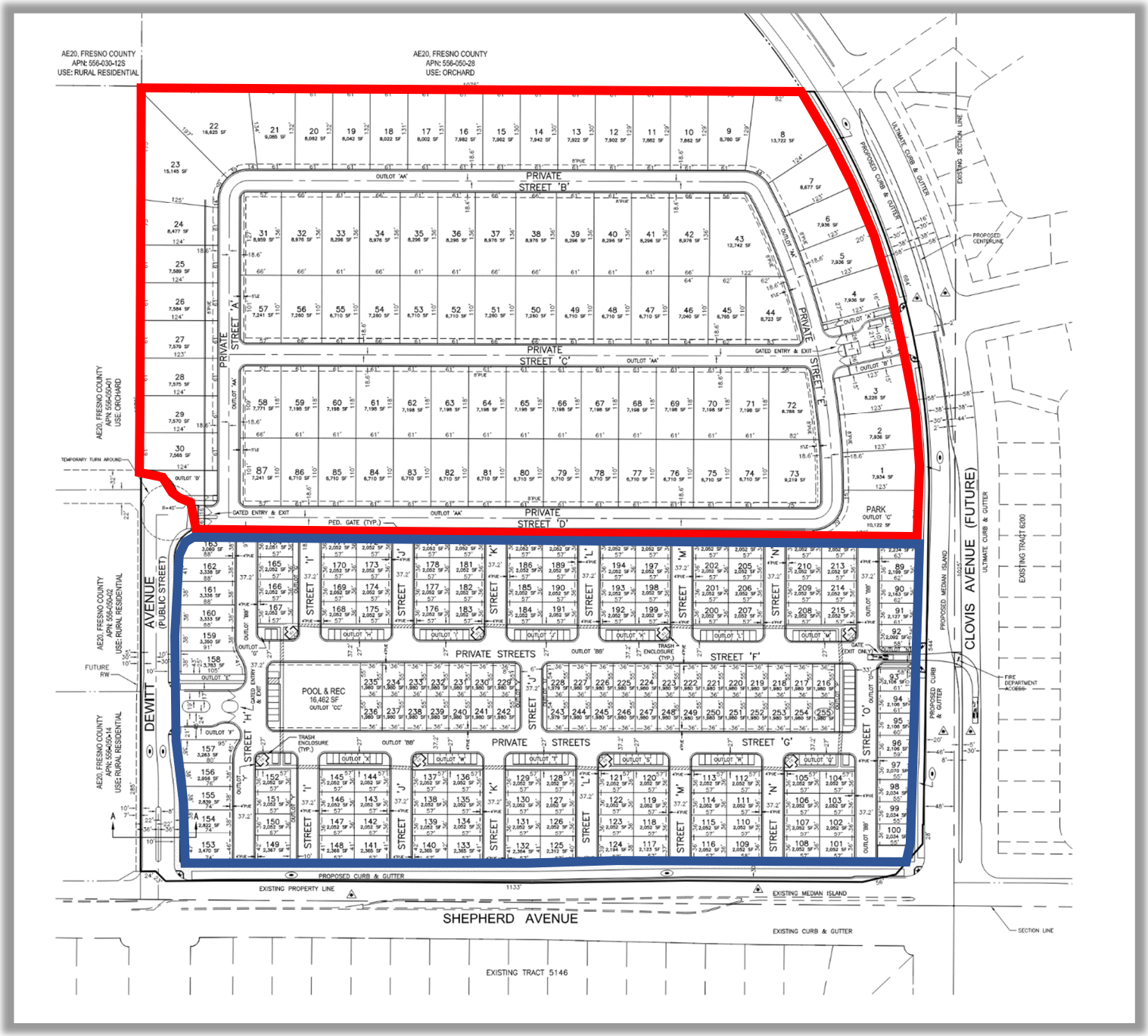
= Project Site (approximate limits)

N

EXISTING ZONING:
County AE-20 (Exclusive Agricultural)

PROPOSED ZONING:
Clovis R-1-PRD (Single Family Planned Residential)

Figure 5: Proposed Site Plan



Approximate layout

N

= Chadwick Product

= Elev8ions Product

Figure 6: Proposed Development Standards

TRACT 6050 - Chadwick

Residential Land Use Deve

LAND USE	DEVELOPMENT STANDARDS	
SINGLE-FAMILY RESIDENTIAL	**STANDARD**	**NOTES**
DESIGNATION		
Zone District	R-1-PRD	
GP Density Range	4.1 - 7.1 du/ac	Medium Density Residential
Dwelling Units	87	
BUILDING INTENSITY		
Minimum Lot Area	6,100 sqft	
Minimum Lot Width	61'	
Minimum Lot Depth	110'	
Maximum Height	35'	
Curved/Corner Lot	50' min/66' min	For street frontage/For lot width
Lot Coverage	55% max	
BUILDING SETBACKS		**All setbacks measured from PL.**
Front Yard (Local)	20' min/10' min	To garage/To living area, projections, porch/patio, and side loaded garage
Side Yard	5' min/4' min	5' min one side/4' min other side
Corner Street Side	3' min/8' min	To side yard fence/To living area
Reversed Corner Street Side	8' min	To living area
Rear Yard	10' min	
GARAGES/STREETS/PARKING		
Garages	2-car	20' x 20' min
	3-car	29.5' x 20' min/20' x 20' min with 10' x 15' min tandem
Streets (Private)	36' wide	Curb to curb
On-Street Parking	Yes	
ACCESSORY USES		**General list of requirements and restrictions.**
Walls/Fences	6' min - 8' high max	
Trellises	12' high max	
Pools and Spas	5' min	Water portion to rear and side PLs. Pool and spa may not be located in front yard.
Equipment	Pool, spa and fountain equipment allowed in side yard easement.	
Covered Structures	12' high max	Covered structures and building additions are allowed subject to review by the City of Clovis, provided that lot coverage standards are not exceeded and that a rear yard encroachment permit is obtained if encroachment into rear yard occurs.
Accessory Buildings		

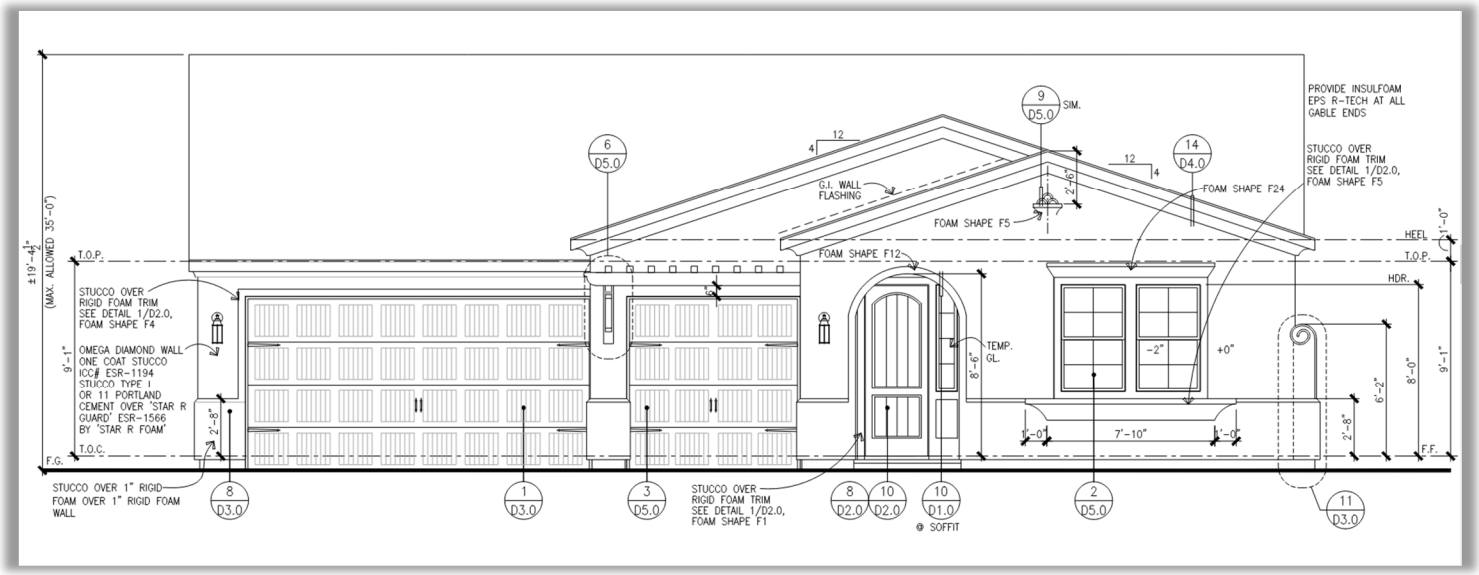
TRACT 6050 - Elev8ions

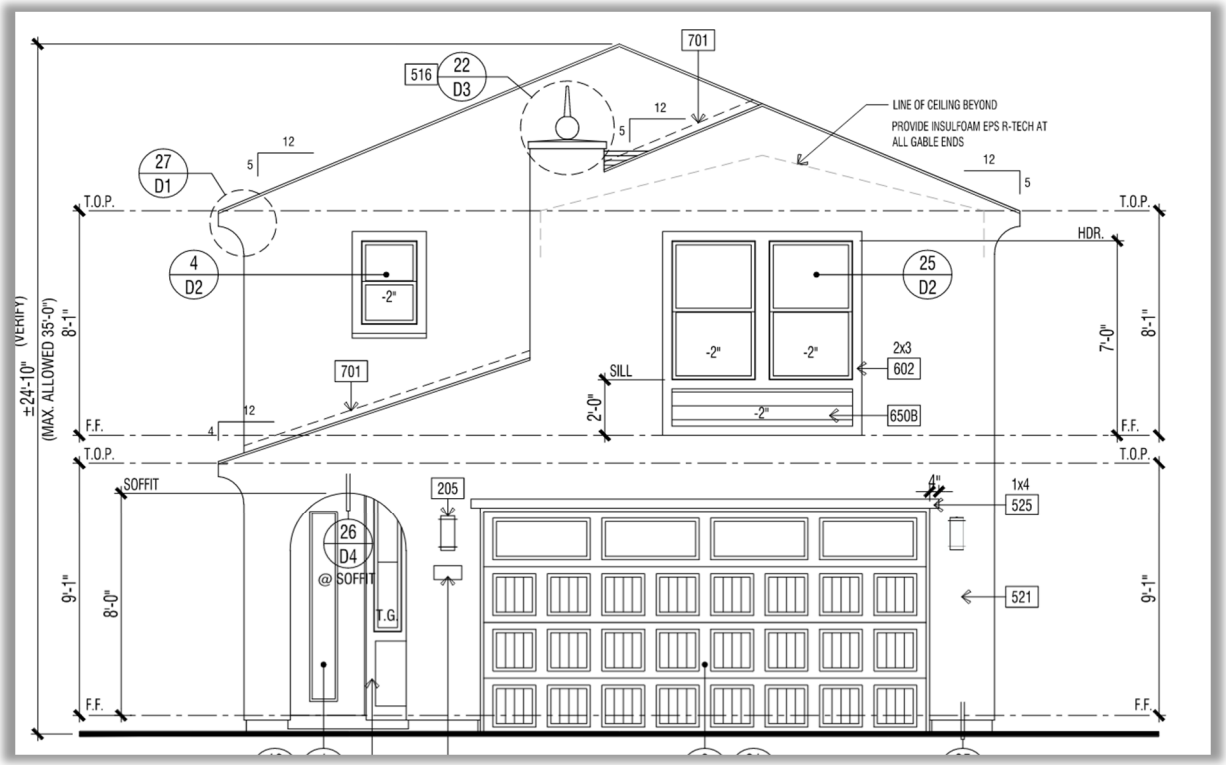
Residential Land Use Deve

LAND USE	DEVELOPMENT STANDARDS	
SINGLE-FAMILY RESIDENTIAL	**STANDARD**	**NOTES**
DESIGNATION		
Zone District	R-1-PRD	
GP Density Range	4.1 - 7.1 du/ac	Medium Density Residential
Dwelling Units	168	
BUILDING INTENSITY		
Minimum Lot Area	1,800 sq ft	
Minimum Lot Width	36'	
Minimum Lot Depth	50'	
Maximum Coverage	65%	
Maximum Height	35'	
Curved, Cul-de-sac or Corner Lot	36' min/50' min	For street frontage/For lot depth
BUILDING SETBACKS		**All setbacks measured from PL.**
Front Yard	5' min/4' min	To garage, living area/porch or projections
Side Yard	5' min/3' min	5' min garage side/3' min other side
Corner/Reversed Corner	3' min	
Rear Yard	4' min	
GARAGES/STREETS/PARKING		
Garages	1-car 2-car	10'x16' min 20'x20' min or tandem 10'x38' min
Streets (Interior)	36' wide	Curb-to-curb
Parking	1.5 spaces/unit min	1 covered space per unit min
ACCESSORY USES		**General list of requirements and restrictions.**
Walls/Fences	6' min - 8' high max	
Trellises	12' high max	
Pools and Spas	3' min	Water portion to rear and side PLs. Pool and spa may not be located in front yard.
Equipment	Pool, spa and fountain equipment allowed in side yard setback.	
Covered Structures	12' high max	Covered structures and building additions are allowed subject to review by HOA committee and permitting by the City of Clovis, provided that lot coverage standards are not exceeded and that a rear yard encroachment permit is obtained if encroachment into rear yard occurs.
Accessory Buildings		

Proposed development standards only. Actual standards may change during the review process.

Figure 7: Conceptual Elevations





Conceptual elevations only. Final product may change during the review process.

G. ENVIRONMENTAL CHECKLIST

This section provides an evaluation of the potential environmental impacts of the proposed project and are based on CEQA Guidelines Appendix G. For each issue area, one of four conclusions is made:

- **No Impact**: No project-related impact to the environment would occur with project development.
- **Less Than Significant Impact:** The proposed project would not result in a substantial and adverse change in the environment. This impact level does not require mitigation measures.
- **Less Than Significant with Mitigation Incorporated**: The proposed project would result in an environmental impact or effect that is potentially significant, but the incorporation of mitigation measure(s) would reduce the project-related impact to a less than significant level.
- **Potentially Significant Impact**: The proposed project would result in an environmental impact or effect that is potentially significant, and no mitigation can be identified that would reduce the impact to a less than significant level**.**

1. AESTHETICS

Except as provided in Public Resources Code Section 21099, would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Have a substantial effect on a scenic vista?			X	
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				X
c. Substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?			X	
d. Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?		X		

ENVIRONMENTAL SETTING

The City of Clovis is located within the San Joaquin Valley. Thus, much of the City and its surrounding areas are predominately flat. As a result, on clear days, the Sierra Nevada Mountains are visible to the east depending on location.

Aside from the Sierra Nevadas, there are no officially designated focal points or viewsheds within the City. However, Policy 2.3, Visual Resources, of the Open Space Element of the 2014 Clovis General Plan, requires

maintaining public views of open spaces, parks, and natural features and to preserve Clovis' viewshed of the surrounding foothills.

As indicated above in the Project Description, the project area is located in the northwest corner of Shepherd and N. Clovis Avenues. The Project area will be primarily surrounded by urban residential uses to the south (TM5146) and east (TM6200), rural residential and agricultural uses to the west, and agricultural uses to the north.

DISCUSSION

a) *Would the project have a substantial effect on a scenic vista?*

Less-Than-Significant Impact. As mentioned above, there are no officially designated scenic vistas or focal points in the City of Clovis or Northwest Urban Growth Area (Heritage Grove). While the Sierra Nevada Mountains can be viewed on clear days, the Project would allow structures to be constructed at a maximum height of 35 feet. Further, General Plan Policy 2.3 requires that public views of open spaces, parks, and natural features be maintained. Therefore, because there are no officially designated scenic vistas in the area, a **less-than-significant impact** would occur with regards to the project having a substantial effect on a scenic vista. As a result, no mitigation measures are required.

b) *Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?*

No Impact. As stated in the 2014 Clovis General Plan Environmental Impact Report (EIR), there are no Caltrans-designated scenic highways within the City of Clovis or the Northwest Urban Growth Area.[3] Further, there are no existing historical structures or rock outcroppings located on or within the immediate vicinity of the project area, Therefore, the Project would result in **no impact** with regards to substantially damaging scenic resources within a State scenic highway, and no mitigation measures are required.

c) *Would the project substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?*

Less-Than-Significant Impact. The existing Project area is surrounded by rural residential and agricultural uses, including urban single-family residential uses to the south and east. Thus, as a proposed medium density residential project consistent with the 2014 Clovis General Plan, the homes would fit within the character of the surrounding area. Furthermore, the Project proposes a Prezone, and if approved, would be consistent with the applicable Clovis R-1-PRD (Single-Family Planned Residential Development) Zone District.

Further, the Project would undergo the Residential Site Plan Review (RSPR) process which would ensure that the overall design and character is consistent with the Heritage Grove Design Guidelines, the Clovis Development Code, and the Clovis General Plan. During the review, the height, architecture, private and public amenities, color and materials are reviewed for consistency with these plans and guidelines. Consequently, a **less-than-significant** impact would occur with regards to substantially degrading the existing visual character of the site and its surroundings, and no mitigation measures are required.

3 2014 Clovis General Plan EIR, June 2014, Pages 5.1-1 and 5.1-4.

d) *Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?*

Less-Than-Significant With Mitigation Incorporated. The Project consists of 255 single-family homes within approximately 38.50 acres. As a result of the existing Project area being vacant land, the Project would result in new sources of light and glare. Light and glare from the Project would be typical of residential developments, including but not limited to, sources such as exterior lighting for safety, light and glare from vehicles or from light reflecting off of surfaces such as windshields. Other sources of light would be the interior lighting of the units at night. These sources of light and glare are not typically associated with causing significant effects on the environment, especially given that the surrounding urban residential developments to the south already emits similar sources of light and glare and are part of the existing conditions present in the vicinity. The existing urban development (TM5146) located on the south side of Shepherd Avenue, between N. Minnewawa and N. Clovis Avenues has contributed to the urbanization of the area, therefore, lighting and glare are already being emitted in the vicinity. Sources of existing light and glare are comprised of streetlights, and light and glare from vehicles going to and from home.

Although the Project would introduce new sources of light and glare, the Residential Site Plan Review process would ensure that the design and placement of lighting is appropriate to minimize potential light and glare impacts to surrounding properties. Further, the Project would be required to comply with Section 9.22.050, Exterior Light and Glare, of the Clovis Municipal Code (CMC or Development Code), which requires light sources to be shielded and that lighting does not spillover to adjacent properties.

Overall, the lighting is necessary to provide enough illumination at night for security and traffic purposes. All lighting will be installed per City and PG&E standards. With the inclusion of the following Mitigation Measure, impacts in this category will be reduced to a less than significant impact.

> Mitigation Measure AES-1d: The developer shall direct all on-site lighting downward and provide physical shields to prevent direct view of the light source from adjacent rural residential properties to the west of the proposed residential development. Street lighting shall be spaced in accordance with City Standards to reduce up-lighting. The applicant shall utilize a PG&E street light which directs light downward.

2. AGRICULTURE AND FORESTRY RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.		X		
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X

c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220 (g)) or timberland (as defined in Public Resources Code section 4526)?				X
d. Result in the loss of forest land or conversion of forest land to non-forest use?				X
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?				X

ENVIRONMENTAL SETTING

The Project site is located at the northwest corner of Shepherd and N. Clovis Avenues in the County of Fresno. The Project area is within the City's Northwest Urban Growth Area (Heritage Grove) and surrounded by rural residential and agricultural uses to the west, agricultural uses to the north and urban residential uses to the south and east. A portion of the City limits is located along the southern and eastern sides of the Project site with the land use designations of Low Density Residential and Medium Density Residential.

DISCUSSION

a) *Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?*

Less-Than-Significant With Mitigation Incorporated. According to the 2016 Farmland Monitoring and Mapping Program (FMMP) maps from the California Department of Conservation,[4] the Project area is considered Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Rural Residential Land. Rural Residential is defined by the Department of Conservation as residential areas of one to five structures per ten acres. Prime Farmland is defined as having the best combination of physical and chemical features able to sustain long-term agricultural production. Farmland of Statewide Importance is defined as similar to prime farmland, but with minor shortcomings. Unique Farmland is defined as consisting of lesser quality soils used for the production of the State's leading agricultural crops.

The potential impacts associated with the conversion of farmlands as described above were evaluated in conjunction with the 2014 Clovis General Plan EIR.[5] This initial study relies on the General Plan EIR through the tiering concept (Section 15152 of the CEQA Guidelines) with regard to the analysis of potential farmland conversion impacts associated with the Project. The Project is consistent with the 2014 General Plan and will not result in impacts to agricultural and forestry resources that were not envisioned by the General Plan EIR.

4 Farmland Mapping and Monitoring Program, California Department of Conservation, 2016 Fresno County Map.

5 2014 Clovis General Plan EIR, June 2014, Page 5.2-21.

The General Plan EIR is available at the City of Clovis Planning and Development Services Department, 1033 5th Street, Clovis, or the City's webpage: https://cityofclovis.com/wp-content/uploads/2018/10/Final-Program-Environmental-Impact-Report-EIR.pdf.

The 2014 General Plan EIR determined that Implementation of the General Plan would result in significant, unavoidable impacts regarding conversion of farmland. Though a mitigation program addressing farmland conversion was established, the EIR concluded that the mitigation program would not fully mitigate the direct loss of farmlands associated with the implementation of the General Plan because there would still be a net reduction in the total amount of land suitable for agricultural use. The impacts would therefore be significant and unavoidable. The Project is subject to the mitigation program established by the General Plan EIR, which minimizes environmental effects to the extent feasible. No additional analysis is necessary.

> Mitigation Measure AGR-2a: The Project shall implement the General Plan EIR Mitigation Program 5.2-3.

b) *Would the project conflict with existing zoning for agricultural use, or a Williamson Act Contract?*

No Impact. As shown on Figure 5.2-2 of the Agricultural Resources Chapter of the 2014 Clovis General Plan EIR,[6] the Project area is not under a Williamson Act Contract. As a result, the Project would have **no impact** with regards to conflicting with existing zoning for agricultural use or a Williamson Act Contract. No mitigation measures are required.

c) *Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220 (g)) or timberland (as defined in Public Resources Code section 4526)?*

No Impact. The Project area is currently vacant land with two small accessory structures, clustered shrubs and trees, thus, does not contain forest land. Further, the area is not zoned for forestry or other forestry related uses. As a result, **no impact** would occur with regards to conflicts with existing zoning for, or cause rezoning of, forest land. No mitigation measures are required.

d) *Would the project result in the loss of forest land or conversion of forest land to non-forest use?*

No Impact. See discussion under Section 2c.

e) *Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?*

No Impact. See discussions under Sections 2a, 2b and 2c.

6 2014 Clovis General Plan EIR, June 2014, Page 5.2-7.

3. AIR QUALITY

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Conflict with or obstruct implementation of the applicable air quality plan?			X	
b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?			X	
c. Expose sensitive receptors to substantial pollutant concentrations?			X	
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?			X	

ENVIRONMENTAL SETTING

An Air Quality and Greenhouse Gas Analysis Report (AQ/GHG Report) was prepared by Mitchell Air Quality Consulting on September 7, 2016 (see Appendix A). A subsequent Air Quality and Greenhouse Gas Analysis Report (AQ/GHG Report) was prepared again by Mitchell Air Quality Consulting on February 5, 2020 (see Appendix B). Information in these AQ/GHG Reports is used for the analysis included in both the Air Quality and Greenhouse Gas Emissions section of this Initial Study.

San Joaquin Valley Air Basin

The City of Clovis (City) is in the central portion of the San Joaquin Valley Air Basin (SJVAB). SJVAB consists of eight counties: Fresno, Kern (western and central), Kings, Tulare, Madera, Merced, San Joaquin, and Stanislaus. Air pollution from significant activities in the SJVAB includes a variety of industrial-based sources as well as on- and off-road mobile sources. These sources, coupled with geographical and meteorological conditions unique to the area, stimulate the formation of unhealthy air.

The SJVAB is approximately 250 miles long and an average of 35 miles wide. It is bordered by the Sierra Nevada in the east, the Coast Ranges in the west, and the Tehachapi mountains in the south. There is a slight downward elevation gradient from Bakersfield in the southeast end (elevation 408 feet) to sea level at the northwest end where the valley opens to the San Francisco Bay at the Carquinez Strait. At its northern end is the Sacramento Valley, which comprises the northern half of California's Central Valley. The bowl-shaped topography inhibits movement of pollutants out of the valley (SJVAPCD 2012a).

Topography[7]

The topography of a region is important for air quality because mountains can block airflow that would help disperse pollutants, and can channel air from upwind areas that transports pollutants to downwind areas. The San Joaquin Valley Air Pollution Control District (SJVAPCD) covers the entirety of the SJVAB. The SJVAB is generally shaped like a bowl. It is open in the north and is surrounded by mountain ranges on all other sides. The Sierra Nevada mountains are along the eastern boundary (8,000 to 14,000 feet in elevation), the Coast Ranges are along the western boundary (3,000 feet in elevation), and the Tehachapi Mountains are along the southern boundary (6,000 to 8,000 feet in elevation).

Climate

The SJVAB is in a Mediterranean climate zone and is influenced by a subtropical high-pressure cell most of the year. Mediterranean climates are characterized by sparse rainfall, which occurs mainly in winter. Summers are hot and dry. Summertime maximum temperatures often exceed 100°F in the valley.

The subtropical high-pressure cell is strongest during spring, summer, and fall and produces subsiding air, which can result in temperature inversions in the valley. A temperature inversion can act like a lid, inhibiting vertical mixing of the air mass at the surface. Any emissions of pollutants can be trapped below the inversion. Most of the surrounding mountains are above the normal height of summer inversions (1,500–3,000 feet).

Winter-time high pressure events can often last many weeks, with surface temperatures often lowering into the 30°F. During these events, fog can be present and inversions are extremely strong. These wintertime inversions can inhibit vertical mixing of pollutants to a few hundred feet (SJVAPCD 2012a).

Ambient Air Quality Standards

The Clean Air Act (CAA) was passed in 1963 by the US Congress and has been amended several times. The 1970 Clean Air Act amendments strengthened previous legislation and laid the foundation for the regulatory scheme of the 1970s and 1980s. In 1977, Congress again added several provisions, including nonattainment requirements for areas not meeting National AAQS and the Prevention of Significant Deterioration program. The 1990 amendments represent the latest in a series of federal efforts to regulate the protection of air quality in the United States. The CAA allows states to adopt more stringent standards or to include other pollution species. The California Clean Air Act (CCAA), signed into law in 1988, requires all areas of the state to achieve and maintain the California AAQS by the earliest practical date. The California AAQS tend to be more restrictive than the National AAQS, based on even greater health and welfare concerns.

These National and California AAQS are the levels of air quality considered to provide a margin of safety in the protection of the public health and welfare. They are designed to protect “sensitive receptors,” those most susceptible to further respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

Both California and the federal government have established health-based AAQS for seven air pollutants. As shown in Table 4, Ambient Air Quality Standards for Criteria Pollutants, these pollutants are ozone (O3), nitrogen dioxide (NO2), carbon monoxide (CO), sulfur dioxide (SO2), coarse inhalable particulate matter (PM10), fine inhalable particulate matter (PM2.5), and lead (Pb). In addition, the state has set standards for sulfates,

7 Air Quality and Greenhouse Gas Analysis Reports, Mitchell Air Quality Consulting, September 7, 2016 & February 5, 2020.

hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

In addition to the criteria pollutants, toxic air contaminants (TACs) are another group of pollutants of concern. TACs are injurious in small quantities and are regulated despite the absence of criteria documents. The identification, regulation and monitoring of TACs is relatively recent compared to that for criteria pollutants. Unlike criteria pollutants, TACs are regulated on the basis of risk rather than specification of safe levels of contamination.

Table 2: Ambient Air Quality Standards

Pollutant	Averaging Time	Federal Primary Standard	State Standard
Ozone	1-Hour 8-Hour	-- 0.07 ppm	0.09 ppm 0.07 ppm
Carbon Monoxide	8-Hour 1-Hour	9.0 ppm 35.0 ppm	9.0 ppm 20.0 ppm
Nitrogen Dioxide	Annual 1-Hour	0.053 ppm 0.100 ppm	0.03 ppm 0.18 ppm
Sulfur Dioxide	Annual 24-Hour 3-Hour 1-Hour	0.03 ppm 0.14 ppm 0.5 ppm 0.075 ppm	-- 0.04 ppm 0.25 ppm
PM_{10}	Annual 24-Hour	-- 150 ug/m^3	20 ug/m^3 50 ug/m^3
$PM_{2.5}$	Annual 24-Hour	12 ug/m^3 35 ug/m^3	12 ug/m^3 --
Lead	30-Day Avg. 3-Month Avg.	-- 1.5 ug/m^3	1.5 ug/m^3 --

Notes: ppm = parts per million; ug/m3 = micrograms per cubic meter.
Source: California Air Resources Board, 2008. Ambient Air Quality Standards (4/01/08), http://www.arb.ca.gov.aqs/aaqs2.pdf.

Attainment Status

The air quality management plans prepared by SJVAPCD provide the framework for SJVAB to achieve attainment of the state and federal AAQS through the SIP. Areas are classified as attainment or nonattainment areas for particular pollutants, depending on whether they meet the ambient air quality standards. Severity classifications for ozone nonattainment range in magnitude from marginal, moderate, and serious to severe and extreme.

At the federal level, the SJVAPCD is designated as extreme nonattainment for the 8-hour ozone standard, attainment for PM_{10} and CO, and nonattainment for $PM_{2.5}$. At the state level, the SJVAB is designated nonattainment for the 8-hour ozone, PM_{10}, and $PM_{2.5}$ standards. The SJVAB has not attained the federal 1-hour ozone, although this standard was revoked in 2005.

DISCUSSION

a) *Would the project conflict with or obstruct implementation of the applicable air quality plan?*

Less-Than-Significant Impact. Although the CEQA Guidelines indicate that a significant impact would occur if the Project were to conflict with or obstruct implementation of the applicable air quality plan, the SJVAPCDs

2015 Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI) does not provide specific guidance on analyzing conformity with the plan. Thus, for purposes of analyzing this potential impact, the AQ/GHG Analysis Report considered impacts based on: (1) whether the Project will result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards; and (2) whether the Project will comply with applicable control measures in the air quality plan, primarily compliance with Regulation VIII – Fugitive PM_{10} Prohibitions and Rule 9510 – Indirect Source Review.

In general, regional air quality impacts and attainment of standards are the result of the cumulative impacts of all emission sources within the air basin. Thus, individual projects are generally not large enough to contribute measurably to an existing violation or air quality standards alone. Therefore, in order to analyze this threshold, and because the of the region's existing nonattainment status for several pollutants, the Project would be considered to cause significant impacts if it were to generate emissions that would exceed the SJVAPCDs significance thresholds. Based on the AQ/GHG Analysis Reports, the Project would not exceed these thresholds from construction and operation of the homes.[8]

The SJVAPCD provided a comment letter, dated March 18, 2020, indicating that the Project would not exceed thresholds for criteria pollutants. However, the Project would be subject to compliance with District Rule 9510 which is intended to mitigate a project's impact through project design elements or payment of off-site fees. The Project applicant would be requires to submit to the SJVAPCD an Air Impact Assessment (AIA). Further, the Project would be required to submit a Dust Control Plan (DCP) to the SJVAPCD for review and approval. Consequently, a **less-than-significant** impact would occur and no mitigation measures are required.

b) *Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?*

Less-Than-Significant Impact. See discussion under Section 3a above.

c) *Would the project expose sensitive receptors to substantial pollutant concentrations?*

Less-Than-Significant Impact. Sensitive receptors are generally considered to include children, the elderly, and persons with pre-existing respiratory and cardiovascular illness. The SJVAPCD considers a sensitive receptor a location that houses or attracts children, the elderly, or people with illnesses. Examples of these receptors are considered to be hospitals, residences, schools and school facilities, and convalescent facilities. The nearest sensitive receptors to the Project area would be the existing rural residences adjacent to the site to the west and the existing urban residential homes to the south. Based the AQ/GHG Analysis Reports, the Project would not exceed emission thresholds that would result in a significant impact[9] based on compliance with SJVAPCD regulations and standards for construction and operation of this type of development. Therefore, a **less-than-significant** impact would occur.

d) *Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?*

Less-Than-Significant Impact. Generally, sources considered to emit odors are associated with wastewater treatment facilities, sanitary landfills, petroleum refineries, chemical manufacturing, and other

8 Air Quality and Greenhouse Gas Analysis Report, Mitchell Air Quality Consulting, Pages 1 & 75 (Pages 7 & 81 of PDF), September 7, 2016; Air Quality and Greenhouse Gas Analysis Report, Mitchell Air Quality Consulting, Pages 1 & 71 (Pages 7 & 77 of PDF), February 5, 2020.

9 Air Quality and Greenhouse Gas Analysis Report, Mitchell Air Quality Consulting, September 7, 2016; Air Quality and Greenhouse Gas Analysis Report, Mitchell Air Quality Consulting, February 5, 2020.

industrial/manufacturing related uses. The Project is a residential use, thus, the odors associated with such use would be similar to that of the surrounding area which includes rural and urban residential uses. Although the Project proposes a trash toter with each unit, the toters are located away from the existing residences, thus, would minimize or eliminate the possibility of odor emitting from the toters. Overall, because the Project is a residential use, similar to existing rural and urban residential uses, the types of odor that could result from the Project would not be considered an objectionable odor source. Thus, a **less-than-significant** impact would occur.

4. BIOLOGICAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		X		
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?				X
c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				X
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?				X

e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			X	
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				X

ENVIRONMENTAL SETTING

A Biological Assessment was prepared by Argonaut Ecological Consulting, Inc. on September 1, 2016 (see Appendix C). A subsequent Biological Assessment was prepared by Argonaut Ecological Consulting, Inc. on February 19, 2020 (see Appendix D). These Biological Assessments included an investigation of the biotic resources of the Project area, and assessed potential project-related impacts pursuant to the California Environmental Quality Act. As part of the Biological Assessments, the Project area was surveyed on two separate occasions, the first field survey was conducted on August 3, 2016 and the second field survey on February 7, 2020, to assess the potential presence of sensitive species and associated suitable habitat.[10]

The existing Project area is currently vacant land with two small accessory structures, clustered shrubs and trees near the southwest corner of the project site. The area habitat is characteristic of non-native grassland grassland intermixed with some agricultural crop types (wheat, barly, oats, etc.). There are several old orchard trees planted along the northern edge of the site and on the east side as well.

The following analysis is based in part on information provided by the Biological Assessments prepared by Argonaut Ecological Consulting, Inc.

DISCUSSION

a) *Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?*

Less-Than-Significant Impact With Mitigation. As described in the Biological Assessments, a pedestrian survey of the Project area was conducted on two separate occasions, the first field survey was conducted on August 3, 2016 and the second field survey on February 7, 2020, by Argonaut Ecological Consulting, Inc. The surveys found that the site does not contain suitable habitat for special status species within the Project area. A summary of the potential special status species impacts are shown in Table 2 of the reports. Nevertheless, implementation of mitigation measures BIO-1 and BIO-2 would ensure that a **less-than-significant impact with mitigation** occurs.

Mitigation Measure BIO-1: **Burrowing Owl.** A preconstruction survey for burrowing owl or signs of owl occupation within 30 days prior to ground disturbance, regardless of the time of year construction

10 Biological Assessment, Argonaut Ecological Consulting, Page 7 (Page 10 of PDF), September 1, 2016; Biological Habitat Assessment, Argonaut Ecological Consulting, Page 10 (Page 13 of PDF), February 19, 2020.

commences is recommended. If evidence of current occupation is discovered, the biologist should implement passive relocation in accordance with the California Department of Fish and Game Staff Report on Burrowing Owl Mitigation.

Mitigation Measure BIO-2: **Nesting Season.** If any trees or shrubs are to be removed during the nesting season (commences approximately February 1 and ends around August 31st), then a preconstruction survey should be conducted within 15-30 days of commencement of construction. This survey can be performed concurrent with the burrowing owl survey.

b) *Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?*

No Impact. According to the Biological Assessments, the pedestrian surveys found that the site does not contain critical habitat for any listed species.[11] Therefore, the Project would not result in a substantial adverse effect with respect to this threshold, and **no impact** would occur. No mitigation measures are required.

c) *Would the project have a substantial adverse effect on state or federally protected wetlands as (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?*

No Impact. See discussion under Section 4b.

d) *Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?*

No Impact. See discussion under Section 4b.

e) *Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*

Less-Than-Significant Impact. The site does not indicate the presence of any suitable habitat features that would be significantly impacted. Although Policy 2.6 of the Open Space and Conservation Element of the General Plan calls for the protection of biological resources, the Biological Assessments did not identify any such resources at the site due to its location and continuous agricultural use for several decades. Further, the Clovis Development Code does include tree protection standards which would ensure the appropriate replacement of any trees removed during construction in compliance with this standard. Consequently, due to the lack of any identified sensitive species, and because compliance with existing City codes for the removal of any existing trees would ensure trees are replaced or in-lieu fee is assessed for the replacement of trees, the impact would be **less-than-significant** as the Project would not conflict with local policies or ordinances for protection biological resources.

f) *Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural community Conservation Plan, or other approved local, regional, or state habitat conservation plan?*

No Impact. The Project site is not located within an adopted or approved Habitat Conservation Plan (HCP) or other conservation plan. Therefore, **no impact** would occur and no mitigation measures are required.

11 Biological Assessment, Argonaut Ecological Consulting, Page 10 (Page 13 of PDF), September 1, 2016; Biological Habitat Assessment, Argonaut Ecological Consulting, Page 18 (Page 21 of PDF), February 19, 2020.

5. CULTURAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?				X
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?		X		
c. Disturb any human remains, including those interred outside of formal cemeteries?		X		

ENVIRONMENTAL SETTING

The Project area is located at the northwest corner of Shepherd and N. Clovis Avenues in the County of Fresno. The Project area is within the Northwest Urban Growth Area (Heritage Grove) and surrounded rural residential and agricultural uses to the west, agricultural uses to the north and urban residential development to the south and east. A portion of the City limits is located along the southern and eastern boundaries of the Project site with a land use designation of Low Density Residential and Medium Density Residential. The Project area is currently vacant land with two small accessory structures, clustered shrubs and trees near the southwest corner of the project site.

A Cultural Resources Study was prepared by Peak & Associates, Inc., dated July 19, 2016 (see Appendix E). A subsequent Cultural Memorandum Summary was prepared by Peak & Associates, Inc., dated February 10, 2020 (see Appendix F). These Cultural Resources Studies included a records search at the Southern San Joaquin Valley Information Center (SSJVIC) and a formal request submittal to the Native American Heritage Commission to review their Sacred Lands Files.

In addition to the Cultural Resources Study and the Cultural Memorandum Summary, City staff conducted Native American Consultation in compliance with Assembly Bill 52 (AB52). In compliance with AB52, invitations for consultation were mailed on September 12, 2016, which affords Native tribes thirty (30) days to respond and to request consultation. During that time, one (1) tribe requested consultation. On September 19, 2016, representatives from Table Mountain Rancheria provided a letter to the City requesting to coordinate a meeting date to discuss the proposed project. On Thursday, September 22, 2016, City staff forwarded the Cultural Resources Assessment prepared by Peak & Associates, Inc. to the representative from Table Mountain Rancheria for review.

Invitations for consultation were mailed again on February 28, 2020, which affords Native tribes thirty (30) days to respond and to request consultation. During this timeframe, no requests for consultations were received.

Mitigation measures are included in the following analysis to ensure protection of such resources if any are discovered inadvertently.

DISCUSSION

a) *Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?*

No Impact. As part of the Cultural Resources Study, the survey found no evidence of prehistoric or historic period cultural resources within the Project area. Additionally, there are no resources eligible for the California Register of Historical Resources within the Project area. Further, compliance with Policy 2.9 of the General Plan, which calls for the preservation of historical sites and buildings of state or national significance, would ensure that if there were historical resources present, they would be protected. Therefore, **no impact** would occur with regard to the Project causing a substantial adverse change in the significance of a historical resource and no mitigation measures are required.

b) *Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?*

Less-Than-Significant With Mitigation. The site is currently vacant land with two small accessory structures, clustered shrubs and trees near the southwest corner of the project site. The Cultural Resources Study and the Cultural Resources Summary found the site negative for prehistoric or historic period cultural resources.[12]

Because there is the slight possibility for the accidental or inadvertent uncovering of archaeological resources during construction, Mitigation Measure CULT-1 would serve to reduce those potential impacts by requiring the stopping of any work until any found artifacts can be properly removed and inventoried by a qualified archaeologist. Therefore, the Project would result in a **less-than-significant impact with mitigation**.

> Mitigation Measure CULT-1: Although no prehistoric or historic period sites were found during the research, there is a slight possibility that a site may exist and be totally obscured by vegetation, fill, or other historic activities, leaving no surface evidence. Should artifacts or unusual amounts of stone, bone, or shell be uncovered during construction activities, an archeologist should be consulted for in field evaluation of the discovery.

c) *Would the project disturb any human remains, including those interred outside of formal cemeteries?*

Less-Than-Significant With Mitigation. The site is currently vacant land with two small accessory structures, clustered shrubs and trees near the southwest corner of the project site. The Project area shows long-term agricultural use with leveling, irrigation and general agricultural use evident. However, the potential remains that human remains could be inadvertently or accidentally uncovered during ground-disturbing activities such as trenching, digging, and the installation of utilities and other infrastructure.

Because there is the slight possibility for the accidental or inadvertent uncovering of human remains during construction, Mitigation Measure CULT-2 would serve to reduce those potential impacts by requiring the stopping of any work until any found human remains can be properly removed by the Fresno County coroner and/or tribes. Therefore, the Project would result in a **less-than-significant impact with mitigation**.

> Mitigation Measure CULT-2: The possibility of encountering human remains cannot be entirely discounted. If human graves are encountered, work should halt, and the Fresno County Coroner should be notified. The California Health and Safety Code Section 7050.5 states it is a misdemeanor to knowingly disturb a human grave. Upon discovery, the Project owner should contact a qualified

12 Cultural Resources Study, Peak & Associates, Inc., Page 1 (Page 1 of PDF), July 19, 2016; Cultural Resources Summary, Peak & Associates, Inc., Page 1 (Page 1 of PDF), February 10, 2020.

archaeologist to evaluate the historical significance of the remains. If human remains are of Native American origin, the Coroner must notify the NAHC within 24 hours of the identification.

6. ENERGY

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?			X	
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?			X	

ENVIRONMENTAL SETTING

The Project area is located within the Northwest Urban Growth Area (Heritage Grove) and surrounded by existing rural residential and agricultural uses to the west, agricultural uses to the north and urban residential uses to the south and east.

DISCUSSION

a) *Would the project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?*

Less-Than-Significant Impact. The Project proposes the construction of 255 single-family homes on approximately 38.50 acres, along with associated landscaping, hardscape and infrastructure (i.e. drive aisles, utilities, etc.). The Project would include construction activities typical of residential development, thus, is not generally considered the type of use or intensity that would result in the unnecessary consumption of energy. The homes would comply with Title 24 Green Building Standards for energy efficiency, as well as be required to comply with the latest water efficient landscape policy regulations, and California Building Code. Further, the Project would be required to comply with Clovis General Plan Policy 3.4, and 3.7 of the Open Space and Conservation, which call for the use of water conserving and drought tolerant landscape, as well as energy efficient buildings. Consequently, compliance with these measures would ensure that the Project does not result in a significant impact due to the unnecessary consumption of energy and **less-than-significant** impact would occur.

b) *Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?*

Less-Than-Significant Impact. See discussion under Section 6a above.

7. GEOLOGY AND SOILS

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?			X	
ii) Strong seismic ground shaking?			X	
iii) Seismic-related ground failure, including liquefaction?			X	
iv) Landslides?			X	
b. Result in substantial soil erosion or the loss of topsoil?			X	
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			X	
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?				X
e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste disposal systems where sewers are not available for the disposal of wastewater?				X
f. Directly or indirectly destroy a unique paleontological resource or unique geologic feature?		X		

ENVIRONMENTAL SETTING

The 2014 Clovis General Plan EIR identified no geologic hazards or unstable soil conditions known to exist in the Project area. Although Figure 5.6-2 of the Geology and Soils Chapter of the General Plan EIR does show a fault, the fault is located northeast of the Project site.

DISCUSSION

a) *Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?; ii) Strong seismic ground shaking?; iii) Seismic-related ground failure, including liquefaction?; iv) Landslides?*

Less-Than-Significant Impact. Although the Project site does not have any known faults on the site, the potential remains that seismic ground-shaking could occur from the fault located northeast of the Project. However, adherence to the most current California Building Codes would ensure that the structures are constructed safely and in compliance with the appropriate Building Codes. With regards to liquefaction, the 2014 General Plan EIR states that the soil types in the area are not considered conducive to liquefaction due to their high clay content or from being too coarse.[13] Further, the site is generally flat and therefore landslides would not occur at the Project site. Overall, due to the location away from a known fault, adherence to the most recent California Building Codes, and the flat topography, a **less-than-significant impact** would occur with regards to potential impacts from seismic activity.

b) *Would the project result in substantial soil erosion or the loss of topsoil?*

Less-Than-Significant Impact. Grading activities would be required to ensure a flat and graded surface prior to construction, which may result in the soil erosion and loss of topsoil. However, as part of the Project, grading plans are required to be submitted and approved by the City's Engineering Division to ensure appropriate grading of the site. Thus, this review and approval process would ensure that a **less-than-significant** impact occur and no mitigation measures are required.

c) *Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?*

Less-Than-Significant Impact. See discussion under Section 7a.

d) *Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating direct or indirect substantial risks to life or property?*

No Impact. According to the 2014 Clovis General Plan EIR, expansive soils are mostly present in areas along the northern edge of the non-Sphere of Influence (SOI) and the easternmost part of the Clovis non-SOI plan area. Because the Project is not within the vicinity of these areas, there would be no potential for creating direct or indirect substantial risks to life or property with regards to expansive soils. As a result, **no impact** would occur and no mitigation measures are required.

13 2014 Clovis General Plan EIR, Chapter 5: Geology and Soils, Page 5.6-11.

e) *Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste disposal systems where sewers are not available for the disposal of wastewater?*

No Impact. The proposed 255-lot gated single-family planned residential development does not propose the use of septic tanks, therefore, **no impact** would occur.

f) *Would the project directly or indirectly destroy a unique paleontological resource or unique geologic feature?*

Less-Than-Significant With Mitigation. The Project site has been previously disturbed, as well as the immediately surrounding areas with no known occurrences of the discovery of paleontological resources. In addition, the Cultural Resource Study found the site negative for prehistoric or historic period cultural resources. Nevertheless, the possibility remains that the inadvertent or accidental discovery could occur during ground disturbing construction activities. However, Mitigation Measure GEO-1, below, would serve to protect the accidental discovery of paleontological resources. As such, a **less-than-significant with mitigation** impact would occur.

> Mitigation Measure GEO-1: If prehistoric or historic-era cultural materials are encountered during construction activities, all work in the immediate vicinity of the find shall halt until a qualified professional archaeologist and/or paleontologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeologist, can evaluate the significance of the find and make recommendations. Cultural resource materials may include prehistoric resources such as flaked and ground stone tools and debris, shell, bone, ceramics, and fire-affected rock as well as historic resources such as glass, metal, wood, brick, or structural remnants.
>
> If the qualified professional determines that the discovery represents a potentially significant cultural resource, additional investigations may be required to mitigate adverse impacts from project implementation. These additional studies may include avoidance, testing, and evaluation or data recovery excavation.
>
> If a potentially-eligible resource is encountered, then the qualified professional archaeologist and/or paleontologist, the Lead Agency, and the project proponent shall arrange for either 1) total avoidance of the resource or 2) test excavations to evaluate eligibility and, if eligible, total data recovery. The determination shall be formally documented in writing and submitted to the Lead Agency as verification that the provisions for managing unanticipated discoveries have been met.

8. GREENHOUSE GAS EMISSIONS

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	
b. Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of			X	

reducing the emissions of greenhouse gases?				

ENVIRONMENTAL SETTING

An Air Quality and Greenhouse Gas Analysis Report (AQ/GHG Report) was prepared by Mitchell Air Quality Consulting on September 7, 2016 (see Appendix A). A subsequent Air Quality and Greenhouse Gas Analysis Report (AQ/GHG Report) was prepared again by Mitchell Air Quality Consulting on February 5, 2020 (see Appendix B). Information in these AQ/GHG Reports is used for the analysis included in both the Air Quality and Greenhouse Gas Emissions section of this Initial Study.

Gases that trap heat in the atmosphere are referred to as greenhouse gases (GHGs) because they capture heat radiated from the sun as it is reflected back into the atmosphere, much like a greenhouse does. The accumulation of GHG's has been implicated as a driving force for global climate change. Definitions of climate change vary between and across regulatory authorities and the scientific community, but in general can be described as the changing of the earth's climate caused by natural fluctuations and anthropogenic activities which alter the composition of the global atmosphere.

Individual Projects contribute to the cumulative effects of climate change by emitting GHGs during construction and operational phases. The principal GHGs are carbon dioxide, methane, nitrous oxide, ozone, and water vapor. While the presence of the primary GHGs in the atmosphere are naturally occurring, carbon dioxide (CO2), methane (CH4), and nitrous oxide (N2O) are largely emitted from human activities, accelerating the rate at which these compounds occur within earth's atmosphere. Carbon dioxide is the "reference gas" for climate change, meaning that emissions of GHGs are typically reported in "carbon dioxide-equivalent" measures. Emissions of carbon dioxide are largely by-products of fossil fuel combustion, whereas methane results from off-gassing associated with agricultural practices and landfills. Other GHGs, with much greater heat-absorption potential than carbon dioxide, include hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride, and are generated in certain industrial processes.

There is international scientific consensus that human-caused increases in GHGs have and will continue to contribute to global warming, although there is uncertainty concerning the magnitude and rate of the warming. Potential global warming impacts in California may include, but are not limited to, loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years. Secondary effects are likely to include a global rise in sea level, impacts to agriculture, changes in disease vectors, and changes in habitat and biodiversity.

In 2005, in recognition of California's vulnerability to the effects of climate change, Governor Schwarzenegger established Executive Order S-3-05, which sets forth a series of target dates by which statewide emission of greenhouse gases (GHG) would be progressively reduced, as follows: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; and by 2050, reduce GHG emissions to 80 percent below 1990 levels. In 2006, California passed the California Global Warming Solutions Act of 2006 (AB 32), which requires the California Air Resources Board (CARB) to design and implement emission limits, regulations, and other measures, such that feasible and cost-effective statewide GHG emissions are reduced to 1990 levels by 2020 (representing a 25 percent reduction in emissions).

In April 2009, the California Office of Planning and Research published proposed revisions to the California Environmental Quality Act to address GHG emissions. The amendments to CEQA indicate the following:

- Climate action plans and other greenhouse gas reduction plans can be used to determine whether a project has significant impacts, based upon its compliance with the plan.

- Local governments are encouraged to quantify the greenhouse gas emissions of proposed projects, noting that they have the freedom to select the models and methodologies that best meet their needs and circumstances. The section also recommends consideration of several qualitative factors that may be used in the determination of significance, such as the extent to which the given project complies with state, regional, or local GHG reduction plans and policies. OPR does not set or dictate specific thresholds of significance. Consistent with existing CEQA Guidelines, OPR encourages local governments to develop and publish their own thresholds of significance for GHG impacts assessment.

- When creating their own thresholds of significance, local governments may consider the thresholds of significance adopted or recommended by other public agencies, or recommended by experts.

- New amendments include guidelines for determining methods to mitigate the effects of greenhouse gas emissions in Appendix F of the CEQA Guidelines.

- OPR is clear to state that "to qualify as mitigation, specific measures from an existing plan must be identified and incorporated into the project; general compliance with a plan, by itself, is not mitigation."

- OPR's emphasizes the advantages of analyzing GHG impacts on an institutional, programmatic level. OPR therefore approves tiering of environmental analyses and highlights some benefits of such an approach.

- Environmental impact reports (EIRs) must specifically consider a project's energy use and energy efficiency potential.

On December 30, 2009, the Natural Resources Agency adopted the proposed amendments to the CEQA Guidelines in the California Code of Regulations.

In December 2009, the San Joaquin Valley Air Pollution Control District (SJVAPCD) adopted guidance for addressing GHG impacts in its *Guidance for Valley Land Use Agencies in Addressing GHG Impacts for New Projects under CEQA*. The guidance relies on performance-based standards, otherwise known as Best Performance Standards (BPS), to assess significance of project-specific GHG emissions on global climate change during the environmental review process.

Projects can reduce their GHG emission impacts to a less than significant level by implementing BPS. Projects can also demonstrate compliance with the requirements of AB 32 by demonstrating that their emissions achieve a 29% reduction below "business as usual" (BAU) levels. BAU is a projected GHG emissions inventory assuming no change in existing business practices and without considering implementation of any GHG emission reduction measures.

Significance Criteria

The SJVAPCDs *Guidance for Valley Land Use Agencies in Addressing GHG Impacts for New Projects under CEQA* provides initial screening criteria for climate change analyses, as well as draft guidance for the determination of significance.

The effects of project-specific GHG emissions are cumulative, and therefore climate change impacts are addressed as a cumulative, rather than a direct impact. The guidance for determining significance of impacts has been developed from the requirements of AB 32. The guideline addresses the potential cumulative impacts that a project's GHG emissions could have on climate change. Since climate change is a global phenomenon,

no direct impact would be identified for an individual land development project. The following criteria are used to evaluate whether a project would result in a significant impact for climate change impacts:

- Does the project comply with an adopted statewide, regional, or local plan for reduction or mitigation of GHG emissions? If no, then
- Does the project achieve 29% GHG reductions by using approved Best Performance Standards? If no, then
- Does the project achieve AB 32 targeted 29% GHG emission reductions compared with BAU?

Projects that meet one of these guidelines would have less than significant impact on the global climate.

Because BPS have not yet been adopted and identified for specific development projects, and because neither the ARB nor the City of Clovis has not yet adopted a plan for reduction of GHG with which the Project can demonstrate compliance, the goal of 29% below BAU for emissions of GHG has been used as a threshold of significance for this analysis.

DISCUSSION

a) *Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?*

Less-Than-Significant Impact. The Project would include the construction and operation of 255 single-family homes and associated infrastructure (i.e. sewer and water infrastructure, roadways, sidewalks, etc.). As such, GHG emissions would be produced through the construction and operational phases of the Project. However, the SJVAPCD includes regulations to reduce GHG emissions such as standards for medium and heavy duty engines and vehicles (i.e. tractors and construction equipment) that would apply to buildout of the Project. Further, compliance with Title 24 energy efficient building codes would apply, which also help to reduce GHG emissions during operation of the Project, by requiring minimum standards for insulation, energy efficiency, and window glazing, etc., which serve to maximize efficiency of new construction. Further, the Project would comply with the latest water efficient landscape standards which help to reduce energy usage. Overall, the AQ/GHG Reports concluded that the Project, with implementation of required energy efficient standards, would reduce emissions versus business as usual scenarios and would exceed the minimum percentage reduction of emissions required by the State, SJVAPCD, and the Clovis General Plan EIR. Therefore, a **less-than-significant** impact would occur.

b) *Would the project conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?*

Less-Than-Significant Impact. Based on the AQ/GHG Analysis Reports,[14] the Project would include several features that would minimize GHG emissions, which are consistent with project-level strategies identified by the Air Resources Board Scoping Plan and the Clovis General Plan. As indicated in the discussion above under Section 8a, the Project would result in GHG reductions that meet or exceed minimum targets by complying with the latest energy efficient standards, and water conservation. Consequently, the AQ/GHG Analysis Report found this potential impact to be **less than significant**.

14 Air Quality and Greenhouse Gas Analysis Report, Mitchell Air Quality Consulting, pages 99 - 125 (Pages 105 – 131 of PDF), September 7, 2016; Air Quality and Greenhouse Gas Analysis Report, Mitchell Air Quality Consulting, pages 95 - 114 (Pages 101 – 120 of PDF), February 5, 2020.

9. HAZARDS AND HAZARDOUS MATERIALS

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			X	
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			X	
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				X
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?				X
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X	
g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?			X	

ENVIRONMENTAL SETTING

For purposes of this chapter, the term "hazardous materials" refers to both hazardous substances and hazardous wastes. A "hazardous material" is defined in the Code of Federal Regulations (CFR) as "substance or material that is capable of posing an unreasonable risk to health, safety, and property when transported in commerce" (49 CFR 171.8). California Health and Safety Code Section 25501 defines a hazardous material as follows:

"Hazardous material" means any material that, because of its quantity, concentration, or physical, or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. "Hazardous materials" include, but are not limited to, hazardous substances, hazardous waste, and any material which a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment. "Hazardous wastes" are defined in California Health and Safety Code Section 25141(b) as wastes that:
…because of their quantity, concentration, or physical, chemical, or infectious characteristics, [may either] cause or significantly contribute to an increase in mortality or an increase in serious illness, or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

The nearest school to the Project site is Woods Elementary School, located approximately 0.38 miles south of the Project area at its closest point.

DISCUSSION

a) *Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?*

Less-Than-Significant Impact. The Project consists of the construction of 255 single-family homes on approximately 38.50 acres. The type of hazardous materials that would be associated with the Project are those typical of residential uses, such as the use of household cleaners, landscape maintenance products, and potential pesticides (for pest control). These materials, when used and applied properly, would not necessarily create a significant hazard to the public or the environment. Further, these materials are not anticipated to be stored in large quantities that could pose a threat. Overall, the Project would not routinely transport, use, or dispose of hazardous materials other than those typical of residential development, which are not generally considered of the type or quantity that would pose a significant hazard to the public when used as directed. During construction, typical equipment and materials would be used that are associated with residential construction; however, any chemicals or materials would be handled, stored, disposed of, and/or transported according to applicable laws. Consequently, because the Project is not of the type of use that would routinely transport, use, or dispose of hazardous materials a **less-than-significant** impact would occur.

b) *Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?*

Less-Than-Significant Impact. See discussion above under Section 9a.

c) *Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?*

Less-Than-Significant Impact. As mentioned above, the Project site is located approximately 0.38 miles from the nearest school, which is Woods Elementary School. Further, the Project is not of the type of use typically associated with emitting hazardous emissions or handling the type or quantity of hazardous materials such that it would pose a risk or threat to the school, or surrounding area. Therefore, a **less-than-significant** impact would occur.

d) *Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?*

No Impact. According the California Department of Toxic Substance Control EnviroStor Database, the Project site is not located on or within the immediate vicinity of a hazardous materials site.[15] Therefore, **no impact** would occur.

e) *For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?*

No Impact. The Project is not within an airport land use plan nor is the site within two miles of a public airport. Therefore, **no impact** would occur.

f) *Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?*

Less-Than-Significant Impact. The Project is located at a site that is surrounded by existing rural residential and agricultural uses to the west, agricultural uses to the north and urban residential uses to the south and east. Further, the road network is already in place from previous developments. Although the Project could result in temporary traffic detouring or closures during buildout, these delays would be temporary and would be coordinated with the City's Engineering Division and other departments to ensure safe access to and from the area is maintained. Further, the site itself would be reviewed by City departments to ensure adequate site access and circulation is provided in the event of an emergency. Overall, a **less-than-significant** impact would occur.

g) *Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?*

Less-Than-Significant Impact. The site is surrounded by rural residential and agricultural uses to the west, agricultural uses to the north and urban residential uses to the south and east. Therefore, it is not in a location typically associated with wildfires. Although urban fires could occur, the Project would be constructed to the latest fire code standards, which would include fire sprinklers in each unit, as well as the installation of several fire hydrants throughout the site as required by the Clovis Fire Department. Further, other life safety features would be required such as smoke detectors, which would be reviewed and checked by the Fire Department to ensure proper operation prior to occupancy. Ultimately, a **less-than-significant** impact would occur.

15 California Department of Toxic Substance Control, EnviroStor Database, https://www.envirostor.dtsc.ca.gov/public/map/?myaddress=Clovis, accessed on Thursday, April 30, 2020.

10. HYDROLOGY AND WATER QUALITY

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?			X	
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?			X	
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: (i) result in substantial erosion or siltation on- or off-site; (ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite; (iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or (iv) impede or redirect flood flows?			X	
i) Result in substantial erosion or siltation on- or off-site?			X	
ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?			X	
iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?			X	
iv) Impede or redirect flood flows?			X	

d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?			X	
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?			X	

ENVIRONMENTAL SETTING

The Plan area is within the drainages of three streams: Dry Creek, Dog Creek, and Redbank Slough. On the north, Dry Creek discharges into the Herndon Canal in the City of Fresno west of Clovis. South of Dry Creek, Dog Creek is a tributary of Redbank Slough, which discharges into Mill Ditch south of Clovis (USGS 2012). A network of storm drains in the City and the Plan Area discharges into 31 retention basins, most of which provide drainage for a one- to two-square-mile area. Most of the Plan Area east and northeast of the City is not in drainage areas served by retention basins. Those areas drain to streams that discharge into reservoirs, including Big Dry Creek Reservoir in the north-central part of the Plan Area and Redbank Creek Dam and Reservoir in the southeast part of the Plan Area. Fancher Creek Dam and Reservoir are near the east Plan Area boundary.

The Project is located within the Fresno Metropolitan Flood Control District (FMFCD) boundary, and subject to its standards and regulations. Detention and retention basins in the FMFCD's flood control system are sized to accommodate storm water from each basin's drainage area in builtout condition. The current capacity standard for FMFCD basins is to contain runoff from six inches of rainfall during a ten-day period and to infiltrate about 75 to 80 percent of annual rainfall into the groundwater basin (Rourke 2014). Basins are highly effective at reducing average concentrations of a broad range of contaminants, including several polyaromatic hydrocarbons, total suspended solids, and most metals (FMFCD 2013). Pollutants are removed by filtration through soil, and thus don't reach the groundwater aquifer (FMFCD 2014). Basins are built to design criteria exceeding statewide Standard Urban Storm Water Mitigation Plan (SUSMP) standards (FMFCD 2013). The urban flood control system provides treatment for all types of development—not just the specific categories of development defined in a SUSMP—thus providing greater water quality protection for surface water and groundwater than does a SUSMP.

In addition to their flood control and water quality functions, many FMFCD basins are used for groundwater recharge with imported surface water during the dry season through contracts with the Fresno Irrigation District (FID) and the cities of Fresno and Clovis; such recharge totaled 29,575 acre-feet during calendar year 2012 (FMFCD 2013).

The pipeline collection system in the urban flood control system is designed to convey the peak flow rate from a two-year storm.

Most drainage areas in the urban flood control system do not discharge to other water bodies, and drain mostly through infiltration into groundwater. When necessary, FMFCD can move water from a basin in one such drainage area to a second such basin by pumping water into a street and letting water flow in curb and gutter to a storm drain inlet in an adjoining drainage area (Rourke 2014). Two FMFCD drainage areas discharge directly to the San Joaquin River, and three to an irrigation canal, without storage in a basin. Six drainage areas containing basins discharge to the San Joaquin River, and another 39 basins discharge to canals (FMFCD 2013).

A proposed development that would construct more impervious area on its project site than the affected detention/retention basin is sized to accommodate is required to infiltrate some storm water onsite, such as through an onsite detention basin or drainage swales (Rourke 2014).

The Big Dry Creek Reservoir has a total storage capacity of about 30 thousand acre-feet (taf) and controls up to 230-year flood flows. Fancher Creek Dam and Reservoir hold up to 9.7 taf and controls up to 200-year flood flows. Redbank Creek Dam and Reservoir hold up to 1 taf and controls up to 200-year flood flows.

Groundwater

Clovis is underlain by the Kings Groundwater Basin that spans 1,530 square miles of central Fresno County and small areas of northern Kings and Tulare counties. Figure 5.9-4, Kings Groundwater Basin, shows that the basin is bounded on the north by the San Joaquin River, on the west by the Delta-Mendota and Westside Subbasins, the south by the Kings River South Fork and the Empire West Side Irrigation District, and on the east by the Sierra Nevada foothills. Depth to groundwater in 2016 ranged from 196.5 feet at the northwest City boundary to 69.5 feet at the southeast City boundary (Clovis 2016), 25 feet at the southeast SOI boundary, and about 20 feet at the eastern Plan Area boundary (FID 2013). The Kings Subbasin has been identified as critically overdrafted (Provost & Pritchard 2011).

In the Plan Area, groundwater levels are monitored by the City of Clovis and FID. The overall area has not experienced land subsidence due to groundwater pumping since the early 1900s (FID 2006). Subsidence occurs when underground water or natural resources (e.g., oil) are pumped to the extent that the ground elevation lowers. No significant land subsidence is known to have occurred in the last 50 years as a result of land development, water resources development, groundwater pumping, or oil drilling (FID 2006). The City has identified a localized area of subsidence of 0.6 feet in the vicinity of Minnewawa and Herndon Avenues within the last 14 years (Clovis 2016). Regional ground subsidence in the Plan Area was mapped as less than one foot by the US Geological Survey in 1999 (Galloway and Riley 1999). Groundwater levels in the San Joaquin Valley are forecast to hit an all-time low in 2014 (UCCHM 2014).

New development in accordance with the General Plan Update would increase the amount of impervious surface in the Plan Area, potentially affecting the amount of surface water that filters into the groundwater supply. Groundwater levels are monitored in the Plan Area by the FID and the City of Clovis. As described in the 2015 City of Clovis Urban Water Management Plan (UWMP), groundwater recharge occurs both naturally and artificially throughout the City. The Kings Groundwater Basin area is recharged through a joint effort between the Cities of Clovis and Fresno and the FID (CDWR 2006). Approximately 8,400 acre-feet per year (afy) of water are intentionally recharged into the Kings Groundwater Basin by the City of Clovis, and approximately 7,700 afy of water naturally flow into groundwater in the City's boundaries (Clovis 2011).

The FMFCD urban storm water drainage system would provide groundwater infiltration for runoff from developed land uses in detention basins in the drainage system service area.

Projects pursuant to the proposed General Plan Update and developed outside of the FMFCD urban storm water drainage system would be required to meet the requirements of NPDES regulations, including the implementation of BMPs to improve water retention and vegetation on project sites.

DISCUSSION

a) *Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?*

Less-Than-Significant Impact. The Project is located on a site that was previously anticipated for agricultural use. As with any development, existing policies and standards are required to be complied with, which are assessed during review of the entitlements. As such, the City's Engineering Division, as well as outside agencies such as the Fresno Metropolitan Flood Control District (FMFCD) review all plans to ensure that none of the water quality standards are violated and that waste discharge requirements are adhered to during construction and operation of the Project. Consequently, this process of Project review and approval would ensure that a **less-than-significant** impact occur.

b) *Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?*

Less-Than-Significant Impact. The Project would not deplete groundwater supplies or interfere with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level due to the Project. The General Plan EIR identified a net decrease in ground water aquifer throughout the region, however, because the City's domestic water system is primarily served through surface water via existing water entitlements, the loss of aquifer is less than significant. The City has developed a surface water treatment plant (opened in June, 2004) that reduces the need for pumped groundwater, and has also expanded the municipal groundwater recharge facility. The Projects impacts to groundwater are **less than significant**.

c) *Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would: (i) result in substantial erosion or siltation on- or off-site; (ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite; (iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or (iv) impede or redirect flood flows?*

Less-Than-Significant Impact. The Project site is located on a site that has slight grade differences and mostly surrounded by existing rural residential and agricultural uses to the west, agricultural uses to the north and urban residential uses to the south and east. There are no streams or rivers on the site that would be altered as a result of the Project. The Project area is mostly pervious since it is currently vacant land, and as a result, the Project would increase the amount of impervious surfaces by installing paving for roadways and sidewalks. However, the drainage pattern would be constructed per existing policies and regulations through review of the plans by the City's Engineering Division and the FMFCD to ensure the site is properly and adequately drained such that the storm drain system is maintained and so that no flooding occurs. Consequently, this review and approval by City engineers and FMFCD would mean that the Project result in a **less-than-significant** impact.

d) *Would the project, in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?*

Less-Than-Significant Impact. The Project site is located on a site substantially surrounded by existing rural residential and agricultural uses to the west, agricultural uses to the north and urban residential uses to the south and east. Due to the Central Valley's location away from the ocean, an impact from a tsunami is unlikely. Furthermore, the Project site is not located in or adjacent to a flood zone per figure 5.9-5 of the Clovis General Plan Environmental Impact Report. The nearest flood zone is located approximately 2,075 feet away from the Project area boundaries (southeast area). Consequently, this is a low-risk area and as a result a **less-than-significant** impact would occur.

e) *Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?*

Less-Than-Significant Impact. The City of Clovis is within the North Kings County Groundwater Sustainability Agency (GSA). Pursuant to the Sustainable Groundwater Management Act of 2014 (SGMA), certain regions in California are required to develop and implement a groundwater management plan that sustainably manages groundwater resources. As of the writing of this Initial Study, the North Kings County GSA has an adopted groundwater management plan, as of November 22, 2019, according to the North Kings GSA website.[16] The Project would derive its water from surface water sources and does not propose or include plans for groundwater use. With regards to water quality control, the Project would be required to adhere to appropriate storm drain conveyance and the protection of water resources which would include the installation of backflow preventers. Consequently, the Project would result in a **less-than-significant** impact.

11. LAND USE AND PLANNING

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Physically divide an existing community?			X	
b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?			X	

ENVIRONMENTAL SETTING

As described above in the Project Description, the Project site is surrounded by existing rural residential and agricultural uses to the west, agricultural uses to the north and urban residential uses to the south and east.

The Project requests a Prezone and Vesting Tentative Tract Map to be able to construct 255 single-family homes. The prezone is to allow the change in zoning development standards to the Clovis R-1-PRD (single-family planned residential development) Zone District. If approved, the Project would comply with the zoning designated for the Project site upon annexation into the City.

DISCUSSION

a) *Would the project physically divide an existing community?*

Less-Than-Significant Impact. Although the site is currently vacant land, the general area is urbanized with rural residential and agricultural uses to the west, agricultural uses to the north and urban residential uses to the south and east. Typically, physically dividing existing communities is associated with the construction of a new road intersecting an established area or introducing uses that are not necessarily in line with the existing

16 North Kings Groundwater Sustainability Agency, https://www.northkingsgsa.org, accessed on Friday, May 1, 2020.

uses and planned land uses of the area. However, the Project site has been previously designated in the 2014 Clovis General Plan for medium density residential uses. Also, the Project site would provide for greater pedestrian connectivity between the proposed residential project and Shepherd Avenue to the south and N. Clovis Avenue to the east by installing new sidewalks and roadways throughout the site consistent with the development standards of the 2014 Clovis General Plan and the Heritage Grove Design Guidelines.

Consequently, because the proposed Project is the type of use previously planned for this site and other properties within the Northwest Urban Growth Area (Heritage Grove), it would not physically divide an existing community. Rather, it seeks to complement and enhance the connectivity of the area with installation of a new public sidewalk and roadway infrastructure within TM6050 and the completion of Shepherd Avenue and N. Clovis Avenue along the Project's boundaries. Therefore, a **less-than-significant** impact would occur and no mitigation measures are required.

b) *Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?*

Less-Than-Significant Impact. As mentioned, the Project site is currently zoned County AE-20 (Exclusive Agricultural) and includes a request to prezone to the Clovis R-1-PRD (single-family planned residential development) Zone District, which would allow for the proposed Project. Further, through the review and entitlement process, the Project is reviewed for compliance with applicable regulations, including those intended for avoiding or mitigating an environmental effect. The Project would be required to comply applicable lighting, landscape, and noise standards, which are regulated through the Clovis Municipal Code to ensure minimal impacts to the environment as well as to neighboring properties.

As a result of the Project in complying with the existing land use and requested zoning designation upon approval, as well as the review process ensuring General Plan and other applicable policies are adhered to, the Project would result in a **less-than-significant** impact with regards to conflicting with a land use plan.

12. MINERAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				X
b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				X

ENVIRONMENTAL SETTING

The City of Clovis 2014 General Plan EIR defines minerals as any naturally occurring chemical elements or compounds formed from inorganic processes and organic substances.[17] The 2014 General Plan EIR indicates that there are no active mines or inactive mines within the Plan Area of the City of Clovis.

DISCUSSION

a) *Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?*

No Impact. As stated above, the City of Clovis does not have any active mines or inactive mines. Furthermore, the Project site is located within the City's Sphere of Influence and is not zoned, designated, or otherwise mapped for mineral resource extraction, or for having mineral resources of value to the region present on or below the surface of the site. Therefore, **no impact** would occur and no mitigation measures are required.

b) *Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?*

No Impact. Please refer to the discussion under Section 12.a.

13. NOISE

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?		X		
b. Generation of excessive groundborne vibration or groundborne noise levels?			X	
c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				X

17 2014 Clovis General Plan EIR, Chapter 5: Mineral Resources, Page 5.11-1.

ENVIRONMENTAL SETTING

The Project site is located on vacant land surrounded by existing rural residential and agricultural uses to the west, agricultural uses to the north and urban residential uses to the south and east. Further, the Project area is generally bounded by Shepherd Avenue to the south, N. Clovis Avenue to the east, N. Minnewawa Avenue approximately 1,275 feet to the west, and E. Perrin Avenue approximately 1,300 feet to the north. As such, existing ambient noise levels are typical of those associated with residential development, such as the sound of vehicles passing by and recreating. As a result of construction activity associated with Tentative Tract Map TM6200 at the northeast corner of Shepherd and N. Clovis Avenues, existing ambient noise levels may be slightly elevated as a result of the use of construction equipment, such as large trucks, tractors, and other construction tools associated with residential development. These increases would be temporary, however, and would cease upon completion of the subdivision.

DISCUSSION

a) *Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?*

Less-Than-Significant With Mitigation. The Project would include development of 255 single-family homes on approximately 38.50 acres of land. Thus, the Project would result in a temporary and permanent increase in ambient noise levels as a result of construction and operation. However, as mentioned above, the Project site is already surrounded by existing rural residential and agricultural uses to the west, agricultural uses to the north and urban residential uses to the south and east. Therefore, while the Project would introduce new ambient noise from the construction and operation of the homes, these noises would be typical of that of the surrounding area and would not represent the type of noise levels that would drastically differ from what already exists. Also, while increases in ambient noise would increase due to the construction of the Project, this increase would be temporary and would be required to adhere to local regulations limiting the hours of construction.

The City of Clovis Municipal Code Section 9.22.080, Noise, sets forth noise standards for development which would need to be complied with. For example, construction would only be permitted between the hours of 7:00 a.m. and 7:00 p.m. on weekdays, and between 9 a.m. and 5:00 p.m. on weekends. However, between June 1 and September 15, construction may begin at 6 a.m. on weekdays.

The mitigation measures below would reduce these impacts to the extent feasible. Consequently, a **less-than-significant impact with mitigation** would occur.

> Mitigation Measure NOISE-1a: The Project contractor shall locate equipment staging in areas that would create the greatest possible distance between construction-related noise sources and noise-sensitive receptors nearest the active project site during all construction activities.
>
> Mitigation Measure NOISE-1b: The Project contractor shall ensure that all general construction related activities are restricted to between the hours of 7:00 a.m. and 7:00 p.m. Monday through Friday and between 9:00 a.m. and 5:00 p.m. on Saturday and Sunday.

b) *Would the project result in generation of excessive groundborne vibration or groundborne noise levels?*

Less-Than Significant Impact. The Project includes development of 255 single-family homes and associated infrastructure (i.e. sidewalks, roadways, curb, gutter, stormdrains, etc.). Therefore, construction equipment typical of the development of residential homes would be utilized temporarily. This equipment could include the use of heavy tractors, trucks, and other equipment, however, this type of equipment isn't typically associated

with excessive ground-borne vibration. If any vibration were to occur, it's likely that it would be temporary in nature and not at levels that would significantly impact the surrounding area. Further, the Project would be required to comply with the provisions of Section 9.22.090 of the Clovis Municipal Code which requires that vibration not be perceptible along property lines and that it shall not interfere with operations or facilities on adjoining parcels. It's important to note also that temporary construction vibration and noise is exempt from these provisions due to the fact that construction is temporary. Overall, because the type of equipment likely to be used in the development of the Project is not considered to be of the type and intensity to result in substantial vibration or ground-borne noise, the impact would be **less than significant** and no mitigation measures are required.

c) *For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?*

No Impact. The Project is not located within the vicinity of a private airstrip or within an airport land use plan nor is the site within two miles a public airport. Therefore, **no impact** would occur.

14. POPULATION AND HOUSING

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example through extension of roads or other infrastructure)?			X	
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?			X	

ENVIRONMENTAL SETTING

The Project is located on a site that has been previously planned for medium density residential use in the 2014 Clovis General Plan. As mentioned in the Project Description above, the Project proposes a prezone request from the County AE-20 (Exclusive Agricultural) Zone District to the Clovis R-1-PRD (Single-Family Planned Residential Development) Zone District. The Project proposes a 255-lot gated single-family planned residential development on approximately 38.50 acres of land at a density of 6.94 DU/Ac.

DISCUSSION

a) *Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example through extension of roads or other infrastructure)?*

Less-Than-Significant Impact. As mentioned above, the Project would result in a density of 6.94 DU/Ac, which would be within the planned density range of the Medium Density land use designation. Further, the Project includes residential uses consistent with the 2014 Clovis General Plan, including the proposed density for TM6050. Unplanned population growth is typically associated with providing new services in remote areas of the City or other infrastructure that was not previously identified in the General Plan. The major infrastructure (i.e. road network, utilities, sidewalks, etc.) within the project boundaries and a portion of Shepherd Avenue and N. Clovis Avenue will be provided, as planned for in the Heritage Grove Design Guidelines. Thus, a **less-than-significant** impact would occur and no mitigation measures are required.

b) *Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?*

Less-Than-Significant Impact. The Project area is currently vacant land with two small accessory structures, clustered shrubs and trees near the southwest corner of the project site. Although construction of the Project would require the removal of two small accessory structures, this would not represent a substantial displacement of people or housing. Furthermore, the Project itself would include the construction of 255 homes, therefore, construction of housing would occur in place of the removal of the existing accessory structures. Consequently, a **less-than-significant** impact would occur and no mitigation measure are required.

15. PUBLIC SERVICES

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
a. Fire protection?			X	
b. Police protection?			X	
c. Schools?			X	
d. Parks?			X	
e. Other public facilities?			X	

ENVIRONMENTAL SETTING

The Project site is located within the City's Sphere of Influence, surrounded by existing rural residential and agricultural uses to the west, agricultural uses to the north and urban residential uses to the south and east.

The Project would be served by the Clovis Fire Department, Clovis Police Department, with mutual aid from the City of Fresno, when needed. The Project site would also be within the Clovis Unified School District.

The nearest fire station is Fire Station #3, located a short distance (approximately 1.88 miles) south of the site. The other closest fire station is Fire Station #5, located approximately 2.57 miles southeast of the site.

DISCUSSION

a) *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection services?*

Less-Than-Significant Impact. Although the Project would result in 255 new residential units, the site is located in a planned area of the City's Sphere of Influence and will be served by the Clovis Fire Department. Also, the site itself is in close proximity to Fire Station's #3 and #5, which would mean that response times should be able to be maintained during calls for service. As part of the entitlement process for the Project, the Clovis Fire Department will review the design and site layout to ensure adequate fire safety measures and site circulation are achieved. This would include placement of new fire hydrants in certain locations throughout the site, adequate drive widths for fire truck and emergency vehicle access, and the appropriate application of fire codes, such as installation of sprinkler systems, fire alarms, and smoke detectors. Overall, with the Project site in close proximity to numerous fire stations, construction that would meet the latest fire code standards, and review by the Clovis Fire Department, impacts related to effects on the performance of the Fire Department would be **less-than-significant** and no mitigation measures are required.

b) *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for police protection services?*

Less-Than-Significant Impact. Although the Project would result in 255 new residential units, the site is located within a planned area in the City's Sphere of Influence and will be served by the Clovis Police Department. The Clovis Police Department headquarters are located at 1233 Fifth Street, which is approximately 2.93 miles from the site. As part of the entitlement process for the Project, the Clovis Police Department will review the design and site layout to ensure adequate safety measures are achieved. Also, the Project will provide City Standard improvements to a portion of Shepherd Avenue and N. Clovis Avenue and within TM6050, thus access to and from the site would be similar to existing local-street conditions when responding to calls for services. Consequently, a **less-than-significant** impact would occur and no mitigation measures are required.

c) *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for schools?*

Less-Than-Significant Impact. Although the Project would result in 255 new residential units, the site is located within a planned area in the City's Sphere of Influence and within the Clovis Unified School District (CUSD). As part of the review process, CUSD is provided the opportunity to comment and work closely with the City as development is proposed. As mentioned previously, the Project site was previously planned for residential development, as indicated in the 2014 Clovis General Plan. As such, the CUSD has been aware of the potential for this type of development at this location. As part of the process, the Project would be required to pay school fees which typically go towards the improvement and/or construction of new schools or expanding existing

schools if and when needed, as determined by the CUSD. Therefore, because the Project is consistent with what was previously planned for at this site in addition to payment of appropriate school fees set by the CUSD, a **less-than-significant** impact would occur and no mitigation measures are required.

d) *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for parks?*

Less-Than-Significant Impact. See discussion under Section 16, Recreation for the analysis related to parks.

e) *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for other public facilities?*

Less-Than-Significant Impact. Although the Project would result in 255 new residential units, residential uses have been previously planned for in the 2014 Clovis General Plan for this site. Also, through the entitlement process, the Project would undergo review by several departments and agencies for compliance with appropriate regulations and policies. This could result in various impact fees that are intended to maintain and enhance public facilities as appropriate to be able to accommodate the Project. As such, payment of the typical development fees, as well as project review by the different department and agencies, would result in the Project having a **less-than-significant** impact to public facilities. No mitigation measures are required.

16. RECREATION

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?			X	
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?			X	

ENVIRONMENTAL SETTING

The proposed Project area is located on a site surrounded by existing rural residential and agricultural uses to the west, agricultural uses to the north and urban residential uses to the south and east. Shepherd Avenue is located to the south of the Project and N. Clovis Avenue is located to the east. The nearest recreational park

is Dry Creek Park, located at the northeast corner of Alluvial and N. Clovis Avenues, which is approximately 1.36 miles south from the Project site.

DISCUSSION

a) *Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?*

Less-Than-Significant Impact. As mentioned in the Population and Housing section of this Initial Study, the Project is of the type previously planned and accounted for in the 2014 Clovis General Plan. This growth was planned for with regards to park usage throughout the City. Furthermore, the Project itself would include landscaped and private open space areas for each unit, community pool and recreational areas. The Project would also be required to comply with General Plan Policy 2.2 of the Open Space and Conservation Element which encourages the incorporation of on-site natural resources.

Overall, the Project is not likely to increase the use of existing parks such that physical deterioration would occur. Therefore, the impact would be **less-than-significant** and no mitigation measures are required.

b) *Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?*

Less-Than-Significant Impact. The Project would not create new demand for any type of recreational facilities that were not already identified in the parks and Recreation Element of the 2014 Clovis General Plan. The General Plan requires that all development contribute a proportionate share toward the development of parks throughout the community. As such, a **less-than-significant** impact would occur and no mitigation measures are required.

17. TRANSPORTATION

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?		X		
b. Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?			X	
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?			X	

d. Result in inadequate emergency access?			X	

ENVIRONMENTAL SETTING

The Project site is located in an area previously planned for residential development in the City's Sphere of Influence, surrounded by existing rural residential and agricultural uses to the west, agricultural uses to the north and urban residential uses to the south and east. The site is bounded by Shepherd Avenue to the south, rural residential and agricultural uses and N. Minnewawa Avenue to the west, N. Clovis Avenue to the east, and agricultural uses and E. Perrin Avenue to the north. As an already planned area of the City's Sphere of Influence, the circulation network serving the site and its vicinity is already in place, with the exception of internal site circulation and the completion of the west side of N. Clovis Avenue which will be constructed as part of the Project. If approved, the Project will improve and complete Shepherd Avenue on the south side of the Project frontage.

According to the 2014 Clovis General Plan Circulation Diagram in the Circulation Element (Figure C-1 of the Circulation Element), Shepherd Avenue is classified as an "Arterial." N. Clovis Avenue, located on the east side of the Project area, is classified as an "Arterial" as well. Arterials are streets designed to move large volumes of traffic and are intended to provide a high level of mobility between freeways, expressways, other arterials, and collector streets. Local streets are intended to provide direct access to abutting land uses and serve short distance trips within neighborhoods.

A Traffic Impact Analysis (TIA) was prepared by JLB Traffic Engineering, Inc., on April 14, 2020 (included as Appendix G of this Initial Study). The information and analysis in the following sections is based in part on the results of the TIA.

DISCUSSION

a) *Would the project conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?*

Less-Than-Significant Impact With Mitigation. As mentioned above, the Project site is within a planned area of the City's Sphere of Influence for medium density residential uses in the 2014 Clovis General Plan. New traffic will be introduced to the area as a result of the Project. As described in the Project Description above, the Project proposes a density of 6.94 dwelling units per acre, consistent with existing general plan land use designation of Medium Density Residential (4.1-7.0 DU/Ac).

The TIA studied five (5) intersections: 1) Minnewawa Avenue/Behymer Avenue; 2) Peach Avenue/Shepherd Avenue; 3) Minnewawa Avenue/Shepherd Avenue; 4) Clovis Avenue/Shepherd Avenue; and 5) Sunnyside Avenue/Shepherd Avenue for existing conditions, existing-plus-project conditions, near term with project conditions, and cumulative year 2040 with-project conditions. A discussion of each of these scenarios is included below. Each scenario is based on the Project's a.m. and p.m. peak hour trips as determined in the TIA. According to the TIA, the Project would result in 189 trips in the a.m. peak hours of between 7 a.m. and 9 a.m. and 252 trips in the p.m. peak hours between 4 p.m. and 6 p.m., as well as a total of 2,407 daily vehicle trips.

Existing Traffic Conditions

Based on the TIA,[18] existing traffic conditions were based on existing and historical traffic volumes and roadway conditions from traffic counts and field surveys conducted in 2019 and 2020. The intersection of Minnewawa

18 Traffic Impact Analysis, Tentative Tract 6050, JLB Traffic Engineering, Inc., April 14, 2020, Page 6 (Page 11 of PDF).

Avenue and Behymer Avenue is projected to exceed its LOS thresholds during both peak periods. To improve the LOS at this intersection, the addition of turn lanes is recommend. However, according to the TIA, all study segments are operating at an acceptable Level of Service (LOS) based on City of Clovis standards.[19]

Existing-Plus-Project Conditions

Existing-Plus-Project conditions represent existing conditions plus buildout of the Project. According to the TIA, the study road segments are expected to continue to operate at acceptable level of service.[20] The TIA recommends that the project implement Class II bike lanes along its frontages to Clovis Avenue and Shepherd Avenue. The existing plus Project traffic volumes were obtained by adding the Project only trips to the existing traffic conditions scenario. The Project only trips to the study intersections were based on, but not limited to, existing travel patterns, Fresno COG Project Select Zone, the existing roadway network, and engineering judgment.

Near-Term-With-Project Conditions

These conditions are based on buildout of the Project plus the near term planned or entitled projects that are reasonably foreseeable. For a list of the projects considered under this scenario, please refer to Table 6 on page 24 of the TIA (page 29 of PDF). Under this scenario, the intersections of Minnewawa and Behymer Avenues and Peach and Shepherd Avenues are projected to exceed their LOS threshold during one or both peak periods. Additionally, the segments of Shepherd Avenue, between Minnewawa Avenue and Clovis Avenue and between Clovis Avenue and Sunnyside Avenue are projected to slightly exceed their LOS thresholds by approximately 430 daily trips or less.[21]

Cumulative 2040 With-Project Conditions

These conditions represent anticipated traffic volumes for the year 2040. As described in the TIA, the intersections of Minnewawa Avenue and Behymer Avenue, Peach Avenue and Shepherd Avenue, Minnewawa Avenue and Shepherd Avenue, and Sunnyside Avenue and Shepherd Avenue are projected to exceed their LOS threshold during one or both peak periods. Furthermore, all study segments are projected to exceed their LOS threshold. However, implementation of Mitigation Measures TRAF-1 and TRAF-2 were found to adequately mitigate this potential impact.

In the case of the Project, development of the 255-lot gated single-family planned residential development at a medium density (6.94 DU/Ac) would provide a public benefit by improving and completing the north side of Shepherd Avenue and the west side of N. Clovis Avenue, along the Project's (TM6050) street frontages. Consequently, Mitigation Measures TRAF-1, TRAF-2, TRAF-3, TRAF-4, and TRAF-5, would ensure that a **less-than-significant with mitigation** impact would occur.

> Mitigation Measure TRAF-1: Per the Traffic Impact Analysis (TIA), Shepherd Avenue, between Sunnyside Avenue and Peach Avenue is projected to exceed the level of service (LOS) threshold. The Project proponent and/or applicant shall contribute their proportional share of traffic impacts fees (street fees) for the future improvements to Shepherd Avenue as recommended by the TIA.
>
> Mitigation Measure TRAF-2: The Project proponent and/or applicant shall contribute their proportional share of traffic impacts fees (street fees) for the future improvements to the intersection of Minnewawa Avenue and Behymer Avenue.

19 Traffic Impact Analysis, Tentative Tract 6050, JLB Traffic Engineering, Inc., April 14, 2020, Page 1 (Page 6 of PDF).
20 Traffic Impact Analysis, Tentative Tract 6050, JLB Traffic Engineering, Inc., April 14, 2020, Page 2 (Page 7 of PDF).
21 Traffic Impact Analysis, Tentative Tract 6050, JLB Traffic Engineering, Inc., April 14, 2020, Page 2 (Page 7 of PDF).

Mitigation Measure TRAF-3: The Project proponent and/or applicant shall contribute their proportional share of traffic impacts fees (street fees) for the future improvements to the intersection of Peach Avenue and Shepherd Avenue.

Mitigation Measure TRAF-4: The Project proponent and/or applicant shall contribute their proportional share of traffic impacts fees (street fees) for the future improvements to the intersection of Sunnyside Avenue and Shepherd Avenue.

Mitigation Measure TRAF-5: The Project proponent and/or applicant shall improve and complete the north side of Shepherd Avenue and the west side of Clovis Avenue, along the Project's street frontages per the City standards and the Heritage Grove Design Guidelines circulation plan.

b) *Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?*

Less-Than-Significant Impact. Under Senate Bill 743 (SB743), starting July 2020, projects will be required to assess traffic impacts based on Vehicle Miles Traveled (VMT), which is the amount and distance of automobile travel attributable to a project, as opposed to the existing Level of Service (LOS) method, which measures vehicle delays. As such, VMT is not required to be assessed until July 2020. The City Engineer analyzed the project and concluded that the current and proposed improvements with the project can accommodate the additional traffic. Overall, the Project would result in a **less-than-significant** impact.

c) *Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?*

Less-Than-Significant Impact. The Project would result in a significant impact if it would include features that would create a hazard such as a sharp curve in a new roadway, or create a blind corner or result in sight distance issues from entryways. Through the entitlement process, the Project would undergo review by multiple City departments, such as planning and engineering, to ensure that the site layout conforms to existing regulations, such as the City Development Code, and other applicable codes, such as the fire code and building code. During this review, the Project would need to make the necessary corrections to ensure that no hazardous design features would result from the Project. Further, the main roadway network within the current boundaries of the Northwest Urban Growth Area (i.e. Shepherd Avenue, Minnewawa Avenue, Peach Avenue, Perrin Avenue, Behymer Avenue and International Avenue) was previously constructed to County roadway standards. Therefore, because the Project would undergo site plan and design review to ensure consistency and adherence to applicable design and site layout guidelines, a **less-than-significant** impact would occur.

d) *Would the project result in inadequate emergency access?*

Less-Than-Significant Impact. The Project would include three ingress/egress access points to the proposed development, including two access points from De Witt Avenue and one access point from N. Clovis Avenue. The Project will also include an exit-only gate located along the N. Clovis Avenue frontage that will also be utilized as an Emergency Vehicle Access (EVA) for the Clovis Fire Department. As part of the Project review, the Clovis Fire Department would review all plans to ensure adequate emergency access is provided. This review includes review for adequate roadway widths, turning radius, as well as adequate access to units and accessibility to water. Consequently, because the Project plans would be required by the Clovis Municipal Code to be reviewed and approved by Clovis Fire Department and Police Department prior to construction, this impact would be **less than significant** and no mitigation measures are required.

18. TRIBAL CULTURAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?				X
b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American Tribe?		X		

ENVIRONMENTAL SETTING

On September 25, 2014, Governor Jerry Brown signed Assembly Bill AB52, which intends to protect a new class of recourse under CEQA. This new class is Tribal Cultural Resources and provides an avenue to identify Tribal Cultural resources through a consultation process, similar to SB18. However, unlike SB18, where consultation is required for all General Plan and Specific Plan Amendments, AB52, applies to all projects where a Notice of Determination is filed. Furthermore, the consultation process is required to be complete prior to filing a Notice of Intent.

City staff conducted Native American Consultation in compliance with Assembly Bill 52 (AB52). In compliance with AB52, invitations for consultation were mailed on September 12, 2016, which affords Native tribes thirty (30) days to respond and to request consultation. During that time, one (1) tribe requested consultation. On September 19, 2016, representatives from Table Mountain Rancheria provided a letter to the City requesting to coordinate a meeting date to discuss the proposed project. On Thursday, September 22, 2016, City staff forwarded the Cultural Resources Assessment prepared by Peak & Associates, Inc. to the representative from Table Mountain Rancheria for review.

Invitations for consultation were mailed again on February 28, 2020, which affords Native tribes thirty (30) days to respond and to request consultation. During this timeframe, no requests for consultations were received. However, mitigation measures are included in the following analysis to ensure protection of such resources if any are discovered inadvertently.

A Cultural Resources Study was prepared by Peak & Associates, Inc., dated July 19, 2016 (see Appendix E). A subsequent Cultural Memorandum Summary was prepared by Peak & Associates, Inc., dated February 10,

2020 (see Appendix F). These Cultural Resources Studies included a records search at the Southern San Joaquin Valley Information Center (SSJVIC) and a formal request submittal to the Native American Heritage Commission to review their Sacred Lands Files.

DISCUSSION

a) *Would the project cause a substantial adverse change to a listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?*

No Impact. See discussion under Section 5a.

b) *Would the project cause a substantial adverse change to a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American Tribe?*

Less-Than-Significant With Mitigation. The site's ground shows its long-term agricultural use with leveling, irrigation and general agricultural activities. The land is currently vacant with two small accessory structures, clustered shrubs and trees near the southwest corner of the project site. Furthermore, the Cultural Resources Study and Cultural Resources Summary concluded that the research of the site conducted by Peak & Associates, Inc., found it negative for prehistoric or historic period cultural resources.[22] Although no resources were identified, tribal cultural resources could be inadvertently or accidentally uncovered during ground-disturbing activities such as trenching, digging, and the installation of utilities and other infrastructure.

Because there is the slight possibility for the accidental or inadvertent uncovering of tribal cultural resources during construction, Mitigation Measures TCR-1 and TCR-2 would serve to reduce those potential impacts by requiring the stopping of any work until any found artifacts can be properly removed and inventoried by a qualified archaeologist. Therefore, the Project would result in a **less-than-significant impact with mitigation**.

Mitigation Measure TCR-1: There is a possibility that subsurface cultural resources exist in the study area, as archaeological sites may be buried with no surface manifestation. If concentrations of prehistoric or historic-period materials are encouraged during ground disturbing activities, all work in the immediate vicinity shall halt until a qualified professional/archaeologist can evaluate the finds and make specific recommendations. Examples of prehistoric materials include obsidian and chert flake stone tools (e.g. projectile points, knives, scrapers) or toolmaking debitage, cultural darkened soil (midden) containing heat-affected rocks, artifacts, or shellfish remains, and stone milling equipment (e.g. mortars, pestles, handstones). Examples of historical materials include stone, concrete, or adobe footings and walls, filled wells or privies, and deposits of metal, grass, and/or ceramic refuse.

Mitigation Measure TCR-2: If human remains are discovered during construction or operational activities, further excavation or disturbance shall be prohibited pursuant to Section 7050.5 of the California Health and Safety Code. The specific protocol, guidelines, and channels of communication outlined by the Native American Heritage Commission, in accordance with Section 7050.5 of the Health and Safety Code, Section 5097.98 of the Public Resources Code (Chapter 1492, Statutes of 1982, Senate Bill 297), and Senate Bill 447 (Chapter 44, Statutes of 1987), shall be followed. Section 7050.5(c) shall guide the potential Native American involvement, in the event of discovery of human remains, at the direction of

22 Cultural Resources Study, Peak & Associates, Inc., Page 1 (Page 1 of PDF), July 19, 2016; Cultural Resources Summary, Peak & Associates, Inc., Page 1 (Page 1 of PDF), February 10, 2020.

the County coroner. All reports, correspondence, and determinations regarding the discovery of human remains on the project site shall be submitted to the Lead Agency.

19. UTILITIES AND SERVICE SYSTEMS

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?			X	
b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?			X	
c. Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?			X	
d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?			X	
e. Comply with federal, state, and local management reduction statutes and regulations related to solid waste?			X	

ENVIRONMENTAL SETTING

Pacific Gas & Electric (PG&E) provides electricity and natural gas services in the City of Clovis. AT&T/SBC provides telephone service to the City.

The City's water supply sources include groundwater drawn from the Kings Sub-basin of the San Joaquin Valley Groundwater Basin and treated surface water from the Fresno Irrigation District (FID). Surface water is treated at the City of Clovis Surface Water Treatment Facility.

The City of Clovis provides sewer collection service to its residents and businesses. Treatment of wastewater occurs at the Fresno-Clovis Regional Wastewater Treatment Plant (RWTP). The Fresno-Clovis RWTP is

operated and maintained by the City of Fresno and operates under a waste discharge requirement issued by the Central Valley Regional Water Quality Control Board. Additionally, the City of Clovis has completed a 2.8 mgd wastewater treatment/water reuse facility, which will service the City's new growth areas.

The Fresno Metropolitan Flood Control District (FMFCD) has the responsibility for storm water management within the Fresno-Clovis metropolitan area of the Project site. Storm water runoff that is generated by land development is controlled through a system of pipelines and storm drainage detention basins.

DISCUSSION

a) *Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?*

Less-Than-Significant Impact. The Project includes construction of 255 residential units and associated infrastructure. As mentioned above, the proposed residential site is a use previously accounted for in the 2014 Clovis General Plan. Furthermore, as part of the review process for the Project, the wastewater impacts will be evaluated by the City Engineer to ensure compliance with the City's Waste Water Master Plan, as well as FMFCD, so that the Project would not exceed wastewater treatment requirements such that a new facility would be required nor would the existing treatment facility need to be expanded. While the Project would introduce a new units at this site, the type of development would be consistent with the land use designation and Zone District upon approval of the prezone request. Upon review and approval by the City Engineer, the Project would result in a **less-than-significant** impact.

b) *Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?*

Less-Than-Significant Impact. The Project is of the type of development previously accounted for in the 2014 Clovis General Plan, and is a site surrounded with existing rural residential and agricultural uses to the west, agricultural uses to the north and urban residential uses to the south and east. The Project is anticipated to be adequately served by City water. Further, the Project would comply with current Green Building Codes, as well as the water efficient landscape policies with regards to water conserving features. Lastly, the Project would be required to comply several water conserving policies, such as Policy 3.4 and 3.5 of the Open Space and Conservation Element. Overall, a **less-than-significant** impact would occur.

c) *Would the project result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?*

Less-Than-Significant Impact. Because the Project is of the type previously planned and accounted for in the 2014 Clovis General Plan, it is not likely that the Project would result in a demand that would exceed the capacity of the wastewater treatment facility. Further, the Project is reviewed by the appropriate departments and agencies to ensure compliance and adequate capacity with regard to infrastructure, such as the ability to provide adequate wastewater treatment. Consequently, the impact would be **less than significant**.

d) *Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?*

Less-Than-Significant. The Project would introduce new solid waste throughout construction and operation of the Project. However, the Project would be required to comply with Chapter 6.3.1, Recycling and Diversion of Construction and Demolition Debris, of the Clovis Municipal Code during construction. This section of the Clovis

Municipal Code requires that a minimum of fifty percent (50%) of waste tonnage from a project be diverted from disposal, and that all new residential (and commercial) construction within the City shall submit and obtain approval for a waste management plan prior to construction activities. Compliance with these measures would ensure that the Project does not result in a significant impact during the construction phase of the Project. Further, compliance with policies in the General Plan for the reduction and recycling of solid waste would serve to reduce impacts of solid waste by promoting and encouraging the recycling of materials. Lastly, according to the California Department of Resources Recycling and Recovery (CalRecycle, the City of Clovis has exceeded their target per resident disposal rate of 4.7 pounds per day per resident, meaning that Clovis residents are actually producing less solid waste than the target set by the State.[23] Consequently, a **less-than-significant** impact would occur.

e) *Would the project comply with federal, state, and local management reduction statutes and regulations related to solid waste?*

Less-Than-Significant. See discussion 19d above.

20. WILDFIRE

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?			X	
b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?			X	
c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?			X	
d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?			X	

23 Calrecycle, City of Clovis, https://www2.calrecycle.ca.gov/LGCentral/DiversionProgram/JurisdictionDiversionPost2006, accessed on Friday, May 1, 2020.

ENVIRONMENTAL SETTING

The Project site is located on a site surrounded by existing rural residential and agricultural uses to the west, agricultural uses to the north and urban residential uses to the south and east. The site's topography has slight grade differences and characterized primarily by low lying weeds, trees, shrubs, and two small accessory structures.

DISCUSSION

a) *Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?*

Less-Than-Significant Impact. The Project is located at a site that is surrounded by existing rural residential and agricultural uses to the west, agricultural uses to the north and urban residential uses to the south and east. Further, the majority of the major road network (within the Northwest Urban Growth Area) is already in place from previous County projects. Although the Project could result in temporary traffic detouring or closures during buildout, these delays would be temporary and would be coordinated with the City's Engineering Division and other departments to ensure safe access to and from the area is maintained. Further, the site itself would be reviewed by City departments to ensure adequate site access and circulation is provided in the event of an emergency. Overall, a **less-than-significant** impact would occur.

b) *Would the project, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?*

Less-Than-Significant Impact. The Project site is currently vacant land and has a slight grade difference, and located on a site surrounded by existing rural residential and agricultural uses to the west, agricultural uses to the north and urban residential uses to the south and east. The general vicinity of the site is not of the type of topography nor in a location likely to exacerbate wildfire risks. Further, the Project would be required to comply with the latest fire codes and would be required to include sprinklers on the interior of the homes and require installation of several hydrants throughout the Project site. Lastly, the site plans would undergo review by the Clovis Fire Department to ensure that all fire safety regulations are met. Therefore, a **less-than-significant** impact would occur.

c) *Would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?*

Less-Than-Significant Impact. The site is located in an area previously developed with rural residential and agricultural uses to the west, agricultural uses to the north and urban residential uses to the south and east. As a new development, installation of a public roadway network, water lines, and power lines would be required; however, these utilities and infrastructure are typical of residential development and would be constructed to standards of the respective agencies and departments which oversee them, as well as be required to comply all necessary plan review and permitting requirements of such departments and agencies. As such, a **less-than-significant** impact would occur.

d) *Would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?*

No Impact. The City of Clovis (including the Northwest Urban Growth Area) is generally flat topography, and the Project site itself is in an area that is not in close proximity to hillsides such that it would expose people or

structures to significant risks associates with downstream flooding or landslides as a result of runoff or post-fire slope instability. As such, **no impact** would occur.

21. MANDATORY FINDINGS OF SIGNIFICANCE

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?			X	
b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?			X	
c. Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?			X	

ENVIRONMENTAL SETTING

The Project is located on a site within the City of Clovis' Sphere of Influence, substantially surrounded by existing development consisting of rural residential and agricultural uses to the west, agricultural uses to the north and urban residential uses to the south and east.

DISCUSSION

a) *Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or*

restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?

Less-Than-Significant Impact. As discussed above throughout the Initial Study, the Project would not result in any significant impacts with implementation of mitigation measures prescribed above. Therefore, the Project would have a **less-than-significant** impact as it would not substantially degrade the quality of the environment.

b) *Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?*

Less-Than-Significant Impact. The Project includes mitigation measures in certain topic areas identified throughout this Initial Study which would reduce potential impacts to a less-than-significant level. None of these impacts would be cumulatively considerable since most are either temporary impacts from construction or site specific. With the exception of air quality that is generally considered measurable cumulatively, the Project was found to have a less-than-significant impact through compliance with existing regulations from the SJVPACD. As such, future Projects in Clovis would be required to comply with those same regulations, ensuring adequate mitigation as development occurs. Lastly, while the Project would introduce 255 new residential homes to an existing vacant site, the type of use was previously accounted for in the 2014 Clovis General Plan buildout. Thus, a **less-than-significant** impact would occur.

c) *Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?*

Less-Than-Significant Impact. As discussed throughout the document, the Project would not result in an impact that could not be mitigated to a less-than-significant level. Therefore, a **less-than-significant** impact would occur.

H. Report Preparation

LEAD AGENCY

George González, MPA
Associate Planner
City of Clovis
Planning & Development Services

TECHNICAL STUDIES

Air Quality and Greenhouse Gas Analysis Report (September 7, 2016)
Wilson Premier Homes
Dave Mitchell, Senior Air Quality Scientist
Mitchell Air Quality Consulting

Air Quality and Greenhouse Gas Analysis Report (February 5, 2020)
Wilson Premier Homes Tract No. 6050
Dave Mitchell, Senior Air Quality Scientist
Mitchell Air Quality Consulting

Biological Assessment (September 1, 2016)
6050 Enterprises, LP
Argonaut Ecological Consulting, Inc.

Biological Habitat Assessment (Updated February 19, 2020)
6050 Enterprises, LP
Argonaut Ecological Consulting, Inc.

Cultural Resources Study (July 19, 2016)
Tract 6050 Project
Melinda A. Peak, President
Peak & Associates, Inc.

Cultural Resources Summary (February 10, 2020)
Tract No. 6050
Peak & Associates, Inc.

Traffic Impact Analysis (April 14, 2020)
6050 Enterprises, L.P.
Jose Luis Benavides, P.E., T.E.
JLB Traffic Engineering, Inc.

Air Quality and Greenhouse Gas Analysis Report
Tract No. 6050
City of Clovis, Fresno County, California

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Date: September 7, 2016

APPENDIX A

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ACRONYMS AND ABBREVIATIONS

$\mu g/m^3$	micrograms per cubic meter
AB	Assembly Bill
APN	Assessor Parcel Number
AQMP	Air Quality Management Plan
ARB	California Air Resources Board
BAU	Business as Usual
CalEEMod	California Emissions Estimator Model
CAPCOA	California Air Pollution Control Officers Association
CEQA	California Environmental Quality Act
CO	carbon monoxide
CO_2	carbon dioxide
District	San Joaquin Valley Air Pollution Control District
DPM	diesel particulate matter
EMFAC	EMission FACtors Model
EPA	United States Environmental Protection Agency
GAMAQI	Guidance for Assessing and Mitigating Air Quality Impacts
GHG	greenhouse gases
GHG Rx	Greenhouse Gas Reduction Exchange
IPCC	United Nations Intergovernmental Panel on Climate Change
$MMTCO_2e$	million metric tons of carbon dioxide equivalent
$MTCO_2e$	metric tons of carbon dioxide equivalent
NO_x	nitrogen oxides
PM_{10}	particulate matter less than 10 microns in diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
ppb	parts per billion
ppm	parts per million
ROG	reactive organic gases
SB	Senate Bill
SJVAPCD	San Joaquin Valley Air Pollution Control District
SO_x	sulfur oxides
VOC	volatile organic compounds

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SECTION 1: EXECUTIVE SUMMARY

1.1 - Purpose and Methods of Analysis

The following air quality and greenhouse gas (GHG) analysis was prepared to evaluate whether the estimated criteria air pollutant and GHG emissions generated from the Tract No. 6050 (project) would cause significant impacts to air resources in the project area. This assessment was conducted within the context of the California Environmental Quality Act (CEQA, California Public Resources Code Sections 21000, et seq.). The methodology follows the Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI) prepared by the San Joaquin Valley Air Pollution Control District (SJVAPCD or District) for quantification of emissions and evaluation of potential impacts to air resources (SJVAPCD 2015a) and the SJVAPCD's Guidance for Valley Land-Use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA (SJVAPCD 2009).

1.2 - Project Description

The project consists of the construction and development of 248 single-family homes located near the northwest corner of East Shepherd Avenue and North Clovis Avenue in the City of Clovis. The project would be constructed on 39.16 gross acres (35.33 net) and would have an average density of 7.0 units per acre. The Assessor's Parcel Number (APN) associated with the project site is 556-050-11. The project lies within the San Joaquin Valley Air Basin. The project's regional vicinity location is shown in Figure 1; an aerial view of the local vicinity is provided in Figure 2; and the Tentative Tract Map design is provided in Figure 3.

1.3 - Summary of Analysis Results

The following is a summary of the analysis results. As shown below, the project would result in less than significant impacts for all air quality and GHG impact criteria analyzed.

Impact AIR-1: The project would not conflict with or obstruct implementation of the applicable air quality plan. **Less than significant impact.**

Impact AIR-2: The project would not violate air quality standards or contribute substantially to an existing or projected air quality violation. **Less than significant impact.**

Impact AIR-3: The project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors). **Less than significant impact.**

Impact AIR-4: The project would not expose sensitive receptors to substantial pollutant concentrations. **Less than significant impact.**

Impact AIR-5: The project would not create objectionable odors affecting a substantial number of people. **Less than significant impact.**

Impact GHG-1: The project would not generate direct or indirect greenhouse gas emissions that would result in a significant impact on the environment. **Less than significant impact.**

Impact GHG-2: The project would not conflict with any applicable plan, policy or regulation of an agency adopted to reduce the emissions of greenhouse gases. **Less than significant impact**.

1.4 - Standard Conditions and Mitigation Measures Applied to the Project

No mitigation measures beyond compliance with mandatory regulations were required to demonstrate that the project would have less than significant air quality and GHG impacts.

Figure 1: Regional Location Map

Figure 1
Regional Location Map

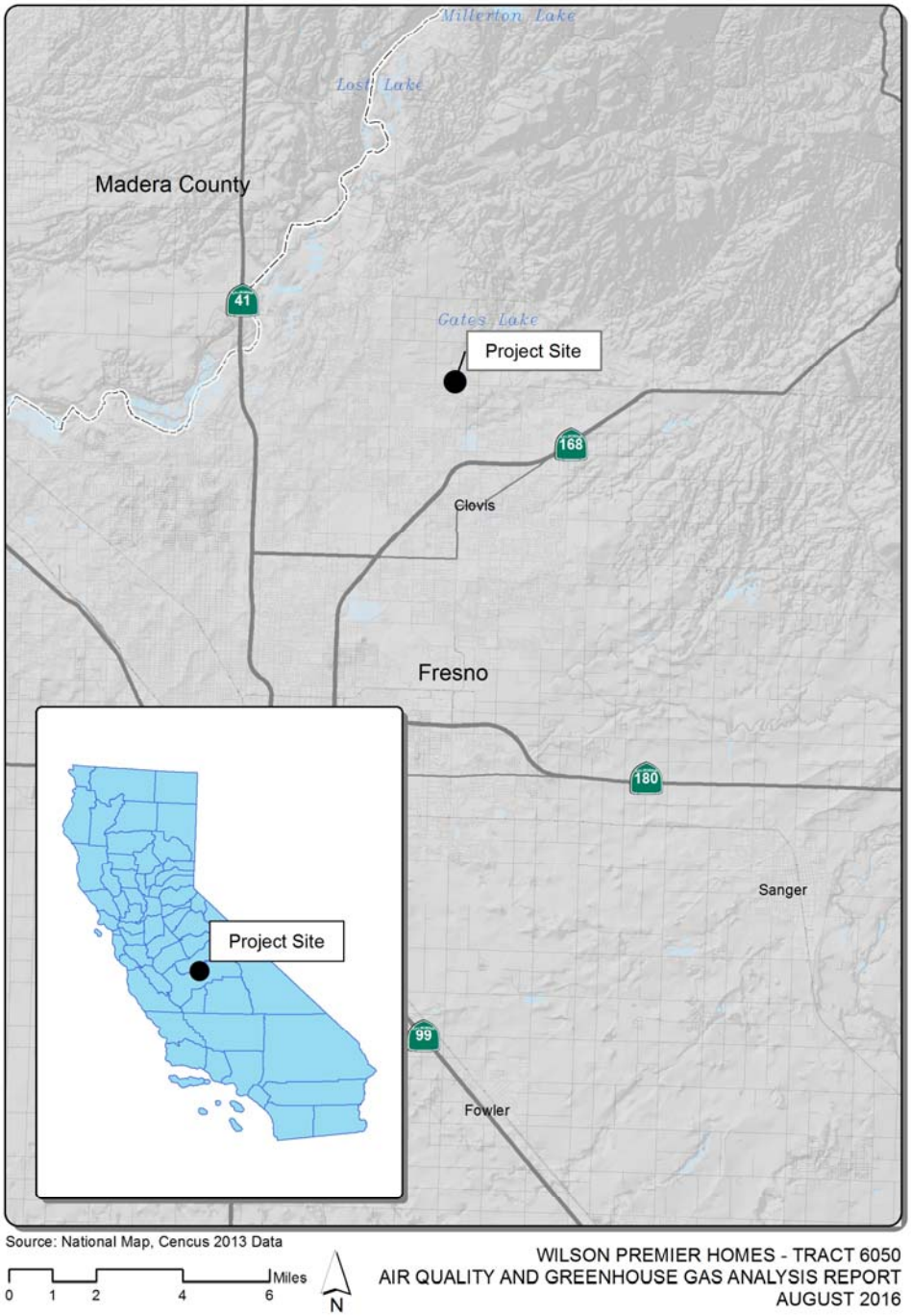

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Figure 2: Local Vicinity Map

Figure 2
Local Vicinity Map With Aerial Base

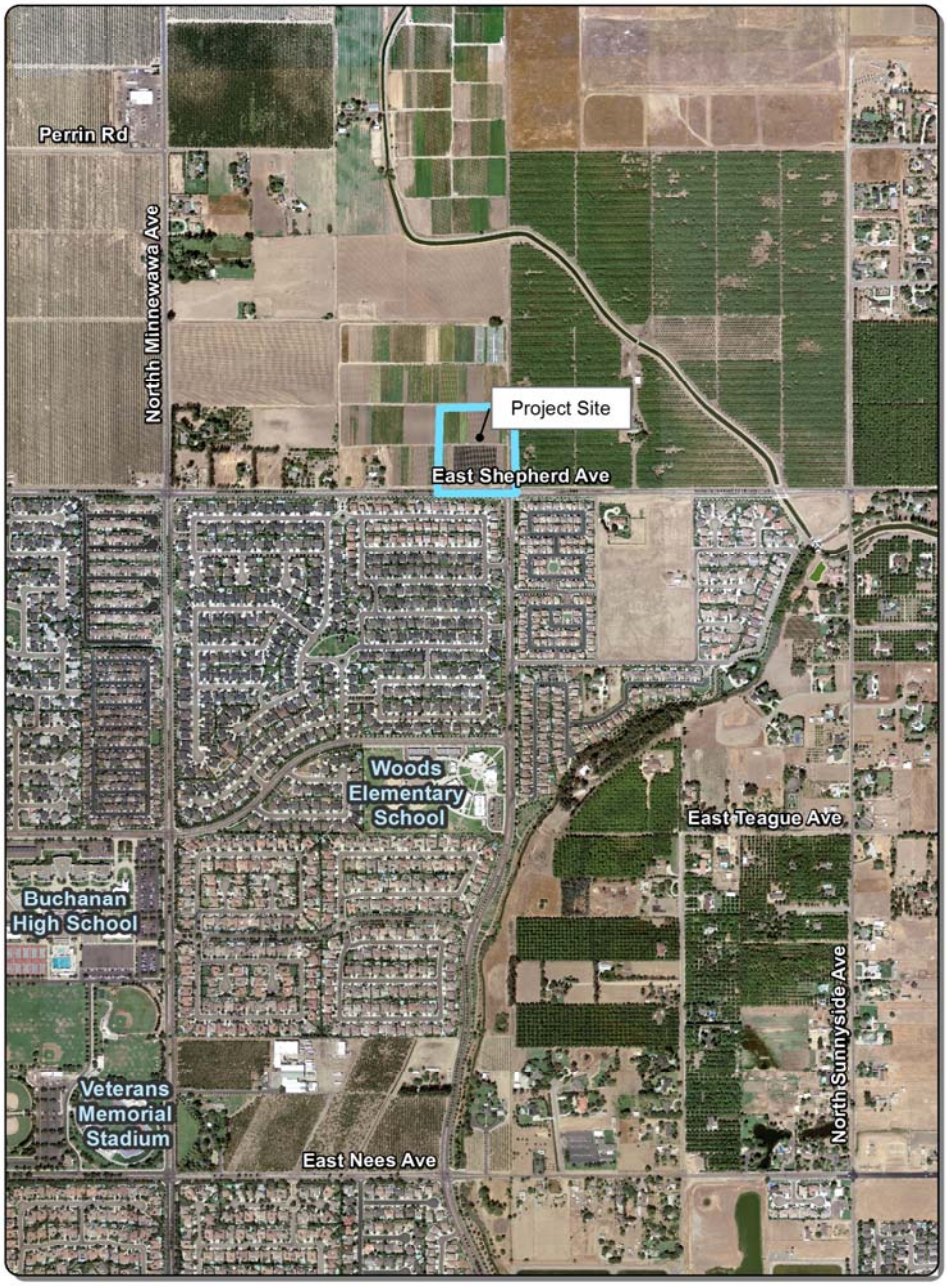

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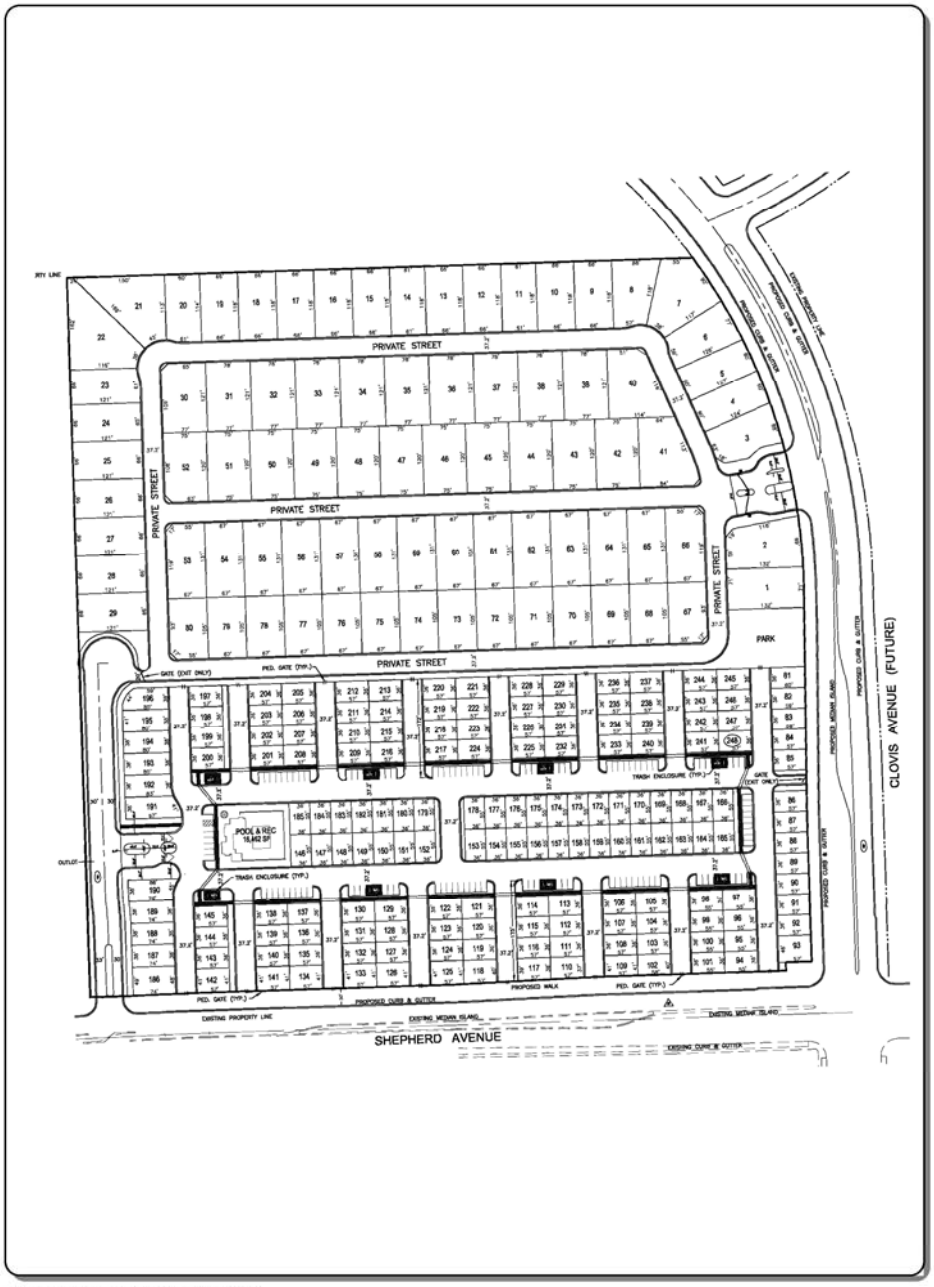
Figure 3: Tract Map

Figure 3
Site Plan



Source: Harbour & Associates, 2016

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SECTION 2: AIR QUALITY SETTING

2.1 - Environmental Setting

Air quality impacts are both local and regional. Regional and local air quality is impacted by topography, dominant airflows, atmospheric inversions, location, and season. The project is located in the San Joaquin Valley Air Basin which experiences some of the challenging environmental conditions for air quality in the nation. The following section describes these conditions as they pertain to the Air Basin. The information in this section is primarily from the District's GAMAQI (SJVAPCD 2015a).

2.1.1 - San Joaquin Valley Air Basin

Topography

The topography of a region is important for air quality because mountains can block airflow that would help disperse pollutants, and can channel air from upwind areas that transports pollutants to downwind areas. The SJVAPCD covers the entirety of the Air Basin. The Air Basin is generally shaped like a bowl. It is open in the north and is surrounded by mountain ranges on all other sides. The Sierra Nevada mountains are along the eastern boundary (8,000 to 14,000 feet in elevation), the Coast Ranges are along the western boundary (3,000 feet in elevation), and the Tehachapi Mountains are along the southern boundary (6,000 to 8,000 feet in elevation).

Climate

The climate is important for air quality because of differences in the atmosphere's ability to trap pollutants close to the ground, which creates adverse air quality; inversely, the atmosphere's ability to rapidly disperse pollutants over a wide area prevents high concentrations from accumulating under different climatic conditions. The Air Basin has an "inland Mediterranean" climate and is characterized by long, hot, dry summers and short, foggy winters. Sunlight can be a catalyst in the formation of some air pollutants (such as ozone); the Air Basin averages over 260 sunny days per year.

Inversion layers are significant in determining pollutant concentrations. Concentration levels can be related to the amount of mixing space below the inversion. Temperature inversions that occur on the summer days are usually encountered 2,000 to 2,500 feet above the valley floor. In winter months, overnight inversions occur 500 to 1,500 feet above the valley floor.

Dominant airflows provide the driving mechanism for transport and dispersion of air pollution. The mountains surrounding the Air Basin form natural horizontal barriers to the dispersion of air contaminants. The wind generally flows south-southeast through the valley, through the Tehachapi Pass and into the Southeast Desert Air Basin portion of Kern County. As the wind moves through the Air Basin, it mixes with the air pollution generated locally, generally transporting air pollutants from the north to the south in the summer and in a reverse flow in the winter.

The winds and unstable air conditions experienced during the passage of winter storms result in periods of low pollutant concentrations and excellent visibility. Between winter storms, high

pressure and light winds allow cold moist air to pool on the SJV floor. This creates strong low-level temperature inversions and very stable air conditions, which can lead to Tule fog. Wintertime conditions favorable to fog formation are also conditions favorable to high concentrations of PM2.5 and PM10.

2.2 - Regulatory Setting

Air pollutants are regulated to protect human health and for secondary effects such as visibility and building soiling. The Clean Air Act of 1970 tasks the United States Environmental Protection Agency (EPA) with setting air quality standards. The State of California also sets air quality standards, which are in some cases more stringent than federal standards, in addition to addressing additional pollutants. The following section describes these federal and state standards and the health effects of the regulated pollutants.

2.2.1 - Clean Air Act

Congress established much of the basic structure of the Clean Air Act (CAA) in 1970, and made major revisions in 1977 and 1990. Six common air pollutants (also known as criteria pollutants) are addressed in the CAA: particulate matter, ground-level ozone, carbon monoxide, sulfur oxides, nitrogen oxides, and lead. The EPA labels these pollutants as criteria air pollutants because they are regulated by developing human health-based and/or environmentally based criteria (science-based guidelines), which sets permissible levels. The set of limits based on human health are called primary standards. Another set of limits intended to prevent environmental and property damage are called secondary standards (EPA 2014). The federal standards are called National Ambient Air Quality Standards (NAAQS). The air quality standards provide benchmarks for determining whether air quality is healthy at specific locations and whether development activities will cause or contribute to a violation of the standards. The criteria pollutants are:

- Ozone
- Nitrogen dioxide (NO_2)
- Lead
- Particulate matter (PM_{10} and $PM_{2.5}$)
- Carbon monoxide (CO)
- Sulfur dioxide

The federal standards were set to protect public health, including that of sensitive individuals; thus, the EPA is tasked with updating the standards as more medical research is available regarding the health effects of the criteria pollutants. Primary federal standards are the levels of air quality necessary, with an adequate margin of safety, to protect the public health (ARB 2016).

2.2.2 - California Clean Air Act

The California Legislature enacted the California Clean Air Act (CCAA) in 1988 to address air quality issues of concern not adequately addressed by the federal CAA at the time. California's air quality problems were and continue to be some of the most severe in the nation, and required additional actions beyond the federal mandates. The California Air Resources Board (ARB) administers California Ambient Air Quality Standards (CAAQS) for the 10 air pollutants designated in the CCAA. The 10 state air pollutants are the six federal standards listed above as well visibility-reducing particulates, hydrogen sulfide, sulfates, and vinyl chloride. The EPA authorized California to adopt its

own regulations for motor vehicles and other sources that are more stringent than similar federal regulations implementing the CAA. Generally, the planning requirements of the CCAA are less stringent than the federal CAA; therefore, consistency with the CAA will also demonstrate consistency with the CCAA.

2.2.3 - Toxic Air Contaminants

A toxic air contaminant (TAC) is defined as an air pollutant that may cause or contribute to an increase in mortality or serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations. There are no ambient air quality standards for TAC emissions. TACs are regulated in terms of health risks to individuals and populations exposed to the pollutants. The 1990 Clean Air Act Amendments significantly expanded the EPA's authority to regulate hazardous air pollutants (HAP). Section 112 of the Clean Air Act lists 187 hazardous air pollutants to be regulated by source category. Authority to regulate these pollutants was delegated to individual states. ARB and local air districts regulate TACs and HAPs in California.

2.2.4 - Air Pollutant Description and Health Effects

The federal and state ambient air quality standards, relevant effects, properties, and sources of the pollutants are summarized in Table 1.

Table 1: Description of Air Pollutants

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
Ozone	1 Hour	0.09 ppm	—	Irritate respiratory system; reduce lung function; breathing pattern changes; reduction of breathing capacity; inflame and damage cells that line the lungs; make lungs more susceptible to infection; aggravate asthma; aggravate other chronic lung diseases; cause permanent lung damage; some immunological changes; increased mortality risk; vegetation and property damage.	Ozone is a photochemical pollutant as it is not emitted directly into the atmosphere, but is formed by a complex series of chemical reactions between volatile organic compounds (VOC), NO_x, and sunlight. Ozone is a regional pollutant that is generated over a large area and is transported and spread by the wind.	Ozone is a secondary pollutant; thus, it is not emitted directly into the lower level of the atmosphere. The primary sources of ozone precursors (VOC and NO_x) are mobile sources (on-road and off-road vehicle exhaust).
	8 Hour	0.070 ppm	0.070 ppm[f]			
Carbon monoxide (CO)	1 Hour	20 ppm	35 ppm	Ranges depending on exposure: slight headaches; nausea; aggravation of angina pectoris (chest pain) and other aspects of coronary heart disease; decreased exercise tolerance in persons with peripheral vascular disease and lung disease; impairment of central nervous system functions; possible increased risk to fetuses; death.	CO is a colorless, odorless, toxic gas. CO is somewhat soluble in water; therefore, rainfall and fog can suppress CO conditions. CO enters the body through the lungs, dissolves in the blood, replaces oxygen as an attachment to hemoglobin, and reduces available oxygen in the blood.	CO is produced by incomplete combustion of carbon-containing fuels (e.g., gasoline, diesel fuel, and biomass). Sources include motor vehicle exhaust, industrial processes (metals processing and chemical manufacturing), residential wood burning, and natural sources.
	8 Hour	9.0 ppm	9 ppm			
Nitrogen dioxide[b] (NO_2)	1 Hour	0.18 ppm	0.100 ppm	Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; contribution to atmospheric discoloration; increased visits to hospital for respiratory illnesses.	During combustion of fossil fuels, oxygen reacts with nitrogen to produce nitrogen oxides—NO_x (NO, NO_2, NO_3, N_2O, N_2O_3, N_2O_4, and N_2O_5). NO_x is a precursor to ozone, PM_{10}, and $PM_{2.5}$ formation. NO_x can react with compounds to form nitric acid and related small particles and result in PM-related health effects.	NO_x is produced in motor vehicle internal combustion engines and fossil fuel-fired electric utility and industrial boilers. Nitrogen dioxide (NO_2) forms quickly from NO_x emissions. NO_2 concentrations near major roads can be 30 to 100 percent higher than those at monitoring stations.
	Annual	0.030 ppm	0.053 ppm			

Table 1 (cont.): Description of Air Pollutants

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
Sulfur dioxide[c] (SO_2)	1 Hour	0.25 ppm	0.075 ppm	Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma. Some population-based studies indicate that the mortality and morbidity effects associated with fine particles show a similar association with ambient sulfur dioxide levels. It is not clear whether the two pollutants act synergistically or one pollutant alone is the predominant factor.	Sulfur dioxide is a colorless, pungent gas. At levels greater than 0.5 ppm, the gas has a strong odor, similar to rotten eggs. Sulfur oxides (SO_x) include sulfur dioxide and sulfur trioxide. Sulfuric acid is formed from sulfur dioxide, which can lead to acid deposition and can harm natural resources and materials. Although sulfur dioxide concentrations have been reduced to levels well below state and federal standards, further reductions are desirable because sulfur dioxide is a precursor to sulfate and PM_{10}.	Human caused sources include fossil-fuel combustion, mineral ore processing, and chemical manufacturing. Volcanic emissions are a natural source of sulfur dioxide. The gas can also be produced in the air by dimethylsulfide and hydrogen sulfide. Sulfur dioxide is removed from the air by dissolution in water, chemical reactions, and transfer to soils and ice caps. The sulfur dioxide levels in the State are well below the maximum standards.
	3 Hour	—	0.5 ppm			
	24 Hour	0.04 ppm	0.14 (for certain areas)			
	Annual	—	0.030 ppm (for certain areas)			
Particulate matter (PM_{10})	24 hour	50 µg/m^3	150 µg/m^3	• Short-term exposure (hours/days): irritation of the eyes, nose, throat; coughing; phlegm; chest tightness; shortness of breath; aggravates existing lung disease, causing asthma attacks and acute bronchitis; those with heart disease can suffer heart attacks and arrhythmias. • Long-term exposure: reduced lung function; chronic bronchitis; changes in lung morphology; death.	Suspended particulate matter is a mixture of small particles that consist of dry solid fragments, droplets of water, or solid cores with liquid coatings. The particles vary in shape, size, and composition. PM_{10} refers to particulate matter that is between 2.5 and 10 microns in diameter, (1 micron is one-millionth of a meter). $PM_{2.5}$ refers to particulate matter that is 2.5 microns or less in diameter, about one-thirtieth the size of the average human hair.	Stationary sources include fuel or wood combustion for electrical utilities, residential space heating, and industrial processes; construction and demolition; metals, minerals, and petrochemicals; wood products processing; mills and elevators used in agriculture; erosion from tilled lands; waste disposal; and recycling. Mobile or transportation-related sources are from vehicle exhaust and road dust. Secondary particles form from reactions in the atmosphere.
	Mean	20 µg/m^3	—			
Particulate matter ($PM_{2.5}$)	24 Hour	—	35 µg/m^3			
	Annual	12 µg/m^3	12.0 µg/m^3			
Visibility-reducing particles	8 Hour	See note below[d]				

Table 1 (cont.): Description of Air Pollutants

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
Sulfates	24 Hour	25 µg/m^3	—	(a) Decrease in ventilatory function; (b) aggravation of asthmatic symptoms; (c) aggravation of cardio-pulmonary disease; (d) vegetation damage; (e) degradation of visibility; (f) property damage.	The sulfate ion is a polyatomic anion with the empirical formula SO_4^{2-}. Sulfates occur in combination with metal and/or hydrogen ions. Many sulfates are soluble in water.	Sulfates are particulates formed through the photochemical oxidation of sulfur dioxide. In California, the main source of sulfur compounds is combustion of gasoline and diesel fuel.
Lead[e]	30-day	1.5 µg/m^3	—	Lead accumulates in bones, soft tissue, and blood and can affect the kidneys, liver, and nervous system. It can cause impairment of blood formation and nerve conduction, behavior disorders, mental retardation, neurological impairment, learning deficiencies, and low IQ.	Lead is a solid heavy metal that can exist in air pollution as an aerosol particle component. Leaded gasoline was used in motor vehicles until around 1970. Lead concentrations have not exceeded state or federal standards at any monitoring station since 1982.	Lead ore crushing, lead-ore smelting, and battery manufacturing are currently the largest sources of lead in the atmosphere in the United States. Other sources include dust from soils contaminated with lead-based paint, solid waste disposal, and crustal physical weathering.
	Quarter	—	1.5 µg/m^3			
	Rolling 3-month average	—	0.15 µg/m^3			
Vinyl chloride[e]	24 Hour	0.01 ppm	—	Short-term exposure to high levels of vinyl chloride in the air causes central nervous system effects, such as dizziness, drowsiness, and headaches. Epidemiological studies of occupationally exposed workers have linked vinyl chloride exposure to development of a rare cancer, liver angiosarcoma, and have suggested a relationship between exposure and lung and brain cancers.	Vinyl chloride, or chloroethene, is a chlorinated hydrocarbon and a colorless gas with a mild, sweet odor. In 1990, ARB identified vinyl chloride as a toxic air contaminant and estimated a cancer unit risk factor.	Most vinyl chloride is used to make polyvinyl chloride plastic and vinyl products, including pipes, wire and cable coatings, and packaging materials. It can be formed when plastics containing these substances are left to decompose in solid waste landfills. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites.
Hydrogen sulfide	1 Hour	0.03 ppm	—	High levels of hydrogen sulfide can cause immediate respiratory arrest. It can irritate the eyes and respiratory tract and cause headache, nausea, vomiting, and cough. Long exposure can cause pulmonary edema.	Hydrogen sulfide (H_2S) is a flammable, colorless, poisonous gas that smells like rotten eggs.	Manure, storage tanks, ponds, anaerobic lagoons, and land application sites are the primary sources of hydrogen sulfide. Anthropogenic sources include the combustion of sulfur-containing fuels (oil and coal).
Volatile organic		There are no state or		Although health-based standards	Reactive organic gases (ROG), or	Indoor sources of VOCs include

Table 1 (cont.): Description of Air Pollutants

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
compounds (VOC)		federal standards for VOCs because they are not classified as criteria pollutants.		have not been established for VOCs, health effects can occur from exposures to high concentrations because of interference with oxygen uptake. In general, concentrations of VOCs are suspected to cause eye, nose, and throat irritation; headaches; loss of coordination; nausea; and damage to the liver, the kidneys, and the central nervous system. Many VOCs have been classified as toxic air contaminants.	VOCs, are defined as any compound of carbon—excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate—that participates in atmospheric photochemical reactions. Although there are slight differences in the definition of ROG and VOCs, the two terms are often used interchangeably.	paints, solvents, aerosol sprays, cleansers, tobacco smoke, etc. Outdoor sources of VOCs are from combustion and fuel evaporation. A reduction in VOC emissions reduces certain chemical reactions that contribute to the formulation of ozone. VOCs are transformed into organic aerosols in the atmosphere, which contribute to higher PM_{10} and lower visibility.
Diesel particulate matter (DPM)		There are no ambient air quality standards for DPM.		Some short-term (acute) effects of DPM exposure include eye, nose, throat, and lung irritation, coughs, headaches, light-headedness, and nausea. Studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems. Human studies on the carcinogenicity of DPM demonstrate an increased risk of lung cancer, although the increased risk cannot be clearly attributed to diesel exhaust exposure.	DPM is a source of $PM_{2.5}$—diesel particles are typically 2.5 microns and smaller. Diesel exhaust is a complex mixture of thousands of particles and gases that is produced when an engine burns diesel fuel. Organic compounds account for 80 percent of the total particulate matter mass, which consists of compounds such as hydrocarbons and their derivatives, and polycyclic aromatic hydrocarbons and their derivatives. Fifteen polycyclic aromatic hydrocarbons are confirmed carcinogens, a number of which are found in diesel exhaust.	Diesel exhaust is a major source of ambient particulate matter pollution in urban environments. Typically, the main source of DPM is from combustion of diesel fuel in diesel-powered engines. Such engines are in on-road vehicles such as diesel trucks, off-road construction vehicles, diesel electrical generators, and various pieces of stationary construction equipment.

Table 1 (cont.): Description of Air Pollutants

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources

Notes:
ppm = parts per million (concentration) $\mu g/m^3$ = micrograms per cubic meter Annual = Annual Arithmetic Mean 30-day = 30-day average Quarter = Calendar quarter

[a] Federal standard refers to the primary national ambient air quality standard, or the levels of air quality necessary, with an adequate margin of safety to protect the public health. All standards listed are primary standards except for 3 Hour SO_2, which is a secondary standard. A secondary standard is the level of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[b] To attain the 1-hour NO_2 national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 parts per billion (ppb) (0.100 ppm).

[c] On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

[d] Visibility-reducing particles: In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are “extinction of 0.23 per kilometer” and “extinction of 0.07 per kilometer” for the statewide and Lake Tahoe Air Basin standards, respectively.

[e] The ARB has identified lead and vinyl chloride as ‘toxic air contaminants’ with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

f The EPA Administrator approved a revised 8-hour ozone standard of 0.07 ppb on October 1, 2015. The new standard will go into effect 60 days after publication of the Final Rule in the Federal Register. The Final Rule was published in the Federal Register on October 26, 2015 and became effective on December 28, 2015.

Source of effects, properties, and sources: South Coast Air Quality Management District 2007; California Environmental Protection Agency 2002; California Air Resources Board 2009a; U.S. Environmental Protection Agency 2003, 2009, 2009b, 2010, 2011, and 2012a; National Toxicology Program 2011a and 2011b.
Source of standards: California Air Resources Board 2013a.

Several pollutants listed in Table 1 are not addressed in this analysis. Analysis of lead is not included in this report because no new sources of lead emissions are anticipated with the project. Visibility-reducing particles are not explicitly addressed in this analysis because particulate matter is addressed as PM_{10} and $PM_{2.5}$. No components of the project would result in vinyl chloride or hydrogen sulfide emissions in any substantial quantity.

Toxic Air Contaminants Health Effects

A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations. The California Almanac of Emissions and Air Quality presents the relevant concentration and cancer risk data for the ten (10) TACs that pose the most substantial health risk in California based on available data. The ten TACs are acetaldehyde, benzene, 1.3-butadiene, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, perchloroethylene, and diesel particulate matter (DPM).

Some studies indicate that DPM poses the greatest health risk among the TACs listed above. A 10-year research program (ARB 1998) demonstrated that DPM from diesel-fueled engines is a human carcinogen and that chronic (long-term) inhalation exposure to DPM poses a chronic health risk. In addition to increased risk of lung cancer, exposure to diesel exhaust can have other health effects. Diesel exhaust can irritate the eyes, nose, throat, and lungs, and it can cause a cough, headaches, lightheadedness, and nausea. Diesel exhaust is a major source of fine particulate pollution as well, and studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems.

DPM differs from other TACs in that it is not a single substance, but a complex mixture of hundreds of substances. Although DPM is emitted by diesel-fueled, internal combustion engines, the composition of the emissions varies, depending on: engine type, operating conditions, fuel composition, lubricating oil, and whether an emission control system is present. Unlike the other TACs, however, no ambient monitoring data are available for DPM because no routine measurement method currently exists. The ARB has made preliminary concentration estimates based on a DPM exposure method. This method uses the ARB emissions inventory's PM_{10} database, ambient PM_{10} monitoring data, and the results from several studies to estimate concentrations of DPM.

Health risks attributable to the top 10 TACs listed above are available from the ARB as part of its California Almanac of Emissions and Air Quality—2009 Edition (ARB 2009b). As shown therein for data collected at the First Street air monitoring station in Fresno, cancer risks attributable to all of the listed TACs above with the exception of DPM have declined about 70 percent from the mid-1990s to 2007. Risks associated with DPM emissions are provided only for the year 2000 and have not been updated in the Almanac. Although more recent editions of the Almanac do not provide estimated risk, they do provide emission inventories for DPM for later years. The 2013 Almanac provides emission inventory trends for DPM from 2000 through 2035. The same Almanac reports that DPM emissions were reduced in the SJVAB from 16 tons per day in 2000 to 11 tons per day in 2010, a 31 percent decrease. DPM emissions in the San Joaquin Valley are projected to decrease to six tons per day by 2015, a 62 percent reduction from year 2000 levels. ARB predicts a reduction to

three tons per day by 2035, which would be an 81 percent reduction from year 2000 levels. Continued implementation of the ARB's Diesel Risk Reduction Plan is expected to provide continued reductions in DPM through 2020 and beyond through regulations on this source (ARB 2013b).

Asbestos

Asbestos is the name given to a number of naturally occurring fibrous silicate minerals that have been mined for their useful properties such as thermal insulation, chemical and thermal stability, and high tensile strength. The three most common types of asbestos are chrysotile, amosite, and crocidolite. Chrysotile, also known as white asbestos, is the most common type of asbestos found in buildings. Chrysotile makes up approximately 90 to 95 percent of all asbestos contained in buildings in the United States. Exposure to asbestos is a health threat; exposure to asbestos fibers may result in health issues such as lung cancer, mesothelioma (a rare cancer of the thin membranes lining the lungs, chest, and abdominal cavity), and asbestosis (a non-cancerous lung disease that causes scarring of the lungs). Exposure to asbestos can occur during demolition or remodeling of buildings that were constructed prior to the 1977 ban on asbestos for use in buildings. Exposure to naturally occurring asbestos can occur during soil-disturbing activities in areas with deposits present.

2.3 - Existing Air Quality Conditions

The local air quality can be evaluated by reviewing relevant air pollution concentrations near the project area. Table 2 summarizes 2012 through 2015 published monitoring data, which is the most recent four-year period available. The table displays data from the Clovis-N Villa Avenue monitoring station (located approximately 3.9 miles southwest of the project site) and the Fresno-Garland monitoring station (located approximately 6.8miles southwest of the project site). The data shows that during the past few years, the project area has exceeded the standards for ozone (state and national), PM_{10} (state), and $PM_{2.5}$ (national). The data in the table reflects the concentration of the pollutants in the air, measured using air monitoring equipment. This differs from emissions, which are calculations of a pollutant being emitted over a certain period. No recent monitoring data for Fresno County or the San Joaquin Valley Air Basin was available for SO_2. Generally, no monitoring is conducted for pollutants that are no longer likely to exceed ambient air quality standards.

Table 2: Air Quality Monitoring Summary

Air Pollutant	Averaging Time	Item	2013	2014	2015
Ozone[1]	1 Hour	Max 1 Hour (ppm)	**0.123**	**0.118**	**0.116**
		Days > State Standard (0.09 ppm)	13	26	18
	8 Hour	Max 8 Hour (ppm)	**0.104**	**0.103**	**0.099**
		Days > State Standard (0.07 ppm)	66	84	51
		Days > National Standard (0.075 ppm)	38	56	28

Table 2 (cont.): Air Quality Monitoring Summary

Air Pollutant	Averaging Time	Item	2013	2014	2015
Carbon monoxide (CO)[2]	8 Hour	Max 8 Hour (ppm)	ID	ID	ND
		Days > State Standard (9.0 ppm)	0	0	ND
		Days > National Standard (9 ppm)	0	0	ND
Nitrogen dioxide (NO_2)[1]	Annual	Annual Average (ppm)	ID	ID	ID
	1 Hour	Max 1 Hour (ppm)	0.0540	0.0590	0.0590
		Days > State Standard (0.18 ppm)	0	0	0
Sulfur dioxide (SO_2)	Annual	Annual Average (ppm)	ND	ND	ND
	24 Hour	Max 24 Hour (ppm)	ND	ND	ND
		Days > State Standard (0.04 ppm)	ND	ND	ND
Inhalable coarse particles (PM_{10})[1]	Annual	Annual Average (µg/m^3)	ID	ID	ID
	24 hour	24 Hour (µg/m^3)	**121.9**	**84.3**	**67.4**
		Days > State Standard (50 µg/m^3)	ID	ID	ID
		Days > National Standard (150 µg/m^3)	0	0	ID
Fine particulate matter ($PM_{2.5}$)[1]	Annual	Annual Average (µg/m^3)	ID	ID	**13.0**
	24 Hour	24 Hour (µg/m^3)	**103.4**	**72.8**	**80.7**
		Days > National Standard (35 µg/m^3)	25.1	40.4	12.4

Notes:
> = exceed
ppm = parts per million
µg/m^3 = micrograms per cubic meter
ID = insufficient data
ND = no data
max = maximum
Bold = exceedance
State Standard = California Ambient Air Quality Standard
National Standard = National Ambient Air Quality Standard
[1] Clovis-North Villa Avenue
[2] Fresno-Garland Station
Source: California Air Resources Board 2016a: Clovis-N Villa Avenue Station and Fresno-Garland Station.

The health impacts of the various air pollutants of concern can be presented in a number of ways. The clearest of these is comparable with the state and federal ozone standards. If concentrations are below the standard, it is safe to say that no health impact would occur to anyone. When concentrations exceed the standard, impacts will vary based on the amount by which the standard is exceeded. The EPA developed the Air Quality Index (AQI) as an easy-to-understand measure of health impacts compared with concentrations in the air. Table 3 provides a description of the health impacts of ozone at different concentrations.

Table 3: Air Quality Index and Health Effects from Ozone

Air Quality Index/ 8-hour Ozone Concentration	Health Effects Description
AQI – 51-100—Moderate Concentration 55-70ppb	**Sensitive Groups**: Children and people with asthma are the groups most at risk.
	Health Effects Statements: Unusually sensitive individuals may experience respiratory symptoms.
	Cautionary Statements: Unusually sensitive people should consider limiting prolonged outdoor exertion.
AQI – 101-150 – Unhealthy for Sensitive Groups Concentration 71-85 ppb	**Sensitive Groups**: Children and people with asthma are the groups most at risk.
	Health Effects Statements: Increasing likelihood of respiratory symptoms and breathing discomfort in active children and adults and people with respiratory disease, such as asthma.
	Cautionary Statements: Active children and adults, and people with respiratory disease, such as asthma, should limit prolonged outdoor exertion.
AQI – 151-200 – Unhealthy Concentration 86-105 ppb	**Sensitive Groups**: Children and people with asthma are the groups most at risk.
	Health Effects Statements: Greater likelihood of respiratory symptoms and breathing difficulty in active children and adults and people with respiratory disease, such as asthma; possible respiratory effects in general population.
	Cautionary Statements: Active children and adults, and people with respiratory disease, such as asthma, should avoid prolonged outdoor exertion; everyone else, especially children, should limit prolonged outdoor exertion.
AQI – 201-250 – Very Unhealthy Concentration 106-153 ppb	**Sensitive Groups**: Children and people with asthma are the groups most at risk.
	Health Effects Statements: Increasingly severe symptoms and impaired breathing likely in active children and adults and people with respiratory disease, such as asthma; increasing likelihood of respiratory effects in general population.
	Cautionary Statements: Active children and adults, and people with respiratory disease, such as asthma, should avoid all outdoor exertion; everyone else, especially children, should limit outdoor exertion.
Source: Air Now 2015.	

The AQI for the 8-hour ozone standard was changed to reflect the new NAAQS of 70 ppb. Based on the AQI scale for the 8-hour ozone standard, the project area experienced no days in the last three years that would be categorized as unhealthy (AQI 151-200), and 78 days that were unhealthy for sensitive groups (AQI 101-150), violating the standard as measured at the Clovis-North Villa Avenue monitoring station. The highest reading was 104 parts per billion (ppb) in 2013, compared with the

85-ppb cutoff point for unhealthful for sensitive groups (AQI 150), but lower than the 115-ppb cutoff point for unhealthy (AQI 200).

The other nonattainment pollutant of concern is $PM_{2.5}$. An AQI of 100 or lower is considered moderate and would be triggered by a 24-hour average concentration of 12.1 to 35.4 µg/m^3. An AQI of 101 to 105 or 35.5-55.4 µg/m^3 is considered unhealthful for sensitive groups. When concentrations reach this amount, it is considered an exceedance of the federal $PM_{2.5}$ standard. The monitoring station nearest the project exceeded the standard on 102 days in the three-year period spanning from 2013 to 2015. People with respiratory or heart disease, the elderly and children are the groups most at risk. Unusually sensitive people should consider reducing prolonged or heavy exertion. The AQI of 151 to 200 is classified as unhealthy for everyone. This AQI classification is triggered when $PM_{2.5}$ concentration ranges from 55.4 to 150.4 µg/m^3. At this concentration, there is increasing likelihood of respiratory symptoms in sensitive individuals, aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease, and in the elderly. People with respiratory or heart disease, the elderly, and children should limit prolonged exertion. Everyone else should reduce prolonged or heavy exertion. The highest concentration recorded at the Clovis-North Villa Avenue monitoring station in the last three years was 103.4 µg/m^3 (AQI 195) in 2013. At this concentration, increased aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease and the elderly, and increased respiratory effects in general population would occur. People with respiratory or heart disease, the elderly, and children should avoid prolonged exertion; everyone else should limit prolonged exertion when the AQI exceeds this level. The relationship of the AQI to health effects in shown Table 4.

Table 4: Air Quality Index and Health Effects of Particulate Pollution

Air Quality Index/ PM2.5 Concentration	Health Effects Description
AQI – 51-100—Moderate Concentration 12.1-35.4 µg/m^3	**Sensitive Groups**: Some people who may be unusually sensitive to particle.
	Health Effects Statements: Unusually sensitive people should consider reducing prolonged or heavy exertion.
	Cautionary Statements: Unusually sensitive people: Consider reducing prolonged or heavy exertion. Watch for symptoms such as coughing or shortness of breath. These are signs to take it easier.
AQI – 101-150 – Unhealthy for Sensitive Groups Concentration 35.5-55.4 µg/m^2	**Sensitive Groups**: Sensitive groups include people with heart or lung disease, older adults, children and teenagers.
	Health Effects Statements: Increasing likelihood of respiratory symptoms in sensitive individuals, aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease and the elderly.
	Cautionary Statements: Sensitive groups: Reduce prolonged or heavy exertion. It is OK to be active outside, but take more breaks and do less intense activities. Watch for symptoms such as coughing or shortness of breath. People with asthma should follow their asthma action plans and keep quick relief medicine handy. If you have heart disease: Symptoms such as palpitations, shortness of breath, or unusual fatigue may indicate a serious problem. If you have any of

Air Quality Index/ PM2.5 Concentration	Health Effects Description
	these, contact your health care provider.
AQI – 151-200 – Unhealthy Concentration 55.5-150.4 µg/m^3	**Sensitive Groups**: Everyone
	Health Effects Statements: Increased aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease and the elderly; increased respiratory effects in general population.
	Cautionary Statements: Sensitive groups: Avoid prolonged or heavy exertion. Consider moving activities indoors or rescheduling. Everyone else: Reduce prolonged or heavy exertion. Take more breaks during outdoor activities.
AQI – 201-300 – Very Unhealthy Concentration 150.5-250.4 µg/m3	**Sensitive Groups**: Everyone
	Health Effects Statements: Significant aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease and the elderly; significant increase in respiratory effects in general population.
	Cautionary Statements: Sensitive groups: Avoid all physical activity outdoors. Move activities indoors or reschedule to a time when air quality is better. Everyone else: Avoid prolonged or heavy exertion. Consider moving activities indoors or rescheduling to a time when air quality is better.

2.3.1 - Attainment Status

The EPA and the ARB designate air basins where ambient air quality standards are exceeded as "nonattainment" areas. If standards are met, the area is designated as an "attainment" area. If there is inadequate or inconclusive data to make a definitive attainment designation, they are considered "unclassified." National nonattainment areas are further designated as marginal, moderate, serious, severe, or extreme as a function of deviation from standards.

Each standard has a different definition, or "form" of what constitutes attainment, based on specific air quality statistics. For example, the federal 8-hour CO standard is not to be exceeded more than once per year; therefore, an area is in attainment of the CO standard if no more than one 8-hour ambient air monitoring values exceeds the threshold per year. In contrast, the federal annual $PM_{2.5}$ standard is met if the three-year average of the annual average $PM_{2.5}$ concentration is less than or equal to the standard.

The current attainment designations for the Air Basin are shown in Table 5. The Air Basin is designated as nonattainment for ozone, PM_{10}, and $PM_{2.5}$.

Table 5: San Joaquin Valley Air Basin Attainment Status

Pollutant	State Status	National Status
Ozone — One Hour	Nonattainment/Severe	No Standard
Ozone — Eight Hour	Nonattainment	Nonattainment/Extreme

Pollutant	State Status	National Status
Carbon monoxide	Attainment/Unclassified	Merced, Madera, and Kings Counties are unclassified; others are in Attainment
Nitrogen dioxide	Attainment	Attainment/Unclassified
Sulfur dioxide	Attainment	Attainment/Unclassified
PM_{10}	Nonattainment	Attainment
$PM_{2.5}$	Nonattainment	Nonattainment
Lead	Attainment	No Designation/Classification
Source of State status: California Air Resources Board (ARB 2013a). Source of National status: U.S. Environmental Protection Agency (EPA 2016).		

2.4 - Air Quality Plans and Regulations

Air pollutants are regulated at the national, state, and air basin or county level, and each agency has a different level of regulatory responsibility: the EPA regulates at the national level, the ARB at the state level, and the SJVAPCD at the air basin level.

The EPA is responsible for national and interstate air pollution issues and policies. The EPA sets national vehicle and stationary source emission standards, oversees approval of all State Implementation Plans, provides research and guidance for air pollution programs, and sets National Ambient Air Quality Standards - also known as the federal standards described earlier.

A State Implementation Plan is a document prepared by each state describing existing air quality conditions and measures that will be followed to attain and maintain federal standards. The State Implementation Plan for the State of California is administered by the ARB, which has overall responsibility for statewide air quality maintenance and air pollution prevention. California's State Implementation Plan incorporates individual federal attainment plans for regional air districts; specifically, an air district prepares their federal attainment plan, which is sent to ARB to be approved and incorporated into the California State Implementation Plan. Federal attainment plans include the technical foundation for understanding air quality (e.g., emission inventories and air quality monitoring), control measures and strategies, and enforcement mechanisms. The most recent attainment plans for the SJVAPCD are the 2007 8-hour Ozone Attainment Plan and the 2012 $PM_{2.5}$ Plan for the 2006 $PM_{2.5}$ standard. The EPA Administrator signed the Final Rule revising the 8-hour ozone standard to 70 ppm on October 1, 2015. The Air Basin is designated as an extreme ozone nonattainment area for the EPA's 2008 8-hour ozone standard of 75 ppb. The plan to address this standard was adopted by the SJVAPCD on June 16, 2016. The ARB was scheduled to approve the attainment demonstration plan for the San Joaquin Valley on July 21, 2016. The plan for areas designated extreme nonattainment must demonstrate attainment of the new ozone standard by July 20, 2032. The 2016 Ozone Plan predicts attainment of the 2008 standard by 2031.

Areas designated non-attainment must develop air quality plans and regulations to achieve standards by specified dates, depending on the severity of the exceedances. For much of the country, implementation of federal motor vehicle standards and compliance with federal permitting requirements for industrial sources are adequate to attain air quality standards on schedule. For

many areas of California, however, additional state and local regulation is required to achieve the standards. Regulations adopted by California are described below.

2.4.1 - California Regulations

Low-Emission Vehicle Program

The ARB first adopted Low-Emission Vehicle (LEV) program standards in 1990. These first LEV standards ran from 1994 through 2003. LEV II regulations, running from 2004 through 2010, represent continuing progress in emission reductions. As the State's passenger vehicle fleet continues to grow and more sport utility vehicles and pickup trucks are used as passenger cars rather than work vehicles, the more stringent LEV II standards were adopted to provide reductions necessary for California to meet federally mandated clean air goals outlined in the 1994 State Implementation Plan. In 2012, ARB adopted the LEV III amendments to California's Low-Emission Vehicle (LEV) regulations. These amendments, also known as the Advanced Clean Car Program include more stringent emission standards for model years 2017 through 2025 for both criteria pollutants and GHGs for new passenger vehicles (ARB 2012a).

On-Road Heavy-Duty Vehicle Program

The ARB has adopted standards for emissions from various types of new on-road heavy-duty vehicles. Section 1956.8, Title 13, California Code of Regulations contains California's emission standards for on-road heavy-duty engines and vehicles, as well as test procedures. ARB has also adopted programs to reduce emissions from in-use heavy-duty vehicles including the Heavy-Duty Diesel Vehicle Idling Reduction Program, the Heavy-Duty Diesel In-Use Compliance Program, the Public Bus Fleet Rule and Engine Standards, and the School Bus Program and others (ARB 2013b).

ARB Regulation for In-Use Off-Road Diesel Vehicles

On July 26, 2007, the ARB adopted a regulation to reduce DPM and nitrous oxides (NO_x) emissions from in-use (existing) off-road heavy-duty diesel vehicles in California. Such vehicles are used in construction, mining, and industrial operations. The regulation limits idling to no more than five consecutive minutes, requires reporting and labeling, and requires disclosure of the regulation upon vehicle sale. The ARB is enforcing that part of the rule with fines up to $10,000 per day for each vehicle in violation. Performance requirements of the rule are based on a fleet's average NO_x emissions, which can be met by replacing older vehicles with newer, cleaner vehicles or by applying exhaust retrofits. The regulation was amended in 2010 to delay the original timeline of the performance requirements, making the first compliance deadline January 1, 2014 for large fleets (over 5,000 horsepower), 2017 for medium fleets (2,501-5,000 horsepower), and 2019 for small fleets (2,500 horsepower or less).

The latest amendments to the Truck and Bus regulation became effective on December 31, 2014. The amended regulation requires diesel trucks and buses that operate in California to be upgraded to reduce emissions. Newer heavier trucks and buses must meet PM filter requirements beginning January 1, 2012. Lighter and older heavier trucks must be replaced starting January 1, 2015. By January 1, 2023, nearly all trucks and buses will need to have 2010 model year engines or equivalent.

The regulation applies to nearly all privately and federally owned diesel fueled trucks and buses and to privately and publicly owned school buses with a gross vehicle weight rating (GVWR) greater than 14,000 pounds. The regulation provides a variety of flexibility options tailored to fleets operating low-use vehicles, fleets operating in selected vocations like agricultural and construction, and small fleets of three or fewer trucks (ARB 2015b).

ARB Airborne Toxic Control Measure for Asbestos

In July 2001, the ARB approved an Air Toxic Control Measure for construction, grading, quarrying, and surface mining operations to minimize emissions of naturally occurring asbestos. The regulation requires application of best management practices to control fugitive dust in areas known to have naturally occurring asbestos and requires notification to the local air district prior to commencement of ground-disturbing activities. The measure establishes specific testing, notification and engineering controls prior to grading, quarrying, or surface mining in construction zones where naturally occurring asbestos is located on projects of any size. There are additional notification and engineering controls at work sites larger than one acre in size. These projects require the submittal of a "Dust Mitigation Plan" and approval by the air district prior to the start of a project.

Construction sometimes requires the demolition of existing buildings where construction occurs. Buildings often include materials containing asbestos, but no demolition is associated with this project. However, asbestos is also found in a natural state, known as naturally occurring asbestos. Exposure and disturbance of rock and soil that naturally contain asbestos can result in the release of fibers into the air and consequent exposure to the public. Asbestos most commonly occurs in ultramafic rock that has undergone partial or complete alteration to serpentine rock (serpentinite) and often contains chrysotile asbestos. In addition, another form of asbestos, tremolite, can be found associated with ultramafic rock, particularly near faults. Sources of asbestos emissions include unpaved roads or driveways surfaced with ultramafic rock, construction activities in ultramafic rock deposits, or rock quarrying activities where ultramafic rock is present.

The ARB has an Air Toxic Control Measure for construction, grading, quarrying, and surface mining operations, requiring the implementation of mitigation measures to minimize emissions of asbestos-laden dust. The measure applies to road construction and maintenance, construction and grading operations, and quarries and surface mines when the activity occurs in an area where naturally occurring asbestos is likely to be found. Areas are subject to the regulation if they are identified on maps published by the Department of Conservation as ultramafic rock units or if the Air Pollution Control Officer or owner/operator has knowledge of the presence of ultramafic rock, serpentine, or naturally occurring asbestos on the site. The measure also applies if ultramafic rock, serpentine, or asbestos is discovered during any operation or activity. Review of the Department of Conservation maps indicates that no ultramafic rock has been found near Clovis.

Diesel Risk Reduction Plan

The ARB's Diesel Risk Reduction Plan has led to the adoption of new state regulatory standards for all new on-road, off-road, and stationary diesel-fueled engines and vehicles to reduce DPM emissions by about 90 percent overall from year 2000 levels. The projected emission benefits associated with the full implementation of this plan, including federal measures, are reductions in

DPM emissions and associated cancer risks of 75 percent by 2010, and 85 percent by 2020 (ARB 2000).

2.4.2 - San Joaquin Valley Air Pollution Control District

The District is responsible for controlling emissions primarily from stationary sources. The District, in coordination with the eight countywide transportation agencies, is also responsible for developing, updating, and implementing air quality attainment plans for the Air Basin. The District also has roles under CEQA.

Ozone Plans

The Air Basin is designated nonattainment of state and federal health-based air quality standards for ozone. To meet Clean Air Act requirements for the one-hour ozone standard, the District adopted an Extreme Ozone Attainment Demonstration Plan in 2004, with an attainment date of 2010. Although the EPA revoked the federal 1-hour ozone standard effective June 15, 2005 and replaced it with an 8-hour standard, the requirement to submit a plan for that standard remained in effect for the San Joaquin Valley.

The planning requirements for the 1-hour plan remain in effect until replaced by a federal 8-hour ozone attainment plan. On March 8, 2010, the EPA approved the 2004 Extreme Ozone Attainment Demonstration Plan, including revisions to the plan, effective April 7, 2010. However, the Air Basin failed to attain the standard in 2010 and was subject to a $29-million Clean Air Act penalty. The penalty is being collected through an additional $12 motor vehicle registration surcharge for each passenger vehicle registered in the Air Basin that will be applied to pollution reduction programs in the region. The District also instituted a more robust ozone episodic program to reduce emissions on days with the potential to exceed the ozone standards.

The EPA originally classified the Air Basin as serious nonattainment for the 1997 federal 8-hour ozone standard with an attainment date of 2013. On April 30, 2007, the District's Governing Board adopted the 2007 Ozone Plan, which contained analysis showing a 2013 attainment target to be infeasible. The 2007 Ozone Plan details the plan for achieving attainment on schedule with an "extreme nonattainment" deadline of 2024. At its adoption of the 2007 Ozone Plan, the District also requested a reclassification to extreme nonattainment. ARB approved the plan in June 2007, and the EPA approved the request for reclassification to extreme nonattainment on April 15, 2010.

The 2007 Ozone Plan contains measures to reduce ozone and particulate matter precursor emissions to bring the Basin into attainment with the federal 8-hour ozone standard. The 2007 Ozone Plan calls for a 75 percent reduction of NO_x and a 25 percent reduction of reactive organic gases (ROG). Figure 4: San Joaquin Valley NOx Emissions Forecast

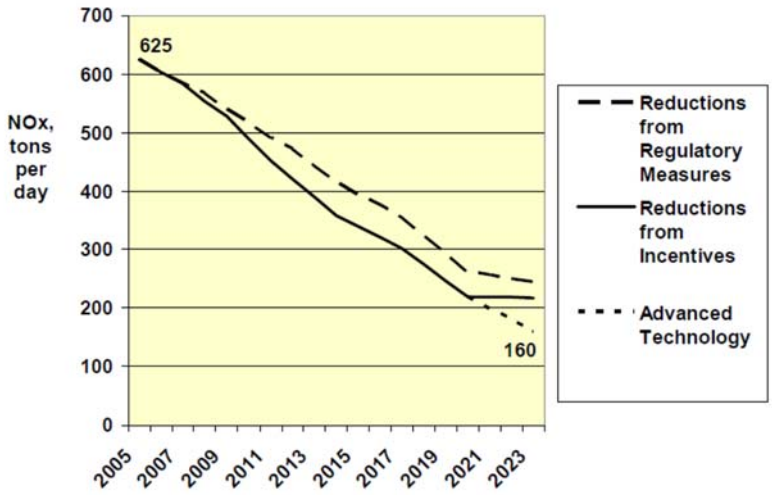
displays the anticipated NO_x reductions attributed in the 2007 Ozone Plan (Source: 2007 Ozone Plan). The plan, with innovative measures and a "dual path" strategy, assures expeditious attainment of the federal 8-hour ozone standard for all Air Basin residents. The District Governing Board adopted the 2007 Ozone Plan on April 30, 2007. The ARB approved the plan on June 14, 2007. The 2007 Ozone Plan requires yet to be determined "Advanced Technology" to achieve additional reductions after 2021, in order to attain the standard at all monitoring stations in the Air

Basin by 2024 as allowed for areas designated extreme nonattainment by the federal Clean Air Act (CAA).

The Air Basin is designated as an extreme ozone nonattainment area for the EPA's 2008 8-hour ozone standard of 75 ppb. The District's Governing Board approved the 2016 Plan for the 2008 8-Hour Ozone Standard on June 16, 2016. The comprehensive strategy in this plan will reduce NOx emissions by over 60 percent between 2012 and 2031, and will bring the San Joaquin Valley into attainment of EPA's 2008 8-hour ozone standard as expeditiously as practicable, no later than December 31, 2031. To ensure that the plan is approvable with the necessary contingencies, the plan includes a "Black Box" that will require implementation of new advanced technologies and controls prior to the 2031 deadline.

State ozone standards do not have an attainment deadline but require implementation of all feasible measures to achieve attainment at the earliest date possible. This is achieved through compliance with the federal deadlines and control measure requirements.

Figure 4: San Joaquin Valley NOx Emissions Forecast



Particulate Matter Plans

The Air Basin was designated nonattainment of state and federal health-based air quality standards for PM_{10}. The Air Basin is also designated nonattainment of state and federal standards for $PM_{2.5}$.

To meet Clean Air Act requirements for the PM_{10} standard, the District adopted a PM_{10} Attainment Demonstration Plan (Amended 2003 PM_{10} Plan and 2006 PM_{10} Plan), which has an attainment date of 2010. The District adopted the 2007 PM_{10} Maintenance Plan in September 2007 to assure the San Joaquin Valley's continued attainment of the EPA's PM_{10} standard. The EPA designated the valley as an attainment/maintenance area for PM_{10} on September 25, 2008. Although the San Joaquin Valley has exceeded the standard since then, those days were considered exceptional events that are not considered a violation of the standard for attainment purposes.

The 2008 $PM_{2.5}$ Plan builds upon the comprehensive strategy adopted in the 2007 Ozone Plan to bring the Air Basin into attainment of the 1997 national standards for $PM_{2.5}$. The EPA has identified NO_x and SO_2as precursors that must be addressed in air quality plans for the 1997 $PM_{2.5}$ standards.

The 2008 $PM_{2.5}$ Plan is a continuation of the District's strategy to improve the air quality in the Air Basin. The EPA issued final approval of the 2008 $PM_{2.5}$ Plan on November 9, 2011, which became effective on January 9, 2012. The EPA approved the emissions inventory, the reasonably available control measures/reasonably available control technology demonstration, reasonable further progress demonstration, attainment demonstration and associated air quality modeling, and the transportation conformity motor vehicle emissions budgets. The EPA also granted California's request to extend the attainment deadline for the San Joaquin Valley to April 5, 2015 and approved commitments to measures and reductions by the District and the ARB. Finally, it disapproved the State Implementation Plan's contingency provisions and issued a protective finding for transportation conformity determinations.

In December 2012, the District adopted the 2012 $PM_{2.5}$ Plan to bring the San Joaquin Valley into attainment of the EPA's 2006 24-hour $PM_{2.5}$ standard of 35 $\mu g/m^3$. The ARB approved the District's 2012 $PM_{2.5}$ Plan for the 2006 standard at a public hearing on January 24, 2013 (SJVAPCD 2012a). This plan seeks to bring the Valley into attainment with the standard by 2019, with the expectation that most areas will achieve attainment before that time.

The 2015 Plan for the 1997 $PM_{2.5}$ Standard approved by the District Governing Board on April 16, 2015 – will bring the Valley into attainment of EPA's 1997 $PM_{2.5}$ standard as expeditiously as practicable, but no later than December 31, 2020. The plan was required to request reclassification to Serious nonattainment and to extend the attainment date from 2018 to 2020 (SJVAPCD 2015b).

SJVAPCD Rules and Regulations

The SJVAPCD rules and regulations that may apply to projects that will occur during buildout of the project include, but are not limited to the following:

Rule 4102 – Nuisance. The purpose of this rule is to protect the health and safety of the public, and applies to any source operation that emits or may emit air contaminants or other materials.

Rule 4601 – Architectural Coatings. The purpose of this rule is to limit Volatile Organic Compounds (VOC) emissions from architectural coatings. Emissions are reduced by limits on VOC content and providing requirements on coatings storage, cleanup, and labeling.

Rule 4641 – Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations. The purpose of this rule is to limit VOC emissions from asphalt paving and maintenance operations. If asphalt paving will be used, then the paving operations will be subject to Rule 4641.

Rule 4901 – Wood-Burning Fireplaces and Wood-Burning Heaters. The purposes of this rule are to limit emissions of carbon monoxide and particulate matter from wood-burning fireplaces, wood-burning heaters, and outdoor wood-burning devices, and to establish a public education program to reduce wood-burning emissions. All development that includes wood-burning devices are subject to this rule.

Rule 4902 – Residential Water Heaters. In 2009, the District amended Rule 4902 to strengthen the rule by lowering the limit to 10 ng/J for new or replacement water heaters, and to a limit of 14 ng/J

for instantaneous water heaters. Retailer compliance dates ranged from 2010 to 2012, depending on the unit type.

Regulation VIII – Fugitive PM_{10} Prohibitions. Rules 8011-8081 are designed to reduce PM_{10} emissions (predominantly dust/dirt) generated by human activity, including construction and demolition activities, road construction, bulk materials storage, paved and unpaved roads, carryout and trackout, etc. All development projects that involve soil disturbance are subject to at least one provision of the Regulation VIII series of rules.

Rule 9510 – Indirect Source Review. This rule reduces the impact of NO_x and PM_{10} emissions from growth within the Air Basin. The rule places application and emission reduction requirements on development projects meeting applicability criteria in order to reduce emissions through on-site mitigation, off-site District-administered projects, or a combination of the two. This project must comply with Rule 9510 because it would develop more than 50 residential dwelling units.

CEQA

The District has three roles under CEQA:

1. *Lead Agency*: Responsible for preparing environmental analyses for its own projects (adoption of rules, regulations, or plans) or permit projects filed with the District where the District has primary approval authority over the project.
2. *Responsible Agency*: The discretionary authority of a responsible agency is more limited than a lead agency; having responsibility for mitigating or avoiding only the environmental effects of those parts of the project which it decides to approve, carry out, or finance. The District defers to the lead agency for preparation of environmental documents for land use projects that also have discretionary air quality permits, unless no document is prepared by the lead agency and potentially significant impacts related to the permit are possible. The District regularly submits comments on documents prepared by lead agencies to ensure that District concerns are addressed.
3. *Commenting Agency*: The District reviews and comments on air quality analyses prepared by other public agencies (such as the project).

The District also provides guidance and thresholds for CEQA air quality and GHG analyses. The result of this guidance, as well as state regulations to control air pollution, is an overall improvement in the Air Basin. In particular, the District's 2015 GAMAQI states the following:

1. The District's Air Quality Attainment Plans include measures to promote air quality elements in county and city general plans as one of the primary indirect source programs. The general plan is the primary long range planning document used by cities and counties to direct development. Since air districts have no authority over land use decisions, it is up to cities and counties to ensure that their general plans help achieve air quality goals. Section 65302.1 of the California Government Code requires cities and counties in the San Joaquin Valley to amend appropriate elements of their general plans to include data, analysis, comprehensive goals, policies, and feasible implementation strategies to improve air quality in their next housing element revisions.

2. The Air Quality Guidelines for General Plans (AQGGP), adopted by the District in 1994 and amended in 2005, is a guidance document containing goals and policy examples that cities and counties may want to incorporate into their General Plans to satisfy Section 65302.1. When adopted in a general plan and implemented, the suggestions in the AQGGP can reduce vehicle trips and miles traveled and improve air quality. The specific suggestions in the AQGGP are voluntary. The District strongly encourages cities and counties to use their land use and transportation planning authority to help achieve air quality goals by adopting the suggested policies and programs.

2.4.3 - Local

The City of Clovis adopted its 2014 General Plan in August 2014. The City's applicable air quality goals and policies from the Air Quality Element and Circulation Element are listed below.

City of Clovis Air Quality Goals and Policies

Air Quality Element

- **Goal 1:** A local environment that is protected from air pollution and emissions.
- **Policy 1.1: Land use and transportation.** Reduce greenhouse gas and other local pollutant emissions through mixed use and transit-oriented development and well-designed transit, pedestrian, and bicycle systems.
- **Policy 1.2: Sensitive land uses.** Prohibit the future siting of sensitive land uses within the distances of emission sources as defined by the California Air Resources Board, without sufficient mitigation.
- **Policy 1.3: Construction activities.** Encourage the use of best management practices during construction activities to reduce emissions of criteria pollutants as outlined by the San Joaquin Valley Air Pollution Control District (SJVAPCD).
- **Policy 1.6: Alternative fuel infrastructure.** Encourage public and private activity and employment centers to incorporate electric charging and alternative fuel stations.
- **Policy 1.8: Trees.** Maintain or plant trees where appropriate to provide shade, absorb carbon, improve oxygenation, slow stormwater runoff, and reduce the heat island effect.
- **Goal 2:** A region with healthy air quality and lower greenhouse gas emissions.
- **Policy 2.1: Regional coordination.** Support regional efforts to reduce air pollution (criteria air pollutants and greenhouse gas emissions) and collaborate with other agencies to improve air quality at the emission source and reduce vehicle miles traveled.
- **Policy 2.2: Cross-jurisdictional issues.** Collaborate with regional agencies and surrounding jurisdictions to address cross-jurisdictional transportation and air quality issues.
- **Policy 2.6: Innovative mitigation.** Encourage innovative mitigation measures to reduce air quality impacts by coordinating with the SJVAPCD, project applicants, and other interested parties.

Circulation Element

- **Goal 1:** A context-sensitive and "complete streets" transportation network that prioritizes effective connectivity and accommodates a comprehensive range of mobility needs.

- **Policy 1.1: Multimodal network.** The City shall plan, design, and maintain the transportation network to promote safe and convenient travel for all users: pedestrian, bicyclists, transit riders, freight, and motorists.
- **Policy 1.2: Transportation decisions.** Decisions should balance the comfort, convenience, and safety of pedestrian, bicyclists, and motorists.
- **Policy 1.4: Jobs and housing.** Encourage infill development that would provide jobs and services closer to housing, and vice versa, to reduce citywide vehicle miles traveled and effectively utilize the existing transportation infrastructure.
- **Policy 1.5: Neighborhood connectivity.** The transportation network shall provide multimodal access between neighborhoods and neighborhood-serving uses (educational, recreational, or neighborhood commercial uses).
- **Goal 3:** A multimodal transportation network that is safe and comfortable in the context of adjacent neighborhoods.
- **Policy 3.5: Energy and water conservation.** Encourage new development and substantial rehabilitation projects to exceed energy and water conservation and reduction standards set in the California Building Code.
- **Policy 3.9: Connected development.** New development in Urban Centers must fully improve roadway, pedestrian, and bicycle systems within and adjacent to the proposed project and connect to existing urbanized development.
- **Policy 3.11: Right-of-way design.** Design landscaped parkways, medians, and right-of-ways as aesthetic buffers to improve the community's appearance and encourage non-motorized transportation.
- **Goal 5:** A complete system of trails and pathways accessible to all residents.
- **Policy 5.1: Complete street amenities.** Upgrade existing streets and design new streets to include complete street amenities, prioritizing improvements to bicycle and pedestrian connectivity or safety (consistent with the Bicycle Transportation Master Plan and other master plans).
- **Policy 5.3: Pathways.** Encourage pathways and other pedestrian amenities in Urban Centers and new development 10 acres or larger.
- **Policy 5.5: Pedestrian access.** Require sidewalks, paths, and crosswalks to provide access to schools, parks, and other activity centers to provide general pedestrian connectivity throughout the city.

City of Clovis General Plan Program EIR

The General Plan Program Environmental Impact Report (PEIR) includes the following mitigation measures and standard conditions to reduce significant air quality impacts:

- **SC-1:** Prior to project approval, each applicant for individual, site-specific developments under the General Plan shall comply with the San Joaquin Valley Air Pollution Control District rules and regulations, including, without limitation, Indirect Source Rule 9510. The applicant shall document, to the City's reasonable satisfaction, its compliance with this standard condition.

Mitigation Measures

3-1: Prior to issuance of any construction permits, development project applicants shall prepare and submit to the City of Clovis Planning Division a technical assessment evaluating

potential project construction-related air quality impacts. The evaluation shall be prepared in conformance with San Joaquin Valley Air Pollution Control District (SJVAPCD) methodology in assessing air quality impacts. If construction-related criteria air pollutants are determined to have the potential to exceed the SJVAPCD adopted thresholds of significance, as identified in the Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI), the City of Clovis Planning Division shall require that applicants for new development projects incorporate mitigation measures to reduce air pollutant emissions during construction activities to below these thresholds. These identified measures shall be incorporated into all appropriate construction documents (e.g., construction management plans) submitted to the City and shall be verified by the City's Planning Division.

3-2: Prior to discretionary approval, applicants for phased development projects (i.e., construction would overlap operation/opening of the project) involving residential land uses shall coordinate with the San Joaquin Valley Air Pollution Control District (SJVAPCD) or the City of Clovis in conjunction with the SJVAPCD in preparation of a health risk assessment (HRA) for construction activities. If the HRA identifies risk impacts that exceed the standards as determined by the SVJAPCD at the time the project is considered, it shall identify measures to reduce these impacts to below these standards. Recommended measures may include those identified in Mitigation Measure 3-1. The recommendations of the HRA shall be incorporated into all construction management plans which shall be submitted to the City and verified by the City's Planning Division.

3-3: Prior to project approval, development project applicants shall prepare and submit to the City of Clovis Planning Division a technical assessment evaluating potential project operation phase-related air quality impacts. The evaluation shall be prepared in conformance with San Joaquin Valley Air Pollution Control District (SJVAPCD) methodology in assessing air quality impacts. If operational-related criteria air pollutants are determined to have the potential to exceed the SJVAPCD adopted thresholds of significance – as identified in the Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI) – the City of Clovis Planning Division shall require that applicants for new development projects incorporate mitigation measures to reduce air pollutant emissions during operational activities. The identified measures shall be included as part of the Standard Conditions of Approval.

3-4: Prior to project approval, the City of Clovis Planning Division shall require applicants for individual, site-specific developments to consider establishing a Voluntary Emission Reduction Agreement (VERA) with the San Joaquin Valley Air Pollution Control District. Under this agreement, project proponents may enter into an agreement where funds are used to develop and implement emission reduction projects.

3-5: Prior to discretionary project approval, the City of Clovis shall evaluate new development proposals for sensitive land uses (e.g., residential, schools, day care centers) within the City for potential incompatibilities with regard to the California Air Resources Board's Air Quality and Land Use Handbook: A Community Health Perspective (April 2005). Applicants for sensitive land uses that are within the recommended buffer distances shall submit a health risk assessment (HRA) to the City of Clovis prior to future discretionary project approval. The HRA shall be prepared in accordance with policies and procedures of the State Office of Environmental Health Hazard Assessment (OEHHA) and the San Joaquin Valley Air Pollution

Control District. The latest OEHHA guidelines shall be used for the analysis, including age sensitivity factors, breathing rates, and body weights appropriate for children age 0 to 6 years. If the HRA shows that the incremental cancer risk exceeds ten in one million (10E-06), the appropriate noncancer hazard index exceeds 1.0, or if the PM_{10} or $PM_{2.5}$ ambient air quality standard increment exceeds 2.5 µg/m3, the applicant will be required to identify and demonstrate that mitigation measures are capable of reducing potential cancer and non-cancer risks to an acceptable level (i.e., below ten in one million or a hazard index of 1.0), including appropriate enforcement mechanisms.

3-6: Prior to discretionary project approval, applicants for industrial or warehousing land uses shall coordinate with the San Joaquin Valley Air Pollution Control District (SJVAPCD) or the City of Clovis in conjunction with the SJVAPCD to determine the appropriate level of health risk assessment (HRA) required. All HRAs shall be submitted to the City of Clovis.

2.4.4 - Existing Sources of Toxic Emissions

No existing sources were identified that exceed ARB recommendations in its Air Quality Land Use Handbook for siting sensitive land uses impact the project.

2.4.5 - ARB Air Quality Land Use Handbook

Table 6 lists the following ARB advisory recommendations that address the issue of siting "sensitive land uses" near specific sources of air pollution (ARB 2005):

- High traffic freeways and roads
- Distribution centers
- Rail yards
- Ports
- Refineries
- Chrome plating facilities
- Dry cleaners
- Large gas dispensing facilities

The analysis examines the area around the site to determine if potential sources of TAC emissions may impact the project, based on the ARB recommended screening distances.

Table 6: Recommendations on Siting New Sensitive Land Uses

Source Category	Advisory Recommendations
Freeways and High-Traffic Roads	Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day.
Distribution Centers	Avoid siting new sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units (TRUs) per day, or where TRU unit operations exceed 300 hours per week) Take into account the configuration of existing distribution centers and avoid locating residences and other new sensitive land uses near entry and exit points.
Rail Yards	Avoid siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard. Within one mile of a rail yard, consider possible siting limitations and mitigation approaches.

Source Category	Advisory Recommendations
Ports	Avoid siting of new sensitive land uses immediately downwind of ports in the most heavily impacted zones. Consult local air districts or the ARB on the status of pending analyses of health risks.
Refineries	Avoid siting new sensitive land uses immediately downwind of petroleum refineries. Consult with local air districts and other local agencies to determine an appropriate separation.
Chrome Platers	Avoid siting new sensitive land uses within 1,000 feet of a chrome plater.
Dry Cleaners Using Perchloroethylene	Avoid siting new sensitive land uses within 300 feet of any dry cleaning operation. For operations with two or more machines, provide 500 feet. For operations with three or more machines, consult with the local air district. Do not site new sensitive land uses in the same building with perchloroethylene dry cleaning operations.
Gasoline Dispensing Facilities	Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50-foot separation is recommended for typical gas dispensing facilities.
Note: These recommendations are advisory. Land use agencies have to balance other considerations, including housing and transportation needs, economic development priorities, and other quality of life issues.	

SECTION 3: CLIMATE CHANGE SETTING

3.1 - Climate Change

Climate change is a change in the average weather of the earth that is measured by alterations in wind patterns, storms, precipitation, and temperature. These changes are assessed using historical records of temperature changes occurring in the past, such as during previous ice ages. Many of the concerns regarding climate change use this data to extrapolate a level of statistical significance, specifically focusing on temperature records from the last 150 years (the Industrial Age) that differ from previous climate changes in rate and magnitude.

The United Nations Intergovernmental Panel on Climate Change (IPCC) constructed several emission trajectories of GHGs needed to stabilize global temperatures and climate change impacts. In its Fourth Assessment Report, the IPCC predicted that the global mean temperature change from 1990 to 2100, given six scenarios, could range from 1.1 degrees Celsius (°C) to 6.4°C. Regardless of analytical methodology, global average temperatures and sea levels are expected to rise under all scenarios (IPCC 2007a). The report also concluded that "[w]arming of the climate system is unequivocal," and that "[m]ost of the observed increase in global average temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic greenhouse gas concentrations."

An individual project cannot generate enough GHG emissions to cause a discernible change in global climate. However, the project participates in the potential for global climate change by its incremental contribution of GHGs – and when combined with the cumulative increase of all other sources of GHGs – constitute potential influences on global climate change.

3.1.1 - Consequences of Climate Change in California

In California, climate change may result in consequences such as the following (from CCCC 2006 and Moser et al. 2009):

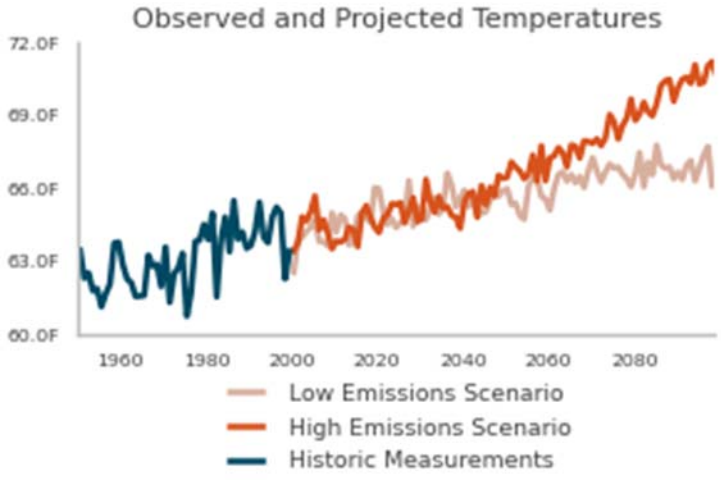
- **A reduction in the quality and supply of water from the Sierra snowpack.** If heat-trapping emissions continue unabated, more precipitation will fall as rain instead of snow, and the snow that does fall will melt earlier, reducing the Sierra Nevada spring snowpack by as much as 70 to 90 percent. This can lead to challenges in securing adequate water supplies. It can also lead to a potential reduction in hydropower.
- **Increased risk of large wildfires.** If rain increases as temperatures rise, wildfires in the grasslands and chaparral ecosystems of southern California are estimated to increase by approximately 30 percent toward the end of the 21st century because more winter rain will stimulate the growth of more plant "fuel" available to burn in the fall. In contrast, a hotter, drier climate could promote up to 90 percent more northern California fires by the end of the century by drying out and increasing the flammability of forest vegetation.
- **Reductions in the quality and quantity of certain agricultural products.** The crops and products likely to be adversely affected include wine grapes, fruit, nuts, and milk.

- **Exacerbation of air quality problems.** If temperatures rise to the medium warming range, there could be 75 to 85 percent more days with weather conducive to ozone formation in Los Angeles and the San Joaquin Valley, relative to today's conditions. This is more than twice the increase expected if rising temperatures remain in the lower warming range. This increase in air quality problems could result in an increase in asthma and other health-related problems.
- **A rise in sea levels resulting in the displacement of coastal businesses and residences.** During the past century, sea levels along California's coast have risen about seven inches. If emissions continue unabated and temperatures rise into the higher anticipated warming range, sea level is expected to rise an additional 22 to 35 inches by the end of the century. Elevations of this magnitude would inundate coastal areas with salt water, accelerate coastal erosion, threaten vital levees and inland water systems, and disrupt wetlands and natural habitats.
- **An increase in temperature and extreme weather events.** Climate change is expected to lead to increases in the frequency, intensity, and duration of extreme heat events and heat waves in California. More heat waves can exacerbate chronic disease or heat-related illness.
- **A decrease in the health and productivity of California's forests.** Climate change can cause an increase in wildfires, an enhanced insect population, and establishment of non-native species.

Consequences of Climate Change in the Clovis Area

Figure 5 displays a chart of measured historical and projected annual average temperatures in the Clovis area. As shown in the figure, temperatures are expected to rise in the low and high greenhouse gas emissions scenarios. The results indicate that temperatures are predicted to increase by 3.7 degrees Fahrenheit (°F) under the low emission scenario and 6.5°F under the high emissions scenario (CalAdapt 2016).

Figure 5: Observed and Projected Temperatures for Climate Change in the City of Clovis Area



Source: CalAdapt 2016

Water Supply

The City of Clovis Public Utilities Department would provide water for the project. The City relies on groundwater and treated surface water for potable water supplies. The availability of surface water and the rate of groundwater recharge could decline if climate change results in reduced snowpack in the Sierra Nevada.

Wildfires

The project site is within an urban area with limited fuels that would be subject to a wildfire. Foothill and mountain areas located to the north and east of the Clovis area subject to wildfire. The potential for increased temperatures and drought conditions due to climate change would result in increased risk from wildfire in those areas.

Human Health Effects of GHG Emissions

Greenhouse gas emissions from development projects would not result in concentrations that would directly impact public health. However, the cumulative effects of GHG emissions on climate change have the potential to cause adverse effects to human health.

In its report, Global Climate Change Impacts in the U.S. (2009), the U.S. Global Change Research Program has analyzed the degree to which impacts on human health are expected to impact the United States.

Potential effects of climate change on public health include:

- Direct Temperature Effects: Climate change may directly affect human health through increases in average temperatures, which are predicted to increase the incidence of heat waves and hot extremes.
- Extreme Events: Climate change may affect the frequency and severity of extreme weather events, such as hurricanes and extreme heat and floods, which can be destructive to human health and well-being.
- Climate–Sensitive Diseases: Climate change may increase the risk of some infectious diseases, particularly those diseases that appear in warm areas and are spread by mosquitoes and other insects, such as malaria, dengue fever, yellow fever, and encephalitis.
- Air Quality: Respiratory disorders may be exacerbated by warming-induced increases in the frequency of smog (ground-level ozone) events and particulate air pollution (EPA 2009a).

Although there could be health effects resulting from changes in the climate and the consequences that can occur, inhalation of GHGs at levels currently in the atmosphere would not result in adverse health effects, with the exception of ozone and aerosols (particulate matter). The potential health effects of ozone and particulate matter are discussed in criteria pollutant analyses. At very high indoor concentrations (not at levels existing outside), carbon dioxide, methane, sulfur hexafluoride, and some chlorofluorocarbons can cause suffocation as the gases can displace oxygen (CDC 2010 and OSHA 2003).

3.2 - Greenhouse Gases

Gases that trap heat in the atmosphere are referred to as GHGs. The effect is analogous to the way a greenhouse retains heat. Common GHGs include water vapor, carbon dioxide, methane, NO_x, chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, ozone, and aerosols. Natural processes and human activities emit GHGs. The presence of GHGs in the atmosphere affects the earth's temperature. It is believed that emissions from human activities, such as electricity production and vehicle use, have elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations.

Climate change is driven by forcings and feedbacks. Radiative forcing is the difference between the incoming energy and outgoing energy in the climate system. Positive forcing tends to warm the surface while negative forcing tends to cool it. Radiative forcing values are typically expressed in watts per square meter. A feedback is a climate process that can strengthen or weaken a forcing. For example, when ice or snow melts, it reveals darker land underneath which absorbs more radiation and causes more warming. The global warming potential is the potential of a gas or aerosol to trap heat in the atmosphere. The global warming potential of a gas is essentially a measurement of the radiative forcing of a GHG compared with the reference gas, CO_2.

Individual GHG compounds have varying global warming potential and atmospheric lifetimes. CO_2, the reference gas for global warming potential, has a global warming potential of one. The global warming potential of a GHG is a measure of how much a given mass of a GHG is estimated to contribute to global warming. To describe how much global warming a given type and amount of GHG may cause, the carbon dioxide equivalent is used. The calculation of the carbon dioxide equivalent is a consistent methodology for comparing GHG emissions since it normalizes various GHG emissions to a consistent reference gas, CO_2. For example, CH_4's warming potential of 21 indicates that CH_4 has 21 times greater warming effect than CO_2 on a molecule-per-molecule basis. A carbon dioxide equivalent is the mass emissions of an individual GHG multiplied by its global warming potential. GHGs defined by AB 32 (see the Climate Change Regulatory Environment section for a description) include CO_2, CH_4, NO_x, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. They are described in Table 7. A seventh GHG, nitrogen trifluoride (NF_3), was added to Health and Safety Code section 38505(g)(7) as a GHG of concern.

Table 7: Description of Greenhouse Gases

Greenhouse Gas	Description and Physical Properties	Sources
Nitrous oxide	Nitrous oxide (laughing gas) is a colorless GHG. It has a lifetime of 114 years. Its global warming potential is 310.	Microbial processes in soil and water, fuel combustion, and industrial processes.
Methane	Methane is a flammable gas and is the main component of natural gas. It has a lifetime of 12 years. Its global warming potential is 21.	Methane is extracted from geological deposits (natural gas fields). Other sources are landfills, fermentation of manure, and decay of organic matter.

Table 7 (cont.): Description of Greenhouse Gases

Greenhouse Gas	Description and Physical Properties	Sources
Carbon dioxide	Carbon dioxide (CO_2) is an odorless, colorless, natural GHG. Carbon dioxide's global warming potential is 1. The concentration in 2005 was 379 parts per million (ppm), which is an increase of about 1.4 ppm per year since 1960.	Natural sources include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic sources are from burning coal, oil, natural gas, and wood.
Chlorofluorocarbons	These are gases formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms. They are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the earth's surface). Global warming potentials range from 3,800 to 8,100.	Chlorofluorocarbons were synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. They destroy stratospheric ozone. The Montreal Protocol on Substances that Deplete the Ozone Layer prohibited their production in 1987.
Perfluorocarbons	Perfluorocarbons have stable molecular structures and only break down by ultraviolet rays about 60 kilometers above Earth's surface. Because of this, they have long lifetimes, between 10,000 and 50,000 years. Global warming potentials range from 6,500 to 9,200.	Two main sources of perfluorocarbons are primary aluminum production and semiconductor manufacturing.
Sulfur hexafluoride	Sulfur hexafluoride (SF_6) is an inorganic, odorless, colorless, and nontoxic, nonflammable gas. It has a lifetime of 3,200 years. It has a high global warming potential of 23,900.	This gas is manmade and used for insulation in electric power transmission equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas.
Nitrogen trifluoride	Nitrogen trifluoride (NF_3) was added to Health and Safety Code section 38505(g)(7) as a GHG of concern. It has a high global warming potential of 17,200.	This gas is used in electronics manufacture for semiconductors and liquid crystal displays.
Sources: Compiled from a variety of sources, primarily Intergovernmental Panel on Climate Change 2007a and 2007b.		

The State has begun the process of addressing pollutants referred to as short-lived climate pollutants. Senate Bill 605, approved by the governor on September 14, 2014 requires the ARB to complete a comprehensive strategy to reduce emissions of short-lived climate pollutants by January 1, 2016. ARB will complete an emission inventory of these pollutants, identify research needs, identify existing and potential new control measures that offer co-benefits, and coordinate with other state agencies and districts to develop measures. The draft emission inventory and strategy were released on September 30, 2015. No date for final adoption was located.

The short-lived climate pollutants include three main components: black carbon, fluorinated gases, and methane. Fluorinated gases and methane are described in Table 7 and are already included in

the California GHG inventory. Black carbon has not been included in past GHG inventories; however, ARB will include it in its comprehensive strategy (ARB 2015c).

Ozone is another short-lived climate pollutant that will be part of the strategy. Ozone affects evaporation rates, cloud formation, and precipitation levels. Ozone is not directly emitted, so its precursor emissions, volatile organic compounds (VOC) and oxides of nitrogen (NO_x) on a regional scale and CH_4 on a hemispheric scale will be subject of the strategy (ARB 2015c).

Black carbon is a component of fine particulate matter. Black carbon is formed by incomplete combustion of fossil fuels, biofuels, and biomass. Sources of black carbon within a jurisdiction may include exhaust from diesel trucks, vehicles, and equipment, as well as smoke from biogenic combustion. Biogenic combustion sources of black carbon include the burning of biofuels used for transportation, the burning of biomass for electricity generation and heating, prescribed burning of agricultural residue, and natural and unnatural wildfires. Black carbon is not a gas but an aerosol—particles or liquid droplets suspended in air. Black carbon only remains in the atmosphere for days to weeks, whereas other GHGs that can remain in the atmosphere for years. Black carbon can be deposited on snow, where it absorbs sunlight, reduces sunlight reflectivity, and hastens snowmelt. Direct effects include absorbing incoming and outgoing radiation; indirectly, black carbon can also affect cloud reflectivity, precipitation, and surface dimming (cooling).

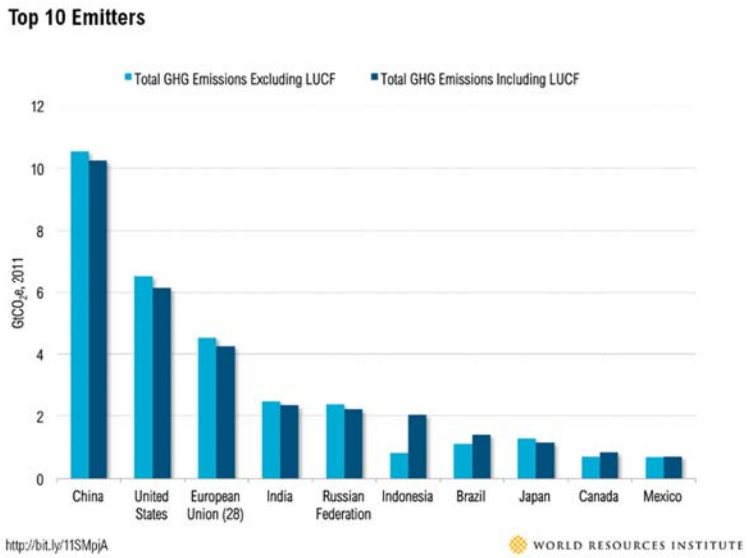
Global warming potentials for black carbon were not defined by the IPCC in its Fourth Assessment Report. The ARB has identified a global warming potential of 3,200 using a 20-year time horizon and 900 using a 100-year time horizon from the IPCC Fifth Assessment. Sources of black carbon are already regulated by ARB, and air district criteria pollutant and toxic regulations that control fine particulate emissions from diesel engines and other combustion sources (ARB 2015c). Additional controls on the sources of black carbon specifically for their GHG impacts beyond those required for toxic and fine particulates are not likely to be needed.

Water vapor is also considered a GHG. Water vapor is an important component of our climate system and is not regulated. Increasing water vapor leads to warmer temperatures, which causes more water vapor to be absorbed into the air. Warming and water absorption increase in a spiraling cycle. Water vapor feedback can also amplify the warming effect of other greenhouse gases, such that the warming brought about by increased carbon dioxide allows more water vapor to enter the atmosphere (NASA 2015b).

3.2.1 - Emissions Inventories

An emissions inventory is a database that lists, by source, the amount of air pollutants discharged into the atmosphere of a geographic area during a given time period. Emissions worldwide were approximately 43,286 million metric tons of carbon dioxide equivalents ($MMTCO_2e$) in 2012. As shown in Figure 6, China was the largest GHG emitter with over 10 billion metric tons of CO_2e, and the United States was the second largest GHG emitter with over 6 billion metric tons of CO_2e (WRI 2014).

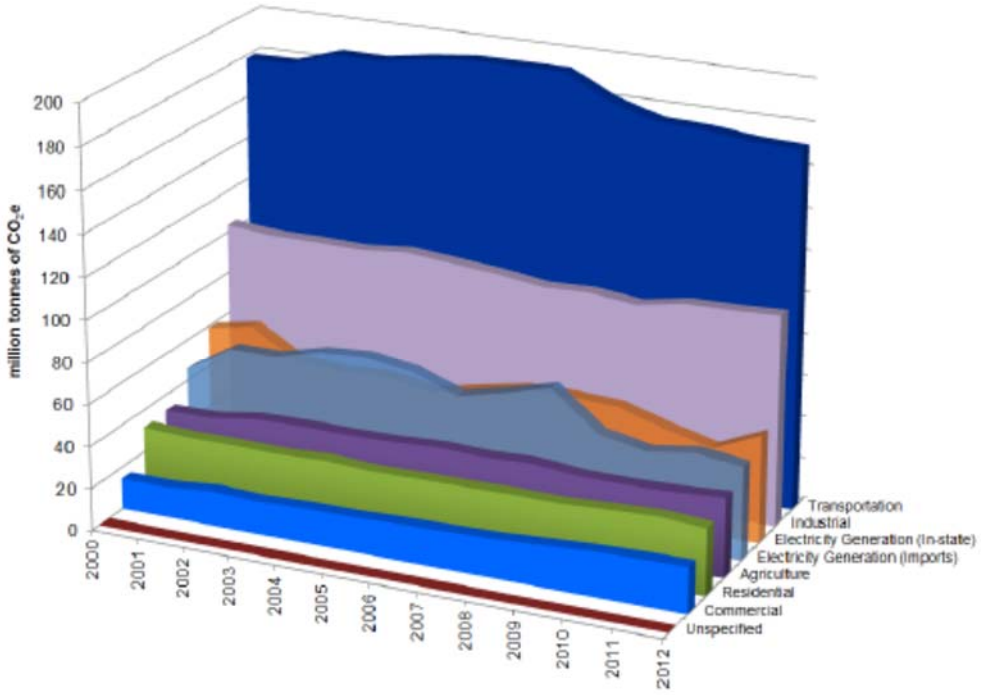
Figure 6: Greenhouse Gas Emissions Trends



Source: WRI 2014.

Figure 7 shows the contributors of GHG emissions in California between years 2000 and 2012 by economic sector. The main contributor was transportation. The second highest sector was industrial, which includes sources from refineries, general fuel use, oil and gas extraction, cement plants, and cogeneration heat output. ARB reported that California's GHG emissions inventory was 459 $MMTCO_2e$ in 2012 (ARB 2014a).

Figure 7: Greenhouse Gas Emission Trends by Sector in California



Source: ARB 2014a.

3.3 - Regulatory Environment

3.3.1 - International

International organizations, such as the ones discussed below, have made substantial efforts to reduce GHGs. Preventing human-induced climate change will require the participation of all nations in solutions to address the issue.

Intergovernmental Panel on Climate Change. In 1988, the United Nations and the World Meteorological Organization established the Intergovernmental Panel on Climate Change. The panel was tasked with assessing the scientific, technical and socioeconomic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts, and options for adaptation and mitigation.

United Nations Framework Convention on Climate Change (Convention). On March 21, 1994, the United States joined a number of countries around the world in signing the Convention. Under the Convention, governments gather and share information on GHG emissions, national policies, and best practices; launch national strategies for addressing GHG emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries; and cooperate in preparing for adaptation to the impacts of climate change.

Kyoto Protocol. The Kyoto Protocol is an international agreement linked to the United Nations Framework Convention on Climate Change. The major feature of the Kyoto Protocol is that it sets binding targets for 37 industrialized countries and the European community for reducing GHG emissions at average of five percent against 1990 levels over the five-year period from 2008–2012. The Convention (as discussed above) encouraged industrialized countries to stabilize emissions; however, the Protocol commits them to do so. Developed countries have contributed more emissions over the last 150 years; therefore, the Protocol places a heavier burden on developed nations under the principle of "common but differentiated responsibilities."

In 2001, President George W. Bush indicated that he would not submit the treaty to the U.S. Senate for ratification, which effectively ended American involvement in the Kyoto Protocol. In December 2009, international leaders met in Copenhagen to address the future of international climate change commitments post-Kyoto. No binding agreement was reached in Copenhagen; however, the Committee identified the long-term goal of limiting the maximum global average temperature increase to no more than 2°C above pre-industrial levels, subject to a review in 2015. The UN Climate Change Committee held additional meetings in Durban, South Africa in November 2011; Doha, Qatar in November 2012; and Warsaw, Poland in November 2013. The meetings are gradually gaining consensus among participants on individual climate change issues.

On September 23, 2014, more than 100 heads of state and government, along with leaders from the private sector and civil society met at the Climate Summit in New York hosted by the United Nations. At the Summit, heads of government, business, and civil society announced actions in areas that would have the greatest impact on reducing emissions, including: climate finance, energy, transport, industry, agriculture, cities, forests, and building resilience.

Parties to the U.N. Framework Convention on Climate Change (UNFCCC) reached a landmark agreement on December 12 in Paris, charting a fundamentally new course in the two-decade-old global climate effort. Culminating in a four-year negotiating round, the new treaty ends the strict differentiation between developed and developing countries that characterized earlier efforts, replacing it with a common framework that commits all countries to put forward their best efforts and to strengthen those efforts in the years ahead. This includes, for the first time, requirements that all parties report regularly on their emissions and implementation efforts, and undergo international review.

The agreement and a companion decision by parties were the key outcomes of the conference, known as the 21st session of the UNFCCC Conference of the Parties, or COP 21. Together, the Paris Agreement and the accompanying COP decision:

- Reaffirm the goal of limiting global temperature increase well below 2 degrees Celsius, while urging efforts to limit the increase to 1.5 degrees;
- Establish binding commitments by all parties to make "nationally determined contributions" (NDCs), and to pursue domestic measures aimed at achieving them;
- Commit all countries to report regularly on their emissions and "progress made in implementing and achieving" their NDCs, and to undergo international review;
- Commit all countries to submit new NDCs every five years, with the clear expectation that they will "represent a progression" beyond previous ones;
- Reaffirm the binding obligations of developed countries under the UNFCCC to support the efforts of developing countries, while for the first time encouraging voluntary contributions by developing countries too;
- Extend the current goal of mobilizing $100 billion a year in support by 2020 through 2025, with a new, higher goal to be set for the period after 2025;
- Extend a mechanism to address "loss and damage" resulting from climate change, which explicitly will not "involve or provide a basis for any liability or compensation;"
- Require parties engaging in international emissions trading to avoid "double counting;" and
- Call for a new mechanism, similar to the Clean Development Mechanism under the Kyoto Protocol, enabling emission reductions in one country to be counted toward another country's NDC. (C2ES 2015a)

3.3.2 - Federal Regulations

Prior to the last decade, there were no concrete federal regulations of GHGs or major planning for climate change adaptation. Since then, federal activity has increased. The following are actions regarding the federal government, GHGs, and fuel efficiency.

Greenhouse Gas Endangerment. *Massachusetts v. EPA* (Supreme Court Case 05-1120) was argued before the United States Supreme Court on November 29, 2006, in which it was petitioned that the EPA regulate four GHGs, including carbon dioxide, under Section 202(a)(1) of the Clean Air Act. A decision was made on April 2, 2007, in which the Supreme Court found that GHGs are air pollutants covered by the Clean Air Act. The Court held that the Administrator must determine whether emissions of GHGs from new motor vehicles cause or contribute to air pollution, which may reasonably be anticipated to endanger public health or welfare, or whether the science is too

uncertain to make a reasoned decision. On December 7, 2009, the EPA Administrator signed two distinct findings regarding GHGs under section 202(a) of the Clean Air Act:

- Endangerment Finding: The Administrator finds that the current and projected concentrations of the six key well-mixed greenhouse gases—carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride—in the atmosphere threaten the public health and welfare of current and future generations.
- Cause or Contribute Finding: The Administrator finds that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution, which threatens public health and welfare.

These findings do not impose requirements on industry or other entities. However, this was a prerequisite for implementing GHG emissions standards for vehicles, as discussed in the section "Clean Vehicles" below. After a lengthy legal challenge, the United States Supreme Court declined to review an Appeals Court ruling upholding the EPA Administrator findings (EPA 2009b).

Clean Vehicles. Congress first passed the Corporate Average Fuel Economy law in 1975 to increase the fuel economy of cars and light duty trucks. The law has become more stringent over time. On May 19, 2009, President Obama put in motion a new national policy to increase fuel economy for all new cars and trucks sold in the United States. On April 1, 2010, the EPA and the Department of Transportation's National Highway Safety Administration announced a joint final rule establishing a national program that would reduce GHG emissions and improve fuel economy for new cars and trucks sold in the United States.

The first phase of the national program applies to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. They require these vehicles to meet an estimated combined average emissions level of 250 grams of CO_2 per mile, equivalent to 35.5 miles per gallon; that is, if the automobile industry were to meet this CO_2 level solely through fuel economy improvements. Together, these standards would cut CO_2 emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012–2016). The EPA and the National Highway Safety Administration issued final rules on a second-phase joint rulemaking, establishing national standards for light-duty vehicles for model years 2017 through 2025 in August 2012 (EPA 2012b). The new standards for model years 2017 through 2025 apply to passenger cars, light-duty trucks, and medium duty passenger vehicles. The final standards are projected to result in an average industry fleetwide level of 163 grams/mile of CO_2 in model year 2025, which is equivalent to 54.5 miles per gallon (mpg) if achieved exclusively through fuel economy improvements.

The EPA and the U.S. Department of Transportation issued final rules for the first national standards to reduce GHG emissions and improve fuel efficiency of heavy-duty trucks and buses on September 15, 2011, which became effective November 14, 2011. For combination tractors, the agencies are proposing engine and vehicle standards that began in the 2014 model year and achieve up to a 20-percent reduction in CO_2 emissions and fuel consumption by the 2018 model year. For heavy-duty pickup trucks and vans, the agencies are proposing separate gasoline and diesel truck standards, which phase in starting in the 2014 model year and achieve up to a 10-percent reduction for gasoline

vehicles, and a 15-percent reduction for diesel vehicles by 2018 model year (12 and 17 percent respectively if accounting for air conditioning leakage). Lastly, for vocational vehicles, the engine and vehicle standards would achieve up to a 10-percent reduction in fuel consumption and CO_2 emissions from the 2014 to 2018 model years.

Mandatory Reporting of Greenhouse Gases. The Consolidated Appropriations Act of 2008, passed in December 2007, requires the establishment of mandatory GHG reporting requirements. On September 22, 2009, the EPA issued the Final Mandatory Reporting of Greenhouse Gases Rule, which became effective January 1, 2010. The rule requires reporting of GHG emissions from large sources and suppliers in the United States, and is intended to collect accurate and timely emissions data to inform future policy decisions. Under the rule, suppliers of fossil fuels or industrial GHGs, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions are required to submit annual reports to the EPA.

New Source Review. The EPA issued a final rule on May 13, 2010 that establishes thresholds for GHGs, which will define when permits under the New Source Review Prevention of Significant Deterioration and Title V Operating Permit programs are required for new and existing industrial facilities. This final rule "tailors" the requirements of these Clean Air Act permitting programs to limit which facilities will be required to obtain Prevention of Significant Deterioration and Title V permits. In the preamble to the revisions to the federal code of regulations, the EPA states:

> This rulemaking is necessary because without it the Prevention of Significant Deterioration and Title V requirements would apply, as of January 2, 2011, at the 100 or 250 tons per year levels provided under the Clean Air Act, greatly increasing the number of required permits, imposing undue costs on small sources, overwhelming the resources of permitting authorities, and severely impairing the functioning of the programs. EPA is relieving these resource burdens by phasing in the applicability of these programs to greenhouse gas sources, starting with the largest greenhouse gas emitters. This rule establishes two initial steps of the phase-in. The rule also commits the agency to take certain actions on future steps addressing smaller sources, but excludes certain smaller sources from Prevention of Significant Deterioration and Title V permitting for greenhouse gas emissions until at least April 30, 2016.

The EPA estimates that facilities responsible for nearly 70 percent of the national GHG emissions from stationary sources will be subject to permitting requirements under this rule. This includes the nation's largest GHG emitters—power plants, refineries, and cement production facilities.

Standards of Performance for Greenhouse Gas Emissions for New Stationary Sources: Electric Utility Generating Units. As required by a settlement agreement, the EPA proposed new performance standards for emissions of carbon dioxide for new, affected, fossil fuel-fired electric utility generating units on March 27, 2012. New sources greater than 25 megawatts would be required to meet an output based standard of 1,000 pounds of carbon dioxide per megawatt-hour, based on the performance of widely used natural gas combined cycle technology.

Cap and Trade. Cap and trade refers to a policy tool where emissions are limited to a certain amount and can be traded, or provides flexibility on how the emitter can comply. There is no federal GHG cap-and-trade program currently; however, some states have joined to create initiatives to provide a mechanism for cap and trade.

The Regional Greenhouse Gas Initiative is an effort to reduce GHGs among the states of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont. Each state caps carbon dioxide emissions from power plants, auctions carbon dioxide emission allowances, and invests the proceeds in strategic energy programs that further reduce emissions, save consumers money, create jobs, and build a clean energy economy. The Initiative began in 2008.

The Western Climate Initiative partner jurisdictions have developed a comprehensive initiative to reduce regional GHG emissions to 15 percent below 2005 levels by 2020. The partners are California, British Columbia, Manitoba, Ontario, and Quebec. Currently only California and Quebec are participating in the cap and trade program (C2ES 2015).

3.3.3 - California

Legislative Actions to Reduce GHGs

The State of California legislature has enacted a series of bills that constitute the most aggressive program to reduce GHGs of any state in the nation. Some legislation such as the landmark AB 32 California Global Warming Solutions Act of 2006 was specifically enacted to address GHG emissions. Other legislation such as Title 24 and Title 20 energy standards were originally adopted for other purposes such as energy and water conservation, but also provide GHG reductions. This section describes the major provisions of the legislation.

AB 32. The California State Legislature enacted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires that GHGs emitted in California be reduced to 1990 levels by the year 2020. "Greenhouse gases" as defined under AB 32 include carbon dioxide, methane, NO_x, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Since AB 32 was enacted, a seventh chemical, nitrogen trifluoride, has also been added to the list of GHGs. The ARB is the state agency charged with monitoring and regulating sources of GHGs. AB 32 states the following:

> Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems.

The ARB approved the 1990 GHG emissions level of 427 $MMTCO_2e$ on December 6, 2007 (ARB 2007). Therefore, to meet the State's target, emissions generated in California in 2020 are required to be equal to or less than 427 $MMTCO_2e$. Emissions in 2020 in a BAU scenario were estimated to be 596 $MMTCO_2e$, which do not account for reductions from AB 32 regulations (ARB 2008a). At that

rate, a 28 percent reduction was required to achieve the 427 $MMTCO_2e$ 1990 inventory. In October 2010, ARB prepared an updated 2020 forecast to account for the effects of the 2008 recession and slower forecasted growth. The 2020 inventory without the benefits of adopted regulation is now estimated at 545 $MMTCO_2e$. Therefore, under the updated forecast, a 21.7 percent reduction from BAU is required to achieve 1990 levels (ARB 2010).

Progress in Achieving AB 32 Targets and Remaining Reductions Required

The State has made steady progress in implementing AB 32 and achieving targets included in Executive Order S-3-05. The progress is shown in updated emission inventories prepared by ARB for 2000 through 2012 to show progress achieved to date (ARB 2014a). The State has also achieved the Executive Order S-3-05 target for 2010 of reducing GHG emissions to 2000 levels. As shown below, the 2010 emission inventory achieved this target. Also shown are the average reductions needed from all statewide sources (including all existing sources) to reduce GHG emissions back to 1990 levels.

- 1990: 427 million $MTCO_2e$ (AB 32 2020 Target)
- 2000: 463 million $MTCO_2e$ (an average 8 percent reduction needed to achieve 1990 base)
- 2010: 450 million $MTCO_2e$ (an average 5 percent reduction needed to achieve 1990 base)
- 2020: 545 million $MTCO_2e$ BAU (an average 21.7 percent reduction from BAU needed to achieve 1990 base)

ARB Scoping Plan. The ARB's Climate Change Scoping Plan (Scoping Plan) contains measures designed to reduce the State's emissions to 1990 levels by the year 2020 to comply with AB 32 (ARB 2008). The Scoping Plan identifies recommended measures for multiple GHG emission sectors and the associated emission reductions needed to achieve the year 2020 emissions target—each sector has a different emission reduction target. Most of the measures target the transportation and electricity sectors. As stated in the Scoping Plan, the key elements of the strategy for achieving the 2020 GHG target include:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards;
- Achieving a statewide renewables energy mix of 33 percent;
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system;
- Establishing targets for transportation-related GHG emissions for regions throughout California and pursuing policies and incentives to achieve those targets;
- Adopting and implementing measures pursuant to existing State laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard; and
- Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the State's long-term commitment to AB 32 implementation.

In addition, the Scoping Plan differentiates between "capped" and "uncapped" strategies. Capped strategies are subject to the proposed cap-and-trade program. The Scoping Plan states that the inclusion of these emissions within the cap-and trade program will help ensure that the year 2020 emission targets are met despite some degree of uncertainty in the emission reduction estimates for any individual measure. Implementation of the capped strategies is calculated to achieve a sufficient amount of reductions by 2020 to achieve the emission target contained in AB 32. Uncapped strategies that will not be subject to the cap-and-trade emissions caps and requirements are provided as a margin of safety by accounting for additional GHG emission reductions (ARB 2008).

The ARB approved the First Update to the Scoping Plan (Update) on May 22, 2014. The Update identifies the next steps for California's climate change strategy. The Update shows how California continues on its path to meet the near-term 2020 GHG limit, but also sets a path toward long-term, deep GHG emission reductions. The report establishes a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050. The Update identifies progress made to meet the near-term objectives of AB 32 and defines California's climate change priorities and activities Climate for the next several years. The Update does not set new targets for the State, but describes a path that would achieve the long term 2050 goal of Executive Order S-05-03 for emissions to decline to 80 percent below 1990 levels by 2050.

The ARB has no legislative mandate to set a target beyond the 2020 target from AB 32 or to adopt additional regulations to achieve a post-2020 target. The Update estimates that reductions averaging 5.2 percent per year would be required after 2020 to achieve the 2050 goal. With no estimate of future reduction commitments from the State, identifying a feasible strategy including plans and measures to be adopted by local agencies is not currently possible (ARB 2014b).

Cap and Trade Program. The Cap and Trade Program is a key element of the Scoping Plan. It sets a statewide limit on sources responsible for 85 percent of California's greenhouse gas emissions, and establishes a price signal needed to drive long-term investment in cleaner fuels and more efficient use of energy. The program is designed to provide covered entities the flexibility to seek out and implement the lowest cost options to reduce emissions. The program conducted its first auction in November 2012. Compliance obligations began for power plants and large industrial sources in January 2013. Other significant milestones include linkage to Quebec's cap and trade system in January 2014 and starting the compliance obligation for distributors of transportation fuels, natural gas, and other fuels in January 2015 (ARB 2015d).

The Cap-and-Trade Program provides a firm cap, ensuring that the 2020 statewide emission limit will not be exceeded. An inherent feature of the Cap-and-Trade program is that it does not guarantee GHG emissions reductions in any discrete location or by any particular source. Rather, GHG emissions reductions are guaranteed only on an accumulative basis. As summarized by ARB in the First Update:

> The Cap-and-Trade Regulation gives companies the flexibility to trade allowances with others or take steps to cost-effectively reduce emissions at their own facilities. Companies that emit more have to turn in more allowances or other compliance instruments. Companies that can cut their GHG emissions have to turn in fewer allowances. But as the cap declines, aggregate emissions must be reduced. In other

> words, a covered entity theoretically could increase its GHG emissions every year and still comply with the Cap-and-Trade Program if there is a reduction in GHG emissions from other covered entities. Such a focus on aggregate GHG emissions is considered appropriate because climate change is a global phenomenon, and the effects of GHG emissions are considered cumulative (ARB 2014b).

The Cap-and-Trade Program works with other direct regulatory measures and provides an economic incentive to reduce emissions. If California's direct regulatory measures reduce GHG emissions more than expected, then the Cap-and-Trade Program will be responsible for relatively fewer emissions reductions. If California's direct regulatory measures reduce GHG emissions less than expected, then the Cap-and-Trade Program will be responsible for relatively more emissions reductions. Thus, the Cap-and-Trade Program assures that California will meet its 2020 GHG emissions reduction mandate:

> The Cap-and-Trade Program establishes an overall limit on GHG emissions from most of the California economy—the "capped sectors." Within the capped sectors, some of the reductions are being accomplished through direct regulations, such as improved building and appliance efficiency standards, the [Low Carbon Fuel Standard] LCFS, and the 33 percent [Renewables Portfolio Standard] RPS. Whatever additional reductions are needed to bring emissions within the cap is accomplished through price incentives posed by emissions allowance prices. Together, direct regulation and price incentives assure that emissions are brought down cost-effectively to the level of the overall cap. The Cap-and-Trade Regulation provides assurance that California's 2020 limit will be met because the regulation sets a firm limit on 85 percent of California's GHG emissions. In sum, the Cap-and-Trade Program will achieve aggregate, rather than site specific or project-level, GHG emissions reductions. Also, due to the regulatory architecture adopted by ARB in AB 32, the reductions attributed to the Cap-and-Trade Program can change over time depending on the State's emissions forecasts and the effectiveness of direct regulatory measures (ARB 2014b).

SB 375—The Sustainable Communities and Climate Protection Act of 2008. Senate Bill (SB) 375 was signed into law on September 30, 2008. According to SB 375, the transportation sector is the largest contributor of GHG emissions, which emits over 40 percent of the total GHG emissions in California. SB 375 states, "Without improved land use and transportation policy, California will not be able to achieve the goals of AB 32." SB 375 does the following: (1) requires metropolitan planning organizations to include sustainable community strategies in their regional transportation plans for reducing GHG emissions, (2) aligns planning for transportation and housing, and (3) creates specified incentives for the implementation of the strategies.

Concerning CEQA, SB 375 – as codified in Public Resources Code Section 21159.28 – states that CEQA findings determinations for certain projects are not required to reference, describe, or discuss (1) growth-inducing impacts or (2) any project-specific or cumulative impacts from cars and light-duty truck trips generated by the project on global warming or the regional transportation network if the project:

1. Is in an area with an approved Sustainable Communities Strategy or an alternative planning strategy that the ARB accepts as achieving the greenhouse gas emission reduction targets;
2. Is consistent with that strategy (in designation, density, building intensity, and applicable policies); and
3. Incorporates the mitigation measures required by an applicable prior environmental document.

AB 1493 Pavley Regulations and Fuel Efficiency Standards. California AB 1493, enacted on July 22, 2002, required the ARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. Implementation of the regulation was delayed by lawsuits filed by automakers and by the EPA's denial of an implementation waiver. The EPA subsequently granted the requested waiver in 2009, which was upheld by the by the U.S. District Court for the District of Columbia in 2011 (ARB 2013d).

The standards are to be phased in during the 2009 through 2016 model years. When fully phased in, the near-term (2009–2012) standards will result in an approximately 22 percent reduction compared with the 2002 fleet, and the mid-term (2013–2016) standards will result in about a 30 percent reduction. Several technologies stand out as providing significant reductions in emissions at favorable costs. These include discrete variable valve lift or camless valve actuation to optimize valve operation, rather than relying on fixed valve timing and lift as has historically been done; turbocharging to boost power and allow for engine downsizing; improved multi-speed transmissions; and improved air conditioning systems that operate optimally, leak less, and/or use an alternative refrigerant (ARB 2013e).

The second phase of the implementation for the Pavley bill was incorporated into Amendments to the Low-Emission Vehicle Program referred to as LEV III or the Advanced Clean Cars program. The Advanced Clean Car program combines the control of smog-causing pollutants and GHG emissions into a single coordinated package of requirements for model years 2017 through 2025. The regulation will reduce GHGs from new cars by 34 percent from 2016 levels by 2025. The new rules will reduce pollutants from gasoline and diesel-powered cars, and deliver increasing numbers of zero-emission technologies, such as full battery electric cars, newly emerging plug-in hybrid electric vehicles, and hydrogen fuel cell cars. The regulations will also ensure adequate fueling infrastructure is available for the increasing numbers of hydrogen fuel cell vehicles planned for deployment in California (ARB 2011a).

SB 1368—Emission Performance Standards. In 2006, the State Legislature adopted SB 1368, which was subsequently signed into law by the governor. SB 1368 directs the California Public Utilities Commission to adopt a performance standard for GHG emissions for the future power purchases of California utilities. SB 1368 seeks to limit carbon emissions associated with electrical energy consumed in California by forbidding procurement arrangements for energy longer than 5 years from resources that exceed the emissions of a relatively clean, combined cycle natural gas power plant. Because of the carbon content of its fuel source, a coal-fired plant cannot meet this standard because such plants emit roughly twice as much carbon as natural gas, combined cycle plants. Accordingly, the new law effectively prevents California's utilities from investing in, otherwise financially supporting, or purchasing power from new coal plants located in or out of the State. The

California Public Utilities Commission adopted the regulations required by SB 1368 on August 29, 2007. The regulations implementing SB 1368 establish a standard for baseload generation owned by, or under long-term contract to publicly owned utilities, of 1,100 lbs CO_2 per megawatt-hour (MWh).

SB 1078—Renewable Electricity Standards. On September 12, 2002, Governor Gray Davis signed SB 1078, requiring California to generate 20 percent of its electricity from renewable energy by 2017. SB 107 changed the due date to 2010 instead of 2017. On November 17, 2008, Governor Arnold Schwarzenegger signed Executive Order S-14-08, which established a Renewable Portfolio Standard target for California requiring that all retail sellers of electricity serve 33 percent of their load with renewable energy by 2020. Governor Schwarzenegger also directed the ARB (Executive Order S-21-09) to adopt a regulation by July 31, 2010, requiring the State's load serving entities to meet a 33 percent renewable energy target by 2020. The ARB approved the Renewable Electricity Standard on September 23, 2010 by Resolution 10-23.

SB 350— Clean Energy and Pollution Reduction Act of 2015. The legislature recently approved and the governor signed SB 350 which reaffirms California's commitment to reducing its GHG emissions and addressing climate change. Key provisions include: an increase in the renewables portfolio standard (RPS), higher energy efficiency requirements for buildings, initial strategies towards a regional electricity grid, and improved infrastructure for electric vehicle charging stations. Provisions for a 50 percent reduction in the use of petroleum statewide were removed from the Bill because of opposition and concern that it would prevent the Bill's passage. Specifically, SB 350 requires the following to reduce statewide GHG emissions:

- Increase the amount of electricity procured from renewable energy sources from 33 percent to 50 percent by 2030, with interim targets of 40 percent by 2024, and 25 percent by 2027.
- Double the energy efficiency in existing buildings by 2030. This target will be achieved through the California Public Utility Commission (CPUC), the California Energy Commission (CEC), and local publicly owned utilities.
- Reorganize the Independent System Operator (ISO) to develop more regional electric transmission markets and improve accessibility in these markets, which will facilitate the growth of renewable energy markets in the western United States (California Leginfo 2015).

SBX 7-7—The Water Conservation Act of 2009. The legislation directs urban retail water suppliers to set individual 2020 per capita water use targets and begin implementing conservation measures to achieve those goals. Meeting this statewide goal of 20 percent decrease in demand will result in a reduction of almost 2 million acre-feet in urban water use in 2020.

Executive Orders Related to GHG Emissions

California's Executive Branch has taken several actions to reduce GHGs through the use of executive orders. Although not regulatory, they set the tone for the State and guide the actions of state agencies.

Executive Order S-3-05. On June 1, 2005, former California Governor Arnold Schwarzenegger announced through Executive Order S-3-05, the following reduction targets for GHG emissions:

- By 2010, reduce greenhouse gas emissions to 2000 levels.
- By 2020, reduce greenhouse gas emissions to 1990 levels.
- By 2050, reduce greenhouse gas emissions to 80 percent below 1990 levels.

The 2050 reduction goal represents what some scientists believe is necessary to reach levels that will stabilize the climate. The 2020 goal was established to be a mid-term target. Because this is an executive order, the goals are not legally enforceable for local governments or the private sector.

Executive Order B-30-15. On April 29, 2015, Governor Edmund G. Brown Jr. issued an executive order to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. The Governor's executive order aligns California's GHG reduction targets with those of leading international governments ahead of the United Nations Climate Change Conference in Paris late 2015. The executive order sets a new interim statewide GHG emission reduction target to reduce GHG emissions to 40 percent below 1990 levels by 2030 in order to ensure California meets its target of reducing GHG emissions to 80 percent below 1990 levels by 2050, and directs the ARB to update the Climate Change Scoping Plan to express the 2030 target in terms of $MMCO_2e$. The executive order also requires the State's climate adaptation plan to be updated every three years and for the State to continue its climate change research program, among other provisions. As with Executive Order S-3-05, this executive order is not legally enforceable against local governments and the private sector. Legislation that would update AB 32 to make post 2020 targets and requirements a mandate is in process in the State Legislature.

Executive Order S-01-07—Low Carbon Fuel Standard. The governor signed Executive Order S 01-07 on January 18, 2007. The order mandates that a statewide goal shall be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020. In particular, the executive order established a Low Carbon Fuel Standard (LCFS) and directed the Secretary for Environmental Protection to coordinate the actions of the California Energy Commission, the ARB, the University of California, and other agencies to develop and propose protocols for measuring the "life-cycle carbon intensity" of transportation fuels. This analysis supporting development of the protocols was included in the State Implementation Plan for alternative fuels (State Alternative Fuels Plan adopted by California Energy Commission on December 24, 2007) and was submitted to ARB for consideration as an "early action" item under AB 32. The ARB adopted the Low Carbon Fuel Standard on April 23, 2009.

The Low Carbon Fuel Standard was subject to legal challenge in 2011. Ultimately, on August 8, 2013, the Fifth District Court of Appeal (California) ruled that ARB failed to comply with CEQA and the Administrative Procedure Act (APA) when adopting regulations for Low Carbon Fuel Standards. In a partially published opinion, the Court of Appeal directed that Resolution 09-31 and two executive orders of ARB approving LCFS regulations promulgated to reduce GHG emissions be set aside. However, the court tailored its remedy to protect the public interest by allowing the LCFS regulations to remain operative while ARB complies with the procedural requirements it failed to satisfy.

To address the Court ruling, ARB was required to bring a new LCFS regulation to the Board for consideration in February 2015. The proposed LCFS regulation was required to contain revisions to the 2010 LCFS as well as new provisions designed to foster investments in the production of the low-carbon fuels, offer additional flexibility to regulated parties, update critical technical information,

simplify and streamline program operations, and enhance enforcement. The second public hearing for the new LCFS regulation was held on September 24 and25, 2015, where the LCFS Regulation was adopted. The Final Rulemaking Package adopting the regulation was filed with the Office of Administrative Law (OAL) on October 2, 2015. The OAL approved the regulation on November 16, 2015 (ARB 2015e).

Executive Order S-13-08. Executive Order S-13-08 states that "climate change in California during the next century is expected to shift precipitation patterns, accelerate sea level rise and increase temperatures, thereby posing a serious threat to California's economy, to the health and welfare of its population and to its natural resources." Pursuant to the requirements in the order, the 2009 California Climate Adaptation Strategy (California Natural Resources Agency 2009) was adopted, which is the ". . . first statewide, multi-sector, region-specific, and information-based climate change adaptation strategy in the United States." Objectives include analyzing risks of climate change in California, identifying and exploring strategies to adapt to climate change, and specifying a direction for future research.

California Regulations and Building Codes

California has a long history of adopting regulations to improve energy efficiency in new and remodeled buildings. These regulations have kept California's energy consumption relatively flat even with rapid population growth.

Title 20 Appliance Efficiency Regulations. California Code of Regulations, Title 20: Division 2, Chapter 4, Article 4, Sections 1601-1608: Appliance Efficiency Regulations regulates the sale of appliances in California. The Appliance Efficiency Regulations include standards for both federally regulated appliances and non-federally regulated appliances. Twenty-three categories of appliances are included in the scope of these regulations. The standards within these regulations apply to appliances that are sold or offered for sale in California, except those sold wholesale in California for final retail sale outside the State and those designed and sold exclusively for use in recreational vehicles or other mobile equipment (CEC 2012).

Title 24 Energy Efficiency Standards. California Code of Regulations Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings, was first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficient technologies and methods. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions. The newest version of Title 24 was adopted by the California Energy Commission (CEC) on May 31, 2012. The standards became effective on July 1, 2014. The CEC has completed the process of preparing the 2016 Building Energy Efficiency Standards that are scheduled to go into effect on January 1, 2017.

Title 24 California Green Building Standards Code (California Code of Regulations Title 24, Part 11 code) is a comprehensive and uniform regulatory code for all residential, commercial, and school buildings that went in effect January 1, 2011. The code is updated on a regular basis, with the most recent update consisting of the 2013 California Green Building Code Standards that became effective January 1, 2014. Local jurisdictions are permitted to adopt more stringent requirements, as state law provides methods for local enhancements. The Code recognizes that many jurisdictions have

developed existing construction and demolition ordinances, and defers to them as the ruling guidance provided they provide a minimum 50-percent diversion requirement. The code also provides exemptions for areas not served by construction and demolition recycling infrastructure. State building code provides the minimum standard that buildings need to meet in order to be certified for occupancy, which is generally enforced by the local building official.

The California Green Building Standards Code (California Code of Regulations Title 24, Part 11 code) requires:

- **Short-term bicycle parking**. If a commercial project is anticipated to generate visitor traffic, provide permanently anchored bicycle racks within 200 feet of the visitors' entrance, readily visible to passers-by, for five percent of visitor motorized vehicle parking capacity, with a minimum of one two-bike capacity rack (5.106.4.1.1).
- **Long-term bicycle parking**. For buildings with over 10 tenant-occupants, provide secure bicycle parking for five percent of tenant-occupied motorized vehicle parking capacity, with a minimum of one space (5.106.4.1.2).
- **Designated parking**. Provide designated parking in commercial projects for any combination of low-emitting, fuel-efficient and carpool/van pool vehicles as shown in Table 5.106.5.2 (5.106.5.2).
- **Recycling by Occupants**. Provide readily accessible areas that serve the entire building and are identified for the depositing, storage, and collection of nonhazardous materials for recycling. (5.410.1).
- **Construction waste**. A minimum 50-percent diversion of construction and demolition waste from landfills, increasing voluntarily to 65 and 80 percent for new homes and 80-percent for commercial projects. (5.408.1, A5.408.3.1 [nonresidential], A5.408.3.1 [residential]). All (100 percent) of trees, stumps, rocks and associated vegetation and soils resulting from land clearing shall be reused or recycled (5.408.3).
- **Wastewater reduction**. Each building shall reduce the generation of wastewater by one of the following methods:
  1. The installation of water-conserving fixtures or
  2. Using nonpotable water systems (5.303.4).
- **Water use savings**. Twenty percent mandatory reduction in indoor water use with voluntary goal standards for 30, 35, and 40 percent reductions (5.303.2, A5303.2.3 [nonresidential]).
- **Water meters**. Separate water meters for buildings in excess of 50,000 square feet or buildings projected to consume more than 1,000 gallons per day (5.303.1).
- **Irrigation efficiency**. Moisture-sensing irrigation systems for larger landscaped areas (5.304.3).
- **Materials pollution control**. Low-pollutant emitting interior finish materials such as paints, carpet, vinyl flooring, and particleboard (5.404).
- **Building commissioning**. Mandatory inspections of energy systems (i.e., heat furnace, air conditioner, mechanical equipment) for nonresidential buildings over 10,000 square feet to ensure that all are working at their maximum capacity according to their design efficiencies (5.410.2).

Model Water Efficient Landscape Ordinance. The Model Water Efficient Landscape Ordinance (Ordinance) was required by AB 1881 Water Conservation Act. The bill required local agencies to adopt a local landscape ordinance at least as effective in conserving water as the Model Ordinance by January 1, 2010. Reductions in water use of 20 percent consistent with (SBX-7-7) 2020 mandate are expected for the ordinance. Governor Brown's Drought Executive Order of April 1, 2015 (EO B-29-15) directed DWR to update the ordinance through expedited regulation. The California Water Commission approved the revised ordinance on July 15, 2015, which became effective on December 15, 2015. New development projects that include landscaped areas of 500 square feet or more are subject to the ordinance. The update requires:

- More efficient irrigation systems
- Incentives for graywater usage
- Improvements in onsite stormwater capture
- Limiting the portion of landscapes that can be planted with high water use plants
- Reporting requirements for local agencies.

SB 97 and the CEQA Guidelines Update. Passed in August 2007, SB 97 added Section 21083.05 to the Public Resources Code. The code states: "(a) On or before July 1, 2009, the Office of Planning and Research shall prepare, develop, and transmit to the Resources Agency guidelines for the mitigation of GHG emissions or the effects of GHG emissions as required by this division, including, but not limited to, effects associated with transportation or energy consumption. (b) On or before January 1, 2010, the Resources Agency shall certify and adopt guidelines prepared and developed by the Office of Planning and Research pursuant to subdivision (a)."

Section 21097 was also added to the Public Resources Code. This provided an exemption until January 1, 2010 for transportation projects funded by the Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006, or projects funded by the Disaster Preparedness and Flood Prevention Bond Act of 2006 – in stating that the failure to analyze adequately the effects of GHGs would not violate CEQA. The Natural Resources Agency completed the approval process and the Amendments became effective on March 18, 2010.

The 2010 CEQA Amendments provide guidance to public agencies regarding the analysis and mitigation of the effects of GHG emissions in CEQA documents. The CEQA Amendments fit within the existing CEQA framework by amending existing CEQA Guidelines to reference climate change.

Section 15064.4(b) of the CEQA Guidelines provides direction for lead agencies for assessing the significance of impacts of GHG emissions:

- The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting;
- Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; or
- The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse

gas emissions. Such regulations or requirements must be adopted by the relevant public agency through a public review process and must include specific requirements that reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

The CEQA Guidelines amendments do not identify a threshold of significance for GHG emissions, nor do they prescribe assessment methodologies or specific mitigation measures. Instead, they call for a "good-faith effort, based on available information, to describe, calculate, or estimate the amount of greenhouse gas emissions resulting from a project." The amendments encourage lead agencies to consider many factors in performing a CEQA analysis and preserve lead agencies' discretion to make their own determinations based upon substantial evidence. The amendments also encourage public agencies to make use of programmatic mitigation plans and programs from which to tier when they perform individual project analyses.

Also amended were CEQA Guidelines Sections 15126.4 and 15130, which address mitigation measures and cumulative impacts, respectively. GHG mitigation measures are referenced in general terms, but no specific measures are championed. The revision to the cumulative impact discussion requirement (Section 15130) simply directs agencies to analyze GHG emissions in an EIR when a project's incremental contribution of emissions may be cumulatively considerable; however, it does not answer the question of when emissions are cumulatively considerable.

Section 15183.5 permits programmatic GHG analysis and later project-specific tiering, as well as the preparation of Greenhouse Gas Reduction Plans. Compliance with such plans can support a determination that a project's cumulative effect is not cumulatively considerable, according to Section 15183.5(b).

In addition, the amendments revised Appendix F of the CEQA Guidelines, which focuses on energy conservation. The sample environmental checklist in Appendix G was amended to include GHG questions.

CEQA emphasizes that the effects of GHG emissions are cumulative, and should be analyzed in the context of CEQA's requirements for cumulative impacts analysis (see CEQA Guidelines Section 15130(f)).

California Supreme Court GHG Ruling

In a November 30, 2015 ruling, the *California Supreme Court in Center for Biological Diversity (CBD) v. California Department of Fish and Wildlife (CDFW)* on the Newhall Ranch project, concluded that whether the project was consistent with meeting statewide emission reduction goals is a legally permissible criterion of significance, but the significance finding for the project was not supported by a reasoned explanation based on substantial evidence. The Court offered potential solutions on pages 25 to 27 of the ruling to address this issue summarized below.

Specifically, the Court advised that:

- **Substantiation of Project Reductions from BAU**. A lead agency may use a BAU comparison based on the Scoping Plan's methodology if it also substantiates the reduction a particular project must achieve to comply with statewide goals. The Court suggested a lead agency could examine the "data behind the Scoping Plan's business-as-usual model" to determine the necessary project-level reductions from new land use development at the proposed location (p. 25).
- **Compliance with Regulatory Programs or Performance Based Standards**. A lead agency "might assess consistency with A.B. 32's goal in whole or part by looking to compliance with regulatory programs designed to reduce greenhouse gas emissions from particular activities. (See Final Statement of Reasons, supra, at p. 64 [greenhouse gas emissions 'may be best analyzed and mitigated at a programmatic level.'].) To the extent a project's design features comply with or exceed the regulations outlined in the Scoping Plan and adopted by the Air Resources Board or other state agencies, a lead agency could appropriately rely on their use as showing compliance with 'performance based standards' adopted to fulfill 'a statewide . . . plan for the reduction or mitigation of greenhouse gas emissions.' (CEQA Guidelines § 15064.4(a)(2), (b)(3); see also id., § 15064(h)(3) [determination that impact is not cumulatively considerable may rest on compliance with previously adopted plans or regulations, including 'plans or regulations for the reduction of greenhouse gas emissions'].) (p. 26).
- **Compliance with GHG Reduction Plans or Climate Action Plans (CAPs)**. A lead agency may utilize "geographically specific GHG emission reduction plans" such as climate action plans or greenhouse gas emission reduction plans to provide a basis for the tiering or streamlining of project-level CEQA analysis (p. 26).
- **Compliance with Local Air District Thresholds**. A lead agency may rely on "existing numerical thresholds of significance for greenhouse gas emissions" adopted by, for example, local air districts (p. 27).

Therefore, consistent with CEQA Guidelines Appendix G, the three factors identified in CEQA Guidelines Section 15064.4 and the recently issued Newhall Ranch opinion, the GHG impacts would be considered significant if the project would:

- Conflict with a compliant GHG Reduction Plan if adopted by the lead agency;
- Exceed the SJVAPCD GHG Reduction Threshold; or
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emission of GHGs.

3.3.4 - San Joaquin Valley Air Pollution Control District

Climate Change Action Plan

On August 21, 2008, the SJVAPCD Governing Board approved a proposal called the Climate Change Action Plan (CCAP). The CCAP began with a public process bringing together stakeholders, land use agencies, environmental groups, and business groups to conduct public workshops to develop comprehensive policies for CEQA guidelines, a carbon exchange bank, and voluntary GHG emissions

mitigation agreements for the Board's consideration. The CCAP contains the following goals and actions:

- Develop GHG significance thresholds to address CEQA projects with GHG emission increases.
- Develop the San Joaquin Valley Carbon Exchange for banking and trading GHG reductions.
- Authorize use of the SJVAPCD's existing inventory reporting system to allow use for GHG reporting required by AB 32 regulations.
- Develop and administer GHG reduction agreements to mitigate proposed emission increases from new projects.
- Support climate protection measures that reduce greenhouse gas emissions as well as toxic and criteria pollutants. Oppose measures that result in a significant increase in toxic or criteria pollutant emissions in already impacted areas.

On December 17, 2009, the SJVAPCD Governing Board adopted "Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA," and the policy "District Policy – Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency." The SJVAPCD concluded that the existing science is inadequate to support quantification of the impacts that project-specific GHG emissions have on global climatic change. The SJVAPCD found the effects of project-specific emissions to be cumulative, and without mitigation, their incremental contribution to global climatic change could be considered cumulatively considerable. The SJVAPCD found that this cumulative impact is best addressed by requiring all projects to reduce their GHG emissions, whether through project design elements or mitigation.

The SJVAPCD's approach is intended to streamline the process of determining if project-specific GHG emissions would have a significant effect. Projects exempt from the requirements of CEQA, and projects complying with an approved plan or mitigation program would be determined to have a less than significant cumulative impact. Such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources, and must have a certified final CEQA document.

For non-exempt projects, those projects for which there is no applicable approved plan or program, or those projects not complying with an approved plan or program, the lead agency must evaluate the project against performance-based standards and would require the adoption of design elements, known as a Best Performance Standard, to reduce GHG emissions. The Best Performance Standards (BPS) have not yet fully been established, though they must be designed to achieve a 29 percent reduction when compared with the BAU projections identified in ARB's AB 32 Scoping Plan.

BAU represents the emissions that would occur in 2020 if the average baseline emissions during the 2002–2004 period were grown to 2020 levels, without control. Thus, these standards would carry with them pre-quantified emissions reductions, eliminating the need for project-specific quantification. Therefore, projects incorporating BPS would not require specific quantification of GHG emissions, and automatically would be determined to have a less than significant cumulative impact for GHG emissions.

For stationary source permitting projects, BPS means, "The most stringent of the identified alternatives for control of GHG emissions, including type of equipment, design of equipment and operational and maintenance practices, which are achieved-in-practice for the identified service, operation, or emissions unit class." The SJVAPCD has identified BPS for the following sources: boilers; dryers and dehydrators; oil and gas extraction; storage, transportation, and refining operations; cogeneration; gasoline dispensing facilities; volatile organic compound control technology; and steam generators.

For development projects, BPS means, "Any combination of identified GHG emission reduction measures, including project design elements and land use decisions that reduce project-specific GHG emission reductions by at least 29 percent compared with business as usual."

Projects not incorporating BPS would require quantification of GHG emissions and demonstration that BAU GHG emissions have been reduced or mitigated by 29 percent. As stated earlier, ARB's adjusted inventory reduced the amount required by the State to achieve 1990 emission levels from 29 percent to 21.7 percent to account for slower growth experienced since the 2008 recession. According to SJVAPCD guidance, quantification of GHG emissions would be required for all projects for which the lead agency has determined that an environmental impact report is required, regardless of whether the project incorporates BPS. The SJVAPCD has not yet adopted BPS for development projects, so quantification of project emissions is required.

San Joaquin Valley Carbon Exchange

The SJVAPCD initiated work on the San Joaquin Valley Carbon Exchange in November 2008. The purpose of the carbon exchange is to quantify, verify, and track voluntary GHG emissions reductions generated within the San Joaquin Valley. However, the SJVAPCD has pursued an alternative strategy that incorporates the GHG emissions into its existing Rule 2301—Emission Reduction Credit Offset Banking that formerly only addressed criteria pollutants. The SJVAPCD is also participating with the California Air Pollution Control Officers Association (CAPCOA), of which it is a member, in the CAPCOA Greenhouse Gas Reduction Exchange (GHG Rx). The GHG Rx is operated cooperatively by air districts that have elected to participate. Participating districts have signed a Memorandum of Understanding (MOU) with CAPCOA and agree to post only those credits that meet the Rx standards for quality. The objective is to provide a secure, low-cost, high-quality greenhouse gas exchange for credits created in California. The GHG Rx is intended to help fulfill compliance obligations or mitigation needs of local projects subject to environmental review, reducing the uncertainty of using credits generated in distant locations. The SJVAPCD currently has no credits posted to the GHG Rx as of this writing (CAPCOA 2015).

Rule 2301

While the Climate Change Action Plan indicated that the GHG emission reduction program would be called the San Joaquin Valley Carbon Exchange, the District incorporated a method to register voluntary GHG emission reductions into its existing Rule 2301—Emission Reduction Credit Banking through amendments of the rule. Amendments to the rule were adopted on January 19, 2012. The purposes of the amendments to the rule include the following:

- Provide an administrative mechanism for sources to bank voluntary GHG emission reductions for later use.

- Provide an administrative mechanism for sources to transfer banked GHG emission reductions to others for any use.
- Define eligibility standards, quantitative procedures, and administrative practices to ensure that banked GHG emission reductions are real, permanent, quantifiable, surplus, and enforceable.

Fresno Council of Governments

2014 Regional Transportation Plan

The Fresno Council of Governments (Fresno COG) is the Regional Transportation Planning Agency (RTPA) for the Fresno County region. The Fresno COG is in the process of preparing the 2014 Regional Transportation Plan/Sustainable Community Strategy (RTP/SCS). The 2014 RTP is a planning document in cooperation with the Federal Highway Administration (FHWA), Federal Transit Administration (FTA), the California Department of Transportation (Caltrans), and other stakeholders, including transportation system users. SB 375 includes the following four primary findings related to the RTP/SCS development process:

- That the ARB develop regional GHG emission reduction targets for cars and light trucks for each of the 18 MPOs in California, including Fresno COG. ARB approved targets for the San Joaquin Valley in January 2013. The target for Fresno is a per capita reduction in GHG emissions from passenger vehicle travel of five percent by 2020 and 10 percent by 2035 relative to 2005 levels. However, the 2014 RTP/SCS includes a target of nine percent per capita reduction by 2020 and an 11 percent reduction by 2035 relative to 2005 levels (ARB 2015f).
- During the next RTP update, the Fresno COG is required to prepare an SCS that specifies how the GHG emission reduction target set by ARB will be achieved. If the target cannot be met through the SCS, then an Alternative Planning Strategy (APS) shall be prepared by Fresno COG. Chapter 4 of the 2014 RTP includes the SCS for Fresno COG.
- Streamlines CEQA requirements for specific residential and mixed-use developments that are consistent with the Fresno County SCS or APS (as determined by ARB) to achieve regional GHG emissions reduction target.

3.3.5 - Local

The City of Clovis does not currently have formal GHG emissions reduction plans or recommended emissions thresholds for determining significance associated with GHG emissions from development projects. However, the General Plan includes goals and policies to reduce GHG emissions that are listed below.

General Plan

The City of Clovis adopted its 2014 General Plan in August 2014. The 2014 General Plan includes the following applicable goals and policies related to improving air quality that may also co-benefit climate change impacts:

Air Quality Element

- **Goal 1:** A local environment that is protected from air pollution and emissions.
- **Policy 1.1: Land use and transportation**. Reduce greenhouse gas and other local pollutant emissions through mixed use and transit-oriented development and well-designed transit, pedestrian, and bicycle systems.
- **Policy 1.6: Alternative fuel infrastructure.** Encourage public and private activity and employment centers to incorporate electric charging and alternative fuel stations.
- **Policy 1.8: Trees.** Maintain or plant trees where appropriate to provide shade, absorb carbon, improve oxygenation, slow stormwater runoff, and reduce the heat island effect.
- **Goal 2:** A region with healthy air quality and lower greenhouse gas emissions.
- **Policy 2.1: Regional coordination.** Support regional efforts to reduce air pollution (criteria air pollutants and greenhouse gas emissions) and collaborate with other agencies to improve air quality at the emission source and reduce vehicle miles traveled.
- **Policy 2.2: Cross-jurisdictional issues.** Collaborate with regional agencies and surrounding jurisdictions to address cross-jurisdictional transportation and air quality issues.
- **Policy 2.6**: **Innovative mitigation.** Encourage innovative mitigation measures to reduce air quality impacts by coordinating with the SJVAPCD, project applicants, and other interested parties.

Circulation Element

- **Goal 1:** A context-sensitive and "complete streets" transportation network that prioritizes effective connectivity and accommodates a comprehensive range of mobility needs.
- **Policy 1.1: Multimodal network.** The City shall plan, design, operate, and maintain the transportation network to promote safe and convenient travel for all users: pedestrian, bicyclists, transit riders, freight, and motorists.
- **Policy 1.2: Transportation decisions.** Decisions should balance the comfort, convenience, and safety of pedestrians, bicyclists, and motorists.
- **Policy 1.4: Jobs and housing.** Encourage infill development that would provide jobs and services closer to housing, and vice versa, to reduce citywide vehicle miles traveled and effectively utilize the existing transportation infrastructure.
- **Policy 1.5: Neighborhood connectivity.** The transportation network shall provide multimodal access between neighborhoods and neighborhood-serving uses (educational, recreational, or neighborhood commercial uses).
- **Goal 3:** A multimodal transportation network that is safe and comfortable in the context of adjacent neighborhoods.
- **Policy 3.11: Right-of-way design.** Design landscaped parkways, medians, and right-of-ways as aesthetic buffers to improve the community's appearance and encourage non-motorized transportation.
- **Goal 5:** A complete system of trails and pathways accessible to all residents.
- **Policy 5.1: Complete street amenities.** Upgrade existing streets and design new streets to include complete street amenities, prioritizing improvements to bicycle and pedestrian connectivity or safety (consistent with the Bicycle Transportation Master Plan and other master plans).
- **Policy 5.2: Development-funded facilities.** Require development to fund and construct facilities as shown in the Bicycle Transportation Plan when facilities are in or adjacent to the development.

- **Policy 5.3: Pathways.** Encourage pathways and other pedestrian amenities in urban centers and new development 10 acres or larger.
- **Policy 5.4: Homeowner associations.** The city may require homeowner associations to maintain pathways and other bicycle and pedestrian facilities within the homeowner association area.
- **Policy 5.5: Pedestrian access.** Require sidewalks, paths, and crosswalks to provide access to schools, parks, and other activity centers and to provide general pedestrian connectivity throughout the city.

Land Use

- **Goal 3:** Orderly and sustainable outward growth into three urban centers with neighborhoods that provide a balanced mix of land uses and development types to support a community lifestyle and small town character.
- **Policy 3.3 Completion of Loma Vista**. The City prioritizes the completion of Loma Vista while allowing growth to proceed elsewhere in the Clovis Planning Area in accordance with agreements with the County of Fresno and LAFCo policies.
- **Policy 3.9: Connected development**. New development in urban centers must fully improve roadway, pedestrian, and bicycle systems within and adjacent to the proposed project and connect to existing urbanized development.
- **Goal 3:** A built environment that conserves and protects the use and quality of water and energy resources.
- **Policy 3.4: Drought-tolerant landscaping**. Promote water conservation through use of drought-tolerant landscaping on existing and new residential properties. Require drought-tolerant landscaping for all new commercial and industrial development and city-maintained landscaping, unless used for recreation purposes.
- **Policy 3.5: Energy and water conservation**. Encourage new development and substantial rehabilitation projects to exceed energy and water conservation and reduction standards set in the California Building Code.
- **Policy 3.6: Renewable Energy**. Promote the use of renewable and sustainable energy sources to serve public and private sector development.
- **Policy 3.7: Construction and design**. Encourage new construction to incorporate energy efficient building and site design strategies.

City of Clovis General Plan Program EIR

The General Plan PEIR includes the following discussion regarding reducing GHG emissions associated with the General Plan Update:

Prior to issuance of construction permits, the City of Clovis Planning Division shall require that applicants for new development projects submit documentation showing that greenhouse gas (GHG) emissions meet a 29 percent reduction from BAU in accordance with the methodology identified by the San Joaquin Valley Air Pollution Control District (SJVAPCD). The documentation shall identify measures to be incorporated into the considered project that would reduce GHG emissions from BAU. Such measures include, but are not limited to the following:

- Provide a pedestrian access network that internally links all uses and connects to existing external streets and pedestrian facilities.
- Provide the minimum number of parking spaces required.
- Create a shared parking program, as feasible.
- Provide bicycle end-of-trip facilities (e.g., bike parking, showers, and lockers).
- Develop rideshare and ride-matching assistance programs.
- For planned residential development, design and incorporate a neighborhood electric vehicle system.
- Design buildings to be electric vehicle charging-station-ready.
- Coordinate with the City of Clovis and/or the Fresno Area Express to install bus stops at or near the project site.
- Design buildings to be energy efficient beyond the requirements of Title 24.
- Design and orient structures to maximize shade in the summer and sun exposure in the winter.
- Install vegetative roofs that cover at least 50 percent of the roof area.
- Design buildings to incorporate passive solar design and solar heaters.
- Install solar panels on carports and parking areas.
- Limit nonessential idling of commercial vehicles beyond Air Toxic Control Measures idling restrictions.

Waste Diversion

With the passage of SB 1016, the Per Capita Disposal Measurement System, only per capita disposal rates are measured. Targets are based on the per capita disposal rates. For 2011, 2012, and 2013 the target rate was 4.7 pounds per person. The City's disposal rates were well below the target with 3.4 pounds per person per day in 2011, 3.3 pounds per person per day in 2012, and 3.0 pounds per day in 2013. Data for later years had not been finalized. The City has met the per capita target on a per-resident basis for each year of the last three reporting years with finalized data (CalRecycle 2016a).

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SECTION 4: MODELING PARAMETERS AND ASSUMPTIONS

4.1 - Model Selection and Guidance

Air pollutant emissions can be estimated by using emission factors and a level of activity. Emission factors are the emission rate of a pollutant given the activity over time; for example, grams of NO_x per horsepower-hour. The ARB has published emission factors for on-road mobile vehicles/trucks in the EMFAC mobile source emissions model and emission factors for off-road equipment and vehicles in the OFFROAD emissions model. An air emissions model (or calculator) combines the emission factors and the various levels of activity and outputs the emissions for the various pieces of equipment.

The California Emissions Estimator Model (CalEEMod) version 2013.2.2 was developed by the South Coast Air Quality Management District in cooperation with other air districts throughout the State. CalEEMod is designed as a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions associated with construction and operation from a variety of land uses.

The modeling follows District guidance where applicable from its GAMAQI. The models used in this analysis are summarized as follows:

- Construction emissions: CalEEMod, version 2013.2.2
- Operational emissions: CalEEMod, version 2013.2.2

4.2 - Air Pollutants and GHGs Assessed

4.2.1 - Criteria Pollutants Assessed

The following air pollutants are assessed in this analysis:

- Reactive organic gases (ROG)
- Nitrogen oxides (NO_x)
- Carbon monoxide (CO)
- Sulfur oxides (SO_x)
- Particulate matter less than 10 microns in diameter (PM_{10})
- Particulate matter less than 2.5 microns in diameter ($PM_{2.5}$)

Note that the project would emit ozone precursors ROG and NO_x. However, the project would not directly emit ozone, since it is formed in the atmosphere during the photochemical reaction of ozone precursors.

As noted previously, the project would emit ultrafine particles. However, there is currently no standard separate from the $PM_{2.5}$ standards for ultrafine particles and there is no accepted methodology to quantify or assess the significance of such particles.

4.2.2 - Greenhouse Gases Assessed

This analysis is restricted to GHGs identified by AB 32, which include: carbon dioxide, methane, NO_x, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. The project would generate a variety of GHGs, including several defined by AB 32 such as carbon dioxide, methane, and NO_x.

The project may emit GHGs that are not defined by AB 32. For example, the project may generate aerosols through emissions of DPM from the vehicles and trucks that would access the project site. Aerosols are short-lived particles, as they remain in the atmosphere for about one week. Black carbon is a component of aerosol. Studies have indicated that black carbon has a high global warming potential; however, the Intergovernmental Panel on Climate Change states that it has a low level of scientific certainty (IPCC 2007a).

Water vapor could be emitted from evaporated water used for landscaping, but this is not a significant impact because water vapor concentrations in the upper atmosphere are primarily due to climate feedbacks rather than emissions from project-related activities.

The project would emit nitrogen oxides and volatile organic compounds, which are ozone precursors. Ozone is a GHG; however, unlike the other GHGs, ozone in the troposphere is relatively short-lived and can be reduced in the troposphere on a daily basis. Stratospheric ozone can be reduced through reactions with other pollutants.

Certain GHGs defined by AB 32 would not be emitted by the project. Perfluorocarbons and sulfur hexafluoride are typically used in industrial applications, none of which would be used by the project. Therefore, it is not anticipated that the project would emit perfluorocarbons or sulfur hexafluoride.

4.3 - Construction Modeling Assumptions

Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and prevailing weather conditions. Construction emissions result from on-site and off-site activities. On-site emissions principally consist of exhaust emissions from the activity levels of heavy-duty construction equipment, motor vehicle operation, and fugitive dust (mainly PM_{10}) from disturbed soil. Additionally, paving operations and application of architectural coatings would release VOC emissions. Off-site emissions are caused by motor vehicle exhaust from delivery vehicles, worker traffic, and road dust (PM_{10} and $PM_{2.5}$). The project was assumed to start construction in January 2017 and be completed by June 2020.

The analysis uses CalEEMod default assumptions for the construction schedule and equipment used during construction. CalEEMod default construction equipment schedule and equipment activity is based on surveys of construction projects of various sizes conducted for development in Southern California. The CalEEMod default construction phase duration is 955 total working days. The modeling assumptions can be reviewed in the modeling results included in Appendix A of this report.

4.3.1 - Construction Equipment Emission Factors

CalEEMod contains an inventory of construction equipment that incorporates estimates of the number of equipment, age, horsepower, and equipment tier from which rates of emissions are developed. The CalEEMod default equipment assumptions were used in this analysis for the estimation of emissions from on-site construction equipment for the unmitigated scenario. CalEEMod's off-road emission factors are based on the equipment populations from the OFFROAD model.

4.3.2 - Grading

During grading activities, fugitive dust can be generated from the movement of dirt on the project site. CalEEMod estimates dust from dozers moving dirt around, dust from graders or scrapers leveling the land, and loading or unloading dirt into haul trucks. Each of those activities is calculated differently in CalEEMod, based on the number of acres traversed by the grading equipment.

Only some pieces of equipment generate fugitive dust in CalEEMod. The CalEEMod manual identifies various equipment and the acreage disturbed in an 8-hour day:

- Crawler tractors, graders, and rubber tired dozers: 0.5 acre per 8-hour day
- Scrapers: 1 acre per 8-hour day

Therefore, the following acres are the total quantities disturbed per day, per phase, according to the acreage disturbed quantities listed above:

- Site preparation = 3.5 acre per day
- Grading = 4 acres per day

It was assumed that soil would be balanced on-site and, therefore, there would be no material imported or exported from the project site.

4.3.3 - Building Construction, Paving, and Architectural Coatings

The analysis uses the default modeling assumptions from CalEEMod for construction equipment during building construction, paving, and application of architectural coatings.

4.3.4 - Construction Off-site Trips

Worker trips are accounted for during the construction phases, based on 1.25 trips per piece of equipment (the CalEEMod default). The CalEEMod default worker trip length of 10.8 miles was retained. The CalEEMod default vehicle fleet (LD Mix) was used for employee trips.

Vendor trips for the building construction phase are calculated from a study performed by the Sacramento Metropolitan Air Quality Management District (SMAQMD) based on land use and size. The CalEEMod defaults for vendor trips, trip length, and vehicle fleet (Heavy Duty Truck Vehicle Fleet Mix) were used.

Operation

Operational emissions are those emissions that occur when the project is occupied by the future residents. The major sources are summarized below.

4.3.5 - Motor Vehicles

Motor vehicle emissions refer to exhaust and road dust emissions from the automobiles that would travel to and from the project residences.

Project trip generation was obtained from the Institute of Transportation Engineers Trip Generation rates included in CalEEMod 2013 for single-family dwelling units.

A pass-by trip accounts for vehicles already on the roadway network that stop at the project site as they pass-by; the pass-by trips are existing vehicle trips in the community. CalEEMod default rates of three percent pass-by trips were used in this analysis.

The vehicle fleet mix is defined as the mix of motor vehicle classes active during the operation of the project. Emission factors are assigned to the expected vehicle mix as a function of vehicle class, speed, and fuel use (gasoline and diesel-powered vehicles). The CalEEMod default vehicle fleet mix overstates the percentage of heavy-duty trucks for residential development projects; therefore, the SJVAPCD- approved Residential Fleet Mix was used in the analysis.

4.3.6 - Architectural Coatings (Painting)

Paints release VOC emissions during application and drying. The buildings in the project would be repainted on occasion. The project is required to comply with the SJVAPCD Rule 4601 - Architectural Coatings. The rule requires flat paints to meet a standard of 50 grams per liter (g/l) and gloss paints 100 g/l by 2012.

4.3.7 - Consumer Products

Consumer products are various solvents used in non-industrial applications, which emit VOCs during their product use. “Consumer Product” means a chemically formulated product used by household and institutional consumers, including but not limited to: detergents; cleaning compounds; polishes; floor finishes; cosmetics; personal care products; home, lawn, and garden products; disinfectants; sanitizers; aerosol paints; and automotive specialty products. It does not include other paint products, furniture coatings, or architectural coatings (ARB 2011b). The default emission factor developed for CalEEMod was used.

4.3.8 - Landscape Equipment

CalEEMod estimated the landscaping equipment using the default assumptions in the model.

4.3.9 - Electricity

There would be emissions from the power plants that would generate electricity to be used by the project (for lighting, etc.). Electricity emissions estimates are only used in the GHG analysis. CalEEMod was used to estimate these emissions from the project.

Electricity Emission Factor

The default CalEEMod emission factors for Pacific Gas & Electric (from the CEC's year 2006 data) are as follows:

- Carbon dioxide: 641.35 pounds per megawatt hour (lbs/MWh)
- Methane: 0.029 lb/MWh
- Nitrous oxide: 0.006 lb/MWh

It is assumed that the Renewable Electricity Standards would have taken effect by 2020. The Renewable Electricity Standard requires that electricity providers include a minimum of 33 percent renewable energy in their portfolios by the year 2020. Pacific Gas & Electric provides estimates of its emission factor per megawatt hour of electricity delivered to its customers. The PG&E emissions factor for 2020 for CO2 is provided below. The rates for methane and nitrous oxide are based on compliance with the Renewable Portfolio Standard.

- Carbon dioxide: 290 lbs/MWh
- Methane: 0.022 lb/MWh
- Nitrous oxide: 0.005 lb/MWh

4.3.10 - Electricity Consumption

CalEEMod has three categories for electricity consumption: electricity that is impacted by Title 24 regulations, non-Title 24 electricity, and lighting. The Title 24 uses are defined as the major building envelope systems covered by California's Building Code Title 24 Part 6, such as space heating, space cooling, water heating, and ventilation. Lighting is separate since it can be both part and not part of Title 24. Since lighting is not considered as part of the building envelope energy budget, CalEEMod does not consider lighting to have any further association with Title 24 references in the program. Non-Title 24 includes everything else such as appliances and electronics. Total electricity consumption in CalEEMod is divided into the three categories. The percentage for each category is determined by using percentages derived from the CalEEMod default electricity intensity factors. The percentages are then applied to the electricity consumption to result in the values used in the analysis.

4.3.11 - Natural Gas

There would be emissions from the combustion of natural gas used for the project (water heaters, heat, etc.). CalEEMod has two categories for natural gas consumption: Title 24 and non-Title 24. CalEEMod defaults were used.

4.3.12 - Water and Wastewater

GHG emissions are emitted from the use of electricity to pump water to the project and to treat wastewater. CalEEMod defaults were used.

4.3.13 - Refrigerants

During operation, there may be leakage of refrigerants (hydrofluorocarbons) from air conditioners and the refrigeration system. Hydrofluorocarbons are typically used for refrigerants, which are long-lived GHGs. Residential uses of refrigerants are minor; therefore, they were not estimated.

4.3.14 - Solid Waste

GHG emissions would be generated from the decomposition of solid waste generated by the project. CalEEMod was used to estimate the GHG emissions from this source. The CalEEMod default for the mix of landfill types is as follows:

- Landfill no gas capture: 6%
- Landfill capture gas flare: 94%
- Landfill capture gas energy recovery: 0%

4.3.15 - Vegetation

There is currently limited carbon sequestration occurring on-site from existing vegetation. The project would plant trees and integrate landscaping into the project design, which would provide carbon sequestration. However, the number of trees to be planted is unknown and data are insufficient to accurately determine the impact that existing plants have on carbon sequestration. For this analysis, it was assumed that the loss and addition of carbon sequestration that are due to the project would be balanced; therefore, emissions due to carbon sequestration were not included.

SECTION 5: AIR QUALITY IMPACT ANALYSIS

This section calculates the expected emissions from construction and operation of the project as a necessary requisite for assessing the regulatory significance of project emissions on a regional and localized level.

5.1 - CEQA Guidelines

The CEQA Guidelines define a significant effect on the environment as "a substantial, or potentially substantial, adverse change in the environment." To determine if a project would have a significant impact on air quality, the type, level, and impact of emissions generated by the project must be evaluated.

The following air quality significance thresholds are contained in Appendix G of the CEQA Guidelines. A significant impact would occur if the project would:

a) Conflict with or obstruct implementation of the applicable air quality plan;

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation;

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable national or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);

d) Expose sensitive receptors to substantial pollutant concentrations; or

e) Create objectionable odors affecting a substantial number of people.

While the final determination of whether a project is significant is within the purview of the lead agency pursuant to Section 15064(b) of the CEQA Guidelines, the District recommends that its quantitative air pollution thresholds be used to determine the significance of project emissions. If the lead agency finds that the project has the potential to exceed these air pollution thresholds, the project should be considered to have significant air quality impacts. The applicable District thresholds and methodologies are contained under each impact statement below.

5.2 - Impact Analysis

5.2.1 - Consistency with Air Quality Plan

Impact AIR-1:	**The project would not conflict with or obstruct implementation of the applicable air quality plan.**

Impact Analysis

The CEQA Guidelines indicate that a significant impact would occur if the project would conflict with or obstruct implementation of the applicable air quality plan. The GAMAQI does not provide specific

guidance on analyzing conformity with the Air Quality Plan (AQP). Therefore, this document proposes the following criteria for determining project consistency with the current AQPs:

1. Will the project result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQPs? This measure is determined by comparison to the regional and localized thresholds identified by the District for Regional and Local Air Pollutants.
2. Will the project conform to the assumptions in the AQPs?
3. Will the project comply with applicable control measures in the AQPs?

The use of the criteria listed above is a standard approach for CEQA analysis of projects in the District's jurisdiction, as well as within other air districts, for the following reasons:

- Significant contribution to existing or new exceedances of the air quality standards would be inconsistent with the goal of attaining the air quality standards.
- AQP emissions inventories and attainment modeling are based on growth assumptions for the area within the air district's jurisdiction.
- AQPs rely on a set of air district-initiated control measures as well as implementation of federal and state measures to reduce emissions within their jurisdictions, with the goal of attaining the air quality standards.

AQPs are plans for reaching attainment of air quality standards. The growth assumptions, emission inventory, and control measures to reduce emissions are analyzed to determine if the Air Basin can reach attainment for the ambient air quality standards by the schedule required by the federal Clean Air Act. In order to show attainment of the standards, the District analyzes the growth projections in the valley, contributing factors in air pollutant emissions and formations, and existing and adopted emissions controls. The District then formulates a control strategy to reach attainment that includes both State and District regulations and other local programs and measures.

Contribution to Air Quality Violations

A measure for determining if the project is consistent with the air quality plans is if the project would not result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the air quality plans. Regional air quality impacts and attainment of standards are the result of the cumulative impacts of all emission sources within the air basin. Individual projects are generally not large enough to contribute measurably to an existing violation of air quality standards. Therefore, the cumulative impact of the project is based on its cumulative contribution. Because of the region's nonattainment status for ozone, $PM_{2.5}$, and PM_{10} – if project-generated emissions of either of the ozone precursor pollutants (ROG and NO_x), PM_{10}, or $PM_{2.5}$ would exceed the District's significance thresholds – then the project would be considered to contribute to violations of the applicable standards and conflict with the attainment plans.

As discussed in Impact AIR-2 below, emissions of ROG, NO_x, PM_{10}, and $PM_{2.5}$ associated with the construction and operation of the project would not exceed the District's significance thresholds. As shown in Impact AIR-2, the project would not result in CO hotspots that would violate CO standards. Therefore, the project would not contribute to air quality violations.

Consistency with Assumptions in AQPs

The primary way of determining whether a project is consistent with the AQP's assumptions is to determine if the General Plan is consistent with the growth assumptions used in the AQPs for the Air Basin, and if the project is consistent with the applicable General Plan. As required by California law, city and county general plans contain a Land Use Element that details the types and quantities of land uses that the city or county estimates will be needed for future growth, and designates locations for land uses to regulate growth. The Fresno COG uses the growth projections and land use information in adopted general plans, among other sources, to estimate future average daily trips and then vehicle miles traveled (VMT), which are then provided to the District to estimate future emissions in the AQPs. Existing and future pollutant emissions computed in the AQP are based on land uses from area general plans. AQPs provide the amount of emission reductions required to reach attainment of the air standards based on the projected growth in emissions, and include control measures required to achieve those reductions by the deadlines mandated by the Clean Air Act.

The applicable General Plan for the project is the City of Clovis General Plan, which was adopted in 2014, which is after the SJVAPCD's adoption of the latest AQPs. In this case, the project site was designated Low Density Residential in the Loma Vista Specific Plan and the City of Clovis 2014 General Plan. The General Plan is amended up to four times per year to allow changes to the planned land use and other plan elements as needed to accommodate development proposals that are not currently consistent with the General Plan. The changes in land use are then incorporated into the modeling assumptions of the regional transportation model on a periodic basis. Therefore, if the project's population growth and VMT are consistent with the General Plan, then the project is automatically consistent with the growth assumptions used in the applicable AQPs as described in Section 2.4.2. Therefore, emissions related to development of the project site would have been included in growth forecasts for the current AQP.

The General Plan PEIR found the growth allowed by the plan to be inconsistent with the SJVAPCD AQP because the emissions at buildout exceeded the criteria pollutant emission thresholds (see Impact AIR-2), and found the impact to be significant and unavoidable, thus adopting a Statement of Overriding Considerations (SOC). Projects that are consistent with the General Plan policies and comply with the mitigation measures included in the General Plan and Development Code Update Draft PEIR mitigation measures are able to rely upon the SOC finding to address its cumulative air quality impacts. The General Plan PEIR indicates that application of SJVAPCD Rule 9510 – Indirect Source Review and implementation of the General Plan policies and implementation actions would reduce impacts to the extent feasible. The project is required to comply with Rule 9510 and is consistent with General Plan policies and implementation actions as described in Table 8: Consistency with General Plan Policies.

Table 8: Consistency with General Plan Policies

General Plan Policy	Project Consistency
Air Quality Policy 1.1: Land use and transportation. Reduce greenhouse gas and other local pollutant emissions through mixed use and transit-oriented development and well-designed transit, pedestrian, and bicycle systems.	**Consistent.** The project area is designated for medium density residential development and will further the General Plan's goal to increase the density of the City. Residents will have easy access to the planned trail system and/or bike lanes that will connect to destinations throughout the area.
Air Quality Policy 1.2: Sensitive land uses. Prohibit the future siting of sensitive land uses within the distances of emission sources as defined by the California Air Resources Board, without sufficient mitigation.	**Consistent.** The project does not locate sensitive receptors within the distances of emission sources as defined by the California Air Resources Board.
Air Quality Policy 1.3: Construction activities. Encourage the use of best management practices during construction activities to reduce emissions of criteria pollutants as outlined by the San Joaquin Valley Air Pollution Control District (SJVAPCD).	**Consistent.** As shown in Table 10, the project's construction emissions would fall well below the thresholds for air pollutant emissions. In addition, the project will be required to prepare a Dust Control Plan containing BMPs to comply with Regulation VIII –Fugitive PM_{10} Prohibitions.
Air Quality Policy 1.6: Alternative fuel infrastructure. Encourage public and private activity and employment centers to incorporate electric charging and alternative fuel stations.	**Consistent.** The project would not preclude future installment of electrical vehicle charging systems in individual residences.
Air Quality Policy 1.8: Trees. Maintain or plant trees where appropriate to provide shade, absorb carbon, improve oxygenation, slow stormwater runoff, and reduce the heat island effect.	**Consistent.** The project would incorporate landscaping throughout the project site. The incorporated landscaping would provide shade, absorb carbon, improve oxygenation, slow stormwater runoff, and reduce the heat island effect.
Air Quality Policy 2.1: Regional coordination. Support regional efforts to reduce air pollution (criteria air pollutants and greenhouse gas emissions) and collaborate with other agencies to improve air quality at the emission source and reduce vehicle miles traveled.	**Not directly applicable.** However, residents can participate in educational and grant programs designed to reduce criteria pollutant emissions developed through regional coordination.
Air Quality Policy 2.2: Cross-jurisdictional issues. Collaborate with regional agencies and surrounding jurisdictions to address cross-jurisdictional transportation and air quality issues.	**Not applicable.** This measure applies to government agencies and not individual development project.
Air Quality Policy 2.6: Innovative mitigation. Encourage innovative mitigation measures to reduce air quality impacts by coordinating with the SJVAPCD, project applicants, and other interested parties.	**Consistent.** The project provides increased density to the plan area (7.02 du/acre) and will allow a greater population to utilize the bicycle and pedestrian connections within the plan area.

Table 8 (cont.): Consistency with General Plan Policies

General Plan Policy	Project Consistency
Circulation Policy 1.1: Multimodal network. The City shall plan, design, and maintain the transportation network to promote safe and convenient travel for all users: pedestrian, bicyclists, transit riders, freight, and motorists.	**Consistent.** The project area includes a variety of features designed to provide safe and convenient travel for users of all modes of transportation. Residents will have easy access to the planned and existing bike lanes that connect to the planned trail system that will connect to destinations throughout the City.
Circulation Policy 1.2: Transportation decisions. Decisions should balance the comfort, convenience, and safety of pedestrian, bicyclists, and motorists.	**Consistent.** The project will have easy access to bike lanes that connect with the planned trail system that will provide convenience and safety for pedestrians and bicyclists.
Circulation Policy 1.4: Jobs and housing. Encourage infill development that would provide jobs and services closer to housing, and vice versa, to reduce citywide vehicle miles traveled and effectively utilize the existing transportation infrastructure.	**Consistent.** The project is medium density residential that will provide employees for jobs in Clovis planned and existing business parks and jobs centers with the plan area. The nearest mixed use and business park land uses are planned in areas less than 2 miles west of the project site.
Circulation Policy 1.5: Neighborhood connectivity. The transportation network shall provide multimodal access between neighborhoods and neighborhood-serving uses (educational, recreational, or neighborhood commercial uses).	**Consistent.** The project is approximately 1.5 miles from the Buchanan Education Complex and will be connected by bicycle and pedestrian infrastructure when the area is built out.
Policy 3.5: Energy and water conservation. Encourage new development and substantial rehabilitation projects to exceed energy and water conservation and reduction standards set in the California Building Code.	**Consistent.** The project will meet or exceed energy and water conservation and reduction standards set in the California Building Code.
Policy 3.9: Connected development. New development in Urban Centers must fully improve roadway, pedestrian, and bicycle systems within and adjacent to the proposed project and connect to existing urbanized development.	**Consistent.** The project will provide required street improvements and connections to pedestrian and bicycle systems.
Circulation Policy 3.11: Right-of-way design. Design landscaped parkways, medians, and right-of-ways as aesthetic buffers to improve the community's appearance and encourage non-motorized transportation.	**Consistent.** The project will comply with City of Clovis design standards and landscaping requirements.
Circulation Policy 5.1: Complete street amenities. Upgrade existing streets and design new streets to include complete street amenities, prioritizing improvements to bicycle and pedestrian connectivity or safety (consistent with the Bicycle Transportation Master Plan and other master plans).	**Consistent.** The project would be required to upgrade existing streets fronting the property in accordance with City standards.
Circulation Policy 5.3: Pathways. Encourage pathways and other pedestrian amenities in urban centers and new development 10 acres or larger.	**Consistent.** Future residents will be able to utilize existing and planned sidewalks, bike lanes and paths constructed in compliance with City requirements in

Table 8 (cont.): Consistency with General Plan Policies

General Plan Policy	Project Consistency
	this area.
Circulation Policy 5.5: Pedestrian access. Require sidewalks, paths, and crosswalks to provide access to schools, parks, and other activity centers to provide general pedestrian connectivity throughout the city.	**Consistent.** Future residents will be able to utilize sidewalks and paths constructed in compliance with City requirements in this area.
Source: City of Clovis General Plan 2014	

The air quality mitigation measures and standard conditions from the General Plan PEIR and a discussion of project compliance with each measure is provided in Table 9.

Table 9: Compliance with General Plan PEIR Mitigation Measures

Mitigation Measure	Project Compliance
SC-1: Prior to project approval, each applicant for individual, site-specific developments under the General Plan shall comply with the San Joaquin Valley Air Pollution Control District rules and regulations, including, without limitation, Indirect Source Rule 9510. The applicant shall document, to the City's reasonable satisfaction, its compliance with this standard condition.	The project is required to submit an Air Impact Assessment Application to the SJVAPCD to comply with Rule 9510. The project is required to submit a Dust Control Plan to comply with SJVAPCD Rule 8020.
3-1: Prior to issuance of any construction permits, development project applicants shall prepare and submit to the City of Clovis Planning Division a technical assessment evaluating potential project construction-related air quality impacts.	The analysis of construction emissions is included herein. No criteria pollutant construction emissions exceed SJVPACD thresholds.
The evaluation shall be prepared in conformance with San Joaquin Valley Air Pollution Control District (SJVAPCD) methodology in assessing air quality impacts. If construction-related criteria air pollutants are determined to have the potential to exceed the SJVAPCD adopted thresholds of significance, as identified in the Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI), the City of Clovis Planning Division shall require that applicants for new development projects incorporate mitigation measures to reduce air pollutant emissions during construction activities to below these thresholds. These identified measures shall be incorporated into all appropriate construction documents (e.g., construction management plans) submitted to the City and shall be verified by the City's Planning Division.	The air quality impact analysis prepared for this project utilizes SJVAPCD guidance and thresholds from the GAMAQI.

Table 9 (cont.): Compliance with General Plan PEIR Mitigation Measures

Mitigation Measure	Project Compliance
3-2: Prior to discretionary approval, applicants for phased development projects (i.e., construction would overlap operation/opening of the project) involving residential land uses shall coordinate with the San Joaquin Valley Air Pollution Control District (SJVAPCD) or the City of Clovis in conjunction with the SJVAPCD in preparation of a health risk assessment (HRA) for construction activities. If the construction HRA identifies risk impacts that exceed the standards as determined by the SVJAPCD at the time the project is considered, it shall identify measures to reduce these impacts to below these standards. Recommended measures may include those identified in Mitigation Measure 3-1. The recommendations of the construction HRA shall be incorporated into all construction management plans which shall be submitted to the City and verified by the City's Planning Division.	The project grading activities and site preparation activities that would generate the greatest amount of emissions during construction will not overlap with project operation. Most emissions during construction are emitted during the site preparation and grading phases when heavy equipment is used to prepare the land for construction. The entire site will be graded at one time; therefore, no grading would occur after housing is occupied. Limited amounts of diesel equipment are used during home construction that would not contribute substantially to the health risk during construction. Therefore, no HRA was needed for the analysis to comply with this measure.
3-3: Prior to project approval, development project applicants shall prepare and submit to the City of Clovis Planning Division a technical assessment evaluating potential project operation phase-related air quality impacts. The evaluation shall be prepared in conformance with San Joaquin Valley Air Pollution Control District (SJVAPCD) methodology in assessing air quality impacts. If operational-related criteria air pollutants are determined to have the potential to exceed the SJVAPCD adopted thresholds of significance, as identified in the Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI), the City of Clovis Planning Division shall require that applicants for new development projects(cont.) incorporate mitigation measures to reduce air pollutant emissions during operational activities. The identified measures shall be included as part of the Standard Conditions of Approval.	The analysis of project operational emissions is included herein. No criteria pollutant operational emissions exceed SJVPACD thresholds.
3-4: Prior to project approval, the City of Clovis Planning Division shall require applicants for individual, site-specific developments to consider establishing a Voluntary Emission Reduction Agreement (VERA) with the San Joaquin Valley Air Pollution Control District. Under this agreement, project proponents may enter into an agreement where funds are used to develop and implement emission reduction projects.	The project does not exceed SJVAPCD significance thresholds; therefore, no VERA would be required to reduce project impacts.

Table 9 (cont.): Compliance with General Plan PEIR Mitigation Measures

3-5: Prior to discretionary project approval, the City of Clovis shall evaluate new development proposals for sensitive land uses (e.g., residential, schools, day care centers) within the City for potential incompatibilities with regard to the California Air Resources Board's Air Quality and Land Use Handbook: A Community Health Perspective (April 2005). Applicants for sensitive land uses that are within the recommended buffer distances shall submit a health risk assessment (HRA) to the City of Clovis prior to future discretionary project approval. The HRA shall be prepared in accordance with policies and procedures of the state Office of Environmental Health Hazard Assessment (OEHHA) and the San Joaquin Valley Air Pollution Control District. The latest OEHHA guidelines shall be used for the analysis, including age sensitivity factors, breathing rates, and body weights appropriate for children age 0 to 6 years. If the HRA shows that the incremental cancer risk exceeds ten in one million (10E-06), the appropriate non-cancer hazard index exceeds 1.0, or if the PM_{10} or $PM_{2.5}$ ambient air quality standard increment exceeds 2.5 µg/m3, the applicant will be required to identify and demonstrate that mitigation measures are capable of reducing potential cancer and non-cancer risks to an acceptable level (i.e., below ten in one million or a hazard index of 1.0), including appropriate enforcement mechanisms**.**	The impacts to sensitive receptors were evaluated herein. No sources of toxic emissions identified by the ARB Air Quality and Land Use Handbook were identified within the recommended buffer distances.
3-6: Prior to discretionary project approval, applicants for industrial or warehousing land uses shall coordinate with the San Joaquin Valley Air Pollution Control District (SJVAPCD) or the City of Clovis in conjunction with the SJVAPCD to determine the appropriate level of health risk assessment (HRA) required. All HRAs shall be submitted to the City of Clovis.	The project is a residential development. This mitigation measure is not applicable.

Air Quality Plan Control Measures

The AQP contains a number of control measures, which are enforceable requirements through the adoption of rules and regulations. A detailed description of rules and regulations that apply to this project is provided in Section 2.2, Regulatory Setting. The project would comply with all applicable SJVAPCD rules and regulations. Therefore, the project complies with this criterion and would not conflict with or obstruct implementation of the applicable air quality attainment plan.

Conclusion

The project's emissions are less than significant for all criteria pollutants and would not result in inconsistency with the AQP for this criterion. The project's proposed land use designation is consistent with the land use policies of the City of Clovis 2014 General Plan. The project complies with all applicable policies, implementation actions and mitigation measures of the 2014 General Plan; therefore, the project is not considered inconsistent with the AQP, and the impact would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant impact.

5.2.2 - Potential for Air Quality Standard Violation

Impact AIR-2:	**The project would not violate any air quality standard or contribute substantially to an existing or projected air quality violation.**

Impact Analysis

Regional Emissions

Air pollutant emissions have both regional and localized effects. This analysis assesses the regional effects of the project's criteria pollutant emissions in comparison to SJVAPCD thresholds of significance for short-term construction activities and long-term operation of the project. Localized emissions from project construction and operation are also assessed using concentration-based thresholds that determine if the project would result in a localized exceedance of any ambient air quality standards or would make a cumulatively considerable contribution to an existing exceedance.

The primary pollutants of concern during project construction and operation are ROG, NO_x, PM_{10}, and $PM_{2.5}$. The SJVAPCD GAMAQI adopted in 2015 contains thresholds for CO, NO_x, ROG, SO_x, PM_{10}, and $PM_{2.5}$.

Ozone is a secondary pollutant that can be formed miles from the source of emissions, through reactions of ROG and NO_x emissions in the presence of sunlight. Therefore, ROG and NO_x are termed ozone precursors. The Air Basin often exceeds the state and national ozone standards. Therefore, if the project emits a substantial quantity of ozone precursors, the project may contribute to an exceedance of the ozone standard. The Air Basin also exceeds air quality standards for PM_{10}, and $PM_{2.5}$; therefore, substantial project emissions may contribute to an exceedance for these pollutants. The District's annual emission significance thresholds used for the project define the substantial contribution for both operational and construction emissions as follows:

- 100 tons per year CO
- 10 tons per year NO_x
- 10 tons per year ROG
- 27 tons per year SO_x
- 15 tons per year PM_{10}
- 15 tons per year $PM_{2.5}$

The project does not contain sources that would produce substantial quantities of SO_2 emissions during construction and operation. Modeling conducted for the project show that SO_2 emissions are well below the SJVAPCD GAMAQI thresholds, as shown in the modeling results contained in Appendix A. No further analysis of SO_2 is required.

Construction Emissions

Construction emissions associated with the project are shown for the years 2016 and 2017 in Table 10. For assumptions in estimating the emissions, please refer to Section 4, Modeling Parameters and Assumptions. As shown in Table 10, the emissions are below the significance thresholds in each construction year. Therefore, the emissions are less than significant on a project basis.

Table 10: Construction Air Pollutant Emissions

Year	Emissions (tons per year)				
	ROG	NO_x	CO	PM_{10}	$PM_{2.5}$
2017	0.60	5.67	4.41	0.99	0.59
2018	0.42	3.38	3.22	0.33	0.22
2019	0.37	3.05	3.09	0.30	0.20
2020	4.65	1.09	1.19	0.10	0.07
Highest Emissions in Any Year of Construction	*4.65*	*5.67*	*4.41*	*0.99*	*0.59*
Significance threshold (tons/year)	10	10	100	15	15
Exceed threshold—significant impact?	No	No	No	No	No

Notes:
PM_{10} and $PM_{2.5}$ emissions are from the mitigated output to reflect compliance with Regulation VIII – Fugitive PM_{10} Prohibitions.
ROG = reactive organic gases NO_x = nitrogen oxides PM_{10} and $PM_{2.5}$ = particulate matter
Source: CalEEMod output (Appendix A).

Operational Emissions

Operational emissions occur over the lifetime of the project and are from two main sources: area sources and motor vehicles, or mobile sources. Construction is scheduled to be completed in a single phase. Operations were modeled assuming that all units would be completed in 2017 as a conservative assumption. The SJVAPCD considers construction and operational emissions separately when making significance determinations; in any case, the annual operational emissions combined with the annual construction emissions would not exceed the SJVAPCD thresholds of significance in any modeling year.

For assumptions in estimating the emissions, please refer to Section 4, Modeling Parameters and Assumptions. The emissions modeling results for project operation are summarized in Table 11. Please note that these results include the benefits from compliance with mandated regulations not yet incorporated into CalEEMod, and project design and location using the CalEEMod mitigation component. These measures and regulations are considered part of the project baseline; however, the results are presented in the CalEEMod mitigated model output and are not considered mitigation required for CEQA compliance.

Reductions from land use and transportation measures related to the project's location, site design, and proximity to alternative modes of transportation are calculated by CalEEMod and are based on the methodology presented in California Air Pollution Control Officers Association's (CAPCOA's) 2010

report, Quantifying Greenhouse Gas Mitigation Measures. As shown in Table 11, the emissions are below the SJVAPCD significance thresholds, and therefore, would result in a less than significant impact.

Table 11: Operational Air Pollutant Emissions (2017)

Source	Emissions (tons per year)				
	ROG	NO_x	CO	PM_{10}	$PM_{2.5}$
Area	2.11	0.02	2.00	0.02	0.02
Energy	0.04	0.31	0.13	0.03	0.03
Mobile	1.67	3.33	17.83	2.79	0.78
Total	**3.81**	**3.67**	**19.96**	**2.84**	**0.82**
Significance threshold	10	10	100	15	15
Exceed threshold—significant impact?	No	No	No	No	No

Notes:
ROG = reactive organic gases NO_x = nitrogen oxides PM_{10} and $PM_{2.5}$ = particulate matter
Area source emissions include emissions from natural gas, landscape, and painting.
Source: CalEEMod output (Appendix A).

Localized Pollutant Analysis

Emissions occurring at or near the project have the potential to create a localized impact, also referred to as an air pollutant hotspot. Localized emissions are considered significant if when combined with background emissions, they would result in exceedance of any health-based air quality standard. In locations that already exceed standards for these pollutants, significance is based on a significant impact level (SIL) that represents the amount that is considered a cumulatively considerable contribution to an existing violation of an air quality standard.

The SJVAPCD's GAMAQI includes screening thresholds for identifying projects that need detailed analysis for localized impacts. Projects with on-site emission increases from construction activities or operational activities that exceed the 100 pounds per day screening level of any criteria pollutant after compliance with Rule 9510 and implementation of all enforceable mitigation measures would require preparation of an ambient air quality analysis. The criteria pollutants of concern for localized impact in the SJVAB are PM_{10}, $PM_{2.5}$, ROG, NOx, and CO. The localized emissions of most types of ROG are not toxic and have no health-based standard; however, some ROG emissions such as evaporated gasoline are toxic air contaminant emissions due to the benzene content. Most of the project emissions during construction are from architectural coatings that have limited toxic content for most types of coatings used in residential construction.

An analysis of maximum daily emissions during construction and operation was conducted to determine if emissions would exceed 100 pounds per day for any pollutant of concern. The maximum daily emissions of PM_{10} and $PM_{2.5}$ during construction would occur during the site preparation phase in 2017. The maximum daily emissions of NO_x and CO during construction would occur during the building construction phase in 2017. The maximum daily operational emissions would occur at project buildout, which was assumed to occur in 2017. Maximum daily ROG

emissions would occur during architectural coatings, which would occur as each unit is finished, but is listed under 2020 construction due to the way that CalEEMod estimates emissions from this source. Operational emissions include emissions generated on-site by area sources such as natural gas combustion and landscape maintenance, and off-site by motor vehicles accessing the project. Most motor vehicle emissions would occur distant from the site. Therefore, emissions that would occur within 0.5 miles from the project site to provide a conservative estimate of localized impacts from mobile sources. The results of the screening analysis are presented in Table 12 and Table 13.

Table 12: Maximum Daily Air Pollutant Emissions During Construction

Source	Emissions (pounds per day)				
	ROG	NO_x	CO	PM_{10}	$PM_{2.5}$
Construction 2017	6.16	69.68	47.63	20.97	12.50
Construction 2018	3.27	25.99	25.62	2.52	1.71
Construction 2019	2.89	23.43	24.63	2.31	1.51
Construction 2020	71.30	21.20	23.80	2.13	1.34
Maximum Daily Emissions	**71.30**	**69.68**	**47.63**	**20.97**	**12.50**
Screening threshold	100	100	100	100	100
Exceed screening threshold?	No	No	No	No	No

Notes:
NO_x = nitrogen oxides CO = carbon monoxide PM_{10} and $PM_{2.5}$ = particulate matter
N/A – Not applicable
Source: Architectural Coatings Spreadsheet and CalEEMod output (Appendix A).

Table 13: Maximum Daily Emissions During Operations

Source	Emissions (pounds per day)				
	ROG	NO_x	CO	PM_{10}	$PM_{2.5}$
Maximum Daily Emissions	13.21	4.83	33.32	1.63	0.79
Screening threshold	100	100	100	100	100
Exceed screening threshold?	No	No	No	No	

Notes:
NO_x = nitrogen oxides CO = carbon monoxide PM_{10} and $PM_{2.5}$ = particulate matter
N/A – Not applicable
Source: CalEEMod output (Appendix A).

The project would not exceed SJVAPCD screening thresholds for localized criteria pollutant impacts; therefore, the project's localized criteria pollutant impacts are less than significant.

Carbon Monoxide Hot Spot Analysis

Localized high levels of CO are associated with traffic congestion and idling or slow-moving vehicles. The SJVAPCD provides screening criteria to determine when to quantify local CO concentrations based on impacts to the level of service (LOS) of intersections in the project vicinity.

The construction of the project would result in minor increases in traffic for the surrounding road network during the duration of construction. Motor vehicles accessing the site when it becomes operational would result in a minor increase in daily trips that would not substantially reduce the LOS. Furthermore, local roadways are not identified as operating at unacceptable conditions under existing and future buildout conditions, according the City of Clovis General Plan. In addition, the highest background 8-hour average of carbon monoxide, as shown in Table 2, is 2.06 ppm, which is 78 percent lower than the state ambient air quality standard of 9.0 ppm. Therefore, the project would not significantly contribute to an exceedance of state or federal CO standards.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant impact.

5.2.3 - Cumulative Impacts

Impact AIR-3:	**The project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).**

Impact Analysis

To result in a less than significant impact, the following criteria must be true:

1. Regional analysis: emissions of nonattainment pollutants must be below the District's regional significance thresholds. This is an approach recommended by the District in its GAMAQI.
2. Summary of projections: the project must be consistent with current air quality attainment plans including control measures and regulations. This is an approach consistent with Section 15130(b) of the CEQA Guidelines.
3. Cumulative health impacts: the project must result in less than significant cumulative health effects from the nonattainment pollutants. This approach correlates the significance of the regional analysis with health effects, consistent with the court decision, *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1219-20.

Step 1: Regional Analysis

If an area is in nonattainment for a criteria pollutant, then the background concentration of that pollutant has historically exceeded the ambient air quality standard. It follows that if a project exceeds the regional threshold for that nonattainment pollutant, then it would result in a cumulatively considerable net increase of that pollutant and result in a significant cumulative impact.

The Air Basin is in nonattainment for PM_{10}, $PM_{2.5}$, and ozone. Therefore, if the project exceeds the regional thresholds for PM_{10}, or $PM_{2.5}$, then it contributes to a cumulatively considerable impact for those pollutants. If the project exceeds the regional threshold for NO_x or ROG, then it follows that the project would contribute to a cumulatively considerable impact for ozone.

Regional emissions include those generated from all on-site and off-site activities. Regional significance thresholds have been established by the District because emissions from projects in the Air Basin can potentially contribute to the existing emission burden and possibly affect the attainment and maintenance of ambient air quality standards. Projects within the Air Basin region with regional emissions in excess of any of the thresholds presented previously are considered to have a significant regional air quality impact.

The criteria pollutant emissions analysis assessed whether the project would exceed the District's thresholds of significance. As shown in Table 10, Table 11, and Table 12, criteria pollutant emissions would not exceed any threshold of significance during project construction or operation. Therefore, the combination of unmitigated project emissions with the criteria pollutants from other sources within the Air Basin would not cumulatively contribute to a significant impact according to this criterion.

Step 2: Plan Approach

Section 15130(b) of the CEQA Guidelines states the following:

> The following elements are necessary to an adequate discussion of significant cumulative impacts: 1) Either: (A) A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency, or (B) A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact.

In accordance with CEQA Guidelines 15130(b), this analysis of cumulative impacts is based on a summary of projections analysis. The District attainment plans are based on a summary of projections that accounts for projected growth throughout the Air Basin, and the controls needed to achieve ambient air quality standards. This analysis considers the current CEQA Guidelines, which includes the amendments approved by the Natural Resources Agency, effective on March 18, 2010. The Air Basin is in nonattainment or maintenance status for ozone and particulate matter (PM_{10} and $PM_{2.5}$), which means that concentrations of those pollutants currently exceed the ambient air quality standards for those pollutants, or that the standards have recently been attained in the case of pollutants with maintenance status. When concentrations of ozone, PM_{10}, or $PM_{2.5}$ exceed the

ambient air quality standard, then those sensitive to air pollution (such as children, the elderly, and the infirm) could experience health effects such as: decrease of pulmonary function and localized lung edema in humans and animals; increased mortality risk; and risk to public health, implied by altered connective tissue metabolism, altered pulmonary morphology in animals after long-term exposures, and pulmonary function decrements in chronically exposed humans. See Section 2.3 - Existing Air Quality Conditions for additional correlation of the health impacts with the existing pollutant concentrations experienced in the Clovis area.

Under the amended CEQA Guidelines, cumulative impacts may be analyzed using other plans that evaluate relevant cumulative effects. The geographic scope for cumulative criteria pollution from air quality impacts is the Air Basin, because that is the area in which the air pollutants generated by the sources within the Air Basin circulate and are often trapped. The SJVAPCD is required to prepare and maintain air quality attainment plans and a State Implementation Plan to document the strategies and measures to be undertaken to reach attainment of ambient air quality standards. While the SJVAPCD does not have authority over land use decisions, it is recognized that changes in land use and circulation planning would help the Air Basin achieve clean air mandates. The District evaluated emissions from land uses and transportation in the entire Air Basin when it developed its attainment plans. Emission inventories used to predict attainment of NAAQS must be based on the latest planning assumptions for mobile sources.

In accordance with CEQA Guidelines Section 15064, subdivision (h)(3), a lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project complies with the requirements in a previously approved plan or mitigation program.

The history and development of the SJVAPCD's current Ozone Attainment Plan is described in Section 2.4, Air Quality Plans. The 2007 8-Hour Ozone Plan contains measures to achieve reductions in emissions of ozone precursors, and sets plans towards attainment of ambient ozone standards by 2023. The 2012 $PM_{2.5}$ Plan and the 2015 $PM_{2.5}$ Plan for the 1997 $PM_{2.5}$ Standard require fewer NO_x reductions to attain the $PM_{2.5}$ standard than the Ozone Plan, so the Ozone Plan is considered the applicable plan for reductions of the ozone precursors NO_x and ROG. The 2012 $PM_{2.5}$ Plan requires reductions in directly emitted $PM_{2.5}$ from combustion sources, such as diesel engines and fireplaces, and from fugitive dust to attain the ambient standard and is the applicable plan for $PM_{2.5}$ emissions. $PM_{2.5}$ is also formed in secondary reactions in the atmosphere involving NO_x and ammonia to form nitrate particles. Reductions in NO_x required for ozone attainment are also sufficient for $PM_{2.5}$ attainment. As discussed in Impact AIR-1, the project is consistent with all applicable control measures in the air quality attainment plans. The project would comply with any District rules and regulations that may pertain to implementation of the AQPs. Therefore, impacts would be less than significant with regard to compliance with applicable rules and regulations.

The City Clovis General Plan found cumulative impacts to be significant because the projected emissions from the buildout of the plan exceed the SJVAPCD quantitative thresholds of significance and application of SJVAPCD Rule 9510, and implementation of the General Plan policies and implementation actions would reduce impacts to the extent feasible. For example, Policy 1.1 of the Air Quality Element focuses on reducing mobile-source emissions through land use planning that would reduce overall vehicle miles traveled. However, future development projects could exceed the SJVAPCD regional emissions thresholds. Therefore, operational-related air quality impacts

associated with future development under the proposed General Plan Update are considered significant and unavoidable. This project does not exceed SJVAPCD thresholds and will reduce its cumulative impact through compliance with Rule 9510; therefore, the project is considered less than significant for this criterion.

Step 3: Cumulative Health Impacts

The Air Basin is in nonattainment for ozone, PM_{10}, (State only) and $PM_{2.5}$, which means that the background levels of those pollutants are at times higher than the ambient air quality standards. The air quality standards were set to protect public health, including the health of sensitive individuals (such as children, the elderly, and the infirm). Therefore, when the concentration of those pollutants exceeds the standard, it is likely that some sensitive individuals in the population would experience health effects that were described in Table 1. However, the health effects are a factor of the dose-response curve. Concentration of the pollutant in the air (dose), the length of time exposed, and the response of the individual are factors involved in the severity and nature of health impacts. If a significant health impact results from project emissions, it does not mean that 100 percent of the population would experience health effects.

Since the Basin is nonattainment for ozone, PM_{10}, and $PM_{2.5}$, it is considered to have an existing significant cumulative health impact without the project. When this occurs, the analysis considers whether the project's contribution to the existing violation of air quality standards is cumulatively considerable. The SJVAPCD regional thresholds for NO_x, VOC, PM_{10}, or $PM_{2.5}$ are applied as cumulative contribution thresholds. Projects that exceed the regional thresholds would have a cumulatively considerable health impact. As shown in Table 10 and Table 11, the regional analysis of construction and operational emissions indicates that the project would not exceed the District's significance thresholds and the project is consistent with the applicable Air Quality Attainment Plan. Therefore, the project would not result in significant cumulative health impacts.

The SJVAPCD Air Quality Attainment Plans predict that nonattainment pollutant emissions will continue to decline each year as regulations adopted to reduce these emissions are implemented, accounting for growth projected for the region. Therefore, the cumulative health impact will also decline even with the project's emission contribution.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant impact.

5.2.4 - Sensitive Receptors

Impact AIR-4: **The project would not expose sensitive receptors to substantial pollutant concentrations.**

Impact Analysis

Sensitive Receptors

Those who are sensitive to air pollution include children, the elderly, and persons with preexisting respiratory or cardiovascular illness. The District considers a sensitive receptor to be a location that houses or attracts children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants. Examples of sensitive receptors include hospitals, residences, convalescent facilities, and schools. The closest sensitive receptor is a residence approximately 413 feet south of the southwestern corner of the project site.

Impacts to On-site Workers

The project is not a commercial or industrial operation that would have on-site workers. Therefore, a health risk assessment for on-site workers is not required or recommended.

Construction: ROG

ROG is emitted during the application of architectural coatings (painting). The amount emitted is dependent on the amount of ROG (or VOC) in the paint. ROG emissions are typically an indoor air quality health hazard concern rather than an outdoor air quality health hazard concern. Therefore, exposure to ROG during architectural coatings is a less than significant health impact.

There are three types of asphalt that are typically used in paving: asphalt cements, cutback asphalts, and emulsified asphalts. However, SJVAPCD Rule 4641 prohibits the use of the following types of asphalt: rapid cure cutback asphalt; medium cure cutback asphalt; slow cure asphalt that contains more than one-half (0.5) percent of organic compounds that evaporate at 500 degrees Fahrenheit (°F) or lower; and emulsified asphalt containing organic compounds, in excess of 3 percent by volume, that evaporate at 500°F or lower. An exception to this is medium cure asphalt when the National Weather Service official forecast of the high temperature for the 24-hour period following application is below 50°F.

The acute (short-term) health effects from worker direct exposure to asphalt fumes include irritation of the eyes, nose, and throat. Other effects include respiratory tract symptoms and pulmonary function changes. The studies were based on occupational exposure of fumes. Residents are not in the immediate vicinity of the fumes; therefore, they would not be subjected to concentrations high enough to evoke a negative response. In addition, the restrictions that are placed on asphalt in the San Joaquin Valley reduce ROG emissions from asphalt and exposure. The impact to nearby sensitive receptors from ROG during construction is less than significant.

Operation: ROG

During operation, ROG would be emitted primarily from motor vehicles. Direct exposure to ROG from project motor vehicles would not result in health effects, because the ROG would be distributed across miles and miles of roadway and in the air. The concentrations would not be great enough to result in direct health effects.

Construction: NO_x, PM_{10}, $PM_{2.5}$

As discussed in Impact AIR-2, emissions during construction would not exceed the significance thresholds, and would not be expected to result in concentrations that would exceed ambient standards or contribute substantially to an existing exceedance of an ambient air quality standard.

Operation: PM_{10}, $PM_{2.5}$, CO, NO_2

As discussed in Impact AIR-2, localized concentrations of PM_{10}, $PM_{2.5}$, CO, and NO_2 would not exceed the ambient air quality standards. Residential development is an insignificant source of these pollutants, except for projects that allow woodburning devices that emit PM_{10}, $PM_{2.5}$ in wood smoke. The project will include only natural gas fueled fireplaces and inserts that are insignificant sources of $PM_{2.5}$ and PM_{10}. Therefore, the project would not expose sensitive receptors to substantial criteria air pollutant concentrations during operation.

Construction: Toxic Air Contaminants

Project construction would involve the use of diesel-fueled vehicles and equipment that emit DPM, which is considered a TAC. The SJVAPCD's latest threshold of significance for TAC emissions is an increase in cancer risk for the maximally exposed individual of 20 in a million (formerly 10 in a million). The SJVAPCD's 2015 GAMAQI does not currently recommend analysis of TAC emissions from project construction activities, but instead focuses on projects with operational emissions that would expose sensitive receptors over a typical lifetime of 70 years. Residential projects produce limited amounts of TAC emissions during operation and thus have not been subject to project TAC analysis. Most emissions from construction activities occur during the grading and site preparation phases that occur over the first three months of construction and do not overlap with project operations. Limited amounts of diesel equipment are used during ground-up construction of individual houses that occurs during the majority of the construction schedule when some units may be occupied. The project does not propose phasing that would require the preparation of a health risk assessment as required by General Plan PEIR Mitigation Measure 3-2. Construction equipment fleet operators are subject to ARB's In Use Offroad Equipment Fleet Regulation, which requires the use of increasing amounts of lower-emitting equipment that will help to ensure that risk would not exceed SJVAPCD thresholds.

Construction phase risks would be considered acute health risks as opposed to cancer risks, which are long-term. OEHHA has yet to define acute risk factors for diesel particulates that would allow the calculation of a hazards risk index; thus, evaluation of this impact would be speculative and no further discussion is necessary.

Operation: Toxic Air Contaminants

The ARB Air Quality and Land Use Handbook contains recommendations that will "help keep California's children and other vulnerable populations out of harm's way with respect to nearby sources of air pollution" (ARB 2005), including recommendations for distances between sensitive receptors and certain land uses. Consistency with these recommendations is assessed as follows:

- Heavily traveled roads. ARB recommends avoiding new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day. Epidemiological studies indicate that the distance from the roadway and truck traffic

densities were key factors in the correlation of health effects, particularly in children. The project is served by East Shepherd Avenue and North Clovis Avenue. Traffic counts for Shepherd Avenue compiled by the Fresno Council of Governments indicate that the road had a total of 10,430 daily trips in 2011. Clovis Avenue at Nees Avenue had a total of 6,630 daily trips. No roads serving the project would exceed this criterion (Fresno COG 2013).

- Distribution centers. ARB also recommends avoiding siting new sensitive land uses within 1,000 feet of a distribution center. The project is not located within 1,000 feet of a distribution center.
- Fueling stations. ARB recommends avoiding new sensitive land uses within 300 feet of a large fueling station (a facility with a throughput of 3.6 million gallons per year or greater). ARB recommends a 50-foot separation is recommended for typical gas dispensing facilities. The nearest gas station is approximately 2.5 miles from the project site.
- Dry cleaning operations. ARB recommends avoiding siting new sensitive land uses within 300 feet of any dry cleaning operation that uses perchloroethylene. For operations with two or more machines, ARB recommends a buffer of 500 feet. For operations with three or more machines, ARB recommends consultation with the local air district. The nearest dry cleaning operation is approximately 2.5 miles from the project site.

Valley Fever

Valley fever, or coccidioidomycosis, is an infection caused by inhalation of the spores of the fungus, *Coccidioides immitis* (*C. immitis*). The spores live in soil and can live for an extended time in harsh environmental conditions. Activities or conditions that increase the amount of fugitive dust contribute to greater exposure, and they include dust storms, grading, and recreational off-road activities.

The San Joaquin Valley is considered an endemic area for Valley fever. By geographic region, hospitalizations for Valley fever in the San Joaquin Valley increased from 230 (6.9 per 100,000 population) in 2000 to 701 (17.7 per 100,000 population) in 2007. Within the region, Kern County reported the highest hospitalization rates, increasing from 121 (18.2 per 100,000 population) in 2000 to 285 (34.9 per 100,000 population) in 2007, and peaking in 2005 at 353 hospitalizations (45.8 per 100,000 population). The Centers for Disease Control and Prevention indicates that 752 of the 8,657 persons (8.7 percent) hospitalized in California between 2000 and 2007 for Valley fever died (CDC 2009).

The distribution of *C. immitis* within endemic areas is not uniform and growth sites are commonly small (a few tens of meters) and widely scattered. Known sites appear to have some ecological factors in common suggesting that certain physical, chemical, and biological conditions are more favorable for *C. immitis* growth. Avoidance, when possible, of sites favorable for the occurrence of *C. immitis* is a prudent risk management strategy. Listed below are ecologic factors and sites favorable for the occurrence of *C. immitis*:

1) Rodent burrows (often a favorable site for *C. immitis*, perhaps because temperatures are more moderate and humidity higher than on the ground surface)
2) Old (prehistoric) Indian campsites near fire pits

3) Areas with sparse vegetation and alkaline soils
4) Areas with high salinity soils
5) Areas adjacent to arroyos (where residual moisture may be available)
6) Packrat middens
7) Upper 30 centimeters of the soil horizon, especially in virgin undisturbed soils
8) Sandy, well-aerated soil with relatively high water-holding capacities

Sites within endemic areas less favorable for the occurrence of *C. immitis* include:

1) Cultivated fields
2) Heavily vegetated areas (e.g. grassy lawns)
3) Higher elevations (above 7,000 feet)
4) Areas where commercial fertilizers (e.g. ammonium sulfate) have been applied
5) Areas that are continually wet
6) Paved (asphalt or concrete) or oiled areas
7) Soils containing abundant microorganisms
8) Heavily urbanized areas where there is little undisturbed virgin soil (USGS 2000).

The project site is situated in a City growth area. The project includes urbanization of a site that is currently used for agricultural purposes. Therefore, implementation of the project would have a low probability of the site having *C. immitis* growth sites and exposure to the spores from disturbed soil.

Construction activities would generate fugitive dust that could contain *C. immitis* spores. The project will minimize the generation of fugitive dust during construction activities by complying with the District's Regulation VIII. Therefore, this regulation, combined with the relatively low probability of the presence of *C. immitis* spores would reduce Valley fever impacts to less than significant.

During operations, dust emissions are anticipated to be negligible, because most of the project area would be occupied by buildings, pavement, and landscaped areas. This condition would preclude the possibility of the project from providing habitat suitable for C. immitis spores and for generating fugitive dust that may contribute to Valley fever exposure. Impacts would be less than significant.

Naturally Occurring Asbestos

According to a map of areas where naturally occurring asbestos in California are likely to occur (U.S. Geological Survey 2011), there are no such areas in the project area. Therefore, development of the project is not anticipated to expose receptors to naturally occurring asbestos. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant impact.

5.2.5 - Objectionable Odors

Impact AIR-5:	**The project would not create objectionable odors affecting a substantial number of people.**

Impact Analysis

Thresholds of Significance

Odor impacts on residential areas and other sensitive receptors, such as hospitals, day-care centers, schools, etc. warrant the closest scrutiny, but consideration should also be given to other land uses where people may congregate, such as recreational facilities, worksites, and commercial areas.

Two situations create a potential for odor impact. The first occurs when a new odor source is located near an existing sensitive receptor. The second occurs when a new sensitive receptor locates near an existing source of odor. The District has determined the common land use types that are known to produce odors in the Air Basin. These types are shown in Table 13.

Table 13: Screening Levels for Potential Odor Sources

Odor Generator	Screening Distance
Wastewater Treatment Facilities	2 miles
Sanitary Landfill	1 mile
Transfer Station	1 mile
Composting Facility	1 mile
Petroleum Refinery	2 miles
Asphalt Batch Plant	1 mile
Chemical Manufacturing	1 mile
Fiberglass Manufacturing	1 mile
Painting/Coating Operations (e.g., auto body shop)	1 mile
Food Processing Facility	1 mile
Feed Lot/Dairy	1 mile
Rendering Plant	1 mile
Source: SJVAPCD 2015a.	

According to the SJVAPCD GAMAQI, analysis of potential odor impacts should be conducted for the following two situations:

- **Generators:** projects that would potentially generate odorous emissions proposed to locate near existing sensitive receptors or other land uses where people may congregate, and
- **Receivers:** residential or other sensitive receptor projects or other projects built for the intent of attracting people located near existing odor sources.

If the project were to result in sensitive receptors being located closer than the recommended distances to an odor generator in the list in Table 13, a more detailed analysis including a review of SJVAPCD odor complaint records is recommended. For a project located near an existing source of odors, the project should be identified as having a significant odor impact if it is proposed for a site that is closer to an existing odor source than any location where there have been:

- More than one *confirmed* complaint per year averaged over a three-year period, or
- Three *unconfirmed* complaints per year averaged over a three-year period.

Project Analysis

Land uses that are typically identified as sources of objectionable odors include landfills, transfer stations, sewage treatment plants, wastewater pump stations, composting facilities, feed lots, coffee roasters, asphalt batch plants, and rendering plants. The project would not engage in any of these activities. Therefore, the project would not be considered to be a generator of objectionable odors during operations.

During construction, the various diesel-powered vehicles and equipment in use on-site would create localized odors. These odors would be temporary and would not likely be noticeable for extended periods of time beyond the project's site boundaries. The potential for diesel odor impacts is therefore less than significant.

As a residential project, the project has the potential to place sensitive receptors near existing odor sources. The project site is located approximately 7 miles northwest from the existing Clovis Water Reuse Facility located at the northwest corner of Ashlan Avenue and McCall Avenue. As outlined on the City of Clovis' website, the facility contains features that keep odor to a minimum (City of Clovis 2015). Other than the Clovis Water Reuse Facility, there are no other major odor generating sources (as listed in Table 13) within screening distance of the site. Therefore, the uses in the vicinity of the project would not cause substantial odor impacts to the project.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant impact.

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SECTION 6: GREENHOUSE GAS IMPACT ANALYSIS

6.1 - CEQA Guidelines

CEQA Guidelines define a significant effect on the environment as "a substantial, or potentially substantial, adverse change in the environment." To determine if a project would have a significant impact on GHGs, the type, level, and impact of emissions generated by the project must be evaluated.

The following GHG significance thresholds are contained in Appendix G of the CEQA Guidelines, which were amendments adopted into the Guidelines on March 18, 2010, pursuant to SB 97. A significant impact would occur if the project would:

(a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or

(b) Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

6.2 - Impact Analysis

6.2.1 - Greenhouse Gas Inventory

Impact GHG-1:	**The project would generate direct and indirect greenhouse gas emissions; however, these emissions would not result in a significant impact on the environment.**

Impact Analysis

Threshold of Significance

Section 15064.4(b) of the CEQA Guidelines' amendments for GHG emissions states that a lead agency may take into account the following three considerations in assessing the significance of impacts from GHG emissions.

- **Consideration #1**: The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting.
- **Consideration #2**: Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
- **Consideration #3**: The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. Such regulations or requirements must be adopted by the relevant public agency through a public review process and must include specific requirements that reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

The City of Clovis has not adopted its own GHG thresholds or prepared a Climate Action Plan that can be used as a basis for determining project significance; however, General Plan PEIR Mitigation Measure 7-1 requires applicants to meet a 29 percent reduction from BAU in accordance with SJVAPCD methodologies. The SJVAPCD's Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA includes thresholds based on whether the project will reduce or mitigate GHG levels by 29 percent from BAU levels compared with 2005 levels (SJVAPCD 2009b). This level of GHG reduction is based on the target established by ARB's AB 32 Scoping Plan, approved in 2008.

The First Update to the Climate Change Scoping Plan adopted in May 2014 provided revised inventory projections to reflect slower growth in emissions during the recession and lower future year projections. The State's 2020 BAU inventory was reduced from 596 $MMTCO_2e$ to 545 $MMTCO_2e$ (ARB 2014b). The new GHG reduction level for the State to reach 1990 emission levels by 2020 is 21.7 percent from BAU in 2020. The First Update to the Climate Change Scoping Plan also confirmed that the State is on track to achieve the 2020 target and to maintain and continue reductions beyond 2020 as required by AB 32 (ARB 2014b).

Although a lower percentage reduction (21.7 percent) would demonstrate consistency with AB 32, this analysis uses the 29 percent reduction from BAU as the basis of the threshold as a conservative approach. The analysis prepared for the project also includes a qualitative assessment of compliance with Scoping Plan and General Plan measures to support GHG significance findings under Impact GHG-2. The SJVAPCD defines Business-as-Usual (BAU) as the total baseline emissions for all emissions sources within the development type, projected for the year 2020, assuming no change in GHG emissions per unit of activity as established for the baseline period.

Newhall Ranch

On November 30, 2015, the California Supreme Court issued its decision in *Newhall Ranch,* invalidating the GHG analysis for a large master planned residential development in Los Angeles County consisting of over 20,000 residential dwelling units and other uses. In particular, the Court upheld: (1) use of the statewide emissions reduction goal in AB 32 as a significance criterion (pp. 15–19), (2) use of the Scoping Plan's BAU model "as a comparative tool for evaluating efficiency and conservation efforts" of the Project (pp. 18–19), and (3) a comparison of the project's expected emissions to a BAU model rather than a baseline of pre-project conditions (pp. 15–19). The Court invalidated the GHG analysis on the grounds that the "administrative record discloses no substantial evidence that the Newhall Ranch's project-level reduction of 31 percent in comparison to [BAU] is consistent with achieving AB 32's statewide goal of a 29 percent reduction from [BAU]. The Court indicated that a lead agency may use a BAU comparison based on the Scoping Plan's methodology if it also substantiates the reduction a particular project must achieve to comply with statewide goals. The Court suggested a lead agency could examine the "data behind the Scoping Plan's business-as-usual model" to determine the necessary project-level reductions from new land use development at the proposed location (p. 25.) A lead agency "might assess consistency with AB 32's goal in whole or part by looking to compliance with regulatory programs designed to reduce greenhouse gas emissions from particular activities".

The substantial evidence needed to support a project BAU threshold can be derived from data used to develop the Scoping Plan inventory and control strategy, and from analysis conducted by the ARB

to track progress in achieving the AB 32 2020 target. The critical factor in determining the appropriate project threshold is whether the State requires additional reductions beyond those achieved by existing regulations in order to achieve its target. If no additional reductions are required from individual projects, no nexus exists to require a project to mitigate its emissions. In that case, the percentage reductions achieved by projects through compliance with regulations is the amount needed to reach the AB 32 target.

The State's regulatory program implementing the 2008 Scoping Plan is now fully mature. All regulations envisioned in the Scoping Plan have been adopted by the responsible agencies and the effectiveness of those regulations have been estimated by the agencies during the adoption process and then are tracked to verify their effectiveness after implementation. The combined effect of this successful effort is that the State now projects that it will meet the 2020 target and achieve continued progress toward meeting post-2020 targets. Governor Brown, in the introduction to Executive Order B-30-15, states "California is on track to meet or exceed the current target of reducing greenhouse gas emissions to 1990 levels by 2020, as established in the California Global Warming Solutions Act of 2006 (AB 32)."

The Supreme Court was concerned that new development may need to do more than existing development to reduce greenhouse gases to demonstrate that it is doing its fair share of reductions. As will be shown below, new development does do more than existing development and, due to the nature of the sources of GHG emissions related to development, existing development is equally responsible for reducing emissions from the most important sources of emissions. It is important to note that most of the State's regulatory program applies to new and existing development.

The Scoping Plan reduction from BAU accounts for growth projected in the State and assumes that existing development would continue to emit GHGs at the same rate that occurred in the base year (2002-2004 average). The California Department of Finance (DOF) Report E-5 predicts that population growth in California from 2005 to 2020 will be 13.2 percent. This means that development that existed in 2005 will produce nearly 87 percent of the State's emissions in 2020. Conversely, new development is only responsible for about 13 percent of the emissions generated during this timeframe. If measures to reduce emissions from existing development were not available, new development could not provide sufficient reductions to reach the 2020 target even if their emissions were reduced to net zero.

The State's regulatory program is able to target both new and existing development because the two most important strategies—motor vehicle fuel efficiency and emissions from electricity generation—obtain reductions equally from existing and new sources. This is because all vehicle operators use cleaner low carbon fuels and buy vehicles subject to the fuel efficiency regulations, and all building owners or operators purchase cleaner energy from the grid that is produced by increasing percentages of renewable fuels. This includes regulations on mobile sources such as: The Pavley standards that apply to all vehicles purchased in California, the Low Carbon Fuel Standard (LCFS) that applies to all fuel used in California, and the Renewable Portfolio Standard and Renewable Energy Standard that apply to utilities providing electricity to all California homes and businesses. The reduction strategy where new development is required to do more than existing development is building energy efficiency and energy use related to water conservation regulations. For example, new projects are subject to Title 24 Energy Efficiency standards and CalGreen Code and MWELO

water conservation requirements. Residential buildings constructed to the 2013 Title 24 standards use 25 percent less energy than buildings complying with the 2008 standards. New buildings and landscapes are much more energy efficient and water efficient than the development that has been built over the past decades and will require much less energy.

As described above, the State requires an average reduction from all sources of the emission inventory of about 22 percent. The Scoping Plan strategy will achieve more than average reductions from energy and mobile source sectors that are the primary sources related to development projects, and lower than average reductions from other sources such as agriculture. The amount of reduction estimated by the ARB for each sector was based on technical feasibility and cost effectiveness. Review of the Scoping Plan inventory and strategy shows that the reduction from all development related sources is approximately 29 percent from BAU in order to make up for the below average sectors and achieve the required 22 percent average reduction.

As suggested by the Court, a project BAU analysis was prepared for this project that assesses "consistency with AB 32's goal in whole or part by looking to compliance with regulatory programs designed to reduce greenhouse gas emissions from particular activities." The analysis shows the extent to which the project complies with adopted regulations and the additional amount that will be achieved through project design features. At this point in time, no additional reductions are required from new development beyond regulations for the State to achieve its target. Therefore, this analysis meets the consistency test described by the Supreme Court.

The analysis prepared for the project also includes a qualitative assessment of compliance with Scoping Plan and General Plan measures to support GHG significance findings under Impact GHG-2. There are no measures that identify specific requirements on development projects, but the analysis shows how the applicable measures affect project emission sources.

To determine significance, the analysis first quantifies project-related GHG emissions under a BAU scenario, and then compares these emissions with emissions that would occur when all project-related design features are accounted for, and when compliance with applicable regulatory measures is assumed. The standard and methodology is explained in further detail below.

Impact Analysis

Construction

Total GHG emissions generated during all phases of construction were combined and are presented in Table 14. The SJVAPCD does not recommend assessing the significance of construction-related emissions. Any construction-related emissions would occur prior to the year 2020, which is the year the State is required to reduce its GHG emissions to 1990 levels. Additionally, emissions from construction would be temporary. However, other jurisdictions, such as the SCAQMD and the SMAQMD, have concluded that construction emissions should be included since they may remain in the atmosphere for years after construction is complete. In order to account for the construction emissions, the total emissions generated during construction were amortized based on the life of the development (residential—30 years) and added to the operational emissions.

Table 14: Construction Greenhouse Gas Emissions

Activity	Total $MTCO_2e$ per year
2017	561.70
2018	460.22
2019	462.50
2020	176.25
Total	**1,670.67**
Amortized over 30 years	***55.36***
Notes: Due to rounding, total $MTCO_2e$ may be marginally different from CalEEMod output. $MTCO_2e$ = metric tons of carbon dioxide equivalents Source: CalEEMod output (Appendix A).	

Operation

Operational or long-term emissions occur over the life of the project. Sources of emissions may include motor vehicles and trucks, energy usage, water usage, waste generation, and area sources, such as landscaping activities and residential wood burning. Operational GHG emissions associated with the project were estimated using CalEEMod 2013.2.2.

Business-as-Usual Operational Emissions

Operational emissions under the BAU scenario were modeled using CalEEMod 2013.2.2. Modeling assumptions for the year 2005 were used to represent 2020 BAU conditions (without the benefit of regulations adopted to reduce GHG emissions). The SJVAPCD guidance recommends using emissions in 2002-2004 in the baseline scenario to represent conditions – as if regulations had not been adopted -to allow the effect of projected growth on achieving reduction targets to be clearly defined. CalEEMod defaults were used for project energy usage, water usage, waste generation, and area sources (architectural coating, consumer products, and landscaping). The vehicle fleet mix was revised to reflect the residential fleet mix approved by SJVAPCD for year 2020. The year 2020 was chosen because it is the AB 32 target year. Full assumptions and CalEEMod model outputs are provided in Appendix A. Results of this analysis are presented below in Table 16.

2020 Operational Emissions

Operational emissions for the year 2020 were modeled using CalEEMod. CalEEMod assumes compliance with some, but not all, applicable rules and regulations regarding energy efficiency, vehicle fuel efficiency, renewable energy usage, and other GHG reduction policies, as described in the CalEEMod User's Guide (SCAQMD 2011). The reductions obtained from each regulation and the source of the reduction amount used in the analysis are described below.

Emissions Accounting for Applicable Regulations

The following regulations are incorporated into the CalEEMod emission factors:

- Pavley I motor vehicle emission standards
- Low Carbon Fuel Standard (LCFS)
- 2005 and 2008 Title 24 Energy Efficiency Standards

The following regulations have not been incorporated into the CalEEMod emission factors and require alternative methods to account for emission reductions provided by the regulations:

- Pavley II (LEV III) Advanced Clean Cars Program
- 2013 Title 24 Energy Efficiency Standards
- Renewable Portfolio Standards (RPS)
- Green Building Code Standards (indoor water use)
- California Model Water Efficient Landscape Ordinance (Outdoor Water)

Pavley II/LEV III standards have not been incorporated in the latest version of CalEEMod. Reductions from standards are calculated by adjusting the CalEEMod GHG passenger car and light truck emission factors by ARB's estimated three percent reduction expected from the vehicle categories subject to the regulation by 2020 (ARB 2010).

Title 24 reductions for 2013 are not accounted for in the current version of CalEEMod. The California Energy Commission (CEC) estimates that 2013 Title 24 standards would result in an increase in energy efficiency of 25 percent in residential buildings compared to 2008 Title 24 (CEC 2014a). The benefits of 2013 Title 24 are applied in the CalEEMod mitigation component to correctly allocate the reductions only to building components subject to the regulation.

RPS is not accounted for in the current version of CalEEMod. Reductions from RPS are addressed by revising the electricity emission intensity factor in CalEEMod to account for the utility complying with the 33 percent renewable mandate by 2020 (ARB 2010 and CPUC 2016). PG&E provides emission factors for the electricity it provides to customers and projections for its energy portfolio for 2020 that is used to estimate project emissions.

Energy savings from water conservation resulting from the Green Building Code Standards for indoor water use and California Model Water Efficient Landscape Ordinance for outdoor water use are not included in CalEEMod. The Water Conservation Act of 2009 mandates a 20 percent reduction in urban water use that is implemented with these regulations (CDWR 2013). Benefits of the water conservation regulations are applied in the CalEEMod mitigation component.

Regulations applicable to project sources and the percent reduction anticipated from each source are shown in Table 15. The percentage reductions are only applied to the specific sources subject to the regulations. For example, the Pavley Low Emission Vehicle Standards apply only to light duty cars and trucks.

Table 15: Reductions from Greenhouse Gas Regulations

Regulation	Project Applicability	Reduction Source	Percent Reduction in 2020
Pavley Low Emission Vehicle Standards	Light duty cars and trucks accessing the site are subject to the regulation	CalEEMod defaults (Pavley I)	25.1[1]
		Adjusted GHG emission factor (Pavley II/LEV III) in CalEEMod.	3%[2]
Low Carbon Fuel Standard (LCFS)	Vehicles accessing the site will use fuel subject to the LCFS	CalEEMod defaults	10%[1]
Title 24 Energy Efficiency Standards	Project buildings will be constructed to meet the latest version of Title 24 (currently 2013). Reduction applies only to energy consumption subject to the regulation.	CalEEMod defaults (2008) and CalEEMod mitigation component (2013)	25%[3]
Green Building Code Standards	The project will include water conservation features required by the standard	CalEEMod mitigation component	20%[4]
Water Efficient Land Use Ordinance	The project landscaping will comply with the regulation	CalEEMod mitigation component	20%[5]
Renewable Portfolio Standard (RPS)	Electricity purchased for use at the project site is subject to the 33 percent RPS mandate	CalEEMod adjusted energy intensity factors with PG&E emission factors.	54.5%[6]
Solid waste	The solid waste service provider will need to provide programs to increase diversion and recycling to meet the 75 percent mandate.	CalEEMod mitigation component	25%[7]

Notes:
Regulations are described in Section 2.3 Regulatory Environment. The source of the percentage reductions from each measure are from the following sources:
1 Pavley 1 + Low Carbon Fuel Standard Postprocessor Version 1.0 User's Guide (ARB 2010)
2 ARB Staff Report for LEV III Amendments (ARB 2013e)
3 California Energy Commission News Release: New Title 24 Standards Will Cut Residential Energy Use by 25 Percent, Save Water, and Reduce Greenhouse Gas Emissions (CEC 2014b)
4 2013 California Green Building Standards Code Section 5.303.2
5 California Water Plan Update 2013 (CDWR 2013)
6 Based on CalEEMod default PG&E rate for 2005 and PG&E projected emission factor for 2020
7 CalRecycle 75 Percent Initiative: Defining the Future (2016b).

In addition to rules and regulations, the project would incorporate design features and would obtain benefits from its location and infrastructure that would reduce project vehicle miles traveled compared to default values. The project would construct pedestrian infrastructure connecting to adjacent land uses. In addition, the project would provide electrical outlets for landscaping equipment that would be used in accordance with statewide usage rates for this type of equipment.

Note that CalEEMod nominally treats these design elements and conditions as "mitigation measures," despite their inclusion in the project description. Therefore, reported operational emissions are considered to represent unmitigated project conditions. Full assumptions and model outputs are provided in Appendix A. Results of this analysis are presented in Table 16.

Table 16: Project Operational Greenhouse Gases

Source	Emissions ($MTCO_2e$ per year)		
	Business as Usual	2020 (with Regulation and Design Features)	Percent Reduction
Area	285.05	120.09	57.9
Energy	1,030.21	623.31	39.5
Mobile	3,297.38	2,310.21	32.0
Waste	116.11	94.09	19.9
Water	55.98	30.58	45.4
Amortized Construction Emissions	55.36	55.36	0
Total	4,840.09	3,233.63	33.2
Reduction from BAU		1,606.46	
Percent Reduction		33.2%	
Significance Threshold		29%	
Are emissions significant?		No	

Notes:
$MTCO_2e$ = metric tons of carbon dioxide equivalents
The project achieves the SJVAPCD 29 percent reduction from BAU threshold and the 21.7 percent required to show consistency with AB 32 targets.
Source of BAU emissions: CalEEMod output using 2005 modeling year to represent emissions in 2020 without regulations (Appendix A).
Source of 2020 emissions: CalEEMod output for the year 2020 (Appendix A).

As shown in Table 16, the project achieves a reduction of 33.2 percent from BAU to the year 2020 with regulations and design features incorporated. This is above the 29 percent reduction required by the SJVAPCD threshold, and the 21.7 percent average reduction from all sources of GHG emissions now required to achieve AB 32 targets. The ARB originally identified a reduction of 29 percent from BAU as needed to achieve AB 32 targets. The 2008 recession and slower growth in the years since 2008 have reduced the growth forecasted for 2020, and the amount needed to be reduced to achieve 1990 levels as required by AB 32. The project includes design features that result in reductions in energy use and support walking and bicycling. Measures that are part of the project design do not require additional mitigation measures to ensure they are accomplished. The impact is less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant impact.

6.2.2 - Greenhouse Gas Reduction Plans

Impact GHG-2:	**The project would not conflict with any applicable plan, policy, or regulation of an agency adopted to reduce the emissions of greenhouse gases.**

Impact Analysis

The City of Clovis has not adopted a GHG reduction plan. In addition, the City has not completed the GHG inventory, benchmarking, or goal-setting process required to identify a reduction target and take advantage of the streamlining provisions contained in the CEQA Guidelines amendments adopted for SB 97. The SJVAPCD has adopted a Climate Action Plan, but it does not contain measures that are applicable to development projects. Therefore, the SJVAPCD Climate Action Plan cannot be applied to the project. Since no other local or regional Climate Action Plan is in place, the project is assessed for its consistency with ARB's adopted Scoping Plan. This would be achieved with an assessment of the project's compliance with Scoping Plan measures.

Although the City of Clovis General Plan does not meet the CEQA Guidelines 15064.4(b)(3) requirements for an applicable plan to reduce GHG emissions, it contains policies intended to reduce vehicle travel and energy use that would provide GHG reductions. Therefore, the project's consistency with the General Plan policies is also assessed.

Scoping Plan

The California State Legislature adopted AB 32 in 2006. AB 32 focuses on reducing GHGs (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride) to 1990 levels by the year 2020. Pursuant to the requirements in AB 32, the ARB adopted the Climate Change Scoping Plan (Scoping Plan) in 2008, which outlines actions recommended to obtain that goal. The Scoping Plan calls for an "ambitious but achievable" reduction in California's GHG emissions, cutting approximately 30 percent from BAU emission levels projected for 2020, or about 10 percent from 2008 levels. On a per-capita basis, that means reducing annual emissions of 14 tons of carbon dioxide for every man, woman, and child in California down to about 10 tons per person by 2020. As stated earlier, the ARB has updated its emission inventory forecasts and now estimates a reduction of 21.7 percent is required from BAU in 2020 to achieve AB 32 targets.

The Scoping Plan contains a variety of strategies to reduce the State's emissions. As shown in Table 17, the project is consistent with most of the strategies, while others are not applicable to the project.

Table 17: Project Consistency with Scoping Plan Reduction Measures

Scoping Plan Sector	Scoping Plan Measure	Implementing Regulations	Project Consistency
Transportation	California Cap-and-Trade Program Linked to Western Climate Initiative	Regulation for the California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanism October 20, 2015 (CCR 95800)	**Consistent.** The Cap-and-Trade Program applies to large industrial sources such as power plants, refineries, and cement manufacturers. However, the regulation indirectly affects people who use the products and services produced by these industrial sources when increased cost of products or services (such as electricity and fuel) are transferred to the consumers. The Cap-and-Trade Program covers the GHG emissions associated with electricity consumed in California, whether generated in-state or imported. Accordingly, GHG emissions associated with CEQA projects' electricity usage are covered by the Cap-and-Trade Program. The Cap-and-Trade Program also covers fuel suppliers (natural gas and propane fuel providers and transportation fuel providers) to address emissions from such fuels and from combustion of other fossil fuels not directly covered at large sources in the Program's first compliance period.
Transportation (Cont.)	California Light-Duty Vehicle Greenhouse Gas Standards	Pavley I 2005 Regulations to Control GHG Emissions from Motor Vehicles	**Consistent**. This measure applies to all new vehicles starting with model year 2012. The project would not conflict with its implementation as it would apply to all new passenger vehicles purchased in California. Passenger vehicles, model year 2012 and later, associated with construction and operation of the project would be required to

Scoping Plan Sector	Scoping Plan Measure	Implementing Regulations	Project Consistency
		2012 LEV III Amendments to the California Greenhouse Gas and Criteria Pollutant Exhaust and Evaporative Emission Standards	comply with the Pavley emissions standards.
	Low Carbon Fuel Standard.	2009 readopted in 2015. Regulations to Achieve Greenhouse Gas Emission Reductions Subarticle 7. Low Carbon Fuel Standard CCR 95480	**Consistent.** This measure applies to transportation fuels utilized by vehicles in California. The project would not conflict with implementation of this measure. Motor vehicles associated with construction and operation of the project would utilize low carbon transportation fuels as required under this measure.
	Regional Transportation-Related Greenhouse Gas Targets.	SB 375. Cal. Public Resources Code §§ 21155, 21155.1, 21155.2, 21159.28	**Consistent**. The project will provide residential development in the region that is consistent with the growth projections in the 2014 Regional Transportation Plan/Sustainable Communities Strategy (SCS). The project is not within a SCS priority area and so is not subject to requirements applicable to those areas.
Transportation (Cont.)	Goods Movement	Goods Movement Action Plan January 2007.	**Not applicable**. The project does not propose any changes to maritime, rail, or intermodal facilities or forms of transportation.
	Medium/Heavy-Duty Vehicles	2010 Amendments to the Truck and Bus Regulation, the Drayage Truck Regulation and the Tractor-Trailer Greenhouse Gas	**Consistent**. This measure applies to medium and heavy-duty vehicles that operate in the state. The project would not conflict with implementation of this measure. Medium and heavy-duty vehicles

Scoping Plan Sector	Scoping Plan Measure	Implementing Regulations	Project Consistency
		Regulation	associated with construction and operation of the project would be required to comply with the requirements of this regulation.
	High Speed Rail	Funded under SB 862	**Not applicable**. This is a statewide measure that cannot be implemented by a project applicant or lead agency.
Electricity and Natural Gas	Energy Efficiency	CEC Title 20 Appliance Efficiency Regulation	**Consistent**. The project would not conflict with implementation of this measure. The project will comply with the latest energy efficiency standards.
		Title 24 Part 6 Energy Efficiency Standards for Residential and Non-Residential Building	
		Title 24 Part 11 California Green Building Code Standards	
Electricity and Natural Gas (Cont.)	Renewable Portfolio Standard/Renewable Electricity Standard.	2010 Regulation to Implement the Renewable Electricity Standard (33% 2020)	**Consistent**. PG&E obtains 19 percent of its power supply from renewable sources such as solar and geothermal. It is required to increase this percentage to 33 percent by the year 2020 pursuant to various regulations. The owners of residences within the project would purchase power that is composed of a greater percentage of renewable sources and could install renewable solar power systems that will assist the utility in achieving the mandate.
		SB 350 Clean Energy and Pollution Reduction Act of 2015 (50% 2030)	
	Million Solar Roofs Program	Tax incentive program	**Consistent**. This measure is to increase solar throughout California, which is being done by various electricity providers and existing solar programs. Projects within the plan area will be

Scoping Plan Sector	Scoping Plan Measure	Implementing Regulations	Project Consistency
			able to take advantage of incentives that are in place at the time of construction. The project will meet the "solar ready" requirements of the Green Building Code Standards.
Water	Water	Title 24 Part 11 California Green Building Code Standards	**Consistent**. The project will comply with the California Green Building Standards Code, which requires a 20 percent reduction in indoor water use. The project will also comply with the MWELO as required by the City's development code.
		SBX 7-7—The Water Conservation Act of 2009	
		Model Water Efficient Landscape Ordinance	
Green Buildings	Green Building Strategy	Title 24 Part 11 California Green Building Code Standards	**Consistent**. The State is to increase the use of green building practices. The project would implement required green building strategies through existing regulation that requires the project to comply with various CALGreen requirements. The project includes sustainability design features that support the Green Building Strategy.
Industry	Industrial Emissions	2010 ARB Mandatory Reporting Regulation	**Not applicable**. The project is not an industrial land use
Recycling and Waste Management	Recycling and Waste	Title 24 Part 11 California Green Building Code Standards	**Consistent**. The project would not conflict with implementation of these measures. The project is required to achieve the recycling mandates via compliance with the CALGreen code. The project would utilize City of Clovis recycling services. The

Scoping Plan Sector	Scoping Plan Measure	Implementing Regulations	Project Consistency
		AB 341 Statewide 75 Percent Diversion Goal	City has consistently exceeded its State recycling mandates.
Forests	Sustainable Forests	Cap and Trade Offset Projects	**Not applicable.** The project site is in an area designated for urban uses. No forested lands exist on-site.
High Global Warming Potential	High Global Warming Potential Gases	ARB Refrigerant Management Program CCR 95380	**Not applicable**. The regulations are applicable to refrigerants used by large air conditioning systems and large commercial and industrial refrigerators and cold storage system. Homes do not use large systems subject to the refrigerant management regulations adopted by ARB.
Agriculture	Agriculture	Cap and Trade Offset Projects for Livestock and Rice Cultivation	**Not applicable**. The project site is designated for urban development. No grazing, feedlot, or other agricultural activities that generate manure occur currently exist on-site or are proposed to be implemented by the project.
Source of ARB Scoping Plan Reduction Measures: California Air Resources Board 2008			

General Plan Compliance

The City of Clovis updated and adopted its General Plan in August of 2014. The General Plan contains a limited number goals or policies that relate directly to climate change. However, some of the policies in the Air Quality and Circulation Element would likely reduce GHG emissions as well as the other criteria pollutant emissions, because they attempt to reduce vehicle miles traveled and increase energy efficiency. As shown in Table 18, the project is consistent with the feasible and applicable policies.

Table 189: Consistency with General Plan Policies

General Plan Policy	Project Consistency
Air Quality Policy 1.1: Land use and transportation. Reduce greenhouse gas and other local pollutant emissions through mixed use and transit-oriented development and well-designed transit, pedestrian, and bicycle systems.	**Consistent.** Residents will have easy access bike lanes that connect to the planned trail system that will connect to destinations throughout the area. Enhancements to encourage walking and bicycling will reduce driving and related pollutant emissions.
Air Quality Policy 1.6: Alternative fuel infrastructure. Encourage public and private activity and employment centers to incorporate electric charging and alternative fuel stations.	**Consistent.** The project would not preclude future installment of electrical vehicle charging systems. Building codes require homes to be wired to allow future installations of charging equipment.
Air Quality Policy 1.8: Trees. Maintain or plant trees where appropriate to provide shade, absorb carbon, improve oxygenation, slow stormwater runoff, and reduce the heat island effect.	**Consistent.** The project would incorporate landscaping throughout the project site. The incorporated landscaping would provide shade, absorb carbon, improve oxygenation, slow stormwater runoff, and reduce the heat island effect.
Air Quality Policy 2.1: Regional coordination. Support regional efforts to reduce air pollution (criteria air pollutants and greenhouse gas emissions) and collaborate with other agencies to improve air quality at the emission source and reduce vehicle miles traveled.	**Not applicable.** This measure applies to local government coordination and not project proponents or residents.
Air Quality Policy 2.2: Cross-jurisdictional issues. Collaborate with regional agencies and surrounding jurisdictions to address cross-jurisdictional transportation and air quality issues.	**Not applicable.** This measure applies to local government coordination and not to project proponents or residents.
Air Quality Policy 2.6: Innovative mitigation. Encourage innovative mitigation measures to reduce air quality impacts by coordinating with the SJVAPCD, project applicants, and other interested parties.	**Consistent.** The project will pay Rule 9510 mitigation fees that can be used for innovative mitigation measures that reduce criteria pollutants and GHG emissions. Residents can participate in educational and grant programs designed to reduce GHG emissions developed through regional coordination.
Circulation Policy 1.1: Multimodal network. The City shall plan, design, operate, and maintain the transportation network to promote safe and convenient travel for all users: pedestrian, bicyclists, transit riders, freight, and motorists.	**Consistent.** The project is connected to the regional bikeways that connect to the City of Clovis trail system.

Table 19 (cont.): Consistency with General Plan Policies

General Plan Policy	Project Consistency
Circulation Policy 1.2: Transportation decisions. Decisions should balance the comfort, convenience, and safety of pedestrians, bicyclists, and motorists.	**Consistent.** The project will comply with City of Clovis standards for street design that supports multiple modes of transportation. Residents will have easy access to the regional bikeways and City of Clovis trail system that will provide convenience and safety for pedestrians and bicyclists.
Circulation Policy 1.4: Jobs and housing. Encourage infill development that would provide jobs and services closer to housing, and vice versa, to reduce citywide vehicle miles traveled and effectively utilize the existing transportation infrastructure.	**Consistent.** The project is located at the intersection of Shephard and Clovis Avenue that provides direct access to existing job centers in Downtown Clovis, the Herndon Avenue corridor, and planned and existing development along Willow Avenue.
Circulation Policy 1.5: Neighborhood connectivity. The transportation network shall provide multimodal access between neighborhoods and neighborhood-serving uses (educational, recreational, or neighborhood commercial uses).	**Consistent.** The project is within 2 miles of multiple existing educational, recreational, and commercial uses.
Policy 3.11: Right-of-way design. Design landscaped parkways, medians, and right-of-ways as aesthetic buffers to improve the community's appearance and encourage non-motorized transportation.	**Consistent.** The project will comply with City of Clovis design standards regarding landscaping and design of road improvements consistent with this policy.
Circulation Policy 5.1: Complete street amenities. Upgrade existing streets and design new streets to include complete street amenities, prioritizing improvements to bicycle and pedestrian connectivity or safety (consistent with the Bicycle Transportation Master Plan and other master plans).	**Consistent.** The project would be required to upgrade existing streets fronting the property in accordance with City standards. The project is located near bike lanes, which provides access and safety for pedestrians and cyclists to jobs, schools, and shopping.
Circulation Policy 5.2: Development-funded facilities. Require development to fund and construct facilities as shown in the Bicycle Transportation Plan when facilities are in or adjacent to the development.	**Consistent.** The project will comply with any special requirements related to the planned pedestrian/bicycle trail system as required by the City for all projects.
Circulation Policy 5.3: Pathways. Encourage pathways and other pedestrian amenities in urban centers and new development 10 acres or larger.	**Consistent.** The project will be served by bike lanes and sidewalks along the roads accessing the site.
Circulation Policy 5.4: Homeowner associations. The city may require homeowner associations to maintain pathways and other bicycle and pedestrian facilities within the homeowner association area.	**Consistent.** The project would comply with this policy if a homeowner's association is formed for the development.
Circulation Policy 5.5: Pedestrian access. Require sidewalks, paths, and crosswalks to provide access to schools, parks, and other activity centers to provide general pedestrian connectivity throughout the city.	**Consistent.** Future residents will be able to utilize sidewalks and paths constructed in compliance with City requirements in this area.

Table 19 (cont.): Consistency with General Plan Policies

General Plan Policy	Project Consistency
Land Use Policy 3.3 Completion of Loma Vista. The City prioritizes the completion of Loma Vista while allowing growth to proceed elsewhere in the Clovis Planning Area in accordance with agreements with the County of Fresno and LAFCo policies.	**Not applicable.** The project is not within the Loma Vista Specific Plan area.
Land Use Policy 3.9: Connected development. New development in urban centers must fully improve roadway, pedestrian, and bicycle systems within and adjacent to the proposed project and connect to existing urbanized development.	**Not applicable.** The project is not within an area designated as an urban center by the Clovis General Plan.
Land Use Policy 3.4: Drought-tolerant landscaping. Promote water conservation through use of drought-tolerant landscaping on existing and new residential properties. Require drought-tolerant landscaping for all new commercial and industrial development and city-maintained landscaping, unless used for recreation purposes.	**Consistent.** The project will promote water conservation through use of drought-tolerant landscaping on new residential properties.
Policy 3.5: Energy and water conservation. Encourage new development and substantial rehabilitation projects to exceed energy and water conservation and reduction standards set in the California Building Code.	**Consistent:** The project will at a minimum comply with the 2013 Title 24 energy efficiency standards, which are 25 percent more stringent than previous standards. The 2016 Title 24 energy efficiency standards go into effect in January 2017 and provide an additional 25 percent reduction in energy use compared to 2013 Title 24. Most or all units will be required to comply with the 2016 Title 24 standards.
Policy 3.6: Renewable Energy. Promote the use of renewable and sustainable energy sources to serve public and private sector development	**Consistent:** The project will comply with Green Building Code requirements for solar-ready roofs.
Policy 3.7: Construction and design. Encourage new construction to incorporate energy efficient building and site design strategies**.**	**Consistent:** The project will design homes to meet or exceed the latest most stringent energy standards.
Source: City of Clovis General Plan 2014	

In summary, the project incorporates a number of features that would minimize GHG emissions. These features are consistent with project-level strategies identified by the ARB's Scoping Plan and the City of Clovis General Plan. As demonstrated in the impact analysis above, the project would achieve an approximately 33.2-percent reduction from the BAU inventory and, therefore, would not significantly hinder or delay the State's ability to meet the reduction targets contained in AB 32 or conflict with implementation of the Scoping Plan. The project promotes the goals of the Scoping Plan through implementation of design measures that reduce energy consumption, water consumption, and reduction in vehicle miles traveled. Therefore, the project does not conflict with any plans to reduce GHG emissions. The impact is less than significant.

Consistency with Executive Orders S-3-05 and B-30-15

At the state level, Executive Orders S-3-05 and B-30-15 are orders from the State's executive branch for the purpose of reducing GHG emissions. The goal of Executive Order S-3-05 is to reduce GHG emissions to 1990 levels by 2020 was codified by the Legislature as the 2006 Global Warming Solutions Act (AB 32). The project, as analyzed above, is consistent with AB 32. Therefore, the project does not conflict with this component of Executive Order S-3-05. The Executive Orders also establish goals to reduce GHG emissions to 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050. These goals have not been codified. However, studies have shown that, in order to meet the 2030 and 2050 targets, aggressive pursuit of technologies in the transportation and energy sectors, including electrification and the decarbonization of fuel, will be required. In its 2008 Scoping Plan, ARB acknowledged that the "measures needed to meet the 2050 are too far in the future to define in detail." In the First Scoping Plan Update, however, ARB generally described the type of activities required to achieve the 2050 target: "energy demand reduction through efficiency and activity changes; large scale electrification of on-road vehicles, buildings, and industrial machinery; decarbonizing electricity and fuel supplies; and rapid market penetration of efficiency and clean energy technologies that requires significant efforts to deploy and scale markets for the cleanest technologies immediately." Because of the technological shifts required and the unknown parameters of the regulatory framework in 2030 and 2050, quantitatively analyzing the project's impacts further relative to the 2030 and 2050 goals is speculative for purposes of CEQA. Moreover, ARB has not calculated and released the BAU emissions projections for 2030 or 2050, which are necessary data points for quantitatively analyzing a CEQA project's consistency with these targets (ARB 2014).

The Scoping Plan recognizes that AB 32 establishes an emissions reduction trajectory that will allow California to achieve the more stringent 2050 target: "These [greenhouse gas emission reduction] measures also put the State on a path to meet the long-term 2050 goal of reducing California's GHG emissions to 80 percent below 1990 levels. This trajectory is consistent with the reductions that are needed globally to stabilize the climate." In addition, ARB's First Update "lays the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050," and many of the emission reduction strategies recommended by ARB would serve to reduce the proposed project's post-2020 emissions level to the extent applicable by law:

- **Energy Sector**: Continued improvements in California's appliance and building energy efficiency programs and initiatives, such as the State's zero net energy building goals, would serve to reduce the proposed project's emissions level. Additionally, further additions to California's renewable resource portfolio would favorably influence the proposed project's emissions level.
- **Transportation Sector**: Anticipated deployment of improved vehicle efficiency, zero emission technologies, lower carbon fuels, and improvement of existing transportation systems all will serve to reduce the proposed project's emissions level.
- **Water Sector**: The proposed project's emissions level will be reduced as a result of further desired enhancements to water conservation technologies.

- **Waste Management Sector**: Plans to further improve recycling, reuse and reduction of solid waste will beneficially reduce the proposed project's emissions level.

In addition to ARB's First Update, in January 2015, during his inaugural address, Governor Brown expressed a commitment to achieve "three ambitious goals" that he would like to see accomplished by 2030 to reduce the State's GHG emissions:

- Increasing the State's Renewable Portfolio Standard from 33 percent in 2020 to 50 percent in 2030;
- Cutting the petroleum use in cars and trucks in half; and
- Doubling the efficiency of existing buildings and making heating fuels cleaner.

These expressions of executive branch policy may be manifested in adopted legislative or regulatory action through the state agencies and departments responsible for achieving the State's environmental policy objectives, particularly those relating to global climate change (Brown 2015). Further, recent studies show that the State's existing and proposed regulatory framework will allow the State to reduce its GHG emissions level to 40 percent below 1990 levels by 2030, and to 80 percent below 1990 levels by 2050. Even though these studies did not provide an exact regulatory and technological roadmap to achieve the 2030 and 2050 goals, they demonstrated that various combinations of policies could allow the statewide emissions level to remain very low through 2050, suggesting that the combination of new technologies and other regulations not analyzed in the studies could allow the State to meet the 2050 target (Energy and Economics 2015).

Given the proportional contribution of mobile source-related GHG emissions to the State's inventory, recent studies also show that relatively new trends, such as the increasing importance of web-based shopping, the emergence of different driving patterns by the "millennial" generation and the increasing effect of Web-based applications on transportation choices, are beginning to substantially influence transportation choices and the energy used by transportation modes. These factors have changed the direction of transportation trends in recent years, and will require the creation of new models to effectively analyze future transportation patterns and the corresponding effect on GHG emissions. For the reasons described above, the proposed project's post-2020 emissions trajectory is expected to follow a declining trend, consistent with the 2030 and 2050 targets.

Regarding goals for 2050 under Executive Order S-3-05, at this time it is not possible to quantify the emissions savings from future regulatory measures, as they have not yet been developed; nevertheless, it can be anticipated that operation of the project would comply with whatever measures are enacted that state lawmakers decide would lead to an 80 percent reduction below 1990 levels by 2050.

Accordingly, taking into account the proposed project's emissions, project design features, and the progress being made by the State towards reducing emissions in key sectors such as transportation, industry, and electricity, the project furthers the State's goals of reducing GHG emissions to 1990 levels by 2020 and an 80 percent reduction below 1990 levels by 2050, and does not obstruct their attainment.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant impact.

SECTION 7: REFERENCES

The following references were used in the preparation of this analysis and are referenced in the text and/or were used to provide the author with background information necessary for the preparation of thresholds and content.

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Appendix A: CalEEMod Output

Tract 6050 Emission Summary

Construction Emissions	**ROG**	**NOX**	**CO**	**SO2**	**PM10**	**PM2.5**
2017	0.5953	5.6664	4.4069	0.0063	0.9860	0.5916
2018	0.4220	3.3827	3.2180	0.0055	0.3255	0.2223
2019	0.3736	3.0505	3.0930	0.0056	0.2978	0.1963
2020	4.6542	1.0944	1.1944	0.0021	0.0972	0.0659
Total	**6.0451**	**13.1940**	**11.9123**	**0.0195**	**1.7065**	**1.0761**

Unmitigated Operational Emissions	**ROG**	**NOX**	**CO**	**SO2**	**PM10**	**PM2.5**
Area	3.2092	0.1417	9.2582	0.0238	1.2013	1.2013
Energy	0.0453	0.3870	0.6470	0.0024	0.0313	0.0313
Mobile	1.6794	3.3948	18.1068	0.0363	0.0483	0.7948
Total	**4.9339**	**3.9235**	**28.0120**	**0.0625**	**1.2809**	**2.0274**

Mitigated Operational Emissions	**ROG**	**NOX**	**CO**	**SO2**	**PM10**	**PM2.5**
Area	2.1084	0.0233	1.9960	0.0001	0.0189	0.0189
Energy	0.0361	0.3088	0.1314	0.0020	0.0250	0.0250
Mobile	1.6699	3.3329	17.8349	0.0356	2.7918	0.7778
Total	**3.8144**	**3.6650**	**19.9623**	**0.0377**	**2.8357**	**0.8217**

Construction

Maximum Daily Emission Winter	**ROG**	**NOX**	**CO**	**SO2**	**PM10**	**PM2.5**
2017	6.1646	69.6844	47.6305	0.0635	20.9699	12.5047
2018	3.2720	25.9864	25.6215	0.0423	2.5203	1.7099
2019	2.8948	23.4345	24.6322	0.0423	2.3077	1.5104
2020	164.9333	21.1959	23.8037	0.0422	2.1311	1.3445
	177.2647	**140.3012**	**121.6879**	**0.1903**	**27.9290**	**17.0695**

Operations

Maximum Daily Emissions	**ROG**	**NOX**	**CO**	**SO2**	**PM10**	**PM2.5**
Area	12.1300	0.2600	22.1900	0.0012	0.3180	0.3159
Energy	0.1980	1.6900	0.7200	0.0108	0.1368	0.1368
Mobile	0.8801	2.8829	10.4137	0.0178	1.1718	0.3385
	13.2081	4.8329	33.3237	0.0298	1.6266	0.7912

Mobile emissions reduced to count only localized emissions at the site using a 0.5 mile trip length and the default trip length 7.3 mi.

Localized Trip Length Fraction	0.06849315

Construction GHG Emissions

Year	**CO2e**
2017	561.70
2018	460.22
2019	462.50
2020	176.25
Total	**1,660.67**
Amortized over 30 years	55.36

Operational GHG Emissions

	BAU	**2020**	**Percent Reduction**
Area	285.05	120.09	0.579
Energy	1,030.21	623.31	0.395
Mobile	3,297.38	2,310.21	0.299
Waste	116.11	94.09	0.190
Water	55.98	30.58	0.454
Total	**4,784.73**	**3,178.27**	**0.336**
Construction	55.36	55.36	0.000
Total with Amortized Construction	**4,840.09**	**3,233.63**	**0.332**
Reduction from BAU		1,606.46	

Architectural Coatings Calculations

			EF	Area	Emissions	Days	Emissions/day
EF C / 454(g/ lb) 3.785(L/Gal) /180(sqft)			0.006948	976860	6786.738436	55	123.3952
				325620	2262.246145	55	41.13175
							164.527
g/l	150	65					
g/lb	454						
L/gal	3.785		**EF**	**Area**	**Emissions**	**Days**	**Emissions/day**
sf/gal	180		0.003011	976860	2940.919989	55	53.47127
Surface area sf x 2.7	2.7			325620	980.306663	55	17.82376
Exterior coverage	0.25						71.29503
Interior coverage	0.75						
Building Area sf	482,400						

	Fraction	g/l	Weighted Average
Flat Usage Rates	0.7	50	35
Non Flat	0.3	100	30
Average Rate			65

Usage rates from online paint estimator
SJVAPCD Emissions from Rule 4601

Wilson Homes Tract 6050

Fresno County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	268.00	Dwelling Unit	39.16	482,400.00	766

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2017
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Lot Acreage from site plan

Construction Phase - Default Schedule with Jan 2017 start date

Off-road Equipment -

Vechicle Emission Factors - SJVAPCD Residential Fleet Mix for 2017

Woodstoves - Phased modeling run

Area Coating - Air District Coatings rule

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation - Mitigation measures from the approved AIA

Area Mitigation - Low VOC paints required by District coatings rule.

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	150	50
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	150	50
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	150	50
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	150	50
tblLandUse	LotAcreage	87.01	39.16
tblProjectCharacteristics	OperationalYear	2014	2017
tblVehicleEF	HHD	0.08	0.02
tblVehicleEF	LDA	0.44	0.51
tblVehicleEF	LDT1	0.06	0.21
tblVehicleEF	LDT2	0.16	0.17
tblVehicleEF	LHD1	0.04	2.1000e-003
tblVehicleEF	LHD2	7.0900e-003	1.0000e-003
tblVehicleEF	MCY	6.4930e-003	3.1000e-003
tblVehicleEF	MDV	0.17	0.06
tblVehicleEF	MH	1.8570e-003	2.3000e-003
tblVehicleEF	MHD	0.02	9.4000e-003
tblVehicleEF	OBUS	2.0600e-003	0.00
tblVehicleEF	SBUS	7.8200e-004	1.0000e-003
tblVehicleEF	UBUS	1.7530e-003	3.8000e-003
tblWoodstoves	NumberCatalytic	0.00	39.16
tblWoodstoves	NumberNoncatalytic	0.00	39.16

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.5953	5.6664	4.4069	6.3000e-003	0.6785	0.3075	0.9860	0.3060	0.2856	0.5916	0.0000	558.9265	558.9265	0.1314	0.0000	561.6865
2018	0.4220	3.3827	3.2180	5.5600e-003	0.1248	0.2008	0.3255	0.0337	0.1886	0.2223	0.0000	468.5330	468.5330	0.0802	0.0000	470.2163
2019	0.3736	3.0505	3.0930	5.5600e-003	0.1248	0.1730	0.2978	0.0337	0.1626	0.1963	0.0000	460.8511	460.8511	0.0786	0.0000	462.5014
2020	4.6542	1.0944	1.1944	2.1200e-003	0.0376	0.0596	0.0972	0.0101	0.0558	0.0659	0.0000	175.4787	175.4787	0.0369	0.0000	176.2535
Total	**6.0451**	**13.1939**	**11.9124**	**0.0195**	**0.9656**	**0.7410**	**1.7066**	**0.3834**	**0.6926**	**1.0760**	**0.0000**	**1,663.7893**	**1,663.7893**	**0.3271**	**0.0000**	**1,670.6577**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.5953	5.6664	4.4069	6.3000e-003	0.3506	0.3075	0.6581	0.1499	0.2856	0.4355	0.0000	558.9259	558.9259	0.1314	0.0000	561.6859
2018	0.4220	3.3827	3.2180	5.5600e-003	0.1248	0.2008	0.3255	0.0337	0.1886	0.2223	0.0000	468.5326	468.5326	0.0802	0.0000	470.2160
2019	0.3736	3.0505	3.0930	5.5600e-003	0.1248	0.1730	0.2978	0.0337	0.1626	0.1963	0.0000	460.8508	460.8508	0.0786	0.0000	462.5010
2020	4.6542	1.0944	1.1944	2.1200e-003	0.0376	0.0596	0.0972	0.0101	0.0558	0.0659	0.0000	175.4785	175.4785	0.0369	0.0000	176.2534
Total	**6.0451**	**13.1939**	**11.9124**	**0.0195**	**0.6377**	**0.7410**	**1.3786**	**0.2273**	**0.6926**	**0.9199**	**0.0000**	**1,663.7878**	**1,663.7878**	**0.3271**	**0.0000**	**1,670.6562**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**33.96**	**0.00**	**19.22**	**40.71**	**0.00**	**14.51**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	3.2092	0.1417	9.2582	0.0238		1.2013	1.2013		1.2013	1.2013	158.3130	119.3501	277.6631	0.7456	2.1300e-003	293.9799
Energy	0.0453	0.3870	0.1647	2.4700e-003		0.0313	0.0313		0.0313	0.0313	0.0000	1,045.6836	1,045.6836	0.0356	0.0138	1,050.7114
Mobile	1.6794	3.3948	18.1068	0.0363	2.8046	0.0483	2.8529	0.7504	0.0444	0.7948	0.0000	2,692.7280	2,692.7280	0.1201	0.0000	2,695.2506
Waste						0.0000	0.0000		0.0000	0.0000	55.9768	0.0000	55.9768	3.3081	0.0000	125.4476
Water						0.0000	0.0000		0.0000	0.0000	5.5397	38.6946	44.2343	0.5707	0.0138	60.4965
Total	**4.9339**	**3.9235**	**27.5297**	**0.0625**	**2.8046**	**1.2809**	**4.0855**	**0.7504**	**1.2769**	**2.0273**	**219.8295**	**3,896.4563**	**4,116.2858**	**4.7802**	**0.0297**	**4,225.8859**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.1084	0.0233	1.9960	1.0000e-004		0.0189	0.0189		0.0189	0.0189	0.0000	119.3208	119.3208	5.4400e-003	2.1300e-003	120.0949
Energy	0.0361	0.3088	0.1314	1.9700e-003		0.0250	0.0250		0.0250	0.0250	0.0000	936.3787	936.3787	0.0330	0.0120	940.7831
Mobile	1.6699	3.3329	17.8349	0.0356	2.7444	0.0473	2.7918	0.7343	0.0435	0.7778	0.0000	2,636.6500	2,636.6500	0.1178	0.0000	2,639.1243
Waste						0.0000	0.0000		0.0000	0.0000	41.9826	0.0000	41.9826	2.4811	0.0000	94.0857
Water						0.0000	0.0000		0.0000	0.0000	4.4317	29.1191	33.5509	0.4565	0.0110	46.5536
Total	**3.8144**	**3.6649**	**19.9623**	**0.0376**	**2.7444**	**0.0912**	**2.8357**	**0.7343**	**0.0873**	**0.8216**	**46.4143**	**3,721.4687**	**3,767.8830**	**3.0939**	**0.0251**	**3,840.6416**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**22.69**	**6.59**	**27.49**	**39.84**	**2.15**	**92.88**	**30.59**	**2.15**	**93.16**	**59.47**	**78.89**	**4.49**	**8.46**	**35.28**	**15.53**	**9.12**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/2/2017	2/10/2017	5	30	
2	Grading	Grading	2/11/2017	5/26/2017	5	75	
3	Building Construction	Building Construction	5/27/2017	3/27/2020	5	740	
4	Paving	Paving	3/28/2020	6/12/2020	5	55	
5	Architectural Coating	Architectural Coating	6/13/2020	8/28/2020	5	55	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 187.5

Acres of Paving: 0

Residential Indoor: 976,860; Residential Outdoor: 325,620; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	96.00	29.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	19.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2710	0.0000	0.2710	0.1490	0.0000	0.1490	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0726	0.7763	0.5910	5.9000e-004		0.0413	0.0413		0.0380	0.0380	0.0000	54.4731	54.4731	0.0167	0.0000	54.8236
Total	**0.0726**	**0.7763**	**0.5910**	**5.9000e-004**	**0.2710**	**0.0413**	**0.3123**	**0.1490**	**0.0380**	**0.1870**	**0.0000**	**54.4731**	**54.4731**	**0.0167**	**0.0000**	**54.8236**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.7000e-004	1.1400e-003	0.0111	3.0000e-005	2.1600e-003	2.0000e-005	2.1700e-003	5.7000e-004	1.0000e-005	5.9000e-004	0.0000	1.7992	1.7992	9.0000e-005	0.0000	1.8011
Total	**8.7000e-004**	**1.1400e-003**	**0.0111**	**3.0000e-005**	**2.1600e-003**	**2.0000e-005**	**2.1700e-003**	**5.7000e-004**	**1.0000e-005**	**5.9000e-004**	**0.0000**	**1.7992**	**1.7992**	**9.0000e-005**	**0.0000**	**1.8011**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1220	0.0000	0.1220	0.0670	0.0000	0.0670	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0726	0.7763	0.5910	5.9000e-004		0.0413	0.0413		0.0380	0.0380	0.0000	54.4730	54.4730	0.0167	0.0000	54.8235
Total	**0.0726**	**0.7763**	**0.5910**	**5.9000e-004**	**0.1220**	**0.0413**	**0.1633**	**0.0670**	**0.0380**	**0.1050**	**0.0000**	**54.4730**	**54.4730**	**0.0167**	**0.0000**	**54.8235**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.7000e-004	1.1400e-003	0.0111	3.0000e-005	2.1600e-003	2.0000e-005	2.1700e-003	5.7000e-004	1.0000e-005	5.9000e-004	0.0000	1.7992	1.7992	9.0000e-005	0.0000	1.8011
Total	**8.7000e-004**	**1.1400e-003**	**0.0111**	**3.0000e-005**	**2.1600e-003**	**2.0000e-005**	**2.1700e-003**	**5.7000e-004**	**1.0000e-005**	**5.9000e-004**	**0.0000**	**1.7992**	**1.7992**	**9.0000e-005**	**0.0000**	**1.8011**

3.3 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3253	0.0000	0.3253	0.1349	0.0000	0.1349	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2287	2.6097	1.7552	2.3100e-003		0.1244	0.1244		0.1144	0.1144	0.0000	214.7772	214.7772	0.0658	0.0000	216.1592
Total	**0.2287**	**2.6097**	**1.7552**	**2.3100e-003**	**0.3253**	**0.1244**	**0.4496**	**0.1349**	**0.1144**	**0.2493**	**0.0000**	**214.7772**	**214.7772**	**0.0658**	**0.0000**	**216.1592**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4300e-003	3.1600e-003	0.0308	7.0000e-005	6.0000e-003	4.0000e-005	6.0400e-003	1.5900e-003	4.0000e-005	1.6300e-003	0.0000	4.9977	4.9977	2.5000e-004	0.0000	5.0031
Total	**2.4300e-003**	**3.1600e-003**	**0.0308**	**7.0000e-005**	**6.0000e-003**	**4.0000e-005**	**6.0400e-003**	**1.5900e-003**	**4.0000e-005**	**1.6300e-003**	**0.0000**	**4.9977**	**4.9977**	**2.5000e-004**	**0.0000**	**5.0031**

3.3 Grading - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1464	0.0000	0.1464	0.0607	0.0000	0.0607	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2287	2.6097	1.7552	2.3100e-003		0.1244	0.1244		0.1144	0.1144	0.0000	214.7770	214.7770	0.0658	0.0000	216.1589
Total	**0.2287**	**2.6097**	**1.7552**	**2.3100e-003**	**0.1464**	**0.1244**	**0.2708**	**0.0607**	**0.1144**	**0.1751**	**0.0000**	**214.7770**	**214.7770**	**0.0658**	**0.0000**	**216.1589**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4300e-003	3.1600e-003	0.0308	7.0000e-005	6.0000e-003	4.0000e-005	6.0400e-003	1.5900e-003	4.0000e-005	1.6300e-003	0.0000	4.9977	4.9977	2.5000e-004	0.0000	5.0031
Total	**2.4300e-003**	**3.1600e-003**	**0.0308**	**7.0000e-005**	**6.0000e-003**	**4.0000e-005**	**6.0400e-003**	**1.5900e-003**	**4.0000e-005**	**1.6300e-003**	**0.0000**	**4.9977**	**4.9977**	**2.5000e-004**	**0.0000**	**5.0031**

3.4 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2404	2.0464	1.4050	2.0800e-003		0.1380	0.1380		0.1297	0.1297	0.0000	185.5963	185.5963	0.0457	0.0000	186.5556
Total	**0.2404**	**2.0464**	**1.4050**	**2.0800e-003**		**0.1380**	**0.1380**		**0.1297**	**0.1297**	**0.0000**	**185.5963**	**185.5963**	**0.0457**	**0.0000**	**186.5556**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0262	0.1983	0.3080	5.3000e-004	0.0146	3.2900e-003	0.0179	4.1900e-003	3.0300e-003	7.2100e-003	0.0000	47.7054	47.7054	3.9000e-004	0.0000	47.7137
Worker	0.0241	0.0314	0.3059	6.9000e-004	0.0595	4.2000e-004	0.0599	0.0158	3.8000e-004	0.0162	0.0000	49.5775	49.5775	2.5100e-003	0.0000	49.6303
Total	**0.0503**	**0.2296**	**0.6138**	**1.2200e-003**	**0.0741**	**3.7100e-003**	**0.0778**	**0.0200**	**3.4100e-003**	**0.0234**	**0.0000**	**97.2830**	**97.2830**	**2.9000e-003**	**0.0000**	**97.3440**

3.4 Building Construction - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2404	2.0464	1.4050	2.0800e-003		0.1380	0.1380		0.1297	0.1297	0.0000	185.5961	185.5961	0.0457	0.0000	186.5553
Total	**0.2404**	**2.0464**	**1.4050**	**2.0800e-003**		**0.1380**	**0.1380**		**0.1297**	**0.1297**	**0.0000**	**185.5961**	**185.5961**	**0.0457**	**0.0000**	**186.5553**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0262	0.1983	0.3080	5.3000e-004	0.0146	3.2900e-003	0.0179	4.1900e-003	3.0300e-003	7.2100e-003	0.0000	47.7054	47.7054	3.9000e-004	0.0000	47.7137
Worker	0.0241	0.0314	0.3059	6.9000e-004	0.0595	4.2000e-004	0.0599	0.0158	3.8000e-004	0.0162	0.0000	49.5775	49.5775	2.5100e-003	0.0000	49.6303
Total	**0.0503**	**0.2296**	**0.6138**	**1.2200e-003**	**0.0741**	**3.7100e-003**	**0.0778**	**0.0200**	**3.4100e-003**	**0.0234**	**0.0000**	**97.2830**	**97.2830**	**2.9000e-003**	**0.0000**	**97.3440**

3.4 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3483	3.0355	2.2880	3.5000e-003		0.1950	0.1950		0.1833	0.1833	0.0000	308.9844	308.9844	0.0756	0.0000	310.5723
Total	**0.3483**	**3.0355**	**2.2880**	**3.5000e-003**		**0.1950**	**0.1950**		**0.1833**	**0.1833**	**0.0000**	**308.9844**	**308.9844**	**0.0756**	**0.0000**	**310.5723**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0379	0.2997	0.4714	9.0000e-004	0.0246	5.0800e-003	0.0297	7.0500e-003	4.6700e-003	0.0117	0.0000	78.9105	78.9105	6.4000e-004	0.0000	78.9241
Worker	0.0359	0.0474	0.4587	1.1700e-003	0.1002	6.9000e-004	0.1008	0.0266	6.3000e-004	0.0273	0.0000	80.6380	80.6380	3.9000e-003	0.0000	80.7199
Total	**0.0737**	**0.3471**	**0.9300**	**2.0700e-003**	**0.1248**	**5.7700e-003**	**0.1305**	**0.0337**	**5.3000e-003**	**0.0390**	**0.0000**	**159.5486**	**159.5486**	**4.5400e-003**	**0.0000**	**159.6440**

3.4 Building Construction - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3483	3.0355	2.2880	3.5000e-003		0.1950	0.1950		0.1833	0.1833	0.0000	308.9841	308.9841	0.0756	0.0000	310.5720
Total	**0.3483**	**3.0355**	**2.2880**	**3.5000e-003**		**0.1950**	**0.1950**		**0.1833**	**0.1833**	**0.0000**	**308.9841**	**308.9841**	**0.0756**	**0.0000**	**310.5720**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0379	0.2997	0.4714	9.0000e-004	0.0246	5.0800e-003	0.0297	7.0500e-003	4.6700e-003	0.0117	0.0000	78.9105	78.9105	6.4000e-004	0.0000	78.9241
Worker	0.0359	0.0474	0.4587	1.1700e-003	0.1002	6.9000e-004	0.1008	0.0266	6.3000e-004	0.0273	0.0000	80.6380	80.6380	3.9000e-003	0.0000	80.7199
Total	**0.0737**	**0.3471**	**0.9300**	**2.0700e-003**	**0.1248**	**5.7700e-003**	**0.1305**	**0.0337**	**5.3000e-003**	**0.0390**	**0.0000**	**159.5486**	**159.5486**	**4.5400e-003**	**0.0000**	**159.6440**

3.4 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3069	2.7359	2.2342	3.5000e-003		0.1677	0.1677		0.1577	0.1577	0.0000	305.5302	305.5302	0.0743	0.0000	307.0913
Total	**0.3069**	**2.7359**	**2.2342**	**3.5000e-003**		**0.1677**	**0.1677**		**0.1577**	**0.1577**	**0.0000**	**305.5302**	**305.5302**	**0.0743**	**0.0000**	**307.0913**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0343	0.2715	0.4438	8.9000e-004	0.0246	4.6600e-003	0.0293	7.0500e-003	4.2900e-003	0.0113	0.0000	77.5404	77.5404	6.2000e-004	0.0000	77.5534
Worker	0.0325	0.0431	0.4150	1.1700e-003	0.1002	6.7000e-004	0.1008	0.0266	6.2000e-004	0.0273	0.0000	77.7806	77.7806	3.6200e-003	0.0000	77.8566
Total	**0.0667**	**0.3146**	**0.8588**	**2.0600e-003**	**0.1248**	**5.3300e-003**	**0.1301**	**0.0337**	**4.9100e-003**	**0.0386**	**0.0000**	**155.3209**	**155.3209**	**4.2400e-003**	**0.0000**	**155.4101**

3.4 Building Construction - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3069	2.7359	2.2342	3.5000e-003		0.1677	0.1677		0.1577	0.1577	0.0000	305.5299	305.5299	0.0743	0.0000	307.0909
Total	**0.3069**	**2.7359**	**2.2342**	**3.5000e-003**		**0.1677**	**0.1677**		**0.1577**	**0.1577**	**0.0000**	**305.5299**	**305.5299**	**0.0743**	**0.0000**	**307.0909**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0343	0.2715	0.4438	8.9000e-004	0.0246	4.6600e-003	0.0293	7.0500e-003	4.2900e-003	0.0113	0.0000	77.5404	77.5404	6.2000e-004	0.0000	77.5534
Worker	0.0325	0.0431	0.4150	1.1700e-003	0.1002	6.7000e-004	0.1008	0.0266	6.2000e-004	0.0273	0.0000	77.7806	77.7806	3.6200e-003	0.0000	77.8566
Total	**0.0667**	**0.3146**	**0.8588**	**2.0600e-003**	**0.1248**	**5.3300e-003**	**0.1301**	**0.0337**	**4.9100e-003**	**0.0386**	**0.0000**	**155.3209**	**155.3209**	**4.2400e-003**	**0.0000**	**155.4101**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0665	0.6011	0.5295	8.4000e-004		0.0351	0.0351		0.0330	0.0330	0.0000	72.6547	72.6547	0.0177	0.0000	73.0264
Total	**0.0665**	**0.6011**	**0.5295**	**8.4000e-004**		**0.0351**	**0.0351**		**0.0330**	**0.0330**	**0.0000**	**72.6547**	**72.6547**	**0.0177**	**0.0000**	**73.0264**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.1900e-003	0.0553	0.0993	2.2000e-004	5.9400e-003	9.9000e-004	6.9300e-003	1.7000e-003	9.1000e-004	2.6100e-003	0.0000	18.2846	18.2846	1.4000e-004	0.0000	18.2876
Worker	7.2500e-003	9.5600e-003	0.0922	2.8000e-004	0.0242	1.6000e-004	0.0243	6.4300e-003	1.5000e-004	6.5800e-003	0.0000	18.0357	18.0357	8.2000e-004	0.0000	18.0530
Total	**0.0144**	**0.0649**	**0.1914**	**5.0000e-004**	**0.0301**	**1.1500e-003**	**0.0313**	**8.1300e-003**	**1.0600e-003**	**9.1900e-003**	**0.0000**	**36.3203**	**36.3203**	**9.6000e-004**	**0.0000**	**36.3406**

3.4 Building Construction - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0665	0.6011	0.5295	8.4000e-004		0.0351	0.0351		0.0330	0.0330	0.0000	72.6546	72.6546	0.0177	0.0000	73.0264
Total	**0.0665**	**0.6011**	**0.5295**	**8.4000e-004**		**0.0351**	**0.0351**		**0.0330**	**0.0330**	**0.0000**	**72.6546**	**72.6546**	**0.0177**	**0.0000**	**73.0264**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.1900e-003	0.0553	0.0993	2.2000e-004	5.9400e-003	9.9000e-004	6.9300e-003	1.7000e-003	9.1000e-004	2.6100e-003	0.0000	18.2846	18.2846	1.4000e-004	0.0000	18.2876
Worker	7.2500e-003	9.5600e-003	0.0922	2.8000e-004	0.0242	1.6000e-004	0.0243	6.4300e-003	1.5000e-004	6.5800e-003	0.0000	18.0357	18.0357	8.2000e-004	0.0000	18.0530
Total	**0.0144**	**0.0649**	**0.1914**	**5.0000e-004**	**0.0301**	**1.1500e-003**	**0.0313**	**8.1300e-003**	**1.0600e-003**	**9.1900e-003**	**0.0000**	**36.3203**	**36.3203**	**9.6000e-004**	**0.0000**	**36.3406**

3.5 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0366	0.3791	0.3947	6.1000e-004		0.0203	0.0203		0.0187	0.0187	0.0000	53.9057	53.9057	0.0174	0.0000	54.2718
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0366**	**0.3791**	**0.3947**	**6.1000e-004**		**0.0203**	**0.0203**		**0.0187**	**0.0187**	**0.0000**	**53.9057**	**53.9057**	**0.0174**	**0.0000**	**54.2718**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.9000e-004	1.3000e-003	0.0126	4.0000e-005	3.3000e-003	2.0000e-005	3.3200e-003	8.8000e-004	2.0000e-005	9.0000e-004	0.0000	2.4602	2.4602	1.1000e-004	0.0000	2.4626
Total	**9.9000e-004**	**1.3000e-003**	**0.0126**	**4.0000e-005**	**3.3000e-003**	**2.0000e-005**	**3.3200e-003**	**8.8000e-004**	**2.0000e-005**	**9.0000e-004**	**0.0000**	**2.4602**	**2.4602**	**1.1000e-004**	**0.0000**	**2.4626**

3.5 Paving - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0366	0.3791	0.3947	6.1000e-004		0.0203	0.0203		0.0187	0.0187	0.0000	53.9056	53.9056	0.0174	0.0000	54.2717
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0366**	**0.3791**	**0.3947**	**6.1000e-004**		**0.0203**	**0.0203**		**0.0187**	**0.0187**	**0.0000**	**53.9056**	**53.9056**	**0.0174**	**0.0000**	**54.2717**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.9000e-004	1.3000e-003	0.0126	4.0000e-005	3.3000e-003	2.0000e-005	3.3200e-003	8.8000e-004	2.0000e-005	9.0000e-004	0.0000	2.4602	2.4602	1.1000e-004	0.0000	2.4626
Total	**9.9000e-004**	**1.3000e-003**	**0.0126**	**4.0000e-005**	**3.3000e-003**	**2.0000e-005**	**3.3200e-003**	**8.8000e-004**	**2.0000e-005**	**9.0000e-004**	**0.0000**	**2.4602**	**2.4602**	**1.1000e-004**	**0.0000**	**2.4626**

3.6 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.5278					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.6600e-003	0.0463	0.0504	8.0000e-005		3.0500e-003	3.0500e-003		3.0500e-003	3.0500e-003	0.0000	7.0215	7.0215	5.4000e-004	0.0000	7.0329
Total	**4.5344**	**0.0463**	**0.0504**	**8.0000e-005**		**3.0500e-003**	**3.0500e-003**		**3.0500e-003**	**3.0500e-003**	**0.0000**	**7.0215**	**7.0215**	**5.4000e-004**	**0.0000**	**7.0329**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2500e-003	1.6500e-003	0.0159	5.0000e-005	4.1800e-003	3.0000e-005	4.2100e-003	1.1100e-003	3.0000e-005	1.1400e-003	0.0000	3.1163	3.1163	1.4000e-004	0.0000	3.1193
Total	**1.2500e-003**	**1.6500e-003**	**0.0159**	**5.0000e-005**	**4.1800e-003**	**3.0000e-005**	**4.2100e-003**	**1.1100e-003**	**3.0000e-005**	**1.1400e-003**	**0.0000**	**3.1163**	**3.1163**	**1.4000e-004**	**0.0000**	**3.1193**

3.6 Architectural Coating - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.5278					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.6600e-003	0.0463	0.0504	8.0000e-005		3.0500e-003	3.0500e-003		3.0500e-003	3.0500e-003	0.0000	7.0214	7.0214	5.4000e-004	0.0000	7.0329
Total	**4.5344**	**0.0463**	**0.0504**	**8.0000e-005**		**3.0500e-003**	**3.0500e-003**		**3.0500e-003**	**3.0500e-003**	**0.0000**	**7.0214**	**7.0214**	**5.4000e-004**	**0.0000**	**7.0329**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2500e-003	1.6500e-003	0.0159	5.0000e-005	4.1800e-003	3.0000e-005	4.2100e-003	1.1100e-003	3.0000e-005	1.1400e-003	0.0000	3.1163	3.1163	1.4000e-004	0.0000	3.1193
Total	**1.2500e-003**	**1.6500e-003**	**0.0159**	**5.0000e-005**	**4.1800e-003**	**3.0000e-005**	**4.2100e-003**	**1.1100e-003**	**3.0000e-005**	**1.1400e-003**	**0.0000**	**3.1163**	**3.1163**	**1.4000e-004**	**0.0000**	**3.1193**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.6699	3.3329	17.8349	0.0356	2.7444	0.0473	2.7918	0.7343	0.0435	0.7778	0.0000	2,636.6500	2,636.6500	0.1178	0.0000	2,639.1243
Unmitigated	1.6794	3.3948	18.1068	0.0363	2.8046	0.0483	2.8529	0.7504	0.0444	0.7948	0.0000	2,692.7280	2,692.7280	0.1201	0.0000	2,695.2506

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	2,564.76	2,701.44	2350.36	7,481,371	7,320,746
Total	2,564.76	2,701.44	2,350.36	7,481,371	7,320,746

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	48.40	15.90	35.70	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.512700	0.213300	0.168800	0.060900	0.002100	0.001000	0.009400	0.021800	0.000000	0.003800	0.003100	0.001000	0.002300

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	578.7668	578.7668	0.0262	5.4100e-003	580.9949
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	597.4956	597.4956	0.0270	5.5900e-003	599.7958
NaturalGas Mitigated	0.0361	0.3088	0.1314	1.9700e-003		0.0250	0.0250		0.0250	0.0250	0.0000	357.6119	357.6119	6.8500e-003	6.5600e-003	359.7882
NaturalGas Unmitigated	0.0453	0.3870	0.1647	2.4700e-003		0.0313	0.0313		0.0313	0.0313	0.0000	448.1880	448.1880	8.5900e-003	8.2200e-003	450.9156

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	8.39873e+006	0.0453	0.3870	0.1647	2.4700e-003		0.0313	0.0313		0.0313	0.0313	0.0000	448.1880	448.1880	8.5900e-003	8.2200e-003	450.9156
Total		**0.0453**	**0.3870**	**0.1647**	**2.4700e-003**		**0.0313**	**0.0313**		**0.0313**	**0.0313**	**0.0000**	**448.1880**	**448.1880**	**8.5900e-003**	**8.2200e-003**	**450.9156**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	6.70139e+006	0.0361	0.3088	0.1314	1.9700e-003		0.0250	0.0250		0.0250	0.0250	0.0000	357.6119	357.6119	6.8500e-003	6.5600e-003	359.7882
Total		**0.0361**	**0.3088**	**0.1314**	**1.9700e-003**		**0.0250**	**0.0250**		**0.0250**	**0.0250**	**0.0000**	**357.6119**	**357.6119**	**6.8500e-003**	**6.5600e-003**	**359.7882**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	2.05387e+006	597.4956	0.0270	5.5900e-003	599.7958
Total		**597.4956**	**0.0270**	**5.5900e-003**	**599.7958**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	1.98949e+006	578.7668	0.0262	5.4100e-003	580.9949
Total		**578.7668**	**0.0262**	**5.4100e-003**	**580.9949**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.1084	0.0233	1.9960	1.0000e-004		0.0189	0.0189		0.0189	0.0189	0.0000	119.3208	119.3208	5.4400e-003	2.1300e-003	120.0949
Unmitigated	3.2092	0.1417	9.2582	0.0238		1.2013	1.2013		1.2013	1.2013	158.3130	119.3501	277.6631	0.7456	2.1300e-003	293.9799

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.4528					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.8840					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.8098	0.1182	7.2483	0.0237		1.1904	1.1904		1.1903	1.1903	158.3130	116.0996	274.4126	0.7423	2.1300e-003	290.6609
Landscaping	0.0626	0.0234	2.0100	1.1000e-004		0.0109	0.0109		0.0109	0.0109	0.0000	3.2505	3.2505	3.2600e-003	0.0000	3.3190
Total	**3.2092**	**0.1417**	**9.2582**	**0.0238**		**1.2013**	**1.2013**		**1.2013**	**1.2013**	**158.3130**	**119.3501**	**277.6631**	**0.7456**	**2.1300e-003**	**293.9799**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1509					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.8840					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0117	0.0000	6.4000e-004	0.0000		8.1100e-003	8.1100e-003		8.0200e-003	8.0200e-003	0.0000	116.0996	116.0996	2.2300e-003	2.1300e-003	116.8061
Landscaping	0.0617	0.0233	1.9954	1.0000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	3.2212	3.2212	3.2200e-003	0.0000	3.2888
Total	**2.1084**	**0.0233**	**1.9960**	**1.0000e-004**		**0.0189**	**0.0189**		**0.0189**	**0.0189**	**0.0000**	**119.3208**	**119.3208**	**5.4500e-003**	**2.1300e-003**	**120.0949**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	33.5509	0.4565	0.0110	46.5536
Unmitigated	44.2343	0.5707	0.0138	60.4965

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	17.4613 / 11.0082	44.2343	0.5707	0.0138	60.4965
Total		**44.2343**	**0.5707**	**0.0138**	**60.4965**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	13.969 / 8.80656	33.5509	0.4565	0.0110	46.5536
Total		**33.5509**	**0.4565**	**0.0110**	**46.5536**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	41.9826	2.4811	0.0000	94.0857
Unmitigated	55.9768	3.3081	0.0000	125.4476

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	275.76	55.9768	3.3081	0.0000	125.4476
Total		**55.9768**	**3.3081**	**0.0000**	**125.4476**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	206.82	41.9826	2.4811	0.0000	94.0857
Total		**41.9826**	**2.4811**	**0.0000**	**94.0857**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Wilson Homes Tract 6050

Fresno County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	268.00	Dwelling Unit	39.16	482,400.00	766

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2017
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Lot Acreage from site plan

Construction Phase - Default Schedule with Jan 2017 start date

Off-road Equipment -

Vechicle Emission Factors - SJVAPCD Residential Fleet Mix for 2017

Woodstoves - Phased modeling run

Area Coating - Air District Coatings rule

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation - Mitigation measures from the approved AIA

Area Mitigation - Low VOC paints required by District coatings rule.

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	150	50
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	150	50
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	150	50
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	150	50
tblLandUse	LotAcreage	87.01	39.16
tblProjectCharacteristics	OperationalYear	2014	2017
tblVehicleEF	HHD	0.08	0.02
tblVehicleEF	LDA	0.44	0.51
tblVehicleEF	LDT1	0.06	0.21
tblVehicleEF	LDT2	0.16	0.17
tblVehicleEF	LHD1	0.04	2.1000e-003
tblVehicleEF	LHD2	7.0900e-003	1.0000e-003
tblVehicleEF	MCY	6.4930e-003	3.1000e-003
tblVehicleEF	MDV	0.17	0.06
tblVehicleEF	MH	1.8570e-003	2.3000e-003
tblVehicleEF	MHD	0.02	9.4000e-003
tblVehicleEF	OBUS	2.0600e-003	0.00
tblVehicleEF	SBUS	7.8200e-004	1.0000e-003
tblVehicleEF	UBUS	1.7530e-003	3.8000e-003

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	6.1646	69.6844	47.6305	0.0635	18.2141	3.3183	20.9694	9.9699	3.0529	12.5047	0.0000	6,454.5793	6,454.5793	1.9419	0.0000	6,495.3582
2018	3.2720	25.9864	25.6215	0.0423	0.9815	1.5387	2.5203	0.2642	1.4457	1.7099	0.0000	3,928.2070	3,928.2070	0.6772	0.0000	3,942.4276
2019	2.8948	23.4345	24.6322	0.0423	0.9815	1.3262	2.3077	0.2642	1.2462	1.5104	0.0000	3,864.2814	3,864.2814	0.6639	0.0000	3,878.2224
2020	164.9332	21.1959	23.8037	0.0422	0.9816	1.1495	2.1311	0.2643	1.0802	1.3445	0.0000	3,786.0654	3,786.0654	0.7033	0.0000	3,800.8354
Total	**177.2645**	**140.3013**	**121.6879**	**0.1903**	**21.1587**	**7.3328**	**27.9284**	**10.7626**	**6.8249**	**17.0695**	**0.0000**	**18,033.1332**	**18,033.1332**	**3.9862**	**0.0000**	**18,116.8436**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	6.1646	69.6844	47.6305	0.0635	8.2777	3.3183	11.0329	4.5080	3.0529	7.0428	0.0000	6,454.5793	6,454.5793	1.9419	0.0000	6,495.3582
2018	3.2720	25.9864	25.6215	0.0423	0.9815	1.5387	2.5203	0.2642	1.4457	1.7099	0.0000	3,928.2070	3,928.2070	0.6772	0.0000	3,942.4276
2019	2.8948	23.4345	24.6322	0.0423	0.9815	1.3262	2.3077	0.2642	1.2462	1.5104	0.0000	3,864.2814	3,864.2814	0.6639	0.0000	3,878.2224
2020	164.9332	21.1959	23.8037	0.0422	0.9816	1.1495	2.1311	0.2643	1.0802	1.3445	0.0000	3,786.0654	3,786.0654	0.7033	0.0000	3,800.8354
Total	**177.2645**	**140.3013**	**121.6879**	**0.1903**	**11.2223**	**7.3328**	**17.9920**	**5.3008**	**6.8249**	**11.6077**	**0.0000**	**18,033.1331**	**18,033.1331**	**3.9862**	**0.0000**	**18,116.8435**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**46.96**	**0.00**	**35.58**	**50.75**	**0.00**	**32.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	33.2508	3.1440	199.1197	0.5779		29.1560	29.1560		29.1539	29.1539	4,256.3474	3,161.2238	7,417.5712	19.9973	0.0572	7,855.2554
Energy	0.2482	2.1206	0.9024	0.0135		0.1715	0.1715		0.1715	0.1715		2,707.0833	2,707.0833	0.0519	0.0496	2,723.5582
Mobile	12.9339	42.8649	153.6599	0.2654	16.9152	0.5674	17.4826	4.5285	0.5216	5.0502		23,093.6374	23,093.6374	0.7989		23,110.4149
Total	**46.4329**	**48.1295**	**353.6820**	**0.8569**	**16.9152**	**29.8949**	**46.8101**	**4.5285**	**29.8470**	**34.3755**	**4,256.3474**	**28,961.9445**	**33,218.2919**	**20.8482**	**0.1069**	**33,689.2286**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	12.1219	0.2586	22.1867	1.1600e-003		0.3180	0.3180		0.3159	0.3159	0.0000	3,160.8652	3,160.8652	0.0992	0.0572	3,180.6886
Energy	0.1980	1.6920	0.7200	0.0108		0.1368	0.1368		0.1368	0.1368		2,159.9977	2,159.9977	0.0414	0.0396	2,173.1431
Mobile	12.8482	42.0936	152.0440	0.2599	16.5520	0.5559	17.1080	4.4313	0.5111	4.9424		22,613.8409	22,613.8409	0.7838		22,630.3003
Total	**25.1681**	**44.0442**	**174.9506**	**0.2719**	**16.5520**	**1.0107**	**17.5628**	**4.4313**	**0.9638**	**5.3951**	**0.0000**	**27,934.7038**	**27,934.7038**	**0.9244**	**0.0968**	**27,984.1320**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	45.80	8.49	50.53	68.27	2.15	96.62	62.48	2.15	96.77	84.31	100.00	3.55	15.91	95.57	9.39	16.93

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/2/2017	2/10/2017	5	30	
2	Grading	Grading	2/11/2017	5/26/2017	5	75	
3	Building Construction	Building Construction	5/27/2017	3/27/2020	5	740	
4	Paving	Paving	3/28/2020	6/12/2020	5	55	
5	Architectural Coating	Architectural Coating	6/13/2020	8/28/2020	5	55	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 187.5

Acres of Paving: 0

Residential Indoor: 976,860; Residential Outdoor: 325,620; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	96.00	29.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	19.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.8382	51.7535	39.3970	0.0391		2.7542	2.7542		2.5339	2.5339		4,003.0859	4,003.0859	1.2265		4,028.8432
Total	**4.8382**	**51.7535**	**39.3970**	**0.0391**	**18.0663**	**2.7542**	**20.8205**	**9.9307**	**2.5339**	**12.4646**		**4,003.0859**	**4,003.0859**	**1.2265**		**4,028.8432**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0589	0.0832	0.7430	1.6100e-003	0.1479	1.0100e-003	0.1489	0.0392	9.3000e-004	0.0402		127.0893	127.0893	6.7000e-003		127.2300
Total	**0.0589**	**0.0832**	**0.7430**	**1.6100e-003**	**0.1479**	**1.0100e-003**	**0.1489**	**0.0392**	**9.3000e-004**	**0.0402**		**127.0893**	**127.0893**	**6.7000e-003**		**127.2300**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	4.8382	51.7535	39.3970	0.0391		2.7542	2.7542		2.5339	2.5339	0.0000	4,003.0859	4,003.0859	1.2265		4,028.8432
Total	**4.8382**	**51.7535**	**39.3970**	**0.0391**	**8.1298**	**2.7542**	**10.8840**	**4.4688**	**2.5339**	**7.0027**	**0.0000**	**4,003.0859**	**4,003.0859**	**1.2265**		**4,028.8432**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0589	0.0832	0.7430	1.6100e-003	0.1479	1.0100e-003	0.1489	0.0392	9.3000e-004	0.0402		127.0893	127.0893	6.7000e-003		127.2300
Total	**0.0589**	**0.0832**	**0.7430**	**1.6100e-003**	**0.1479**	**1.0100e-003**	**0.1489**	**0.0392**	**9.3000e-004**	**0.0402**		**127.0893**	**127.0893**	**6.7000e-003**		**127.2300**

3.3 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	6.0991	69.5920	46.8050	0.0617		3.3172	3.3172		3.0518	3.0518		6,313.3690	6,313.3690	1.9344		6,353.9915
Total	**6.0991**	**69.5920**	**46.8050**	**0.0617**	**8.6733**	**3.3172**	**11.9905**	**3.5965**	**3.0518**	**6.6483**		**6,313.3690**	**6,313.3690**	**1.9344**		**6,353.9915**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0654	0.0924	0.8255	1.7900e-003	0.1643	1.1200e-003	0.1654	0.0436	1.0300e-003	0.0446		141.2103	141.2103	7.4500e-003		141.3667
Total	**0.0654**	**0.0924**	**0.8255**	**1.7900e-003**	**0.1643**	**1.1200e-003**	**0.1654**	**0.0436**	**1.0300e-003**	**0.0446**		**141.2103**	**141.2103**	**7.4500e-003**		**141.3667**

3.3 Grading - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.9030	0.0000	3.9030	1.6184	0.0000	1.6184			0.0000			0.0000
Off-Road	6.0991	69.5920	46.8050	0.0617		3.3172	3.3172		3.0518	3.0518	0.0000	6,313.3690	6,313.3690	1.9344		6,353.9915
Total	**6.0991**	**69.5920**	**46.8050**	**0.0617**	**3.9030**	**3.3172**	**7.2202**	**1.6184**	**3.0518**	**4.6702**	**0.0000**	**6,313.3690**	**6,313.3690**	**1.9344**		**6,353.9915**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0654	0.0924	0.8255	1.7900e-003	0.1643	1.1200e-003	0.1654	0.0436	1.0300e-003	0.0446		141.2103	141.2103	7.4500e-003		141.3667
Total	**0.0654**	**0.0924**	**0.8255**	**1.7900e-003**	**0.1643**	**1.1200e-003**	**0.1654**	**0.0436**	**1.0300e-003**	**0.0446**		**141.2103**	**141.2103**	**7.4500e-003**		**141.3667**

3.4 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730		2,639.8053	2,639.8053	0.6497		2,653.4490
Total	**3.1024**	**26.4057**	**18.1291**	**0.0268**		**1.7812**	**1.7812**		**1.6730**	**1.6730**		**2,639.8053**	**2,639.8053**	**0.6497**		**2,653.4490**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3841	2.5934	4.9503	6.8700e-003	0.1929	0.0428	0.2357	0.0551	0.0394	0.0944		675.5158	675.5158	5.6800e-003		675.6352
Worker	0.3141	0.4436	3.9624	8.6000e-003	0.7886	5.3800e-003	0.7940	0.2092	4.9600e-003	0.2141		677.8094	677.8094	0.0358		678.5602
Total	**0.6982**	**3.0370**	**8.9128**	**0.0155**	**0.9816**	**0.0482**	**1.0297**	**0.2643**	**0.0443**	**0.3086**		**1,353.3252**	**1,353.3252**	**0.0414**		**1,354.1954**

3.4 Building Construction - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730	0.0000	2,639.8053	2,639.8053	0.6497		2,653.4490
Total	**3.1024**	**26.4057**	**18.1291**	**0.0268**		**1.7812**	**1.7812**		**1.6730**	**1.6730**	**0.0000**	**2,639.8053**	**2,639.8053**	**0.6497**		**2,653.4490**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3841	2.5934	4.9503	6.8700e-003	0.1929	0.0428	0.2357	0.0551	0.0394	0.0944		675.5158	675.5158	5.6800e-003		675.6352
Worker	0.3141	0.4436	3.9624	8.6000e-003	0.7886	5.3800e-003	0.7940	0.2092	4.9600e-003	0.2141		677.8094	677.8094	0.0358		678.5602
Total	**0.6982**	**3.0370**	**8.9128**	**0.0155**	**0.9816**	**0.0482**	**1.0297**	**0.2643**	**0.0443**	**0.3086**		**1,353.3252**	**1,353.3252**	**0.0414**		**1,354.1954**

3.4 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6687	23.2608	17.5327	0.0268		1.4943	1.4943		1.4048	1.4048		2,609.9390	2,609.9390	0.6387		2,623.3517
Total	**2.6687**	**23.2608**	**17.5327**	**0.0268**		**1.4943**	**1.4943**		**1.4048**	**1.4048**		**2,609.9390**	**2,609.9390**	**0.6387**		**2,623.3517**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3268	2.3278	4.5785	6.8500e-003	0.1929	0.0392	0.2321	0.0551	0.0360	0.0911		663.5706	663.5706	5.5300e-003		663.6867
Worker	0.2766	0.3978	3.5104	8.6200e-003	0.7886	5.2600e-003	0.7939	0.2092	4.8600e-003	0.2140		654.6975	654.6975	0.0329		655.3892
Total	**0.6033**	**2.7256**	**8.0889**	**0.0155**	**0.9815**	**0.0445**	**1.0260**	**0.2642**	**0.0409**	**0.3051**		**1,318.2681**	**1,318.2681**	**0.0385**		**1,319.0759**

3.4 Building Construction - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6687	23.2608	17.5327	0.0268		1.4943	1.4943		1.4048	1.4048	0.0000	2,609.9389	2,609.9389	0.6387		2,623.3517
Total	**2.6687**	**23.2608**	**17.5327**	**0.0268**		**1.4943**	**1.4943**		**1.4048**	**1.4048**	**0.0000**	**2,609.9389**	**2,609.9389**	**0.6387**		**2,623.3517**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3268	2.3278	4.5785	6.8500e-003	0.1929	0.0392	0.2321	0.0551	0.0360	0.0911		663.5706	663.5706	5.5300e-003		663.6867
Worker	0.2766	0.3978	3.5104	8.6200e-003	0.7886	5.2600e-003	0.7939	0.2092	4.8600e-003	0.2140		654.6975	654.6975	0.0329		655.3892
Total	**0.6033**	**2.7256**	**8.0889**	**0.0155**	**0.9815**	**0.0445**	**1.0260**	**0.2642**	**0.0409**	**0.3051**		**1,318.2681**	**1,318.2681**	**0.0385**		**1,319.0759**

3.4 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3516	20.9650	17.1204	0.0268		1.2850	1.2850		1.2083	1.2083		2,580.7618	2,580.7618	0.6279		2,593.9479
Total	**2.3516**	**20.9650**	**17.1204**	**0.0268**		**1.2850**	**1.2850**		**1.2083**	**1.2083**		**2,580.7618**	**2,580.7618**	**0.6279**		**2,593.9479**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2935	2.1081	4.3483	6.8400e-003	0.1929	0.0360	0.2289	0.0551	0.0331	0.0882		652.0402	652.0402	5.3400e-003		652.1523
Worker	0.2497	0.3614	3.1636	8.6200e-003	0.7886	5.1700e-003	0.7938	0.2092	4.7900e-003	0.2140		631.4795	631.4795	0.0306		632.1222
Total	**0.5432**	**2.4695**	**7.5119**	**0.0155**	**0.9815**	**0.0412**	**1.0227**	**0.2642**	**0.0379**	**0.3021**		**1,283.5197**	**1,283.5197**	**0.0359**		**1,284.2745**

3.4 Building Construction - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3516	20.9650	17.1204	0.0268		1.2850	1.2850		1.2083	1.2083	0.0000	2,580.7618	2,580.7618	0.6279		2,593.9479
Total	**2.3516**	**20.9650**	**17.1204**	**0.0268**		**1.2850**	**1.2850**		**1.2083**	**1.2083**	**0.0000**	**2,580.7618**	**2,580.7618**	**0.6279**		**2,593.9479**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2935	2.1081	4.3483	6.8400e-003	0.1929	0.0360	0.2289	0.0551	0.0331	0.0882		652.0402	652.0402	5.3400e-003		652.1523
Worker	0.2497	0.3614	3.1636	8.6200e-003	0.7886	5.1700e-003	0.7938	0.2092	4.7900e-003	0.2140		631.4795	631.4795	0.0306		632.1222
Total	**0.5432**	**2.4695**	**7.5119**	**0.0155**	**0.9815**	**0.0412**	**1.0227**	**0.2642**	**0.0379**	**0.3021**		**1,283.5197**	**1,283.5197**	**0.0359**		**1,284.2745**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1113	19.0839	16.8084	0.0268		1.1128	1.1128		1.0465	1.0465		2,542.4799	2,542.4799	0.6194		2,555.4880
Total	**2.1113**	**19.0839**	**16.8084**	**0.0268**		**1.1128**	**1.1128**		**1.0465**	**1.0465**		**2,542.4799**	**2,542.4799**	**0.6194**		**2,555.4880**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2526	1.7797	4.0929	6.8200e-003	0.1929	0.0315	0.2245	0.0551	0.0290	0.0841		636.9784	636.9784	5.0900e-003		637.0853
Worker	0.2307	0.3322	2.9024	8.6200e-003	0.7886	5.1300e-003	0.7938	0.2092	4.7500e-003	0.2139		606.6071	606.6071	0.0288		607.2119
Total	**0.4834**	**2.1119**	**6.9952**	**0.0154**	**0.9816**	**0.0367**	**1.0182**	**0.2643**	**0.0338**	**0.2980**		**1,243.5855**	**1,243.5855**	**0.0339**		**1,244.2971**

3.4 Building Construction - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1113	19.0839	16.8084	0.0268		1.1128	1.1128		1.0465	1.0465	0.0000	2,542.4799	2,542.4799	0.6194		2,555.4880
Total	**2.1113**	**19.0839**	**16.8084**	**0.0268**		**1.1128**	**1.1128**		**1.0465**	**1.0465**	**0.0000**	**2,542.4799**	**2,542.4799**	**0.6194**		**2,555.4880**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2526	1.7797	4.0929	6.8200e-003	0.1929	0.0315	0.2245	0.0551	0.0290	0.0841		636.9784	636.9784	5.0900e-003		637.0853
Worker	0.2307	0.3322	2.9024	8.6200e-003	0.7886	5.1300e-003	0.7938	0.2092	4.7500e-003	0.2139		606.6071	606.6071	0.0288		607.2119
Total	**0.4834**	**2.1119**	**6.9952**	**0.0154**	**0.9816**	**0.0367**	**1.0182**	**0.2643**	**0.0338**	**0.2980**		**1,243.5855**	**1,243.5855**	**0.0339**		**1,244.2971**

3.5 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3301	13.7845	14.3523	0.0223		0.7390	0.7390		0.6799	0.6799		2,160.7571	2,160.7571	0.6988		2,175.4326
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3301**	**13.7845**	**14.3523**	**0.0223**		**0.7390**	**0.7390**		**0.6799**	**0.6799**		**2,160.7571**	**2,160.7571**	**0.6988**		**2,175.4326**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0361	0.0519	0.4535	1.3500e-003	0.1232	8.0000e-004	0.1240	0.0327	7.4000e-004	0.0334		94.7824	94.7824	4.5000e-003		94.8769
Total	**0.0361**	**0.0519**	**0.4535**	**1.3500e-003**	**0.1232**	**8.0000e-004**	**0.1240**	**0.0327**	**7.4000e-004**	**0.0334**		**94.7824**	**94.7824**	**4.5000e-003**		**94.8769**

3.5 Paving - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3301	13.7845	14.3523	0.0223		0.7390	0.7390		0.6799	0.6799	0.0000	2,160.7571	2,160.7571	0.6988		2,175.4326
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3301**	**13.7845**	**14.3523**	**0.0223**		**0.7390**	**0.7390**		**0.6799**	**0.6799**	**0.0000**	**2,160.7571**	**2,160.7571**	**0.6988**		**2,175.4326**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0361	0.0519	0.4535	1.3500e-003	0.1232	8.0000e-004	0.1240	0.0327	7.4000e-004	0.0334		94.7824	94.7824	4.5000e-003		94.8769
Total	**0.0361**	**0.0519**	**0.4535**	**1.3500e-003**	**0.1232**	**8.0000e-004**	**0.1240**	**0.0327**	**7.4000e-004**	**0.0334**		**94.7824**	**94.7824**	**4.5000e-003**		**94.8769**

3.6 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	164.6453					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9057
Total	**164.8875**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9057**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0457	0.0658	0.5744	1.7100e-003	0.1561	1.0100e-003	0.1571	0.0414	9.4000e-004	0.0423		120.0577	120.0577	5.7000e-003		120.1774
Total	**0.0457**	**0.0658**	**0.5744**	**1.7100e-003**	**0.1561**	**1.0100e-003**	**0.1571**	**0.0414**	**9.4000e-004**	**0.0423**		**120.0577**	**120.0577**	**5.7000e-003**		**120.1774**

3.6 Architectural Coating - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	164.6453					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9057
Total	**164.8875**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9057**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0457	0.0658	0.5744	1.7100e-003	0.1561	1.0100e-003	0.1571	0.0414	9.4000e-004	0.0423		120.0577	120.0577	5.7000e-003		120.1774
Total	**0.0457**	**0.0658**	**0.5744**	**1.7100e-003**	**0.1561**	**1.0100e-003**	**0.1571**	**0.0414**	**9.4000e-004**	**0.0423**		**120.0577**	**120.0577**	**5.7000e-003**		**120.1774**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	12.8482	42.0936	152.0440	0.2599	16.5520	0.5559	17.1080	4.4313	0.5111	4.9424		22,613.8409	22,613.8409	0.7838		22,630.3003
Unmitigated	12.9339	42.8649	153.6599	0.2654	16.9152	0.5674	17.4826	4.5285	0.5216	5.0502		23,093.6374	23,093.6374	0.7989		23,110.4149

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	2,564.76	2,701.44	2350.36	7,481,371	7,320,746
Total	2,564.76	2,701.44	2,350.36	7,481,371	7,320,746

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	48.40	15.90	35.70	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.439813	0.064119	0.163228	0.170252	0.043054	0.007090	0.018961	0.080539	0.002060	0.001753	0.006493	0.000782	0.001857

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.1980	1.6920	0.7200	0.0108		0.1368	0.1368		0.1368	0.1368		2,159.9977	2,159.9977	0.0414	0.0396	2,173.1431
NaturalGas Unmitigated	0.2482	2.1206	0.9024	0.0135		0.1715	0.1715		0.1715	0.1715		2,707.0833	2,707.0833	0.0519	0.0496	2,723.5582

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	23010.2	0.2482	2.1206	0.9024	0.0135		0.1715	0.1715		0.1715	0.1715		2,707.0833	2,707.0833	0.0519	0.0496	2,723.5582
Total		**0.2482**	**2.1206**	**0.9024**	**0.0135**		**0.1715**	**0.1715**		**0.1715**	**0.1715**		**2,707.0833**	**2,707.0833**	**0.0519**	**0.0496**	**2,723.5582**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	18.36	0.1980	1.6920	0.7200	0.0108		0.1368	0.1368		0.1368	0.1368		2,159.9977	2,159.9977	0.0414	0.0396	2,173.1431
Total		**0.1980**	**1.6920**	**0.7200**	**0.0108**		**0.1368**	**0.1368**		**0.1368**	**0.1368**		**2,159.9977**	**2,159.9977**	**0.0414**	**0.0396**	**2,173.1431**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	12.1219	0.2586	22.1867	1.1600e-003		0.3180	0.3180		0.3159	0.3159	0.0000	3,160.8652	3,160.8652	0.0992	0.0572	3,180.6886
Unmitigated	33.2508	3.1440	199.1197	0.5779		29.1560	29.1560		29.1539	29.1539	4,256.3474	3,161.2238	7,417.5712	19.9973	0.0572	7,855.2554

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.4810					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	10.3234					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	19.7511	2.8837	176.7867	0.5767		29.0347	29.0347		29.0327	29.0327	4,256.3474	3,121.4118	7,377.7592	19.9574	0.0572	7,814.6043
Landscaping	0.6954	0.2603	22.3331	1.1700e-003		0.1213	0.1213		0.1213	0.1213		39.8120	39.8120	0.0400		40.6512
Total	**33.2508**	**3.1440**	**199.1197**	**0.5779**		**29.1560**	**29.1560**		**29.1539**	**29.1539**	**4,256.3474**	**3,161.2238**	**7,417.5712**	**19.9974**	**0.0572**	**7,855.2554**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.8270					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	10.3234					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.2861	1.0000e-005	0.0156	0.0000		0.1977	0.1977		0.1956	0.1956	0.0000	3,121.4118	3,121.4118	0.0598	0.0572	3,140.4082
Landscaping	0.6854	0.2586	22.1711	1.1600e-003		0.1203	0.1203		0.1203	0.1203		39.4534	39.4534	0.0394		40.2804
Total	**12.1219**	**0.2586**	**22.1867**	**1.1600e-003**		**0.3180**	**0.3180**		**0.3159**	**0.3159**	**0.0000**	**3,160.8652**	**3,160.8652**	**0.0992**	**0.0572**	**3,180.6886**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Wilson Premier Homes Tract 6050 - BAU

Fresno County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	248.00	Dwelling Unit	39.16	446,400.00	709

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2005
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 248 single-family dwelling units on 35.33 net acres (39.16 gross acres)

Construction Phase - Operations only

Trips and VMT - Operations only

Vehicle Trips - ITE Trip Generation 9th Edition Single-Family Residential (Code 210)

Vechicle Emission Factors - SJVAPCD 2020 Residential Fleet Mix

Vechicle Emission Factors -

Vechicle Emission Factors -

Woodstoves - Based on Rule 4901

Energy Use -

Mobile Land Use Mitigation -

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	80.52	39.16
tblProjectCharacteristics	OperationalYear	2014	2005
tblVehicleEF	HHD	0.10	0.02
tblVehicleEF	LDA	0.42	0.51
tblVehicleEF	LDT1	0.10	0.21
tblVehicleEF	LDT2	0.20	0.17
tblVehicleEF	LHD1	0.02	2.1000e-003
tblVehicleEF	LHD2	7.9230e-003	1.0000e-003
tblVehicleEF	MCY	7.8260e-003	3.1000e-003
tblVehicleEF	MDV	0.12	0.06
tblVehicleEF	MH	2.3310e-003	2.3000e-003
tblVehicleEF	MHD	0.02	9.6000e-003
tblVehicleEF	OBUS	1.2470e-003	0.00
tblVehicleEF	SBUS	1.6720e-003	1.0000e-003
tblVehicleEF	UBUS	1.5030e-003	3.8000e-003
tblVehicleTrips	ST_TR	10.08	9.91
tblVehicleTrips	SU_TR	8.77	8.62
tblVehicleTrips	WD_TR	9.57	9.52
tblWoodstoves	NumberCatalytic	0.00	39.16
tblWoodstoves	NumberNoncatalytic	0.00	39.16

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017											0.0000	10.3200	10.3200	9.1000e-004	0.0000	10.3390
Total											**0.0000**	**10.3200**	**10.3200**	**9.1000e-004**	**0.0000**	**10.3390**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017											0.0000	10.3199	10.3199	9.1000e-004	0.0000	10.3390
Total											**0.0000**	**10.3199**	**10.3199**	**9.1000e-004**	**0.0000**	**10.3390**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											158.3130	110.4434	268.7564	0.7470	1.9700e-003	285.0531
Energy											0.0000	1,025.2568	1,025.2568	0.0346	0.0137	1,030.2144
Mobile											0.0000	3,290.0518	3,290.0518	0.3491	0.0000	3,297.3819
Waste											51.8114	0.0000	51.8114	3.0620	0.0000	116.1127
Water											5.1263	35.8070	40.9332	0.5281	0.0128	55.9819
Total											**215.2507**	**4,461.5589**	**4,676.8096**	**4.7207**	**0.0284**	**4,784.7439**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											0.0000	110.4434	110.4434	6.8800e-003	1.9700e-003	111.1984
Energy											0.0000	1,025.2568	1,025.2568	0.0346	0.0137	1,030.2144
Mobile											0.0000	3,290.0518	3,290.0518	0.3491	0.0000	3,297.3819
Waste											51.8114	0.0000	51.8114	3.0620	0.0000	116.1127
Water											5.1263	35.8070	40.9332	0.5280	0.0128	55.9737
Total											**56.9377**	**4,461.5589**	**4,518.4965**	**3.9805**	**0.0284**	**4,610.8810**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**73.55**	**0.00**	**3.39**	**15.68**	**0.07**	**3.63**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	1/1/2017	3/17/2017	5	55	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 903,960; Residential Outdoor: 301,320; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	7.0215	7.0215	7.4000e-004	0.0000	7.0370
Total											**0.0000**	**7.0215**	**7.0215**	**7.4000e-004**	**0.0000**	**7.0370**

3.2 Architectural Coating - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	3.2985	3.2985	1.7000e-004	0.0000	3.3020
Total											**0.0000**	**3.2985**	**3.2985**	**1.7000e-004**	**0.0000**	**3.3020**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	7.0214	7.0214	7.4000e-004	0.0000	7.0370
Total											**0.0000**	**7.0214**	**7.0214**	**7.4000e-004**	**0.0000**	**7.0370**

3.2 Architectural Coating - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	3.2985	3.2985	1.7000e-004	0.0000	3.3020
Total											**0.0000**	**3.2985**	**3.2985**	**1.7000e-004**	**0.0000**	**3.3020**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated											0.0000	3,290.0518	3,290.0518	0.3491	0.0000	3,297.3819
Unmitigated											0.0000	3,290.0518	3,290.0518	0.3491	0.0000	3,297.3819

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	2,360.96	2,457.68	2137.76	6,863,897	6,863,897
Total	2,360.96	2,457.68	2,137.76	6,863,897	6,863,897

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	48.40	15.90	35.70	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.511200	0.213700	0.169200	0.061000	0.002100	0.001000	0.009600	0.022100	0.000000	0.003800	0.003100	0.001000	0.002300

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: Y

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated											0.0000	573.2638	573.2638	0.0259	5.3600e-003	575.4707
Electricity Unmitigated											0.0000	573.2638	573.2638	0.0259	5.3600e-003	575.4707
NaturalGas Mitigated											0.0000	451.9930	451.9930	8.6600e-003	8.2900e-003	454.7437
NaturalGas Unmitigated											0.0000	451.9930	451.9930	8.6600e-003	8.2900e-003	454.7437

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	8.47003e+006											0.0000	451.9930	451.9930	8.6600e-003	8.2900e-003	454.7437
Total												**0.0000**	**451.9930**	**451.9930**	**8.6600e-003**	**8.2900e-003**	**454.7437**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	8.47003e+006											0.0000	451.9930	451.9930	8.6600e-003	8.2900e-003	454.7437
Total												**0.0000**	**451.9930**	**451.9930**	**8.6600e-003**	**8.2900e-003**	**454.7437**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	1.97058e+006	573.2638	0.0259	5.3600e-003	575.4707
Total		**573.2638**	**0.0259**	**5.3600e-003**	**575.4707**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	1.97058e+006	573.2638	0.0259	5.3600e-003	575.4707
Total		**573.2638**	**0.0259**	**5.3600e-003**	**575.4707**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated											0.0000	110.4434	110.4434	6.8800e-003	1.9700e-003	111.1984
Unmitigated											158.3130	110.4434	268.7564	0.7470	1.9700e-003	285.0531

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth											158.3130	107.4354	265.7485	0.7421	1.9700e-003	281.9440
Landscaping											0.0000	3.0079	3.0079	4.8200e-003	0.0000	3.1091
Total											**158.3130**	**110.4434**	**268.7564**	**0.7470**	**1.9700e-003**	**285.0531**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth											0.0000	107.4354	107.4354	2.0600e-003	1.9700e-003	108.0893
Landscaping											0.0000	3.0079	3.0079	4.8200e-003	0.0000	3.1091
Total											**0.0000**	**110.4434**	**110.4434**	**6.8800e-003**	**1.9700e-003**	**111.1984**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	40.9332	0.5280	0.0128	55.9737
Unmitigated	40.9332	0.5281	0.0128	55.9819

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	16.1582 / 10.1867	40.9332	0.5281	0.0128	55.9819
Total		**40.9332**	**0.5281**	**0.0128**	**55.9819**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	16.1582 / 10.1867	40.9332	0.5280	0.0128	55.9737
Total		**40.9332**	**0.5280**	**0.0128**	**55.9737**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	51.8114	3.0620	0.0000	116.1127
Mitigated	51.8114	3.0620	0.0000	116.1127

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	255.24	51.8114	3.0620	0.0000	116.1127
Total		**51.8114**	**3.0620**	**0.0000**	**116.1127**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	255.24	51.8114	3.0620	0.0000	116.1127
Total		**51.8114**	**3.0620**	**0.0000**	**116.1127**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

AGENDA ITEM NO.2

Wilson Premier Homes Tract 6050 - Operations 2020

Fresno County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	268.00	Dwelling Unit	39.16	482,400.00	766

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.022	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Based on PG&E Emission Factors

Land Use - Lot acres from site plan

Construction Phase - Operational run only

Off-road Equipment - Operational only run

Trips and VMT - Operational only run

Vehicle Trips - ITE Trip Generation Manual, 9th Edition

Vechicle Emission Factors - SJVAPCD 2020 Residential Fleet Mix
Emissions of light duty autos adjusted to reflect clean car standards as determined by Pavley II (3% reduction)

Vechicle Emission Factors -

Vechicle Emission Factors -

Woodstoves - Based on Rule 4901

Energy Use - Default values

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	87.01	39.16
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.022
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblProjectCharacteristics	OperationalYear	2014	2020
tblVehicleEF	HHD	0.08	0.02
tblVehicleEF	LDA	8.8290e-003	8.5640e-003
tblVehicleEF	LDA	6.0550e-003	5.8730e-003
tblVehicleEF	LDA	227.99	221.15
tblVehicleEF	LDA	51.80	50.25

tblVehicleEF	LDA	0.44	0.51
tblVehicleEF	LDT1	0.02	0.02
tblVehicleEF	LDT1	0.02	0.02
tblVehicleEF	LDT1	275.60	267.33
tblVehicleEF	LDT1	62.41	60.54
tblVehicleEF	LDT1	0.06	0.21
tblVehicleEF	LDT2	0.01	0.01
tblVehicleEF	LDT2	9.1210e-003	8.8470e-003
tblVehicleEF	LDT2	340.51	330.30
tblVehicleEF	LDT2	76.63	74.33
tblVehicleEF	LDT2	0.16	0.17
tblVehicleEF	LHD1	0.04	2.1000e-003
tblVehicleEF	LHD2	7.0780e-003	1.0000e-003
tblVehicleEF	MCY	6.6330e-003	3.1000e-003
tblVehicleEF	MDV	0.02	0.02
tblVehicleEF	MDV	0.02	0.02
tblVehicleEF	MDV	454.23	440.60
tblVehicleEF	MDV	101.61	98.56
tblVehicleEF	MDV	0.17	0.06
tblVehicleEF	MH	1.8650e-003	2.3000e-003
tblVehicleEF	MHD	0.02	9.6000e-003
tblVehicleEF	OBUS	2.0660e-003	0.00
tblVehicleEF	SBUS	7.5600e-004	1.0000e-003
tblVehicleEF	UBUS	1.7620e-003	3.8000e-003
tblVehicleTrips	ST_TR	10.08	9.91
tblVehicleTrips	SU_TR	8.77	8.62
tblVehicleTrips	WD_TR	9.57	9.52

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017											0.0000	10.5032	10.5032	9.2000e-004	0.0000	10.5225
Total											**0.0000**	**10.5032**	**10.5032**	**9.2000e-004**	**0.0000**	**10.5225**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017											0.0000	10.5032	10.5032	9.2000e-004	0.0000	10.5225
Total											**0.0000**	**10.5032**	**10.5032**	**9.2000e-004**	**0.0000**	**10.5225**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											158.3130	119.3501	277.6631	0.7455	2.1300e-003	293.9780
Energy											0.0000	718.3583	718.3583	0.0291	0.0129	722.9603
Mobile											0.0000	2,357.2498	2,357.2498	0.0935	0.0000	2,359.2139
Waste											55.9768	0.0000	55.9768	3.3081	0.0000	125.4476
Water											5.5397	17.4966	23.0363	0.5703	0.0137	39.2709
Total											**219.8295**	**3,212.4548**	**3,432.2843**	**4.7465**	**0.0287**	**3,540.8707**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											0.0000	119.3208	119.3208	5.3500e-003	2.1300e-003	120.0930
Energy											0.0000	619.3135	619.3135	0.0267	0.0111	623.3056
Mobile											0.0000	2,308.2816	2,308.2816	0.0917	0.0000	2,310.2077
Waste											41.9826	0.0000	41.9826	2.4811	0.0000	94.0857
Water											4.4317	13.1668	17.5986	0.4562	0.0110	30.5805
Total											**46.4143**	**3,060.0828**	**3,106.4971**	**3.0611**	**0.0242**	**3,178.2724**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**78.89**	**4.74**	**9.49**	**35.51**	**15.90**	**10.24**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	1/1/2017	3/17/2017	5	55	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 976,860; Residential Outdoor: 325,620; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	19.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	7.0215	7.0215	7.4000e-004	0.0000	7.0370
Total											**0.0000**	**7.0215**	**7.0215**	**7.4000e-004**	**0.0000**	**7.0370**

3.2 Architectural Coating - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	3.4818	3.4818	1.8000e-004	0.0000	3.4855
Total											**0.0000**	**3.4818**	**3.4818**	**1.8000e-004**	**0.0000**	**3.4855**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	7.0214	7.0214	7.4000e-004	0.0000	7.0370
Total											**0.0000**	**7.0214**	**7.0214**	**7.4000e-004**	**0.0000**	**7.0370**

3.2 Architectural Coating - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	3.4818	3.4818	1.8000e-004	0.0000	3.4855
Total											**0.0000**	**3.4818**	**3.4818**	**1.8000e-004**	**0.0000**	**3.4855**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Improve Destination Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated											0.0000	2,308.2816	2,308.2816	0.0917	0.0000	2,310.2077
Unmitigated											0.0000	2,357.2498	2,357.2498	0.0935	0.0000	2,359.2139

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	2,551.36	2,655.88	2310.16	7,417,438	7,258,573
Total	2,551.36	2,655.88	2,310.16	7,417,438	7,258,573

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	48.40	15.90	35.70	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.511200	0.213700	0.169200	0.061000	0.002100	0.001000	0.009600	0.022100	0.000000	0.003800	0.003100	0.001000	0.002300

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated											0.0000	261.7017	261.7017	0.0199	4.5100e-003	263.5174
Electricity Unmitigated											0.0000	270.1703	270.1703	0.0205	4.6600e-003	272.0447
NaturalGas Mitigated											0.0000	357.6119	357.6119	6.8500e-003	6.5600e-003	359.7882
NaturalGas Unmitigated											0.0000	448.1880	448.1880	8.5900e-003	8.2200e-003	450.9156

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	8.39873e+006											0.0000	448.1880	448.1880	8.5900e-003	8.2200e-003	450.9156
Total												**0.0000**	**448.1880**	**448.1880**	**8.5900e-003**	**8.2200e-003**	**450.9156**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	6.70139e+006											0.0000	357.6119	357.6119	6.8500e-003	6.5600e-003	359.7882
Total												**0.0000**	**357.6119**	**357.6119**	**6.8500e-003**	**6.5600e-003**	**359.7882**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	2.05387e+006	270.1703	0.0205	4.6600e-003	272.0447
Total		**270.1703**	**0.0205**	**4.6600e-003**	**272.0447**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	1.98949e+006	261.7017	0.0199	4.5100e-003	263.5174
Total		**261.7017**	**0.0199**	**4.5100e-003**	**263.5174**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated											0.0000	119.3208	119.3208	5.3500e-003	2.1300e-003	120.0930
Unmitigated											158.3130	119.3501	277.6631	0.7455	2.1300e-003	293.9780

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth											158.3130	116.0996	274.4126	0.7423	2.1300e-003	290.6609
Landscaping											0.0000	3.2505	3.2505	3.1700e-003	0.0000	3.3171
Total											**158.3130**	**119.3501**	**277.6631**	**0.7455**	**2.1300e-003**	**293.9780**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth											0.0000	116.0996	116.0996	2.2300e-003	2.1300e-003	116.8061
Landscaping											0.0000	3.2212	3.2212	3.1200e-003	0.0000	3.2868
Total											**0.0000**	**119.3208**	**119.3208**	**5.3500e-003**	**2.1300e-003**	**120.0930**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	17.5986	0.4562	0.0110	30.5805
Unmitigated	23.0363	0.5703	0.0137	39.2709

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	17.4613 / 11.0082	23.0363	0.5703	0.0137	39.2709
Total		**23.0363**	**0.5703**	**0.0137**	**39.2709**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	13.969 / 8.80656	17.5986	0.4562	0.0110	30.5805
Total		**17.5986**	**0.4562**	**0.0110**	**30.5805**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	55.9768	3.3081	0.0000	125.4476
Mitigated	41.9826	2.4811	0.0000	94.0857

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	275.76	55.9768	3.3081	0.0000	125.4476
Total		**55.9768**	**3.3081**	**0.0000**	**125.4476**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	206.82	41.9826	2.4811	0.0000	94.0857
Total		**41.9826**	**2.4811**	**0.0000**	**94.0857**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Mitchell Air Quality Consulting

Air Quality and Greenhouse Gas Analysis Report
Wilson Premier Homes Tract No. 6050
City of Clovis, California

Prepared for:
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7550 N. Palm Avenue, Suite 102
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Chief Operating Officer

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Senior Air Quality Scientist

February 5, 2020

APPENDIX B

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Table of Contents

List of Tables

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ACRONYMS AND ABBREVIATIONS

$\mu g/m^3$	micrograms per cubic meter
AB	Assembly Bill
AQMP	Air Quality Management Plan
ARB	California Air Resources Board
BAU	Business as Usual
CalEEMod	California Emissions Estimator Model
CAPCOA	California Air Pollution Control Officers Association
CEQA	California Environmental Quality Act
CO	carbon monoxide
CO_2	carbon dioxide
District	San Joaquin Valley Air Pollution Control District
DPM	diesel particulate matter
EMFAC	EMission FACtors Model
EPA	United States Environmental Protection Agency
Fresno COG	Fresno Council of Governments
GAMAQI	Guidance for Assessing and Mitigating Air Quality Impacts
GHG Rx	Greenhouse Gas Reduction Exchange
GHG(s)	greenhouse gas(es)
HAP	hazardous air pollutant
HRA	health risk assessment
IPCC	United Nations Intergovernmental Panel on Climate Change
MAQC	Mitchell Air Quality Consulting
$MMTCO_2e$	million metric tons of carbon dioxide equivalent
$MTCO_2e$	metric tons of carbon dioxide equivalent
NO_X	nitrogen oxides
PM_{10}	particulate matter less than 10 microns in diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
ppb	parts per billion
ppm	parts per million
ROG	reactive organic gases
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SJVAPCD	San Joaquin Valley Air Pollution Control District
SMAQMD	Sacramento Metropolitan Air Quality Management District
SO_X	sulfur oxides
VOC	volatile organic compounds

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SECTION 1: EXECUTIVE SUMMARY

1.1—Purpose and Methods of Analysis

The following air quality and greenhouse gas (GHG) analysis was prepared to evaluate whether the estimated criteria air pollutants, toxic air contaminants (TACs), and GHG emissions generated from the development of Tract No. 6050 (project) would cause significant impacts to air resources in the project area. This assessment was conducted within the context of the California Environmental Quality Act (CEQA, California Public Resources Code Sections 21000, et seq.). The methodology follows the Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI) prepared by the San Joaquin Valley Air Pollution Control District (SJVAPCD or District) for quantification of emissions and evaluation of potential impacts to air resources (SJVAPCD 2015a) and the SJVAPCD's Guidance for Valley Land-Use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA (SJVAPCD 2009).

1.2—Project Description

The project consists of the construction and development of 255 single-family homes located at the northwest corner of East Shepherd Avenue and North Clovis Avenue in the City of Clovis. The project would be constructed on 39.76 gross acres (35.22 net acres) and would have an average density of 6.94 units per acre. The average lot size is 4,071 square feet. The Assessor's Parcel Number (APN) associated with the project site is 556-050-11. The project lies within the San Joaquin Valley Air Basin. The project's regional vicinity location is shown in Figure 1; an aerial view of the local vicinity is provided in Figure 2; and the Tract Map is provided in Figure 3.

1.3—Summary of Analysis Results

The following is a summary of the analysis results. As shown below, the project would result in less than significant impacts for all air quality and GHG impact criteria analyzed.

Impact AIR-1: The project would not conflict with or obstruct implementation of the applicable air quality plan. **Less than significant impact.**

Impact AIR-2: The project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors). **Less than significant impact.**

Impact AIR-3: The project would not expose sensitive receptors to substantial pollutant concentrations. **Less than significant impact.**

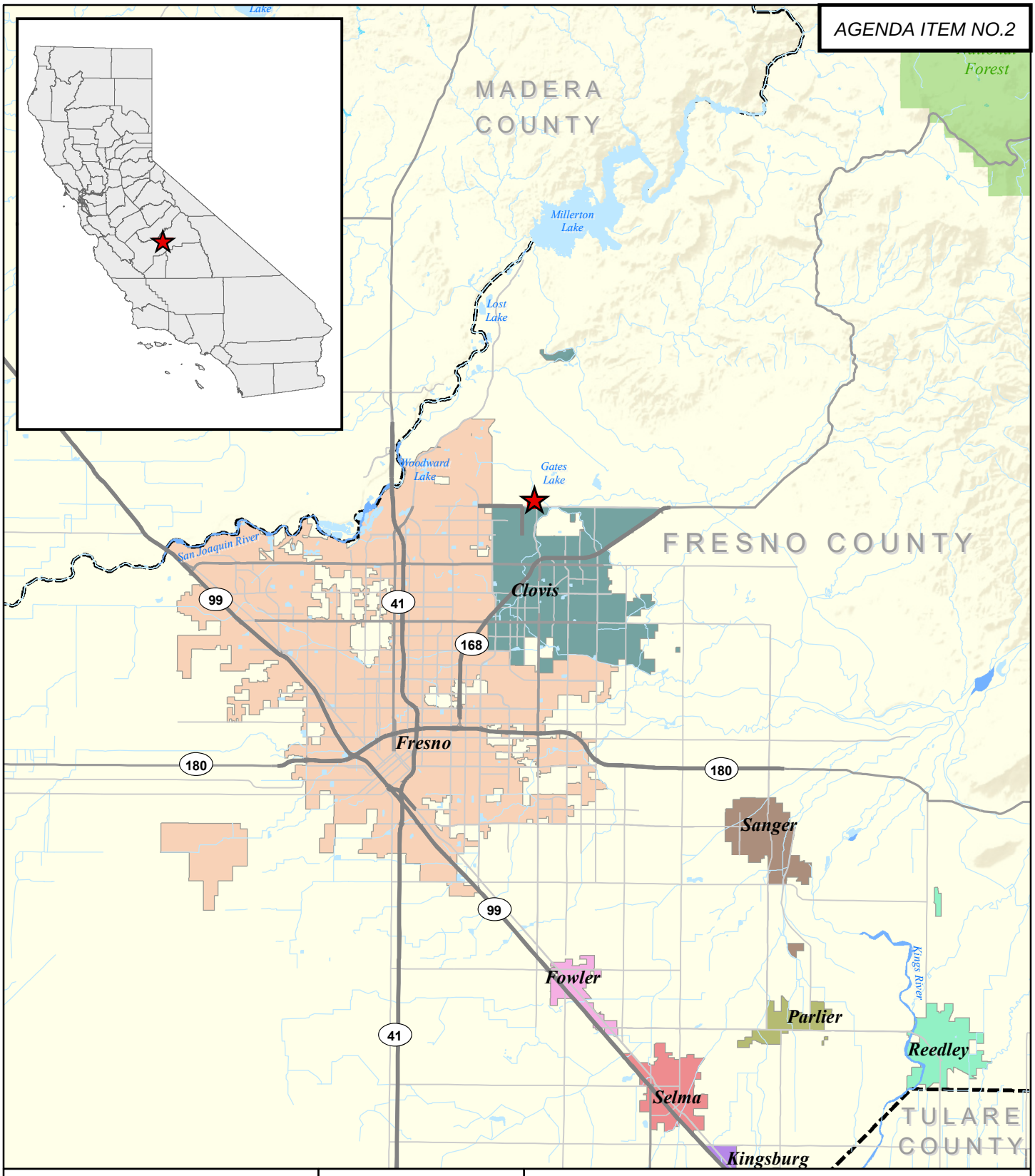
Impact AIR-4: The project would not create objectionable odors affecting a substantial number of people. **Less than significant impact.**

Impact GHG-1: The project would not generate direct or indirect greenhouse gas emissions that would result in a significant impact on the environment. **Less than significant impact.**

Impact GHG-2: The project would not conflict with any applicable plan, policy or regulation of an agency adopted to reduce the emissions of greenhouse gases. **Less than significant impact**.

1.4—Standard Conditions and Mitigation Measures Applied to the Project

No mitigation measures beyond compliance with mandatory regulations were required to demonstrate that the project would have less than significant for air quality, health risk, and GHG impacts.



Legend

Project Location

County Boundary

NORTH

0 2 4

Miles

1:300,000

Sources: Fresno County GIS; Open StreetMap; CalAtlas. USFS. Map date: February 5, 2020.

WILSON PREMIER HOMES, LP
AIR QUALITY AND GREENHOUSE GAS ANALYSIS REPORT
TRACT 6050

Figure 1. Regional Location Map

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Legend

- Project Location
- City of Clovis
- Stream/Canal/Ditch

NORTH

0 500 1,000

Feet

1:12,000

Source: Fresno County GIS; Google Maps.
Map date: February 5, 2020.

WILSON PREMIER HOMES, LP
AIR QUALITY AND GREENHOUSE GAS ANALYSIS REPORT
TRACT 6050

Figure 2. Vicinity Map

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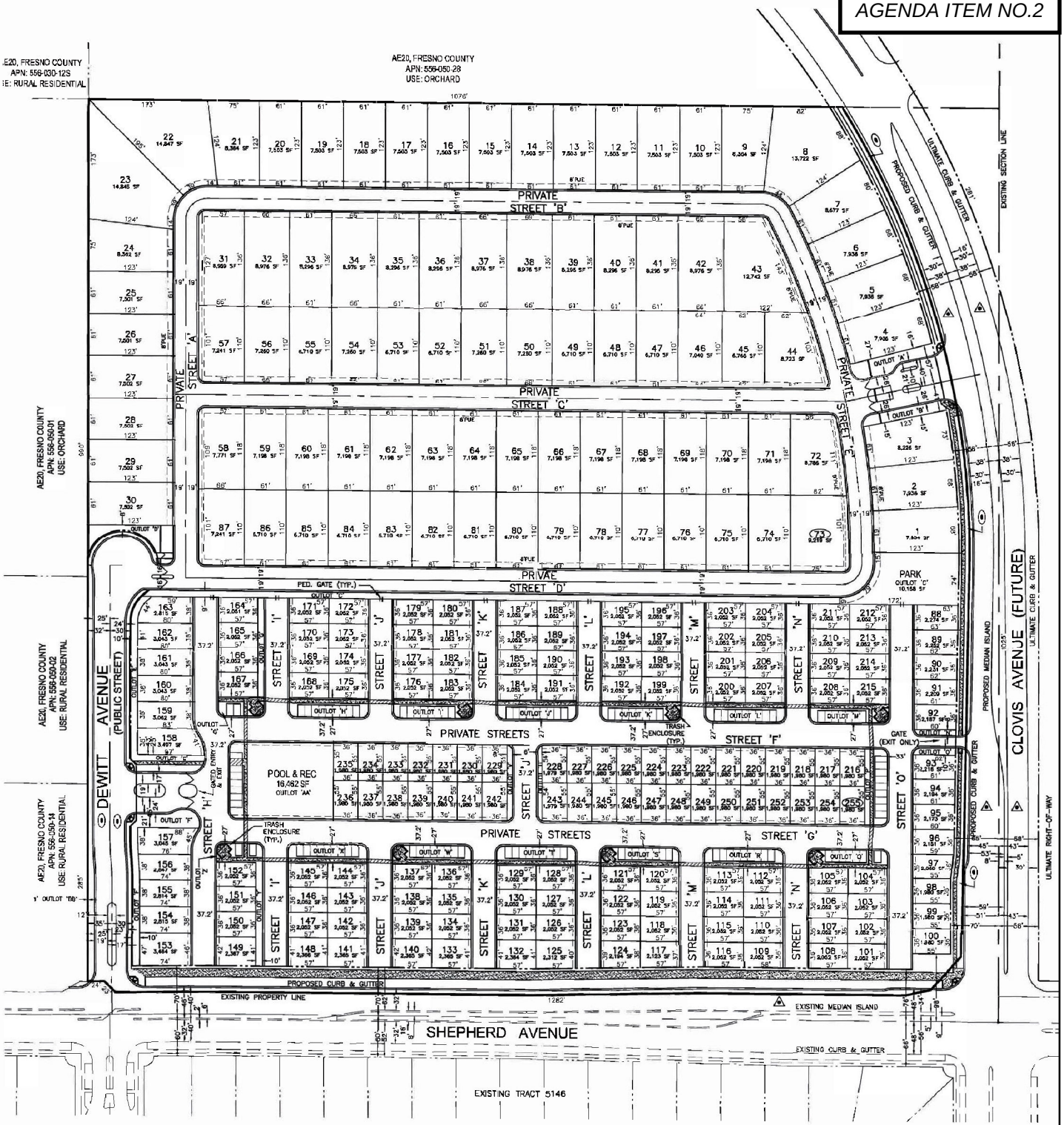

WILSON PREMIER HOMES, LP
AIR QUALITY AND GREENHOUSE GAS ANALYSIS REPORT
TRACT 6050

NORTH

0 100 200

Feet

1:2,500

Figure 3. Tract Map

Source: Harbour & Associates, 1-8-2020.
Map date: February 5, 2020.

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SECTION 2: AIR QUALITY SETTING

2.1—Environmental Setting

Air quality impacts are both local and regional. Regional and local air quality is impacted by topography, dominant airflows, atmospheric inversions, location, and season. The project is located in the San Joaquin Valley Air Basin (Air Basin), which experiences some of the most challenging environmental conditions for air quality in the nation. The following section describes these conditions as they pertain to the Air Basin. The information in this section is primarily from the SJVAPCD's GAMAQI (SJVAPCD 2015a).

2.1.1 - San Joaquin Valley Air Basin

Topography

The topography of a region is important for air quality because mountains can block airflow that would help disperse pollutants, and can channel air from upwind areas that transports pollutants to downwind areas. The SJVAPCD covers the entirety of the Air Basin. The Air Basin is generally shaped like a bowl. It is open in the north and is surrounded by mountain ranges on all other sides. The Sierra Nevada mountains are along the eastern boundary (8,000 to 14,000 feet in elevation), the Coast Ranges are along the western boundary (3,000 feet in elevation), and the Tehachapi Mountains are along the southern boundary (6,000 to 8,000 feet in elevation).

Climate

The climate is important for air quality because of differences in the atmosphere's ability to trap pollutants close to the ground, which creates adverse air quality; inversely, the atmosphere's ability to rapidly disperse pollutants over a wide area prevents high concentrations from accumulating under different climatic conditions. The Air Basin has an "inland Mediterranean" climate and is characterized by long, hot, dry summers and short, foggy winters. Sunlight can be a catalyst in the formation of some air pollutants (such as ozone); the Air Basin averages over 260 sunny days per year.

Inversion layers are significant in determining pollutant concentrations. Concentration levels can be related to the amount of mixing space below the inversion. Temperature inversions that occur on the summer days are usually encountered 2,000 to 2,500 feet above the valley floor. In winter months, overnight inversions occur 500 to 1,500 feet above the valley floor.

Dominant airflows provide the driving mechanism for transport and dispersion of air pollution. The mountains surrounding the Air Basin form natural horizontal barriers to the dispersion of air contaminants. The wind generally flows south-southeast through the valley, through the Tehachapi Pass and into the Mojave Desert Air Basin portion of Kern County. As the wind moves through the Air Basin, it mixes with the air pollution generated locally, generally transporting air pollutants from the north to the south in the summer and in a reverse flow in the winter.

The winds and unstable air conditions experienced during the passage of winter storms result in periods of low pollutant concentrations and excellent visibility. Between winter storms, high pressure and light winds allow cold moist air to pool on the San Joaquin Valley floor. This creates strong, low-

level temperature inversions and very stable air conditions, which can lead to Tule fog. Wintertime conditions favorable to fog formation are also conditions favorable to high concentrations of $PM_{2.5}$ and PM_{10}.

2.2—Regulatory Setting

Air pollutants are regulated to protect human health and for secondary effects such as visibility and building soiling. The Clean Air Act of 1970 tasks the United States Environmental Protection Agency (EPA) with setting air quality standards. The State of California also sets air quality standards, which are in some cases more stringent than federal standards, in addition to addressing additional pollutants. The following section describes these federal and state standards and the health effects of the regulated pollutants.

2.2.1 - Clean Air Act

Congress established much of the basic structure of the Clean Air Act (CAA) in 1970, and made major revisions in 1977 and 1990. Six common air pollutants (also known as criteria pollutants) are addressed in the CAA: particulate matter, ground-level ozone, carbon monoxide, sulfur oxides, nitrogen oxides, and lead. The EPA labels these pollutants as criteria air pollutants because they are regulated by developing human health-based and/or environmentally based criteria (science-based guidelines), which sets permissible levels. The set of limits based on human health are called primary standards. Another set of limits intended to prevent environmental and property damage are called secondary standards (EPA 2014). The federal standards are called National Ambient Air Quality Standards (NAAQS). The air quality standards provide benchmarks for determining whether air quality is healthy at specific locations and whether development activities will cause or contribute to a violation of the standards. The criteria pollutants are:

- Ozone
- Nitrogen dioxide (NO_2)
- Lead
- Particulate matter (PM_{10} and $PM_{2.5}$)
- Carbon monoxide (CO)
- Sulfur dioxide

The federal standards were set to protect public health, including that of sensitive individuals; thus, the EPA is tasked with updating the standards as more medical research is available regarding the health effects of the criteria pollutants. Primary federal standards are the levels of air quality necessary, with an adequate margin of safety, to protect the public health (ARB 2016).

2.2.2 - California Clean Air Act

The California Legislature enacted the California Clean Air Act (CCAA) in 1988 to address air quality issues of concern not adequately addressed by the federal CAA at the time. California's air quality problems were and continue to be some of the most severe in the nation, and required additional actions beyond the federal mandates. The California Air Resources Board (ARB) administers California Ambient Air Quality Standards (CAAQS) for the 10 air pollutants designated in the CCAA. The 10 state air pollutants are the six federal standards listed above as well visibility-reducing particulates, hydrogen sulfide, sulfates, and vinyl chloride. The EPA authorized California to adopt its own regulations for motor vehicles and other sources that are more stringent than similar federal regulations implementing the CAA. Generally, the planning requirements of the CCAA are less

stringent than the federal CAA; therefore, consistency with the CAA will also demonstrate consistency with the CCAA.

2.2.3 - Toxic Air Contaminants

A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations. There are no ambient air quality standards for TAC emissions. TACs are regulated in terms of health risks to individuals and populations exposed to the pollutants. The 1990 Clean Air Act Amendments significantly expanded the EPA's authority to regulate hazardous air pollutants (HAP). Section 112 of the Clean Air Act lists 187 hazardous air pollutants to be regulated by source category. Authority to regulate these pollutants was delegated to individual states. ARB and local air districts regulate TACs and HAPs in California.

2.2.4 - Air Pollutant Description and Health Effects

The federal and state ambient air quality standards, relevant effects, properties, and sources of the pollutants are summarized in Table 1.

AGENDA ITEM NO.2

Table 1: Description of Air Pollutants

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
Ozone	1 Hour	0.09 ppm	—	Irritate respiratory system; reduce lung function; breathing pattern changes; reduction of breathing capacity; inflame and damage cells that line the lungs; make lungs more susceptible to infection; aggravate asthma; aggravate other chronic lung diseases; cause permanent lung damage; some immunological changes; increased mortality risk; vegetation and property damage.	Ozone is a photochemical pollutant as it is not emitted directly into the atmosphere, but is formed by a complex series of chemical reactions between volatile organic compounds (VOC), NO_X, and sunlight. Ozone is a regional pollutant that is generated over a large area and is transported and spread by the wind.	Ozone is a secondary pollutant; thus, it is not emitted directly into the lower level of the atmosphere. The primary sources of ozone precursors (VOC and NO_X) are mobile sources (on-road and off-road vehicle exhaust).
	8 Hour	0.070 ppm	0.070 ppm[f]			
Carbon monoxide (CO)	1 Hour	20 ppm	35 ppm	Ranges depending on exposure: slight headaches; nausea; aggravation of angina pectoris (chest pain) and other aspects of coronary heart disease; decreased exercise tolerance in persons with peripheral vascular disease and lung disease; impairment of central nervous system functions; possible increased risk to fetuses; death.	CO is a colorless, odorless, toxic gas. CO is somewhat soluble in water; therefore, rainfall and fog can suppress CO conditions. CO enters the body through the lungs, dissolves in the blood, replaces oxygen as an attachment to hemoglobin, and reduces available oxygen in the blood.	CO is produced by incomplete combustion of carbon-containing fuels (e.g., gasoline, diesel fuel, and biomass). Sources include motor vehicle exhaust, industrial processes (metals processing and chemical manufacturing), residential wood burning, and natural sources.
	8 Hour	9.0 ppm	9 ppm			
Nitrogen dioxide[b] (NO_2)	1 Hour	0.18 ppm	0.100 ppm	Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; contribution to atmospheric discoloration; increased visits to hospital for respiratory illnesses.	During combustion of fossil fuels, oxygen reacts with nitrogen to produce nitrogen oxides—NO_X (NO, NO_2, NO_3, N_2O, N_2O_3, N_2O_4, and N_2O_5). NO_X is a precursor to ozone, PM_{10}, and $PM_{2.5}$ formation. NO_X can react with compounds to form nitric acid and related small particles and result in PM-related health effects.	NO_X is produced in motor vehicle internal combustion engines and fossil fuel-fired electric utility and industrial boilers. Nitrogen dioxide (NO_2) forms quickly from NO_X emissions. NO_2 concentrations near major roads can be 30 to 100 percent higher than those at monitoring stations.
	Annual	0.030 ppm	0.053 ppm			

AGENDA ITEM NO.2

Table 1 (cont.): Description of Air Pollutants

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
Sulfur dioxide[c] (SO_2)	1 Hour	0.25 ppm	0.075 ppm	Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma. Some population-based studies indicate that the mortality and morbidity effects associated with fine particles show a similar association with ambient sulfur dioxide levels. It is not clear whether the two pollutants act synergistically or one pollutant alone is the predominant factor.	Sulfur dioxide is a colorless, pungent gas. At levels greater than 0.5 ppm, the gas has a strong odor, similar to rotten eggs. Sulfur oxides (SO_X) include sulfur dioxide and sulfur trioxide. Sulfuric acid is formed from sulfur dioxide, which can lead to acid deposition and can harm natural resources and materials. Although sulfur dioxide concentrations have been reduced to levels well below state and federal standards, further reductions are desirable because sulfur dioxide is a precursor to sulfate and PM_{10}.	Human-caused sources include fossil-fuel combustion, mineral ore processing, and chemical manufacturing. Volcanic emissions are a natural source of sulfur dioxide. The gas can also be produced in the air by dimethylsulfide and hydrogen sulfide. Sulfur dioxide is removed from the air by dissolution in water, chemical reactions, and transfer to soils and ice caps. The sulfur dioxide levels in the State are well below the maximum standards.
	3 Hour	—	0.5 ppm			
	24 Hour	0.04 ppm	0.14 (for certain areas)			
	Annual	—	0.030 ppm (for certain areas)			
Particulate matter (PM_{10})	24 Hour	50 µg/m^3	150 µg/m^3	• Short-term exposure (hours/days): irritation of the eyes, nose, throat; coughing; phlegm; chest tightness; shortness of breath; aggravates existing lung disease, causing asthma attacks and acute bronchitis; those with heart disease can suffer heart attacks and arrhythmias. • Long-term exposure: reduced lung function; chronic bronchitis; changes in lung morphology; death.	Suspended particulate matter is a mixture of small particles that consist of dry solid fragments, droplets of water, or solid cores with liquid coatings. The particles vary in shape, size, and composition. PM_{10} refers to particulate matter that is between 2.5 and 10 microns in diameter (1 micron is one-millionth of a meter). $PM_{2.5}$ refers to particulate matter that is 2.5 microns or less in diameter, about one-thirtieth the size of the average human hair.	Stationary sources include fuel or wood combustion for electrical utilities, residential space heating, and industrial processes; construction and demolition; metals, minerals, and petrochemicals; wood products processing; mills and elevators used in agriculture; erosion from tilled lands; waste disposal; and recycling. Mobile or transportation-related sources are from vehicle exhaust and road dust. Secondary particles form from reactions in the atmosphere.
	Mean	20 µg/m^3	—			
Particulate matter ($PM_{2.5}$)	24 Hour	—	35 µg/m^3			
	Annual	12 µg/m^3	12.0 µg/m^3			
Visibility-reducing particles	8 Hour	See note below[d]				

AGENDA ITEM NO.2

Table 1 (cont.): Description of Air Pollutants

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
Sulfates	24 Hour	25 µg/m^3	—	(a) Decrease in ventilatory function; (b) aggravation of asthmatic symptoms; (c) aggravation of cardio-pulmonary disease; (d) vegetation damage; (e) degradation of visibility; (f) property damage.	The sulfate ion is a polyatomic anion with the empirical formula SO_4^{2-}. Sulfates occur in combination with metal and/or hydrogen ions. Many sulfates are soluble in water.	Sulfates are particulates formed through the photochemical oxidation of sulfur dioxide. In California, the main source of sulfur compounds is combustion of gasoline and diesel fuel.
Lead[e]	30-day	1.5 µg/m^3	—	Lead accumulates in bones, soft tissue, and blood and can affect the kidneys, liver, and nervous system. It can cause impairment of blood formation and nerve conduction, behavior disorders, mental retardation, neurological impairment, learning deficiencies, and low IQ.	Lead is a solid heavy metal that can exist in air pollution as an aerosol particle component. Leaded gasoline was used in motor vehicles until around 1970. Lead concentrations have not exceeded state or federal standards at any monitoring station since 1982.	Lead ore crushing, lead-ore smelting, and battery manufacturing are currently the largest sources of lead in the atmosphere in the United States. Other sources include dust from soils contaminated with lead-based paint, solid waste disposal, and crustal physical weathering.
	Quarter	—	1.5 µg/m^3			
	Rolling 3-month average	—	0.15 µg/m^3			
Vinyl chloride[e]	24 Hour	0.01 ppm	—	Short-term exposure to high levels of vinyl chloride in the air causes central nervous system effects, such as dizziness, drowsiness, and headaches. Epidemiological studies of occupationally exposed workers have linked vinyl chloride exposure to development of a rare cancer, liver angiosarcoma, and have suggested a relationship between exposure and lung and brain cancers.	Vinyl chloride, or chloroethene, is a chlorinated hydrocarbon and a colorless gas with a mild, sweet odor. In 1990, ARB identified vinyl chloride as a toxic air contaminant and estimated a cancer unit risk factor.	Most vinyl chloride is used to make polyvinyl chloride plastic and vinyl products, including pipes, wire and cable coatings, and packaging materials. It can be formed when plastics containing these substances are left to decompose in solid waste landfills. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites.
Hydrogen sulfide	1 Hour	0.03 ppm	—	High levels of hydrogen sulfide can cause immediate respiratory arrest. It can irritate the eyes and respiratory tract and cause	Hydrogen sulfide (H_2S) is a flammable, colorless, poisonous gas that smells like rotten eggs.	Manure, storage tanks, ponds, anaerobic lagoons, and land application sites are the primary sources of hydrogen sulfide.

AGENDA ITEM NO.2

Table 1 (cont.): Description of Air Pollutants

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
				headache, nausea, vomiting, and cough. Long exposure can cause pulmonary edema.		Anthropogenic sources include the combustion of sulfur-containing fuels (oil and coal).
Volatile organic compounds (VOC)		There are no state or federal standards for VOCs because they are not classified as criteria pollutants.		Although health-based standards have not been established for VOCs, health effects can occur from exposures to high concentrations because of interference with oxygen uptake. In general, concentrations of VOCs are suspected to cause eye, nose, and throat irritation; headaches; loss of coordination; nausea; and damage to the liver, the kidneys, and the central nervous system. Many VOCs have been classified as toxic air contaminants.	Reactive organic gases (ROG), or VOCs, are defined as any compound of carbon—excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate—that participates in atmospheric photochemical reactions. Although there are slight differences in the definition of ROG and VOCs, the two terms are often used interchangeably.	Indoor sources of VOCs include paints, solvents, aerosol sprays, cleansers, tobacco smoke, etc. Outdoor sources of VOCs are from combustion and fuel evaporation. A reduction in VOC emissions reduces certain chemical reactions that contribute to the formulation of ozone. VOCs are transformed into organic aerosols in the atmosphere, which contribute to higher PM_{10} and lower visibility.
Diesel particulate matter (DPM)		There are no ambient air quality standards for DPM.		Some short-term (acute) effects of DPM exposure include eye, nose, throat, and lung irritation, coughs, headaches, light-headedness, and nausea. Studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems. Human studies on the carcinogenicity of DPM demonstrate an increased risk of lung cancer, although the increased risk cannot be clearly attributed to diesel exhaust exposure.	DPM is a source of $PM_{2.5}$—diesel particles are typically 2.5 microns and smaller. Diesel exhaust is a complex mixture of thousands of particles and gases that is produced when an engine burns diesel fuel. Organic compounds account for 80 percent of the total particulate matter mass, which consists of compounds such as hydrocarbons and their derivatives, and polycyclic aromatic hydrocarbons and their derivatives. Fifteen polycyclic aromatic hydrocarbons are confirmed carcinogens, a number of which are found in diesel exhaust.	Diesel exhaust is a major source of ambient particulate matter pollution in urban environments. Typically, the main source of DPM is from combustion of diesel fuel in diesel-powered engines. Such engines are in on-road vehicles such as diesel trucks, off-road construction vehicles, diesel electrical generators, and various pieces of stationary construction equipment.

AGENDA ITEM NO.2

Table 1 (cont.): Description of Air Pollutants

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources

Notes:
ppm = parts per million (concentration) $\mu g/m^3$ = micrograms per cubic meter Annual = Annual Arithmetic Mean 30-day = 30-day average Quarter = Calendar quarter

[a] Federal standard refers to the primary national ambient air quality standard, or the levels of air quality necessary, with an adequate margin of safety to protect the public health. All standards listed are primary standards except for 3 Hour SO_2, which is a secondary standard. A secondary standard is the level of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[b] To attain the 1-hour NO_2 national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 parts per billion (ppb) (0.100 ppm).

[c] On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

[d] Visibility-reducing particles: In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

[e] The ARB has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[f] The EPA Administrator approved a revised 8-hour ozone standard of 0.07 ppb on October 1, 2015. The new standard went into effect 60 days after publication of the Final Rule in the Federal Register. The Final Rule was published in the Federal Register on October 26, 2015 and became effective on December 28, 2015.

Source of effects, properties, and sources: South Coast Air Quality Management District 2007; California Environmental Protection Agency 2002; California Air Resources Board 2016a; U.S. Environmental Protection Agency 2003, 2009a, 2009b, 2010, 2011, 2012a and 2012b; National Toxicology Program 2011 and 2016.
Source of standards: California Air Resources Board 2013a.

Several pollutants listed in Table 1 are not addressed in this analysis. Analysis of lead, hydrogen sulfide, sulfates, and vinyl chloride are not included in this report because no new sources of these pollutant emissions are anticipated with the project. Visibility-reducing particles are not explicitly addressed in this analysis because particulate matter is addressed as PM_{10} and $PM_{2.5}$.

Toxic Air Contaminants Health Effects

A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations. There are no ambient air quality standards for TAC emissions. TACs are regulated in terms of health risks to individuals and populations exposed to the pollutants. The 1990 Clean Air Act Amendments significantly expanded the EPA's authority to regulate hazardous air pollutants. Section 112 of the Clean Air Act lists 187 hazardous air pollutants to be regulated by source category. Authority to regulate these pollutants was delegated to individual states. ARB and local air districts regulate TACs and hazardous air pollutants in California.

Exposures to TACs emissions can have both chronic long-term (over a year or longer) and acute short-term (over a period of hours) health impacts. The TACs of greatest concern are those that cause serious health problems or affect many people. Health problems can include cancer, respiratory irritation, nervous system problems, and birth defects. Some health problems occur very soon after a person inhales a TAC. These immediate effects may be minor, such as watery eyes, or they may be serious, such as life-threatening lung damage. Other health problems may not appear until many months or years after a person's first exposure to the TAC. Cancer is one example of a delayed health problem.

A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations. The California Almanac of Emissions and Air Quality—2009 Edition (ARB 2009) presents the relevant concentration and cancer risk data for the ten TACs that pose the most substantial health risk in California based on available data. The ten TACs are acetaldehyde, benzene, 1.3-butadiene, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, perchloroethylene, and diesel particulate matter (DPM).

Some studies indicate that DPM poses the greatest health risk among the TACs listed above. A 10-year research program (ARB 1998) demonstrated that DPM from diesel-fueled engines is a human carcinogen and that chronic (long-term) inhalation exposure to DPM poses a chronic health risk. In addition to increased risk of lung cancer, exposure to diesel exhaust can have other health effects. Diesel exhaust can irritate the eyes, nose, throat, and lungs, and it can cause a cough, headaches, lightheadedness, and nausea. Diesel exhaust is a major source of fine particulate pollution as well, and studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems.

DPM differs from other TACs in that it is not a single substance, but a complex mixture of hundreds of substances. Although DPM is emitted by diesel-fueled, internal combustion engines, the composition of the emissions varies, depending on: engine type, operating conditions, fuel composition, lubricating oil, and whether an emission control system is present. Unlike the other TACs, however, no ambient monitoring data are available for DPM because no routine measurement method currently exists. The ARB has made preliminary concentration estimates based on a DPM exposure method. This method uses the ARB emissions inventory's PM_{10} database, ambient PM_{10} monitoring data, and the results from several studies to estimate concentrations of DPM.

Health risks attributable to the top 10 TACs listed above are available from the ARB as part of its California Almanac of Emissions and Air Quality. As shown therein for data collected at the First Street air monitoring station in Fresno, cancer risks attributable to all of the listed TACs above with the exception of DPM have declined about 70 percent from the mid-1990s to 2007. Risks associated with DPM emissions are provided only for the year 2000 and have not been updated in the Almanac. Although more recent editions of the Almanac do not provide estimated risk, they do provide emission inventories for DPM for later years. The 2013 Almanac provides emission inventory trends for DPM from 2000 through 2035. The same Almanac reports that DPM emissions were reduced in the SJVAB from 16 tons per day in 2000 to 11 tons per day in 2010, a 31 percent decrease. DPM emissions in the San Joaquin Valley are projected to decrease to 6 tons per day by 2015, a 62 percent reduction from year 2000 levels. ARB predicts a reduction to three tons per day by 2035, which would be an 81 percent reduction from year 2000 levels. Continued implementation of the ARB's Diesel Risk Reduction Plan is expected to provide continued reductions in DPM through 2020 and beyond through regulations on this source (ARB 2013b).

Asbestos

Asbestos is the name given to a number of naturally occurring fibrous silicate minerals that have been mined for their useful properties such as thermal insulation, chemical and thermal stability, and high tensile strength. The three most common types of asbestos are chrysotile, amosite, and crocidolite. Chrysotile, also known as white asbestos, is the most common type of asbestos found in buildings. Chrysotile makes up approximately 90 to 95 percent of all asbestos contained in buildings in the United States. Exposure to asbestos is a health threat; exposure to asbestos fibers may result in health issues such as lung cancer, mesothelioma (a rare cancer of the thin membranes lining the lungs, chest, and abdominal cavity), and asbestosis (a non-cancerous lung disease that causes scarring of the lungs). Exposure to asbestos can occur during demolition or remodeling of buildings that were constructed prior to the 1977 ban on asbestos for use in buildings. Exposure to naturally occurring asbestos can occur during soil-disturbing activities in areas with deposits present. No naturally occurring asbestos is located near the project site.

2.3—Existing Air Quality Conditions

The local air quality can be evaluated by reviewing relevant air pollution concentrations near the project area. Table 2 summarizes 2016 through 2018 published monitoring data, which is the most recent three-year period available. Data were obtained from the closest air monitoring station with data available. The table displays data from the Clovis-North Villa Avenue monitoring station (located approximately 3.3 miles south-southwest of the project site), which is the closest monitoring station

to the project site. The data show that during the past few years, the project area has exceeded the standards for ozone (state and national), PM_{10} (state), and $PM_{2.5}$ (national). The data in the table reflect the concentration of the pollutants in the air, measured using air monitoring equipment. This differs from emissions, which are calculations of a pollutant being emitted over a certain period. No recent monitoring data for Fresno County or the San Joaquin Valley Air Basin was available for CO or SO_2. Generally, no monitoring is conducted for pollutants that are no longer likely to exceed ambient air quality standards.

Table 2: Air Quality Monitoring Summary

Air Pollutant	Averaging Time	Item	2016	2017	2018
Ozone[1]	1 Hour	Max 1 Hour (ppm)	**0.113**	**0.138**	**0.121**
		Days > State Standard (0.09 ppm)	26	13	13
Ozone[1]	8 Hour	Max 8 Hour (ppm)	**0.095**	**0.100**	**0.094**
		Days > State Standard (0.07 ppm)	63	50	49
		Days > National Standard (0.070 ppm)	62	47	43
Carbon monoxide (CO)	8 Hour	Max 8 Hour (ppm)	ND	ND	ND
		Days > State Standard (9.0 ppm)	ND	ND	ND
		Days > National Standard (9 ppm)	ND	ND	ND
Nitrogen dioxide (NO_2)[1]	Annual	Annual Average (ppm)	ID	0.010	0.090
	1 Hour	Max 1 Hour (ppm)	0.0498	0.0588	0.0645
		Days > State Standard (0.18 ppm)	0	0	0
Sulfur dioxide (SO_2)	Annual	Annual Average (ppm)	ND	ND	ND
	24 Hour	Max 24 Hour (ppm)	ND	ND	ND
		Days > State Standard (0.04 ppm)	ND	ND	ND
Inhalable coarse particles (PM_{10})[1]	Annual	Annual Average (µg/m^3)	**32.7**	**36.2**	**39.4**
	24 hour	24 Hour (µg/m^3)	**74.9**	**99.4**	**118.6**
		Days > State Standard (50 µg/m^3)	61.3	ID	90.4
		Days > National Standard (150 µg/m^3)	0	0	0
Fine particulate matter ($PM_{2.5}$) [1]	Annual	Annual Average (µg/m^3)	11.6	**13.6**	**14.7**
	24 Hour	24 Hour (µg/m^3)	**50.4**	**69.5**	**82.3**
		Days > National Standard (35 µg/m^3)	8.2	19.2	27.1

Notes:
> = exceed ppm = parts per million µg/m^3 = micrograms per cubic meter
ID = insufficient data ND = no data max = maximum
Bold = exceedance
State Standard = California Ambient Air Quality Standard
National Standard = National Ambient Air Quality Standard
[1] Clovis-North Villa Avenue
Source: California Air Resources Board 2019: Clovis-North Villa Avenue Station.

The health impacts of the various air pollutants of concern can be presented in a number of ways. The clearest of these is comparable with the state and federal ozone standards. If concentrations are below the standard, it is safe to say that no health impact would occur to anyone. When concentrations exceed the standard, impacts will vary based on the amount by which the standard is exceeded. The EPA developed the Air Quality Index (AQI) as an easy-to-understand measure of health impacts compared with concentrations in the air. Table 3 provides a description of the health impacts of ozone at different concentrations.

Table 3: Air Quality Index and Health Effects from Ozone

Air Quality Index/ 8-hour Ozone Concentration	Health Effects Description
AQI 51–100—Moderate	**Sensitive Groups**: Children and people with asthma are the groups most at risk.
Concentration 55–70 ppb	**Health Effects Statements**: Unusually sensitive individuals may experience respiratory symptoms.
	Cautionary Statements: Unusually sensitive people should consider limiting prolonged outdoor exertion.
AQI 101–150—Unhealthy for Sensitive Groups	**Sensitive Groups**: Children and people with asthma are the groups most at risk.
Concentration 71–85 ppb	**Health Effects Statements**: Increasing likelihood of respiratory symptoms and breathing discomfort in active children and adults and people with respiratory disease, such as asthma.
	Cautionary Statements: Active children and adults, and people with respiratory disease, such as asthma, should limit prolonged outdoor exertion.
AQI 151–200—Unhealthy	**Sensitive Groups**: Children and people with asthma are the groups most at risk.
Concentration 86–105 ppb	**Health Effects Statements**: Greater likelihood of respiratory symptoms and breathing difficulty in active children and adults and people with respiratory disease, such as asthma; possible respiratory effects in general population.
	Cautionary Statements: Active children and adults, and people with respiratory disease, such as asthma, should avoid prolonged outdoor exertion; everyone else, especially children, should limit prolonged outdoor exertion.
AQI 201–300—Very Unhealthy	**Sensitive Groups**: Children and people with asthma are the groups most at risk.
Concentration 106–200 ppb	**Health Effects Statements**: Increasingly severe symptoms and impaired breathing likely in active children and adults and people with respiratory disease, such as asthma; increasing likelihood of respiratory effects in general population.
	Cautionary Statements: Active children and adults, and people with respiratory disease, such as asthma, should avoid all outdoor exertion; everyone else, especially children, should limit outdoor exertion.
Source: Air Now 2016.	

The AQI for the 8-hour ozone standard is based on the current NAAQS of 70 parts per billion (ppb). Based on the AQI scale for the 8-hour ozone standard, the project area experienced no days in the last three years that would be categorized as very unhealthy (AQI 201–250), and as many as 152 days that were unhealthy (AQI 151–200) or unhealthy for sensitive groups (AQI 101–150), violating the 70-ppb standard as measured at the Clovis-North Villa Avenue monitoring station. The highest reading was 100 parts per billion (ppb) in 2017 (AQI 187), compared with the 105-ppb cutoff point for unhealthy (AQI 200). The most days over the standard were 62 days in 2016.

The other nonattainment pollutant of concern is $PM_{2.5}$. An AQI of 100 or lower is considered moderate and would be triggered by a 24-hour average concentration of 12.1 to 35.4 µg/m^3. An AQI of 101 to 105 or 35.5-55.4 µg/m^3 is considered unhealthful for sensitive groups. When concentrations reach this amount, it is considered an exceedance of the federal $PM_{2.5}$ standard. The monitoring station nearest the project exceeded the standard on approximately 44 days in the three-year period spanning from 2016 to 2018. People with respiratory or heart disease, the elderly and children are the groups most at risk. Unusually sensitive people should consider reducing prolonged or heavy exertion. The AQI of 151 to 200 is classified as unhealthy for everyone. This AQI classification is triggered when $PM_{2.5}$ concentration ranges from 55.4 to 150.4 µg/m^3. At this concentration, there is increasing likelihood of respiratory symptoms in sensitive individuals, aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease, and in the elderly. People with respiratory or heart disease, the elderly, and children should limit prolonged exertion. Everyone else should reduce prolonged or heavy exertion. The highest concentration recorded at the Clovis-North Villa Avenue monitoring station in the last three years was 82.3 µg/m^3 (AQI 165) in 2018. At this concentration, increased aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease and the elderly, and increased respiratory effects in general population would occur. People with respiratory or heart disease, the elderly, and children should avoid prolonged exertion; everyone else should limit prolonged exertion when the AQI exceeds this level. The relationship of the AQI to health effects in shown Table 4.

Table 4: Air Quality Index and Health Effects of Particulate Pollution

Air Quality Index/ $PM_{2.5}$ Concentration	Health Effects Description
AQI 51–100—Moderate Concentration 12.1–35.4 µg/m^3	**Sensitive Groups**: Some people who may be unusually sensitive to particle.
	Health Effects Statements: Unusually sensitive people should consider reducing prolonged or heavy exertion.
	Cautionary Statements: Unusually sensitive people: Consider reducing prolonged or heavy exertion. Watch for symptoms such as coughing or shortness of breath. These are signs to take it easier.
AQI 101–150—Unhealthy for Sensitive Groups Concentration 35.5–55.4 µg/m^2	**Sensitive Groups**: Sensitive groups include people with heart or lung disease, older adults, children, and teenagers.
	Health Effects Statements: Increasing likelihood of respiratory symptoms in sensitive individuals, aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease, and the elderly.

Table 4 (cont.): Air Quality Index and Health Effects of Particulate Pollution

Air Quality Index/ $PM_{2.5}$ Concentration	Health Effects Description
	If you have heart disease: Symptoms such as palpitations, shortness of breath, or unusual fatigue may indicate a serious problem. If you have any of these, contact your health care provider.
AQI 151–200—Unhealthy Concentration 55.5–150.4 µg/m^3	**Sensitive Groups**: Everyone
	Health Effects Statements: Increased aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease and the elderly; increased respiratory effects in general population.
	Cautionary Statements: Sensitive groups: Avoid prolonged or heavy exertion. Consider moving activities indoors or rescheduling. Everyone else: Reduce prolonged or heavy exertion. Take more breaks during outdoor activities.
AQI 201–300—Very Unhealthy Concentration 150.5–250.4 µg/m^3	**Sensitive Groups**: Everyone
	Health Effects Statements: Significant aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease and the elderly; significant increase in respiratory effects in general population.
	Cautionary Statements: Sensitive groups: Avoid all physical activity outdoors. Move activities indoors or reschedule to a time when air quality is better. Everyone else: Avoid prolonged or heavy exertion. Consider moving activities indoors or rescheduling to a time when air quality is better.
Source: Air Now 2016.	

2.3.1 - Attainment Status

The EPA and the ARB designate air basins where ambient air quality standards are exceeded as "nonattainment" areas. If standards are met, the area is designated an "attainment" area. If there is inadequate or inconclusive data to make a definitive attainment designation, they are considered "unclassified." National nonattainment areas are further designated marginal, moderate, serious, severe, or extreme as a function of deviation from standards.

Each standard has a different definition, or "form" of what constitutes attainment, based on specific air quality statistics. For example, the federal 8-hour CO standard is not to be exceeded more than once per year; therefore, an area is in attainment of the CO standard if no more than one 8-hour ambient air monitoring values exceeds the threshold per year. In contrast, the federal annual $PM_{2.5}$ standard is met if the three-year average of the annual average $PM_{2.5}$ concentration is less than or equal to the standard.

The current attainment designations for the Air Basin are shown in Table 5. The Air Basin is designated nonattainment for ozone, PM_{10}, and $PM_{2.5}$.

Table 5: San Joaquin Valley Air Basin Attainment Status

Pollutant	State Status	National Status
Ozone—One Hour	Nonattainment/Severe	No Standard
Ozone—Eight Hour	Nonattainment	Nonattainment/Extreme
Carbon monoxide	Attainment/Unclassified	Merced, Madera, and Kings Counties are unclassified; others are in Attainment
Nitrogen dioxide	Attainment	Attainment/Unclassified
Sulfur dioxide	Attainment	Attainment/Unclassified
PM_{10}	Nonattainment	Attainment
$PM_{2.5}$	Nonattainment	Nonattainment
Lead	Attainment	No Designation/Classification
Source of State status: California Air Resources Board (ARB 2013c). Source of National status: U.S. Environmental Protection Agency (EPA 2016a). Source of additional status information (SJVAPCD 2017a).		

2.4—Air Quality Plans and Regulations

Air pollutants are regulated at the national, state, and air basin or county level, and each agency has a different level of regulatory responsibility: the EPA regulates at the national level, the ARB at the state level, and the SJVAPCD at the air basin level.

The EPA is responsible for national and interstate air pollution issues and policies. The EPA sets national vehicle and stationary source emission standards, oversees approval of all State Implementation Plans, provides research and guidance for air pollution programs, and sets National Ambient Air Quality Standards—also known as the federal standards described earlier.

A State Implementation Plan (SIP) is a document prepared by each state describing existing air quality conditions and measures that will be followed to attain and maintain federal standards. The SIP for the State of California is administered by the ARB, which has overall responsibility for statewide air quality maintenance and air pollution prevention. California's SIP incorporates individual federal attainment plans for regional air districts; specifically, an air district prepares their federal attainment plan, which is sent to ARB to be approved and incorporated into the California State Implementation Plan. Federal attainment plans include the technical foundation for understanding air quality (e.g., emission inventories and air quality monitoring), control measures and strategies, and enforcement mechanisms. The ARB then submits the SIP to the EPA for approval. After reviewing submitted SIPs, the EPA proposes to approve or disapprove all or part of each plan. The public has an opportunity to comment on the EPA's proposed action. The EPA considers public input before taking final action on a state's plan. If EPA approves all or part of a SIP, those control measures are enforceable in federal court. If a state fails to submit an approvable plan or if the EPA disapproves a plan, the EPA is required to develop a federal implementation plan (FIP). The SIP approval process often takes several years. The most recent federally approved attainment plans for the SJVAPCD are the 2007 8-Hour Ozone Attainment Plan and the 2012 $PM_{2.5}$ Plan for the 2006 $PM_{2.5}$ standard.

Areas designated nonattainment must develop air quality plans and regulations to achieve standards by specified dates, depending on the severity of the exceedances. For much of the country, implementation of federal motor vehicle standards and compliance with federal permitting requirements for industrial sources are adequate to attain air quality standards on schedule. For many areas of California, however, additional state and local regulation is required to achieve the standards. Regulations adopted by California are described below.

2.4.1 - California Regulations

Low-Emission Vehicle Program

The ARB first adopted Low-Emission Vehicle (LEV) program standards in 1990. These first LEV standards ran from 1994 through 2003. LEV II regulations, running from 2004 through 2010, represent continuing progress in emission reductions. As the State's passenger vehicle fleet continues to grow and more sport utility vehicles and pickup trucks are used as passenger cars rather than work vehicles, the more stringent LEV II standards were adopted to provide reductions necessary for California to meet federally mandated clean air goals outlined in the 1994 State Implementation Plan. In 2012, ARB adopted the LEV III amendments to California's LEV regulations. These amendments, also known as the Advanced Clean Car Program include more stringent emission standards for model years 2017 through 2025 for both criteria pollutants and GHGs for new passenger vehicles (ARB 2012a).

On-Road Heavy-Duty Vehicle Program

The ARB has adopted standards for emissions from various types of new on-road heavy-duty vehicles. Section 1956.8, Title 13, California Code of Regulations contains California's emission standards for on-road heavy-duty engines and vehicles, as well as test procedures. ARB has also adopted programs to reduce emissions from in-use heavy-duty vehicles including the Heavy-Duty Diesel Vehicle Idling Reduction Program, the Heavy-Duty Diesel In-Use Compliance Program, the Public Bus Fleet Rule and Engine Standards, and the School Bus Program and others (ARB 2013b).

The regulation applies to nearly all privately and federally owned diesel-fueled trucks and buses and to privately and publicly owned school buses with a gross vehicle weight rating (GVWR) greater than 14,000 pounds. The regulation provides a variety of flexibility options tailored to fleets operating low-use vehicles, fleets operating in selected vocations like agricultural and construction, and small fleets of three or fewer trucks (ARB 2015b).

ARB Truck and Bus Regulation

The latest amendments to the Truck and Bus regulation became effective on December 31, 2014. The amended regulation requires diesel trucks and buses that operate in California to be upgraded to reduce emissions. Newer heavier trucks and buses must meet PM filter requirements beginning January 1, 2012. Lighter and older heavier trucks must be replaced starting January 1, 2015. By January 1, 2023, nearly all trucks and buses will need to have 2010 model year engines or equivalent.

The regulation applies to nearly all privately and federally owned diesel-fueled trucks and buses and to privately and publicly owned school buses with a gross vehicle weight rating (GVWR) greater than

14,000 pounds. The regulation provides a variety of flexibility options tailored to fleets operating low-use vehicles, fleets operating in selected vocations like agricultural and construction, and small fleets of three or fewer trucks (ARB 2015a).

ARB Regulation for In-Use Off-Road Diesel Vehicles

On July 26, 2007, the ARB adopted a regulation to reduce DPM and nitrous oxide (NO_X) emissions from in-use (existing) off-road heavy-duty diesel vehicles in California. Such vehicles are used in construction, mining, and industrial operations. The regulation limits idling to no more than five consecutive minutes, requires reporting and labeling, and requires disclosure of the regulation upon vehicle sale. The ARB is enforcing that part of the rule with fines up to $10,000 per day for each vehicle in violation. Performance requirements of the rule are based on a fleet's average NO_X emissions, which can be met by replacing older vehicles with newer, cleaner vehicles or by applying exhaust retrofits. The regulation was amended in 2010 to delay the original timeline of the performance requirements, making the first compliance deadline January 1, 2014 for large fleets (over 5,000 horsepower), 2017 for medium fleets (2,501–5,000 horsepower), and 2019 for small fleets (2,500 horsepower or less).

ARB Regulation for Consumer Products

The ARB Consumer Products Regulation was last amended in January 2015. The ARB regulates the VOC content of a wide variety of consumer products sold and manufactured in California. The purpose of the regulation is to reduce the emission of ozone precursors, TACs, and GHG emissions in products that are used by homes and businesses. The regulated products include but are not limited to solvents, adhesives, air fresheners, soaps, aromatic compounds, windshield cleaners, charcoal lighter, dry cleaning fluids, floor polishes, and general cleaners and degreasers (ARB 2015b)

ARB Airborne Toxic Control Measure for Asbestos

In July 2001, the ARB approved an Air Toxic Control Measure for construction, grading, quarrying, and surface mining operations to minimize emissions of naturally occurring asbestos. The regulation requires application of best management practices to control fugitive dust in areas known to have naturally occurring asbestos and requires notification to the local air district prior to commencement of ground-disturbing activities. The measure establishes specific testing, notification and engineering controls prior to grading, quarrying, or surface mining in construction zones where naturally occurring asbestos is located on projects of any size. There are additional notification and engineering controls at work sites larger than one acre in size. These projects require the submittal of a "Dust Mitigation Plan" and approval by the air district prior to the start of a project.

Construction sometimes requires the demolition of existing buildings where construction occurs. The project includes no demolition. Asbestos is also found in a natural state, known as naturally occurring asbestos. Exposure and disturbance of rock and soil that naturally contain asbestos can result in the release of fibers into the air and consequent exposure to the public. Asbestos most commonly occurs in ultramafic rock that has undergone partial or complete alteration to serpentine rock (serpentinite) and often contains chrysotile asbestos. In addition, another form of asbestos, tremolite, can be found associated with ultramafic rock, particularly near faults. Sources of asbestos emissions include unpaved roads or driveways surfaced with ultramafic rock, construction activities in ultramafic rock deposits, or rock quarrying activities where ultramafic rock is present.

The ARB has an Air Toxic Control Measure for construction, grading, quarrying, and surface mining operations, requiring the implementation of mitigation measures to minimize emissions of asbestos-laden dust. The measure applies to road construction and maintenance, construction and grading operations, and quarries and surface mines when the activity occurs in an area where naturally occurring asbestos is likely to be found. Areas are subject to the regulation if they are identified on maps published by the Department of Conservation as ultramafic rock units or if the Air Pollution Control Officer or owner/operator has knowledge of the presence of ultramafic rock, serpentine, or naturally occurring asbestos on the site. The measure also applies if ultramafic rock, serpentine, or asbestos is discovered during any operation or activity. Review of the Department of Conservation maps indicates that no ultramafic rock has been found near the Clovis area.

Diesel Risk Reduction Plan

The ARB's Diesel Risk Reduction Plan has led to the adoption of new state regulatory standards for all new on-road, off-road, and stationary diesel-fueled engines and vehicles to reduce DPM emissions by about 90 percent overall from year 2000 levels. The projected emission benefits associated with the full implementation of this plan, including federal measures, are reductions in DPM emissions and associated cancer risks of 75 percent by 2010, and 85 percent by 2020 (ARB 2000).

2.4.2 - San Joaquin Valley Air Pollution Control District

The District is responsible for controlling emissions primarily from stationary sources. The District, in coordination with the eight countywide transportation agencies, is also responsible for developing, updating, and implementing air quality attainment plans for the Air Basin. The District also has roles under CEQA.

Ozone Plans

The Air Basin is designated nonattainment of state and federal health-based air quality standards for ozone. To meet Clean Air Act requirements for the one-hour ozone standard, the District adopted an Extreme Ozone Attainment Demonstration Plan in 2004, with an attainment date of 2010. Although the EPA revoked the federal 1-hour ozone standard effective June 15, 2005 and replaced it with an 8-hour standard, the requirement to submit a plan for that standard remained in effect for the San Joaquin Valley.

The planning requirements for the 1-hour plan remain in effect until replaced by a federal 8-hour ozone attainment plan. On March 8, 2010, the EPA approved the 2004 Extreme Ozone Attainment Demonstration Plan, including revisions to the plan, effective April 7, 2010. However, the Air Basin failed to attain the standard in 2010 and was subject to a $29 million Clean Air Act penalty. The penalty is being collected through an additional $12 motor vehicle registration surcharge for each passenger vehicle registered in the Air Basin that will be applied to pollution reduction programs in the region. The District also instituted a more robust ozone episodic program to reduce emissions on days with the potential to exceed the ozone standards. On July 18, 2016, the EPA published in the Federal Register a final action determining that the San Joaquin Valley has attained the 1-hour ozone national ambient air quality standard. This determination is based on the most recent three-year period (2012-2014) of sufficient, quality-assured, and certified data. The penalty fees remain in place pending submittal of a demonstration that the San Joaquin Valley will maintain the 1-hour standard for 10 years (EPA 2016b).

The EPA originally classified the Air Basin as serious nonattainment for the 1997 federal 8-hour ozone standard with an attainment date of 2013. On April 30, 2007, the District's Governing Board adopted the 2007 Ozone Plan, which contained analysis showing a 2013 attainment target to be infeasible. The 2007 Ozone Plan details the plan for achieving attainment on schedule with an "extreme nonattainment" deadline of 2024. At its adoption of the 2007 Ozone Plan, the District also requested a reclassification to extreme nonattainment. ARB approved the plan in June 2007, and the EPA approved the request for reclassification to extreme nonattainment on April 15, 2010.

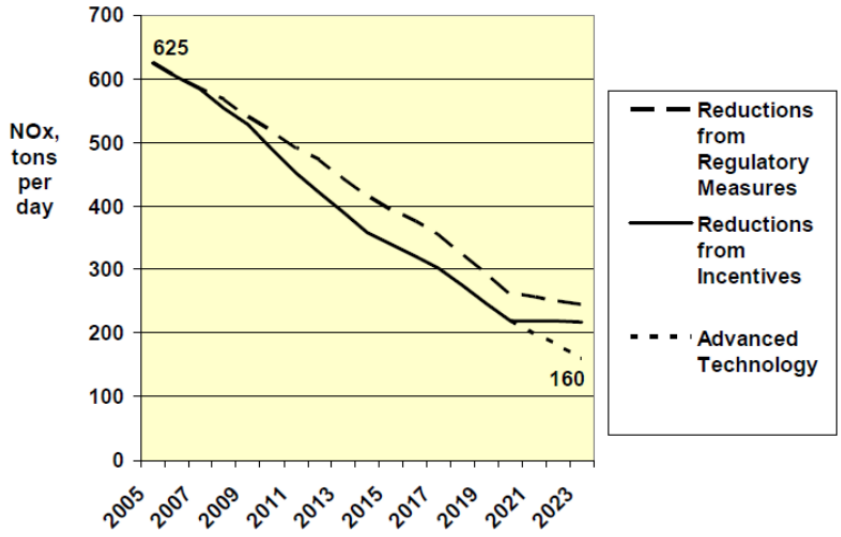
The 2007 Ozone Plan contains measures to reduce ozone and particulate matter precursor emissions to bring the Basin into attainment with the federal 8-hour ozone standard. The 2007 Ozone Plan calls for a 75 percent reduction of NO_X and a 25 percent reduction of reactive organic gases (ROG). Figure 4 displays the anticipated NO_X reductions attributed in the 2007 Ozone Plan (Source: 2007 Ozone Plan). The plan, with innovative measures and a "dual path" strategy, assures expeditious attainment of the federal 8-hour ozone standard for all Air Basin residents. The District Governing Board adopted the 2007 Ozone Plan on April 30, 2007. The ARB approved the plan on June 14, 2007. The 2007 Ozone Plan requires yet to be determined "Advanced Technology" to achieve additional reductions after 2021, in order to attain the standard at all monitoring stations in the Air Basin by 2024 as allowed for areas designated extreme nonattainment by the federal Clean Air Act.

The Air Basin is designated an extreme ozone nonattainment area for the EPA's 2008 8-hour ozone standard of 75 ppb. The District's Governing Board approved the 2016 Plan for the 2008 8-Hour Ozone Standard on June 16, 2016. The ARB approved the attainment demonstration plan for the San Joaquin Valley on July 21, 2016 and transmitted the plan to EPA on August 24, 2016. The comprehensive strategy in this plan will reduce NO_X emissions by over 60 percent between 2012 and 2031, and will bring the San Joaquin Valley into attainment of the EPA's 2008 8-hour ozone standard as expeditiously as practicable, no later than December 31, 2031. The 2016 Ozone Plan predicts attainment of the 2008 standard by 2031 (SJVAPCD 2018a). To ensure that the plan is approvable with the necessary contingencies, the plan includes a "Black Box" that will require implementation of new advanced technologies and controls prior to the 2031 deadline.

The EPA Administrator signed the Final Rule revising the 8-hour ozone standard to 70 ppm on October 1, 2015. The new standard will require the SJVAPCD to prepare a new attainment to achieve the more stringent emission level within 20 years from the effective date of designation (EPA 2018).

State ozone standards do not have an attainment deadline but require implementation of all feasible measures to achieve attainment at the earliest date possible. This is achieved through compliance with the federal deadlines and control measure requirements.

Figure 4: San Joaquin Valley NO_X Emissions Forecast



Particulate Matter Plans

The Air Basin was designated nonattainment of state and federal health-based air quality standards for PM_{10}. The Air Basin is also designated nonattainment of state and federal standards for $PM_{2.5}$.

To meet Clean Air Act requirements for the PM_{10} standard, the District adopted a PM_{10} Attainment Demonstration Plan (Amended 2003 PM_{10} Plan and 2006 PM_{10} Plan), which has an attainment date of 2010. The District adopted the 2007 PM_{10} Maintenance Plan in September 2007 to assure the San Joaquin Valley's continued attainment of the EPA's PM_{10} standard. The EPA designated the valley as an attainment/maintenance area for PM_{10} on September 25, 2008. Although the San Joaquin Valley has exceeded the standard since then, those days were considered exceptional events that are not considered a violation of the standard for attainment purposes.

The 2008 $PM_{2.5}$ Plan builds upon the comprehensive strategy adopted in the 2007 Ozone Plan to bring the Air Basin into attainment of the 1997 national standards for $PM_{2.5}$. The EPA has identified NO_X and SO_2as precursors that must be addressed in air quality plans for the 1997 $PM_{2.5}$ standards. The 2008 $PM_{2.5}$ Plan is a continuation of the District's strategy to improve the air quality in the Air Basin. The EPA issued final approval of the 2008 $PM_{2.5}$ Plan on November 9, 2011, which became effective on January 9, 2012. The EPA approved the emissions inventory, the reasonably available control measures/reasonably available control technology demonstration, reasonable further progress demonstration, attainment demonstration and associated air quality modeling, and the transportation conformity motor vehicle emissions budgets. The EPA also granted California's request to extend the attainment deadline for the San Joaquin Valley to April 5, 2015 and approved commitments to measures and reductions by the District and the ARB. Finally, it disapproved the State Implementation Plan's contingency provisions and issued a protective finding for transportation conformity determinations.

In December 2012, the District adopted the 2012 $PM_{2.5}$ Plan to bring the San Joaquin Valley into attainment of the EPA's 2006 24-hour $PM_{2.5}$ standard of 35 $\mu g/m^3$. The ARB approved the District's 2012 $PM_{2.5}$ Plan for the 2006 standard at a public hearing on January 24, 2013 (SJVAPCD 2012). This

plan seeks to bring the Valley into attainment with the standard by 2019, with the expectation that most areas will achieve attainment before that time.

The 2015 Plan for the 1997 $PM_{2.5}$ Standard approved by the District Governing Board on April 16, 2015—will bring the Valley into attainment of the EPA's 1997 $PM_{2.5}$ standard as expeditiously as practicable, but no later than December 31, 2020. The plan was required to request reclassification to Serious nonattainment and to extend the attainment date from 2018 to 2020 (SJVAPCD 2015b).

The 2016 Moderate Area Plan for the 2012 $PM_{2.5}$ Standard was adopted on September 15, 2016. This plan includes an attainment impracticability demonstration and request for reclassification of the Valley from Moderate nonattainment to Serious nonattainment (SJVAPCD 2017b).

The SJVAPCD adopted the 2018 Plan for the 1997, 2006, and 2012 $PM_{2.5}$ Standards on November 15, 2018. This plan provides a combined strategy to address the EPA federal 1997 annual $PM_{2.5}$ standard of 15 µg/m³ and 24-hour $PM_{2.5}$ standard of 65 µg/m³; the 2006 24-hour $PM_{2.5}$ standard of 35 µg/m³; and the 2012 annual $PM_{2.5}$ standard of 12 µg/m³. This plan demonstrates attainment of the federal $PM_{2.5}$ standards as expeditiously as practicable (SJVAPCD 2018b).

SJVAPCD Rules and Regulations

The SJVAPCD rules and regulations that may apply to projects that will occur during buildout of the project include but are not limited to the following:

Rule 4102—Nuisance. The purpose of this rule is to protect the health and safety of the public, and applies to any source operation that emits or may emit air contaminants or other materials.

Rule 4601—Architectural Coatings. The purpose of this rule is to limit Volatile Organic Compounds (VOC) emissions from architectural coatings. Emissions are reduced by limits on VOC content and providing requirements on coatings storage, cleanup, and labeling.

Rule 4641—Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations. The purpose of this rule is to limit VOC emissions from asphalt paving and maintenance operations. If asphalt paving will be used, then the paving operations will be subject to Rule 4641.

Rule 4901—Wood-Burning Fireplaces and Wood-Burning Heaters. The purposes of this rule are to limit emissions of carbon monoxide and particulate matter from wood-burning fireplaces, wood-burning heaters, and outdoor wood-burning devices, and to establish a public education program to reduce wood-burning emissions. All development that includes wood-burning devices are subject to this rule.

Rule 4902—Residential Water Heaters. In 2009, the District amended Rule 4902 to strengthen the rule by lowering the limit to 10 nanograms per joule (ng/J) for new or replacement water heaters, and to a limit of 14 ng/J for instantaneous water heaters. Retailer compliance dates ranged from 2010 to 2012, depending on the unit type.

Regulation VIII—Fugitive PM_{10} Prohibitions. Rules 8011–8081 are designed to reduce PM_{10} emissions (predominantly dust/dirt) generated by human activity, including construction and demolition activities, road construction, bulk materials storage, paved and unpaved roads, carryout

and trackout, etc. All development projects that involve soil disturbance are subject to at least one provision of the Regulation VIII series of rules.

Rule 9510—Indirect Source Review. This rule reduces the impact of NO_X and PM_{10} emissions from growth within the Air Basin. The rule places application and emission reduction requirements on development projects meeting applicability criteria in order to reduce emissions through on-site mitigation, off-site District-administered projects, or a combination of the two. This project will comply with Rule 9510 because it would develop more than 50 residential dwelling units.

CEQA

The District has three roles under CEQA:

1. **Lead Agency:** Responsible for preparing environmental analyses for its own projects (adoption of rules, regulations, or plans) or permit projects filed with the District where the District has primary approval authority over the project.
2. **Responsible Agency:** The discretionary authority of a responsible agency is more limited than a lead agency; having responsibility for mitigating or avoiding only the environmental effects of those parts of the project which it decides to approve, carry out, or finance. The District defers to the lead agency for preparation of environmental documents for land use projects that also have discretionary air quality permits, unless no document is prepared by the lead agency and potentially significant impacts related to the permit are possible. The District regularly submits comments on documents prepared by lead agencies to ensure that District concerns are addressed.
3. **Commenting Agency:** The District reviews and comments on air quality analyses prepared by other public agencies (such as the project).

The District also provides guidance and thresholds for CEQA air quality and GHG analyses. The result of this guidance, as well as state regulations to control air pollution, is an overall improvement in the Air Basin. In particular, the District's 2015 GAMAQI states the following:

1. The District's Air Quality Attainment Plans include measures to promote air quality elements in county and city general plans as one of the primary indirect source programs. The general plan is the primary long-range planning document used by cities and counties to direct development. Since air districts have no authority over land use decisions, it is up to cities and counties to ensure that their general plans help achieve air quality goals. Section 65302.1 of the California Government Code requires cities and counties in the San Joaquin Valley to amend appropriate elements of their general plans to include data, analysis, comprehensive goals, policies, and feasible implementation strategies to improve air quality in their next housing element revisions.
2. The Air Quality Guidelines for General Plans (AQGGP), adopted by the District in 1994 and amended in 2005, is a guidance document containing goals and policy examples that cities and counties may want to incorporate into their General Plans to satisfy Section 65302.1. When adopted in a general plan and implemented, the suggestions in the AQGGP can reduce vehicle trips and miles traveled and improve air quality. The specific suggestions in

the AQGGP are voluntary. The District strongly encourages cities and counties to use their land use and transportation planning authority to help achieve air quality goals by adopting the suggested policies and programs.

2.4.3 - Local

The City of Clovis adopted its 2014 General Plan in August 2014 (City of Clovis 2015a). The City's applicable air quality goals and policies from the Air Quality Element and Circulation Element are listed below.

City of Clovis Air Quality Goals and Policies

Air Quality Element

- **Goal 1:** A local environment that is protected from air pollution and emissions.
  - **Policy 1.1: Land use and transportation.** Reduce greenhouse gas and other local pollutant emissions through mixed use and transit-oriented development and well-designed transit, pedestrian, and bicycle systems.
  - **Policy 1.2: Sensitive land uses.** Prohibit the future siting of sensitive land uses within the distances of emission sources as defined by the California Air Resources Board, without sufficient mitigation.
  - **Policy 1.3: Construction activities.** Encourage the use of best management practices during construction activities to reduce emissions of criteria pollutants as outlined by the San Joaquin Valley Air Pollution Control District (SJVAPCD).
  - **Policy 1.6: Alternative fuel infrastructure.** Encourage public and private activity and employment centers to incorporate electric charging and alternative fuel stations.
  - **Policy 1.8: Trees.** Maintain or plant trees where appropriate to provide shade, absorb carbon, improve oxygenation, slow stormwater runoff, and reduce the heat island effect.
- **Goal 2:** A region with healthy air quality and lower greenhouse gas emissions.
  - **Policy 2.1: Regional coordination.** Support regional efforts to reduce air pollution (criteria air pollutants and greenhouse gas emissions) and collaborate with other agencies to improve air quality at the emission source and reduce vehicle miles traveled.
  - **Policy 2.2: Cross-jurisdictional issues.** Collaborate with regional agencies and surrounding jurisdictions to address cross-jurisdictional transportation and air quality issues.
  - **Policy 2.6: Innovative mitigation.** Encourage innovative mitigation measures to reduce air quality impacts by coordinating with the SJVAPCD, project applicants, and other interested parties.

Circulation Element

- **Goal 1:** A context-sensitive and "complete streets" transportation network that prioritizes effective connectivity and accommodates a comprehensive range of mobility needs.
  - **Policy 1.1: Multimodal network.** The City shall plan, design, and maintain the transportation network to promote safe and convenient travel for all users: pedestrian, bicyclists, transit riders, freight, and motorists.
  - **Policy 1.2: Transportation decisions.** Decisions should balance the comfort, convenience, and safety of pedestrian, bicyclists, and motorists.

  - **Policy 1.4: Jobs and housing.** Encourage infill development that would provide jobs and services closer to housing, and vice versa, to reduce citywide vehicle miles traveled and effectively utilize the existing transportation infrastructure.
  - **Policy 1.5: Neighborhood connectivity.** The transportation network shall provide multimodal access between neighborhoods and neighborhood-serving uses (educational, recreational, or neighborhood commercial uses).
- **Goal 3:** A multimodal transportation network that is safe and comfortable in the context of adjacent neighborhoods.
  - **Policy 3.11: Right-of-way design.** Design landscaped parkways, medians, and right-of-ways as aesthetic buffers to improve the community's appearance and encourage non-motorized transportation.
- **Goal 5:** A complete system of trails and pathways accessible to all residents.
  - **Policy 5.1: Complete street amenities.** Upgrade existing streets and design new streets to include complete street amenities, prioritizing improvements to bicycle and pedestrian connectivity or safety (consistent with the Bicycle Transportation Master Plan and other master plans).
  - **Development-funded facilities.** Require development to fund and construct facilities as shown in the Bicycle Transportation Plan when facilities are in or adjacent to the development.
  - **Policy 5.3: Pathways.** Encourage pathways and other pedestrian amenities in Urban Centers and new development 10 acres or larger.
  - **Policy 5.5: Pedestrian access.** Require sidewalks, paths, and crosswalks to provide access to schools, parks, and other activity centers to provide general pedestrian connectivity throughout the city.

Land Use Element

- **Goal 3:** Orderly and sustainable outward growth into three urban centers with neighborhoods that provide a balanced mix of land uses and development types to support a community lifestyle and small-town character.
  - **Policy 3.9: Connected development.** New development in Urban Centers must fully improve roadway, pedestrian, and bicycle systems within and adjacent to the proposed project and connect to existing urbanized development.

Open Space and Conservation Element

- **Goal 3:** A built environment that conserves and protects the use and quality of water and energy resources.
  - **Policy 3.5: Energy and water conservation.** Encourage new development and substantial rehabilitation projects to exceed energy and water conservation and reduction standards set in the California Building Code.

City of Clovis General Plan Program EIR

The General Plan Program Environmental Impact Report (PEIR) (City of Clovis 2015b) includes the following mitigation measures and standard condition to reduce significant air quality impacts:

- **SC-1:** Prior to project approval, each applicant for individual, site-specific developments under the General Plan shall comply with the San Joaquin Valley Air Pollution Control District rules

and regulations, including, without limitation, Indirect Source Rule 9510. The applicant shall document, to the City's reasonable satisfaction, its compliance with this standard condition.

Mitigation Measures

3-1: Prior to issuance of any construction permits, development project applicants shall prepare and submit to the City of Clovis Planning Division a technical assessment evaluating potential project construction-related air quality impacts. The evaluation shall be prepared in conformance with San Joaquin Valley Air Pollution Control District (SJVAPCD) methodology in assessing air quality impacts. If construction-related criteria air pollutants are determined to have the potential to exceed the SJVAPCD adopted thresholds of significance, as identified in the Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI), the City of Clovis Planning Division shall require that applicants for new development projects incorporate mitigation measures to reduce air pollutant emissions during construction activities to below these thresholds. These identified measures shall be incorporated into all appropriate construction documents (e.g., construction management plans) submitted to the City and shall be verified by the City's Planning Division.

3-2: Prior to discretionary approval, applicants for phased development projects (i.e., construction would overlap operation/opening of the project) involving residential land uses shall coordinate with the San Joaquin Valley Air Pollution Control District (SJVAPCD) or the City of Clovis in conjunction with the SJVAPCD in preparation of a health risk assessment (HRA) for construction activities. If the HRA identifies risk impacts that exceed the standards as determined by the SVJAPCD at the time the project is considered, it shall identify measures to reduce these impacts to below these standards. Recommended measures may include those identified in Mitigation Measure 3-1. The recommendations of the HRA shall be incorporated into all construction management plans which shall be submitted to the City and verified by the City's Planning Division.

3-3: Prior to project approval, development project applicants shall prepare and submit to the City of Clovis Planning Division a technical assessment evaluating potential project operation phase-related air quality impacts. The evaluation shall be prepared in conformance with San Joaquin Valley Air Pollution Control District (SJVAPCD) methodology in assessing air quality impacts. If operational-related criteria air pollutants are determined to have the potential to exceed the SJVAPCD adopted thresholds of significance—as identified in the Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI)—the City of Clovis Planning Division shall require that applicants for new development projects incorporate mitigation measures to reduce air pollutant emissions during operational activities. The identified measures shall be included as part of the Standard Conditions of Approval.

3-4: Prior to project approval, the City of Clovis Planning Division shall require applicants for individual, site-specific developments to consider establishing a Voluntary Emission Reduction Agreement (VERA) with the San Joaquin Valley Air Pollution Control District. Under this agreement, project proponents may enter into an agreement where funds are used to develop and implement emission reduction projects.

3-5: Prior to discretionary project approval, the City of Clovis shall evaluate new development proposals for sensitive land uses (e.g., residential, schools, day care centers) within the City for potential incompatibilities with regard to the California Air Resources Board's Air Quality and Land Use Handbook: A Community Health Perspective (April 2005). Applicants for sensitive land uses that are within the recommended buffer distances shall submit a health risk assessment (HRA) to the City of Clovis prior to future discretionary project approval. The HRA shall be prepared in accordance with policies and procedures of the State Office of Environmental Health Hazard Assessment (OEHHA) and the San Joaquin Valley Air Pollution Control District. The latest OEHHA guidelines shall be used for the analysis, including age sensitivity factors, breathing rates, and body weights appropriate for children age 0 to 6 years. If the HRA shows that the incremental cancer risk exceeds ten in one million (10E-06), the appropriate noncancer hazard index exceeds 1.0, or if the PM_{10} or $PM_{2.5}$ ambient air quality standard increment exceeds 2.5 $\mu g/m^3$, the applicant will be required to identify and demonstrate that mitigation measures are capable of reducing potential cancer and non-cancer risks to an acceptable level (i.e., below ten in one million or a hazard index of 1.0), including appropriate enforcement mechanisms.

3-6: Prior to discretionary project approval, applicants for industrial or warehousing land uses shall coordinate with the San Joaquin Valley Air Pollution Control District (SJVAPCD) or the City of Clovis in conjunction with the SJVAPCD to determine the appropriate level of health risk assessment (HRA) required. All HRAs shall be submitted to the City of Clovis.

2.4.4 - Existing Sources of Toxic Emissions

No existing sources were identified that exceed ARB recommendations in its Air Quality Land Use Handbook for siting sensitive land uses impact the project.

2.4.5 - ARB Air Quality Land Use Handbook

Table 6 lists the following ARB advisory recommendations that address the issue of siting "sensitive land uses" near specific sources of air pollution (ARB 2005):

- High traffic freeways and roads
- Distribution centers
- Rail yards
- Ports
- Refineries
- Chrome plating facilities
- Dry cleaners
- Large gas dispensing facilities

The analysis examines the area around the site to determine if potential sources of TAC emissions may impact the project, based on the ARB recommended screening distances.

Table 6: Recommendations on Siting New Sensitive Land Uses

Source Category	Advisory Recommendations
Freeways and High-Traffic Roads	Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day.
Distribution Centers	Avoid siting new sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units (TRUs) per day, or where TRU unit operations exceed 300 hours per week). Take into account the configuration of existing distribution centers and avoid locating residences and other new sensitive land uses near entry and exit points.
Rail Yards	Avoid siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard. Within one mile of a rail yard, consider possible siting limitations and mitigation approaches.
Ports	Avoid siting of new sensitive land uses immediately downwind of ports in the most heavily impacted zones. Consult local air districts or the ARB on the status of pending analyses of health risks.
Refineries	Avoid siting new sensitive land uses immediately downwind of petroleum refineries. Consult with local air districts and other local agencies to determine an appropriate separation.
Chrome Platers	Avoid siting new sensitive land uses within 1,000 feet of a chrome plater.
Dry Cleaners Using Perchloroethylene	Avoid siting new sensitive land uses within 300 feet of any dry cleaning operation. For operations with two or more machines, provide 500 feet. For operations with three or more machines, consult with the local air district. Do not site new sensitive land uses in the same building with perchloroethylene dry cleaning operations.
Gasoline Dispensing Facilities	Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50-foot separation is recommended for typical gas dispensing facilities.
Note: These recommendations are advisory. Land use agencies have to balance other considerations, including housing and transportation needs, economic development priorities, and other quality of life issues.	

SECTION 3: CLIMATE CHANGE SETTING

3.1—Climate Change

Climate change is a change in the average weather of the earth that is measured by alterations in wind patterns, storms, precipitation, and temperature. These changes are assessed using historical records of temperature changes occurring in the past, such as during previous ice ages. Many of the concerns regarding climate change use this data to extrapolate a level of statistical significance, specifically focusing on temperature records from the last 150 years (the Industrial Age) that differ from previous climate changes in rate and magnitude.

The United Nations Intergovernmental Panel on Climate Change (IPCC) constructed several emission trajectories of GHGs needed to stabilize global temperatures and climate change impacts. In its Fourth Assessment Report, the IPCC predicted that the global mean temperature change from 1990 to 2100, given six scenarios, could range from 1.1 degrees Celsius (°C) to 6.4°C. Regardless of analytical methodology, global average temperatures and sea levels are expected to rise under all scenarios (IPCC 2007a). The report also concluded that "[w]arming of the climate system is unequivocal," and that "[m]ost of the observed increase in global average temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic greenhouse gas concentrations."

An individual project cannot generate enough GHG emissions to cause a discernible change in global climate. However, the project participates in the potential for global climate change by its incremental contribution of GHGs—and when combined with the cumulative increase of all other sources of GHGs—constitute potential influences on global climate change.

3.1.1 - Consequences of Climate Change in California

In California, climate change may result in consequences such as the following (from CCCC 2006 and Moser et al. 2009):

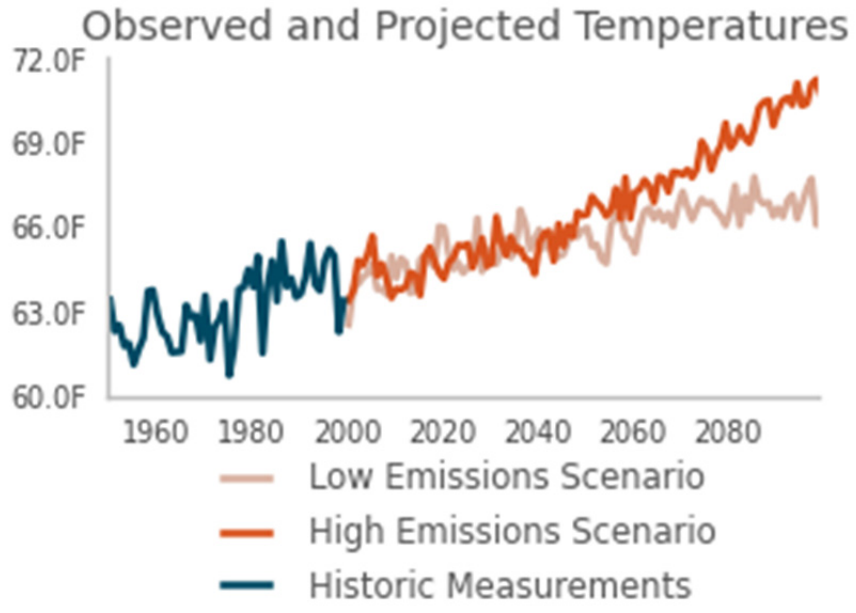
- **A reduction in the quality and supply of water from the Sierra snowpack.** If heat-trapping emissions continue unabated, more precipitation will fall as rain instead of snow, and the snow that does fall will melt earlier, reducing the Sierra Nevada spring snowpack by as much as 70 to 90 percent. This can lead to challenges in securing adequate water supplies. It can also lead to a potential reduction in hydropower.
- **Increased risk of large wildfires.** If rain increases as temperatures rise, wildfires in the grasslands and chaparral ecosystems of southern California are estimated to increase by approximately 30 percent toward the end of the 21st century because more winter rain will stimulate the growth of more plant "fuel" available to burn in the fall. In contrast, a hotter, drier climate could promote up to 90 percent more northern California fires by the end of the century by drying out and increasing the flammability of forest vegetation.
- **Reductions in the quality and quantity of certain agricultural products.** The crops and products likely to be adversely affected include wine grapes, fruit, nuts, and milk.

- **Exacerbation of air quality problems.** If temperatures rise to the medium warming range, there could be 75 to 85 percent more days with weather conducive to ozone formation in Los Angeles and the San Joaquin Valley, relative to today's conditions. This is more than twice the increase expected if rising temperatures remain in the lower warming range. This increase in air quality problems could result in an increase in asthma and other health-related problems.
- **A rise in sea levels resulting in the displacement of coastal businesses and residences.** During the past century, sea levels along California's coast have risen about seven inches. If emissions continue unabated and temperatures rise into the higher anticipated warming range, sea level is expected to rise an additional 22 to 35 inches by the end of the century. Elevations of this magnitude would inundate coastal areas with salt water, accelerate coastal erosion, threaten vital levees and inland water systems, and disrupt wetlands and natural habitats.
- **An increase in temperature and extreme weather events.** Climate change is expected to lead to increases in the frequency, intensity, and duration of extreme heat events and heat waves in California. More heat waves can exacerbate chronic disease or heat-related illness.
- **A decrease in the health and productivity of California's forests.** Climate change can cause an increase in wildfires, an enhanced insect population, and establishment of non-native species.

Consequences of Climate Change in the Clovis Area

Figure 5 displays a chart of measured historical and projected annual average temperatures in the City of Clovis area. As shown in the figure, temperatures are expected to rise in the low and high GHG emissions scenarios. The results indicate that temperatures are predicted to increase by 3.7 degrees Fahrenheit (°F) under the low emission scenario and 6.5°F under the high emissions scenario (CalAdapt 2019).

Figure 5: Observed and Projected Temperatures for Climate Change in the City of Clovis Area



Source: CalAdapt 2019

Water Supply

The City of Clovis Public Utilities Department would provide water for the project. The City relies on groundwater and treated surface water for potable water supplies. The availability of surface water and the rate of groundwater recharge could decline if climate change were to result in reduced snowpack in the Sierra Nevada.

Wildfires

The project site is within an urbanizing area with limited fuels that would be subject to a wildfire. Foothill and mountain areas located to the north and east of the Clovis area are subject to wildfire. The potential for increased temperatures and drought conditions due to climate change would result in increased risk from wildfire in those areas.

Human Health Effects of GHG Emissions

GHG emissions from development projects would not result in concentrations that would directly impact public health. However, the cumulative effects of GHG emissions on climate change have the potential to cause adverse effects to human health.

In its report, Global Climate Change Impacts in the U.S. (2009), the U.S. Global Change Research Program has analyzed the degree to which impacts on human health are expected to impact the United States.

Potential effects of climate change on public health include:

- Direct Temperature Effects: Climate change may directly affect human health through increases in average temperatures, which are predicted to increase the incidence of heat waves and hot extremes.
- Extreme Events: Climate change may affect the frequency and severity of extreme weather events, such as hurricanes and extreme heat and floods, which can be destructive to human health and well-being.
- Climate-Sensitive Diseases: Climate change may increase the risk of some infectious diseases, particularly those diseases that appear in warm areas and are spread by mosquitoes and other insects, such as malaria, dengue fever, yellow fever, and encephalitis.
- Air Quality: Respiratory disorders may be exacerbated by warming-induced increases in the frequency of smog (ground-level ozone) events and particulate air pollution (EPA 2009a).

Although there could be health effects resulting from changes in the climate and the consequences that can occur, inhalation of GHGs at levels currently in the atmosphere would not result in adverse health effects, with the exception of ozone and aerosols (particulate matter). The potential health effects of ozone and particulate matter are discussed in criteria pollutant analyses. At very high indoor concentrations (not at levels existing outside), carbon dioxide, methane, sulfur hexafluoride, and some chlorofluorocarbons can cause suffocation as the gases can displace oxygen (CDC 2010 and OSHA 2003).

3.2—Greenhouse Gases

Gases that trap heat in the atmosphere are referred to as GHGs. The effect is analogous to the way a greenhouse retains heat. Common GHGs include water vapor, carbon dioxide, methane, NO_X, chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, ozone, and aerosols. Natural processes and human activities emit GHGs. The presence of GHGs in the atmosphere affects the earth's temperature. It is believed that emissions from human activities, such as electricity production and vehicle use, have elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations.

Climate change is driven by forcings and feedbacks. Radiative forcing is the difference between the incoming energy and outgoing energy in the climate system. Positive forcing tends to warm the surface while negative forcing tends to cool it. Radiative forcing values are typically expressed in watts per square meter. A feedback is a climate process that can strengthen or weaken a forcing. For example, when ice or snow melts, it reveals darker land underneath which absorbs more radiation and causes more warming. The global warming potential is the potential of a gas or aerosol to trap heat in the atmosphere. The global warming potential of a gas is essentially a measurement of the radiative forcing of a GHG compared with the reference gas, CO_2.

Individual GHG compounds have varying global warming potential and atmospheric lifetimes. CO_2, the reference gas for global warming potential, has a global warming potential of one. The global warming potential of a GHG is a measure of how much a given mass of a GHG is estimated to contribute to global warming. To describe how much global warming a given type and amount of GHG may cause, the carbon dioxide equivalent is used. The calculation of the carbon dioxide equivalent is a consistent methodology for comparing GHG emissions since it normalizes various GHG emissions to a consistent reference gas, CO_2. For example, CH_4's warming potential of 25 indicates that CH_4 has 25 times greater warming effect than CO_2 on a molecule-per-molecule basis. A carbon dioxide equivalent is the mass emissions of an individual GHG multiplied by its global warming potential. GHGs defined by Assembly Bill (AB) 32 (see the Climate Change Regulatory Environment section for a description) include CO_2, CH_4, NO_X, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. They are described in Table 7. A seventh GHG, nitrogen trifluoride (NF_3), was added to Health and Safety Code section 38505(g)(7) as a GHG of concern. The global warming potential amounts are from IPCC Fourth Assessment Report (AR4). The new amounts have been incorporated into the CalEEMod 2016.3.2 used in this analysis.

Table 7: Description of Greenhouse Gases

Greenhouse Gas	Description and Physical Properties	Sources
Nitrous oxide	Nitrous oxide (laughing gas) is a colorless GHG. It has a lifetime of 114 years. Its global warming potential is 298.	Microbial processes in soil and water, fuel combustion, and industrial processes.
Methane	Methane is a flammable gas and is the main component of natural gas. It has a lifetime of 12 years. Its global warming potential is 25.	Methane is extracted from geological deposits (natural gas fields). Other sources are landfills, fermentation of manure, and decay of organic matter.

Table 7 (cont.): Description of Greenhouse Gases

Greenhouse Gas	Description and Physical Properties	Sources
Carbon dioxide	Carbon dioxide (CO_2) is an odorless, colorless, natural GHG. Carbon dioxide's global warming potential is 1. The concentration in 2005 was 379 parts per million (ppm), which is an increase of about 1.4 ppm per year since 1960.	Natural sources include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic sources are from burning coal, oil, natural gas, and wood.
Chlorofluorocarbons	These are gases formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms. They are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the earth's surface). Global warming potentials range from 124 to 14,800.	Chlorofluorocarbons were synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. They destroy stratospheric ozone. The Montreal Protocol on Substances that Deplete the Ozone Layer prohibited their production in 1987.
Perfluorocarbons	Perfluorocarbons have stable molecular structures and only break down by ultraviolet rays about 60 kilometers above Earth's surface. Because of this, they have long lifetimes, between 10,000 and 50,000 years. Global warming potentials range from 7,390 to 12,200.	Two main sources of perfluorocarbons are primary aluminum production and semiconductor manufacturing.
Sulfur hexafluoride	Sulfur hexafluoride (SF_6) is an inorganic, odorless, colorless, and nontoxic, nonflammable gas. It has a lifetime of 3,200 years. It has a high global warming potential of 22,800.	This gas is man-made and used for insulation in electric power transmission equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas.
Nitrogen trifluoride	Nitrogen trifluoride (NF_3) was added to Health and Safety Code section 38505(g)(7) as a GHG of concern. It has a high global warming potential of 17,200.	This gas is used in electronics manufacture for semiconductors and liquid crystal displays.
Sources: Compiled from a variety of sources, primarily Intergovernmental Panel on Climate Change 2007a and 2007b.		

The State has begun addressing pollutants referred to as short-lived climate pollutants. Senate Bill (SB) 605, approved by the governor on September 14, 2014 required the ARB to complete a comprehensive strategy to reduce emissions of short-lived climate pollutants by January 1, 2016. ARB was required to complete an emission inventory of these pollutants, identify research needs, identify existing and potential new control measures that offer co-benefits, and coordinated with other state agencies and districts to develop measures. The Short-Lived Climate Pollutant Strategy was approved by the ARB on March 24, 2017. The strategy calls for reductions of 50 percent from black carbon, 40 percent from methane, and 40 percent from HFCs from the 2030 Business as Usual (BAU) inventory for these pollutants (ARB 2017b).

The short-lived climate pollutants include three main components: black carbon, fluorinated gases, and methane. Fluorinated gases and methane are described in Table 7 and are already included in the California GHG inventory. Black carbon has not been included in past GHG inventories; however, ARB will include it in its comprehensive strategy (ARB 2015c).

Ozone is another short-lived climate pollutant that will be part of the strategy. Ozone affects evaporation rates, cloud formation, and precipitation levels. Ozone is not directly emitted, so its precursor emissions, volatile organic compounds (VOC) and oxides of nitrogen (NO_X) on a regional scale and CH_4 on a hemispheric scale will be subject of the strategy (ARB 2015c).

Black carbon is a component of fine particulate matter. Black carbon is formed by incomplete combustion of fossil fuels, biofuels, and biomass. Sources of black carbon within a jurisdiction may include exhaust from diesel trucks, vehicles, and equipment, as well as smoke from biogenic combustion. Biogenic combustion sources of black carbon include the burning of biofuels used for transportation, the burning of biomass for electricity generation and heating, prescribed burning of agricultural residue, and natural and unnatural wildfires. Black carbon is not a gas but an aerosol—particles or liquid droplets suspended in air. Black carbon only remains in the atmosphere for days to weeks, whereas other GHGs can remain in the atmosphere for years. Black carbon can be deposited on snow, where it absorbs sunlight, reduces sunlight reflectivity, and hastens snowmelt. Direct effects include absorbing incoming and outgoing radiation; indirectly, black carbon can also affect cloud reflectivity, precipitation, and surface dimming (cooling).

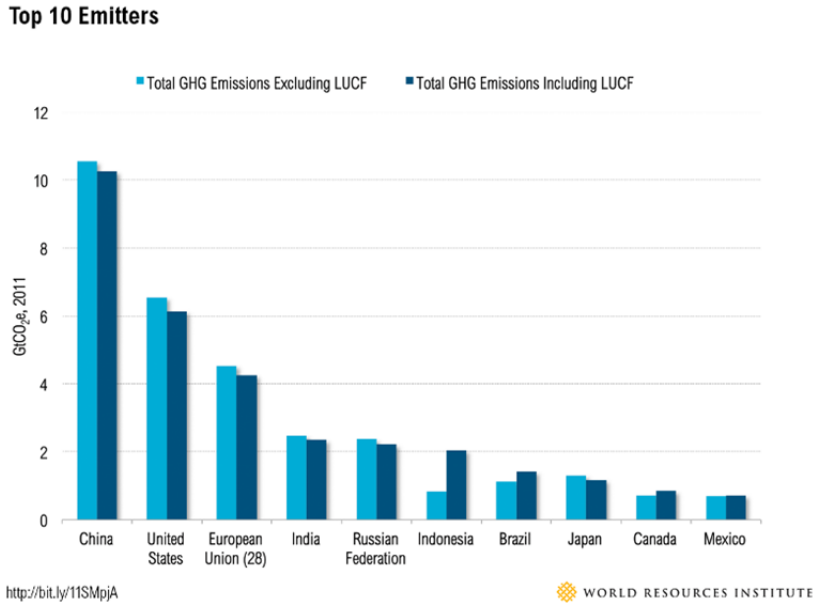
Global warming potentials for black carbon were not defined by the IPCC in its Fourth Assessment Report. The ARB has identified a global warming potential of 3,200 using a 20-year time horizon and 900 using a 100-year time horizon from the IPCC Fifth Assessment. Sources of black carbon are already regulated by ARB, and air district criteria pollutant and toxic regulations that control fine particulate emissions from diesel engines and other combustion sources (ARB 2015d). Additional controls on the sources of black carbon specifically for their GHG impacts beyond those required for toxic and fine particulates are not likely to be needed.

Water vapor is also considered a GHG. Water vapor is an important component of our climate system and is not regulated. Increasing water vapor leads to warmer temperatures, which causes more water vapor to be absorbed into the air. Warming and water absorption increase in a spiraling cycle. Water vapor feedback can also amplify the warming effect of other GHGs, such that the warming brought about by increased carbon dioxide allows more water vapor to enter the atmosphere (NASA 2015b).

3.2.1 - Emissions Inventories

An emissions inventory is a database that lists, by source, the amount of air pollutants discharged into the atmosphere of a geographic area during a given time period. Emissions worldwide were approximately 43,286 million metric tons of carbon dioxide equivalents ($MMTCO_2e$) in 2012. As shown in Figure 6, China was the largest GHG emitter with over 10 billion metric tons of CO_2e, and the United States was the second-largest GHG emitter with over 6 billion metric tons of CO_2e (WRI 2014).

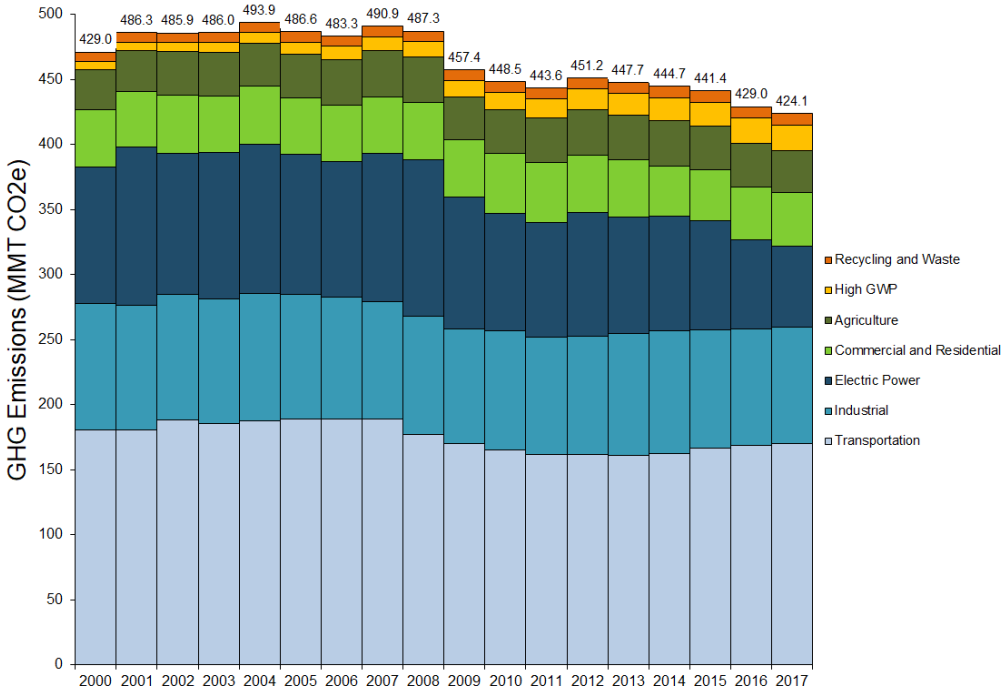
Figure 6: Greenhouse Gas Emissions by Geographic Area



Source: WRI 2014.

Figure 7 shows the contributors of GHG emissions in California between years 2000 and 2017 by Scoping Plan category. The main contributor was transportation. The second highest sector was industrial, which includes sources from refineries, general fuel use, oil and gas extraction, cement plants, and cogeneration heat output. ARB reported that California's GHG emissions inventory was 424.1 $MMTCO_2e$ in 2017 (ARB 2016b).

Figure 7: Greenhouse Gas Emission Trends by Scoping Plan Category in California



Source: ARB 2018a.

3.3—Regulatory Environment

3.3.1 - International

International organizations, such as the ones discussed below, have made substantial efforts to reduce GHGs. Preventing human-induced climate change will require the participation of all nations in solutions to address the issue.

Intergovernmental Panel on Climate Change. In 1988, the United Nations and the World Meteorological Organization established the Intergovernmental Panel on Climate Change. The panel was tasked with assessing the scientific, technical, and socioeconomic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts, and options for adaptation and mitigation.

United Nations Framework Convention on Climate Change (Convention). On March 21, 1994, the United States joined a number of countries around the world in signing the Convention. Under the Convention, governments gather and share information on GHG emissions, national policies, and best practices; launch national strategies for addressing GHG emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries; and cooperate in preparing for adaptation to the impacts of climate change.

Kyoto Protocol. The Kyoto Protocol is an international agreement linked to the United Nations Framework Convention on Climate Change. The major feature of the Kyoto Protocol is that it sets binding targets for 37 industrialized countries and the European community for reducing GHG emissions at average of five percent against 1990 levels over the five-year period from 2008–2012. The Convention (as discussed above) encouraged industrialized countries to stabilize emissions; however, the Protocol commits them to do so. Developed countries have contributed more emissions over the last 150 years; therefore, the Protocol places a heavier burden on developed nations under the principle of "common but differentiated responsibilities."

In 2001, President George W. Bush indicated that he would not submit the treaty to the U.S. Senate for ratification, which effectively ended American involvement in the Kyoto Protocol. In December 2009, international leaders met in Copenhagen to address the future of international climate change commitments post-Kyoto. No binding agreement was reached in Copenhagen; however, the Committee identified the long-term goal of limiting the maximum global average temperature increase to no more than 2°C above pre-industrial levels, subject to a review in 2015. The UN Climate Change Committee held additional meetings in Durban, South Africa in November 2011; Doha, Qatar in November 2012; and Warsaw, Poland in November 2013. The meetings are gradually gaining consensus among participants on individual climate change issues.

On September 23, 2014, more than 100 heads of state and government, along with leaders from the private sector and civil society met at the Climate Summit in New York hosted by the United Nations. At the Summit, heads of government, business, and civil society announced actions in areas that would have the greatest impact on reducing emissions, including: climate finance, energy, transport, industry, agriculture, cities, forests, and building resilience.

Paris Agreement. Parties to the United Nations Framework Convention on Climate Change (UNFCCC) reached a landmark agreement on December 12, 2015 in Paris, charting a fundamentally new course in the two-decade-old global climate effort. Culminating in a 4-year negotiating round, the new treaty ends the strict differentiation between developed and developing countries that characterized earlier efforts, replacing it with a common framework that commits all countries to put forward their best efforts and to strengthen those efforts in the years ahead. This includes, for the first time, requirements that all parties report regularly on their emissions and implementation efforts, and undergo international review.

The agreement and a companion decision by parties were the key outcomes of the conference, known as the 21st session of the UNFCCC Conference of the Parties, or COP 21. Together, the Paris Agreement and the accompanying COP decision:

- Reaffirm the goal of limiting global temperature increase well below 2 degrees Celsius, while urging efforts to limit the increase to 1.5 degrees;
- Establish binding commitments by all parties to make "nationally determined contributions" (NDCs), and to pursue domestic measures aimed at achieving them;
- Commit all countries to report regularly on their emissions and "progress made in implementing and achieving" their NDCs, and to undergo international review;
- Commit all countries to submit new NDCs every five years, with the clear expectation that they will "represent a progression" beyond previous ones;
- Reaffirm the binding obligations of developed countries under the UNFCCC to support the efforts of developing countries, while for the first time encouraging voluntary contributions by developing countries too;
- Extend the current goal of mobilizing $100 billion a year in support by 2020 through 2025, with a new, higher goal to be set for the period after 2025;
- Extend a mechanism to address "loss and damage" resulting from climate change, which explicitly will not "involve or provide a basis for any liability or compensation;"
- Require parties engaging in international emissions trading to avoid "double counting;" and
- Call for a new mechanism, similar to the Clean Development Mechanism under the Kyoto Protocol, enabling emission reductions in one country to be counted toward another country's NDC (C2ES 2015a).

On June 1, 2017, President Trump announced the decision for the United States to withdraw from the Paris Climate Accord (White House 2017). The earliest possible effective withdrawal date by the United States cannot be before November 4, 2020. California remains committed to combating climate change through programs designed to reduce GHGs.

3.3.2 - Federal Regulations

Prior to the last decade, there were no concrete federal regulations of GHGs or major planning for climate change adaptation. Since then, federal activity has increased. The following are actions regarding the federal government, GHGs, and fuel efficiency.

Greenhouse Gas Endangerment. *Massachusetts v. EPA* (Supreme Court Case 05-1120) was argued before the United States Supreme Court on November 29, 2006, in which it was petitioned that the EPA regulate four GHGs, including carbon dioxide, under Section 202(a)(1) of the Clean Air Act. A decision was made on April 2, 2007, in which the Supreme Court found that GHGs are air pollutants covered by the Clean Air Act. The Court held that the Administrator must determine whether emissions of GHGs from new motor vehicles cause or contribute to air pollution, which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. On December 7, 2009, the EPA Administrator signed two distinct findings regarding GHGs under section 202(a) of the Clean Air Act:

- Endangerment Finding: The Administrator finds that the current and projected concentrations of the six key well-mixed greenhouse gases—carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride—in the atmosphere threaten the public health and welfare of current and future generations.
- Cause or Contribute Finding: The Administrator finds that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution, which threatens public health and welfare.

These findings do not impose requirements on industry or other entities. However, this was a prerequisite for implementing GHG emissions standards for vehicles, as discussed in the section "Clean Vehicles" below. After a lengthy legal challenge, the United States Supreme Court declined to review an Appeals Court ruling upholding the EPA Administrator findings (EPA 2009c).

Clean Vehicles. Congress first passed the Corporate Average Fuel Economy law in 1975 to increase the fuel economy of cars and light duty trucks. The law has become more stringent over time. On May 19, 2009, President Obama put in motion a new national policy to increase fuel economy for all new cars and trucks sold in the United States. On April 1, 2010, the EPA and the Department of Transportation's National Highway Safety Administration announced a joint final rule establishing a national program that would reduce GHG emissions and improve fuel economy for new cars and trucks sold in the United States.

The first phase of the national program applies to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. They require these vehicles to meet an estimated combined average emissions level of 250 grams of CO_2 per mile, equivalent to 35.5 miles per gallon; that is, if the automobile industry were to meet this CO_2 level solely through fuel economy improvements. Together, these standards would cut CO_2 emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012–2016). The EPA and the National Highway Safety Administration issued final rules on a second-phase joint rulemaking, establishing national standards for light-duty vehicles for model years 2017 through 2025 in August 2012 (EPA 2012b). The new standards for model years

2017 through 2025 apply to passenger cars, light-duty trucks, and medium duty passenger vehicles. The final standards are projected to result in an average industry fleetwide level of 163 grams/mile of CO_2 in model year 2025, which is equivalent to 54.5 miles per gallon if achieved exclusively through fuel economy improvements.

The EPA and the U.S. Department of Transportation issued final rules for the first national standards to reduce GHG emissions and improve fuel efficiency of heavy-duty trucks and buses on September 15, 2011, which became effective November 14, 2011. For combination tractors, the agencies are proposing engine and vehicle standards that began in the 2014 model year and achieve up to a 20-percent reduction in CO_2 emissions and fuel consumption by the 2018 model year. For heavy-duty pickup trucks and vans, the agencies are proposing separate gasoline and diesel truck standards, which phase in starting in the 2014 model year and achieve up to a 10-percent reduction for gasoline vehicles, and a 15-percent reduction for diesel vehicles by 2018 model year (12 and 17 percent respectively if accounting for air conditioning leakage). Lastly, for vocational vehicles, the engine and vehicle standards would achieve up to a 10-percent reduction in fuel consumption and CO_2 emissions from the 2014 to 2018 model years.

Mandatory Reporting of Greenhouse Gases. The Consolidated Appropriations Act of 2008, passed in December 2007, requires the establishment of mandatory GHG reporting requirements. On September 22, 2009, the EPA issued the Final Mandatory Reporting of Greenhouse Gases Rule, which became effective January 1, 2010. The rule requires reporting of GHG emissions from large sources and suppliers in the United States, and is intended to collect accurate and timely emissions data to inform future policy decisions. Under the rule, suppliers of fossil fuels or industrial GHGs, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions are required to submit annual reports to the EPA.

New Source Review. The EPA issued a final rule on May 13, 2010 that establishes thresholds for GHGs, which will define when permits under the New Source Review Prevention of Significant Deterioration and Title V Operating Permit programs are required for new and existing industrial facilities. This final rule "tailors" the requirements of these Clean Air Act permitting programs to limit which facilities will be required to obtain Prevention of Significant Deterioration and Title V permits. In the preamble to the revisions to the federal code of regulations, the EPA states:

> This rulemaking is necessary because without it the Prevention of Significant Deterioration and Title V requirements would apply, as of January 2, 2011, at the 100 or 250 tons per year levels provided under the Clean Air Act, greatly increasing the number of required permits, imposing undue costs on small sources, overwhelming the resources of permitting authorities, and severely impairing the functioning of the programs. EPA is relieving these resource burdens by phasing in the applicability of these programs to greenhouse gas sources, starting with the largest greenhouse gas emitters. This rule establishes two initial steps of the phase-in. The rule also commits the agency to take certain actions on future steps addressing smaller sources, but excludes certain smaller sources from Prevention of Significant Deterioration and Title V permitting for greenhouse gas emissions until at least April 30, 2016.

The EPA estimates that facilities responsible for nearly 70 percent of the national GHG emissions from stationary sources will be subject to permitting requirements under this rule. This includes the nation's largest GHG emitters—power plants, refineries, and cement production facilities.

Standards of Performance for Greenhouse Gas Emissions for New Stationary Sources: Electric Utility Generating Units. As required by a settlement agreement, the EPA proposed new performance standards for emissions of carbon dioxide for new, affected, fossil fuel-fired electric utility generating units on March 27, 2012. New sources greater than 25 megawatts would be required to meet an output based standard of 1,000 pounds of carbon dioxide per megawatt-hour, based on the performance of widely used natural gas combined cycle technology. President Trump signed the Executive Order on Energy Independence (E.O. 13783), which calls for a review of the Clean Power Plan. On October 16, 2017, the EPA issued the proposed rule Repeal of Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units an Energy Independence (EPA 2017).

Cap-and-Trade. Cap-and-trade refers to a policy tool where emissions are limited to a certain amount and can be traded, or provides flexibility on how the emitter can comply. There is no federal GHG Cap-and-Trade program currently; however, some states have joined to create initiatives to provide a mechanism for Cap-and-Trade.

The Regional Greenhouse Gas Initiative is an effort to reduce GHGs among the states of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont. Each state caps carbon dioxide emissions from power plants, auctions carbon dioxide emission allowances, and invests the proceeds in strategic energy programs that further reduce emissions, save consumers money, create jobs, and build a clean energy economy. The Initiative began in 2008.

The Western Climate Initiative partner jurisdictions have developed a comprehensive initiative to reduce regional GHG emissions to 15 percent below 2005 levels by 2020. The partners are California, British Columbia, Manitoba, Ontario, and Quebec. Currently only California and Quebec are participating in the Cap-and-Trade program (C2ES 2015).

3.3.3 - California

Legislative Actions to Reduce GHGs

The State of California legislature has enacted a series of bills that constitute the most aggressive program to reduce GHGs of any state in the nation. Some legislation such as the landmark AB 32 California Global Warming Solutions Act of 2006 was specifically enacted to address GHG emissions. Other legislation such as Title 24 and Title 20 energy standards were originally adopted for other purposes such as energy and water conservation, but also provide GHG reductions. This section describes the major provisions of the legislation.

AB 32. The California State Legislature enacted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires that GHGs emitted in California be reduced to 1990 levels by the year 2020. "Greenhouse gases" as defined under AB 32 include carbon dioxide, methane, NO_X, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Since AB 32 was enacted, a seventh

chemical, nitrogen trifluoride, has also been added to the list of GHGs. The ARB is the state agency charged with monitoring and regulating sources of GHGs. AB 32 states the following:

> Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems.

The ARB approved the 1990 GHG emissions level of 427 $MMTCO_2e$ on December 6, 2007 (ARB 2007). Therefore, to meet the State's target, emissions generated in California in 2020 are required to be equal to or less than 427 $MMTCO_2e$. Emissions in 2020 in a BAU scenario were estimated to be 596 $MMTCO_2e$, which do not account for reductions from AB 32 regulations (ARB 2008a). At that rate, a 28 percent reduction was required to achieve the 427 $MMTCO_2e$ 1990 inventory. In October 2010, ARB prepared an updated 2020 forecast to account for the effects of the 2008 recession and slower forecasted growth. The 2020 inventory without the benefits of adopted regulation is now estimated at 545 $MMTCO_2e$. Therefore, under the updated forecast, a 21.7 percent reduction from BAU is required to achieve 1990 levels (ARB 2010a).

Progress in Achieving AB 32 Targets and Remaining Reductions Required

The State has made steady progress in implementing AB 32 and achieving targets included in Executive Order S-3-05. The progress is evident in updated emission inventories prepared by ARB, which showed that the State inventory dropped below 1990 levels for the first time in 2016 (ARB 2018a). The 2017 Scoping Plan Update includes projections indicating that the State will meet or exceed the 2020 target with adopted regulations (ARB 2017).

ARB 2008 Scoping Plan. The ARB's Climate Change Scoping Plan (Scoping Plan) contains measures designed to reduce the State's emissions to 1990 levels by the year 2020 to comply with AB 32 (ARB 2008). The Scoping Plan identifies recommended measures for multiple GHG emission sectors and the associated emission reductions needed to achieve the year 2020 emissions target—each sector has a different emission reduction target. Most of the measures target the transportation and electricity sectors. As stated in the Scoping Plan, the key elements of the strategy for achieving the 2020 GHG target include:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards;
- Achieving a statewide renewables energy mix of 33 percent;
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system;
- Establishing targets for transportation-related GHG emissions for regions throughout California and pursuing policies and incentives to achieve those targets;

- Adopting and implementing measures pursuant to existing State laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard; and
- Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the State's long-term commitment to AB 32 implementation.

In addition, the Scoping Plan differentiates between "capped" and "uncapped" strategies. Capped strategies are subject to the proposed Cap-and-Trade program. The Scoping Plan states that the inclusion of these emissions within the Cap-and-Trade program will help ensure that the year 2020 emission targets are met despite some degree of uncertainty in the emission reduction estimates for any individual measure. Implementation of the capped strategies is calculated to achieve a sufficient amount of reductions by 2020 to achieve the emission target contained in AB 32. Uncapped strategies that will not be subject to the Cap-and-Trade emissions caps and requirements are provided as a margin of safety by accounting for additional GHG emission reductions (ARB 2008).

Cap-and-Trade Program. The Cap-and-Trade Program is a key element of the Scoping Plan. It sets a statewide limit on sources responsible for 85 percent of California's GHG emissions, and establishes a price signal needed to drive long-term investment in cleaner fuels and more efficient use of energy. The program is designed to provide covered entities the flexibility to seek out and implement the lowest cost options to reduce emissions. The program conducted its first auction in November 2012. Compliance obligations began for power plants and large industrial sources in January 2013. Other significant milestones include linkage to Quebec's Cap-and-Trade system in January 2014 and starting the compliance obligation for distributors of transportation fuels, natural gas, and other fuels in January 2015 (ARB 2015d).

The Cap-and-Trade Program provides a firm cap, ensuring that the 2020 statewide emission limit will not be exceeded. An inherent feature of the Cap-and-Trade program is that it does not guarantee GHG emissions reductions in any discrete location or by any particular source. Rather, GHG emissions reductions are guaranteed only on an accumulative basis. As summarized by ARB in the First Update:

> The Cap-and-Trade Regulation gives companies the flexibility to trade allowances with others or take steps to cost-effectively reduce emissions at their own facilities. Companies that emit more have to turn in more allowances or other compliance instruments. Companies that can cut their GHG emissions have to turn in fewer allowances. But as the cap declines, aggregate emissions must be reduced. In other words, a covered entity theoretically could increase its GHG emissions every year and still comply with the Cap-and-Trade Program if there is a reduction in GHG emissions from other covered entities. Such a focus on aggregate GHG emissions is considered appropriate because climate change is a global phenomenon, and the effects of GHG emissions are considered cumulative (ARB 2014b).

The Cap-and-Trade Program works with other direct regulatory measures and provides an economic incentive to reduce emissions. If California's direct regulatory measures reduce GHG emissions more than expected, then the Cap-and-Trade Program will be responsible for relatively fewer emissions reductions. If California's direct regulatory measures reduce GHG emissions less than expected, then the Cap-and-Trade Program will be responsible for relatively more emissions reductions. Thus, the Cap-and-Trade Program assures that California will meet its 2020 GHG emissions reduction mandate:

> The Cap-and-Trade Program establishes an overall limit on GHG emissions from most of the California economy—the "capped sectors." Within the capped sectors, some of the reductions are being accomplished through direct regulations, such as improved building and appliance efficiency standards, the [Low Carbon Fuel Standard] LCFS, and the 33 percent [Renewables Portfolio Standard] RPS. Whatever additional reductions are needed to bring emissions within the cap is accomplished through price incentives posed by emissions allowance prices. Together, direct regulation and price incentives assure that emissions are brought down cost-effectively to the level of the overall cap. The Cap-and-Trade Regulation provides assurance that California's 2020 limit will be met because the regulation sets a firm limit on 85 percent of California's GHG emissions. In sum, the Cap-and-Trade Program will achieve aggregate, rather than site specific or project-level, GHG emissions reductions. Also, due to the regulatory architecture adopted by ARB in AB 32, the reductions attributed to the Cap-and-Trade Program can change over time depending on the State's emissions forecasts and the effectiveness of direct regulatory measures (ARB 2014b).

The ARB approved the First Update to the Scoping Plan (Update) on May 22, 2014. The Update identified the next steps for California's climate change strategy. The Update shows how California continues on its path to meet the near-term 2020 GHG limit, but also sets a path toward long-term, deep GHG emission reductions. The report established a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050.

AB 398. The Governor signed AB 398 on July 25, 2017 to extend the Cap-and-Trade Program to 2030. The legislation includes provisions to ensure that offsets used by sources are limited to 4 percent of their compliance obligation from 2021 through 2025 and 6 percent from 2026 through 2030. AB 398 also prevents Air Districts from adopting or implementing emission reduction rules from stationary sources that are also subject to the Cap-and-Trade Program (CAR 2017).

SB 32. The Governor signed SB 32 on September 8, 2016. SB 32 now gives ARB the statutory responsibility to include the 2030 target previously contained in Executive Order B-30-15 in the 2017 Scoping Plan Update. SB 32 states that "In adopting rules and regulations to achieve the maximum technologically feasible and cost-effective greenhouse gas emissions reductions authorized by this division, the state [air resources] board shall ensure that statewide greenhouse gas emissions are reduced to at least 40 percent below the statewide greenhouse gas emissions limit no later than December 31, 2030." The 2017 Climate Change Scoping Plan Update addressing the SB 32 targets was adopted on December 14, 2017. The major elements of the framework proposed to achieve the 2030 target are as follows:

1. SB 350
   - Achieve 50 percent Renewables Portfolio Standard (RPS) by 2030.
   - Doubling of energy efficiency savings by 2030.
2. Low Carbon Fuel Standard (LCFS)
   - Increased stringency (reducing carbon intensity 18 percent by 2030, up from 10 percent in 2020).
3. Mobile Source Strategy (Cleaner Technology and Fuels Scenario)
   - Maintaining existing GHG standards for light- and heavy-duty vehicles.
   - Put 4.2 million zero-emission vehicles (ZEVs) on the roads.
   - Increase ZEV buses, delivery and other trucks.
4. Sustainable Freight Action Plan
   - Improve freight system efficiency.
   - Maximize use of near-zero emission vehicles and equipment powered by renewable energy.
   - Deploy over 100,000 zero-emission trucks and equipment by 2030.
5. Short-Lived Climate Pollutant (SLCP) Reduction Strategy
   - Reduce emissions of methane and hydrofluorocarbons 40 percent below 2013 levels by 2030.
   - Reduce emissions of black carbon 50 percent below 2013 levels by 2030.
6. SB 375 Sustainable Communities Strategies
   - Increased stringency of 2035 targets.
7. Post-2020 Cap-and-Trade Program
   - Declining caps, continued linkage with Québec, and linkage to Ontario, Canada.
   - ARB will look for opportunities to strengthen the program to support more air quality co-benefits, including specific program design elements. In Fall 2016, ARB staff described potential future amendments including reducing the offset usage limit, redesigning the allocation strategy to reduce free allocation to support increased technology and energy investment at covered entities and reducing allocation if the covered entity increases criteria or toxics emissions over some baseline.
8. 20 percent reduction in greenhouse gas emissions from the refinery sector.
9. By 2018, develop Integrated Natural and Working Lands Action Plan to secure California's land base as a net carbon sink (ARB 2017c).

SB 375—The Sustainable Communities and Climate Protection Act of 2008. SB 375 was signed into law on September 30, 2008. According to SB 375, the transportation sector is the largest contributor of GHG emissions, which emits over 40 percent of the total GHG emissions in California. SB 375 states, "Without improved land use and transportation policy, California will not be able to achieve the goals of AB 32." SB 375 does the following: (1) requires metropolitan planning organizations to include sustainable community strategies in their regional transportation plans for reducing GHG emissions, (2) aligns planning for transportation and housing, and (3) creates specified incentives for the implementation of the strategies.

Concerning CEQA, SB 375—as codified in Public Resources Code Section 21159.28—states that CEQA findings determinations for certain projects are not required to reference, describe, or discuss (1) growth-inducing impacts or (2) any project-specific or cumulative impacts from cars and light-duty truck trips generated by the project on global warming or the regional transportation network if the project:

1. Is in an area with an approved Sustainable Communities Strategy or an alternative planning strategy that the ARB accepts as achieving the greenhouse gas emission reduction targets;
2. Is consistent with that strategy (in designation, density, building intensity, and applicable policies); and
3. Incorporates the mitigation measures required by an applicable prior environmental document.

The ARB has prepared the Proposed Update to the SB 375 Greenhouse Gas Emission Reduction Targets. The update includes an increase in the 2035 target for Fresno County from 10 percent to 13 percent (ARB 2018).

AB 1493 Pavley Regulations and Fuel Efficiency Standards. California AB 1493, enacted on July 22, 2002, required the ARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. Implementation of the regulation was delayed by lawsuits filed by automakers and by the EPA's denial of an implementation waiver. The EPA subsequently granted the requested waiver in 2009, which was upheld by the by the U.S. District Court for the District of Columbia in 2011 (ARB 2013d).

The standards were phased in during the 2009 through 2016 model years. When fully phased in, the near-term (2009–2012) standards resulted in an approximately 22 percent reduction compared with the 2002 fleet, and the mid-term (2013–2016) standards resulted in about a 30 percent reduction. Several technologies stand out as providing significant reductions in emissions at favorable costs. These include discrete variable valve lift or camless valve actuation to optimize valve operation, rather than relying on fixed valve timing and lift as has historically been done; turbocharging to boost power and allow for engine downsizing; improved multi-speed transmissions; and improved air conditioning systems that operate optimally, leak less, and/or use an alternative refrigerant (ARB 2013e).

The second phase of the implementation for the Pavley bill was incorporated into Amendments to the Low-Emission Vehicle Program referred to as LEV III or the Advanced Clean Cars program. The Advanced Clean Car program combines the control of smog-causing pollutants and GHG emissions into a single coordinated package of requirements for model years 2017 through 2025. The regulation will reduce GHGs from new cars by 34 percent from 2016 levels by 2025. The rules will reduce pollutants from gasoline and diesel-powered cars, and deliver increasing numbers of zero-emission technologies, such as full battery electric cars, newly emerging plug-in hybrid electric vehicles, and hydrogen fuel cell cars. The regulations will also ensure adequate fueling infrastructure is available for the increasing numbers of hydrogen fuel cell vehicles planned for deployment in California (ARB 2011a).

SB 1368—Emission Performance Standards. In 2006, the State Legislature adopted SB 1368, which was subsequently signed into law by the governor. SB 1368 directs the California Public Utilities Commission to adopt a performance standard for GHG emissions for the future power purchases of California utilities. SB 1368 seeks to limit carbon emissions associated with electrical energy consumed in California by forbidding procurement arrangements for energy longer than 5 years from resources that exceed the emissions of a relatively clean, combined cycle natural gas power plant. Because of the carbon content of its fuel source, a coal-fired plant cannot meet this standard because such plants emit roughly twice as much carbon as natural gas, combined cycle plants. Accordingly, the new law effectively prevents California's utilities from investing in, otherwise financially supporting, or purchasing power from new coal plants located in or out of the State. The California Public Utilities Commission adopted the regulations required by SB 1368 on August 29, 2007. The regulations implementing SB 1368 establish a standard for baseload generation owned by, or under long-term contract to publicly owned utilities, of 1,100 lbs. CO_2 per megawatt-hour (MWh).

SB 1078—Renewable Electricity Standards. On September 12, 2002, Governor Gray Davis signed SB 1078, requiring California to generate 20 percent of its electricity from renewable energy by 2017. SB 107 changed the due date to 2010 instead of 2017. On November 17, 2008, Governor Arnold Schwarzenegger signed Executive Order S-14-08, which established a Renewable Portfolio Standard target for California requiring that all retail sellers of electricity serve 33 percent of their load with renewable energy by 2020. Governor Schwarzenegger also directed the ARB (Executive Order S-21-09) to adopt a regulation by July 31, 2010, requiring the State's load serving entities to meet a 33 percent renewable energy target by 2020 The ARB approved the Renewable Electricity Standard on September 23, 2010 by Resolution 10-23. In 2011, the state legislature adopted this higher standard in SB X1-2. Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas.

SB 350—Clean Energy and Pollution Reduction Act of 2015. The legislature approved and the governor then signed SB 350 on October 7, 2015, which reaffirms California's commitment to reducing its GHG emissions and addressing climate change. Key provisions include an increase in the RPS, higher energy efficiency requirements for buildings, initial strategies towards a regional electricity grid, and improved infrastructure for electric vehicle charging stations. Provisions for a 50 percent reduction in the use of petroleum statewide were removed from the Bill because of opposition and concern that it would prevent the Bill's passage. Specifically, SB 350 requires the following to reduce statewide GHG emissions:

- Increase the amount of electricity procured from renewable energy sources from 33 percent to 50 percent by 2030, with interim targets of 40 percent by 2024, and 25 percent by 2027.
- Double the energy efficiency in existing buildings by 2030. This target will be achieved through the California Public Utility Commission (CPUC), the California Energy Commission (CEC), and local publicly owned utilities.
- Reorganize the Independent System Operator (ISO) to develop more regional electricity transmission markets and improve accessibility in these markets, which will facilitate the growth of renewable energy markets in the western United States (California Leginfo 2015).

SB 100—California Renewables Portfolio Standard Program. The Governor approved SB 100 on September 10, 2018. The legislation revised the Renewable Portfolio Standard goals to achieve the 50 percent renewable resources target by December 31, 2026, and to achieve a 60 percent target by December 31, 2030. The bill would require that retail sellers and local publicly owned electric utilities procure a minimum quantity of electricity products from eligible renewable energy resources so that the total kilowatt hours of those products sold to their retail end-use customers achieve 44 percent of retail sales by December 31, 2024, 52 percent by December 31, 2027, and 60 percent by December 31, 2030 (California Leginfo 2018).

SBX 7-7—The Water Conservation Act of 2009. The legislation directs urban retail water suppliers to set individual 2020 per capita water use targets and begin implementing conservation measures to achieve those goals. Meeting this statewide goal of 20 percent decrease in demand will result in a reduction of almost 2 million acre-feet in urban water use in 2020.

Executive Orders Related to GHG Emissions

California's Executive Branch has taken several actions to reduce GHGs through the use of executive orders. Although not regulatory, they set the tone for the State and guide the actions of state agencies.

Executive Order S-3-05. On June 1, 2005, former California Governor Arnold Schwarzenegger announced through Executive Order S-3-05, the following reduction targets for GHG emissions:

- By 2010, reduce greenhouse gas emissions to 2000 levels.
- By 2020, reduce greenhouse gas emissions to 1990 levels.
- By 2050, reduce greenhouse gas emissions to 80 percent below 1990 levels.

The 2050 reduction goal represents what some scientists believe is necessary to reach levels that will stabilize the climate. The 2020 goal was established to be a mid-term target. Because this is an executive order, the goals are not legally enforceable for local governments or the private sector.

Executive Order B-30-15. On April 29, 2015, Governor Edmund G. Brown Jr. issued an executive order to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. The Governor's executive order aligns California's GHG reduction targets with those of leading international governments ahead of the United Nations Climate Change Conference in Paris late 2015. The executive order sets a new interim statewide GHG emission reduction target to reduce GHG emissions to 40 percent below 1990 levels by 2030 in order to ensure California meets its target of reducing GHG emissions to 80 percent below 1990 levels by 2050, and directs the ARB to update the Climate Change Scoping Plan to express the 2030 target in terms of $MMTCO_2e$. The executive order also requires the State's climate adaptation plan to be updated every three years and for the State to continue its climate change research program, among other provisions. As with Executive Order S-3-05, this executive order is not legally enforceable against local governments and the private sector. Legislation that would update AB 32 to provide post-2020 targets was signed by the Governor in 2016. SB 32 includes a 2030 mandate matching the requirements of the Executive Order.

Executive Order S-01-07—Low Carbon Fuel Standard. The governor signed Executive Order S 01-07 on January 18, 2007. The order mandates that a statewide goal shall be established to reduce the

carbon intensity of California's transportation fuels by at least 10 percent by 2020. In particular, the executive order established a Low Carbon Fuel Standard (LCFS) and directed the Secretary for Environmental Protection to coordinate the actions of the California Energy Commission, the ARB, the University of California, and other agencies to develop and propose protocols for measuring the "life-cycle carbon intensity" of transportation fuels. This analysis supporting development of the protocols was included in the State Implementation Plan for alternative fuels (State Alternative Fuels Plan adopted by California Energy Commission on December 24, 2007) and was submitted to ARB for consideration as an "early action" item under AB 32. The ARB adopted the Low Carbon Fuel Standard on April 23, 2009.

The Low Carbon Fuel Standard was subject to legal challenge in 2011. Ultimately, ARB was required to bring a new LCFS regulation to the Board for consideration in February 2015. The proposed LCFS regulation was required to contain revisions to the 2010 LCFS as well as new provisions designed to foster investments in the production of the low-carbon fuels, offer additional flexibility to regulated parties, update critical technical information, simplify and streamline program operations, and enhance enforcement. The Office of Administrative Law (OAL) approved the regulation on November 16, 2015 (ARB 2015e). The regulation was last amended in 2018.

Executive Order S-13-08. Executive Order S-13-08 states that "climate change in California during the next century is expected to shift precipitation patterns, accelerate sea level rise and increase temperatures, thereby posing a serious threat to California's economy, to the health and welfare of its population and to its natural resources." Pursuant to the requirements in the order, the 2009 California Climate Adaptation Strategy (California Natural Resources Agency 2009) was adopted, which is the ". . . first statewide, multi-sector, region-specific, and information-based climate change adaptation strategy in the United States." Objectives include analyzing risks of climate change in California, identifying and exploring strategies to adapt to climate change, and specifying a direction for future research.

Executive Order B-55-18. Executive Order B-55-18 issued by Governor Brown on September 10, 2018 establishes a new statewide goal to achieve carbon neutrality as soon as possible, but no later than 2045, and achieve and maintain net negative emissions thereafter. The executive order directs ARB to work with relevant state agencies to develop a framework for implementation and accounting that tracks progress toward this goal (Brown 2018).

California Regulations and Building Codes

California has a long history of adopting regulations to improve energy efficiency in new and remodeled buildings. These regulations have kept California's energy consumption relatively flat even with rapid population growth.

Title 20 Appliance Efficiency Regulations. California Code of Regulations, Title 20: Division 2, Chapter 4, Article 4, Sections 1601–1608: Appliance Efficiency Regulations regulates the sale of appliances in California. The Appliance Efficiency Regulations include standards for both federally regulated appliances and non-federally regulated appliances. Twenty-three categories of appliances are included in the scope of these regulations including lighting, air conditioning, and most home appliances. The standards within these regulations apply to appliances that are sold or offered for sale in California, except those sold wholesale in California for final retail sale outside the State and

those designed and sold exclusively for use in recreational vehicles or other mobile equipment (CEC 2018a).

Title 24 Energy Efficiency Standards. California Code of Regulations Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings, was first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficient technologies and methods. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions. The most current 2016 Building Energy Efficiency Standards went into effect on January 1, 2017 (CEC 2016). The 2019 Building Energy Efficiency Standards went into effect on January 1, 2020 (CEC 2018b).

Title 24 California Green Building Standards Code (California Code of Regulations Title 24, Part 11 code) is a comprehensive and uniform regulatory code for all residential, commercial, and school buildings that went in effect January 1, 2011. The code is updated on a regular basis, with the most recent update consisting of the 2016 California Green Building Code Standards that became effective January 1, 2017. Local jurisdictions are permitted to adopt more stringent requirements, as state law provides methods for local enhancements. The Code recognizes that many jurisdictions have developed existing construction and demolition ordinances, and defers to them as the ruling guidance provided they include a minimum 50-percent diversion requirement. The code also provides exemptions for areas not served by construction and demolition recycling infrastructure. State building code provides the minimum standard that buildings need to meet in order to be certified for occupancy, which is generally enforced by the local building official.

The California Green Building Standards Code (California Code of Regulations Title 24, Part 11 code) requires:

- **Short-term bicycle parking**. If a commercial project is anticipated to generate visitor traffic, provide permanently anchored bicycle racks within 200 feet of the visitors' entrance, readily visible to passers-by, for five percent of visitor motorized vehicle parking capacity, with a minimum of one two-bike capacity rack (5.106.4.1.1).
- **Long-term bicycle parking**. For buildings with over 10 tenant-occupants, provide secure bicycle parking for five percent of tenant-occupied motorized vehicle parking capacity, with a minimum of one space (5.106.4.1.2).
- **Designated parking**. Provide designated parking in commercial projects for any combination of low-emitting, fuel-efficient and carpool/van pool vehicles as shown in Table 5.106.5.2 (5.106.5.2).
- **Recycling by Occupants**. Provide readily accessible areas that serve the entire building and are identified for the depositing, storage, and collection of nonhazardous materials for recycling. (5.410.1).
- **Construction waste**. A minimum 50-percent diversion of construction and demolition waste from landfills, increasing voluntarily to 65 and 80 percent for new homes and 80-percent for commercial projects. (5.408.1, A5.408.3.1 [nonresidential], A5.408.3.1 [residential]). All (100

percent) of trees, stumps, rocks and associated vegetation and soils resulting from land clearing shall be reused or recycled (5.408.3).

- **Wastewater reduction**. Each building shall reduce the generation of wastewater by one of the following methods:
  1. The installation of water-conserving fixtures or
  2. Using nonpotable water systems (5.303.4).
- **Water use savings**. Twenty percent mandatory reduction in indoor water use with voluntary goal standards for 30, 35, and 40 percent reductions (5.303.2, A5303.2.3 [nonresidential]).
- **Water meters**. Separate water meters for buildings in excess of 50,000 square feet or buildings projected to consume more than 1,000 gallons per day (5.303.1).
- **Irrigation efficiency**. Moisture-sensing irrigation systems for larger landscaped areas (5.304.3).
- **Materials pollution control**. Low-pollutant emitting interior finish materials such as paints, carpet, vinyl flooring, and particleboard (5.404).
- **Building commissioning**. Mandatory inspections of energy systems (i.e., heat furnace, air conditioner, mechanical equipment) for nonresidential buildings over 10,000 square feet to ensure that all are working at their maximum capacity according to their design efficiencies (5.410.2).

Model Water Efficient Landscape Ordinance. The Model Water Efficient Landscape Ordinance (Ordinance) was required by AB 1881 Water Conservation Act. The bill required local agencies to adopt a local landscape ordinance at least as effective in conserving water as the Model Ordinance by January 1, 2010. Reductions in water use of 20 percent consistent with (SBX-7-7) 2020 mandate are expected for the ordinance. Governor Brown's Drought Executive Order of April 1, 2015 (EO B-29-15) directed DWR to update the ordinance through expedited regulation. The California Water Commission approved the revised ordinance on July 15, 2015, which became effective on December 15, 2015. New development projects that include landscaped areas of 500 square feet or more are subject to the ordinance. The update requires:

- More efficient irrigation systems
- Incentives for graywater usage
- Improvements in on-site stormwater capture
- Limiting the portion of landscapes that can be planted with high water use plants
- Reporting requirements for local agencies.

SB 97 and the CEQA Guidelines Update. Passed in August 2007, SB 97 added Section 21083.05 to the Public Resources Code. The code states: "(a) On or before July 1, 2009, the Office of Planning and Research shall prepare, develop, and transmit to the Resources Agency guidelines for the mitigation of GHG emissions or the effects of GHG emissions as required by this division, including, but not limited to, effects associated with transportation or energy consumption. (b) On or before January 1, 2010, the Resources Agency shall certify and adopt guidelines prepared and developed by the Office of Planning and Research pursuant to subdivision (a)."

Section 21097 was also added to the Public Resources Code. This provided an exemption until January 1, 2010 for transportation projects funded by the Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006, or projects funded by the Disaster Preparedness and Flood Prevention Bond Act of 2006—in stating that the failure to analyze adequately the effects of GHGs would not violate CEQA. The Natural Resources Agency completed the approval process and the Amendments became effective on March 18, 2010. The Natural Resources Agency adopted additional amendments related to greenhouse gases in the 2019 CEQA Guidelines Update adopted on December 28, 2018.

The 2010 CEQA Amendments along with the 2019 CEQA Amendments provide guidance to public agencies regarding the analysis and mitigation of the effects of GHG emissions in CEQA documents. The CEQA Amendments fit within the existing CEQA framework by amending existing CEQA Guidelines to reference climate change.

Section 15064.4(b) of the CEQA Guidelines provides direction for lead agencies for assessing the significance of impacts of GHG emissions:

- The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting;
- Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; or
- The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. Such regulations or requirements must be adopted by the relevant public agency through a public review process and must include specific requirements that reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project. In determining the significance of impacts, the lead agency may consider a project's consistency with the State's long-term climate goals or strategies, provided that substantial evidence supports the agency's analysis of how those goals or strategies address the project's incremental contribution to climate change and its conclusion that the project's incremental contribution is not cumulatively considerable.

Section 15064.4(c) states that a lead agency may use a model or methodology to estimate greenhouse gas emissions resulting from a project. The lead agency has discretion to select the model or methodology it considers most appropriate to enable decision makers to intelligently take into account the project's incremental contribution to climate change. The lead agency must support its selection of a model or methodology with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use.

The 2019 CEQA Guidelines include the following discussion regarding thresholds of significance.

> (d) Using environmental standards as thresholds of significance promotes consistency in significance determinations and integrates environmental review with

other environmental program planning and regulation. Any public agency may adopt or use an environmental standard as a threshold of significance. In adopting or using an environmental standard as a threshold of significance, a public agency shall explain how the particular requirements of that environmental standard reduce project impacts, including cumulative impacts, to a level that is less than significant, and why the environmental standard is relevant to the analysis of the project under consideration. For the purposes of this subdivision, an "environmental standard" is a rule of general application that is adopted by a public agency through a public review process and that is all of the following:

(1) a quantitative, qualitative or performance requirement found in an ordinance, resolution, rule, regulation, order, plan or other environmental requirement;
(2) adopted for the purpose of environmental protection;
(3) addresses the environmental effect caused by the project; and,
(4) applies to the project under review.

In addition, the 2019 amendments revised Appendix G Checklist questions to include a new question specifically on energy conservation.

CEQA emphasizes that the effects of GHG emissions are cumulative and should be analyzed in the context of CEQA's requirements for cumulative impacts analysis (see CEQA Guidelines Section 15130(f)).

California Supreme Court GHG Ruling

A November 30, 2015 ruling, the *California Supreme Court in Center for Biological Diversity (CBD) v. California Department of Fish and Wildlife (CDFW)* on the Newhall Ranch project, concluded that whether the project was consistent with meeting statewide emission reduction goals is a legally permissible criterion of significance, but the significance finding for the project was not supported by a reasoned explanation based on substantial evidence. The Court offered potential solutions on pages 25 to 27 of the ruling to address this issue summarized below.

Specifically, the Court advised that:

- **Substantiation of Project Reductions from BAU.** A lead agency may use a BAU comparison based on the Scoping Plan's methodology if it also substantiates the reduction a particular project must achieve to comply with statewide goals. The Court suggested a lead agency could examine the "data behind the Scoping Plan's business-as-usual model" to determine the necessary project-level reductions from new land use development at the proposed location (p. 25).
- **Compliance with Regulatory Programs or Performance Based Standards.** "A lead agency might assess consistency with A.B. 32's goal in whole or part by looking to compliance with regulatory programs designed to reduce greenhouse gas emissions from particular activities. (See Final Statement of Reasons, supra, at p. 64 [greenhouse gas emissions 'may be best analyzed and mitigated at a programmatic level.'].) To the extent a project's design features comply with or exceed the regulations outlined in the Scoping Plan and adopted by the Air Resources Board or other state agencies, a lead agency could appropriately rely on their use

as showing compliance with 'performance based standards' adopted to fulfill 'a statewide . . . plan for the reduction or mitigation of greenhouse gas emissions.' (CEQA Guidelines § 15064.4(a)(2), (b)(3); see also id., § 15064(h)(3) [determination that impact is not cumulatively considerable may rest on compliance with previously adopted plans or regulations, including 'plans or regulations for the reduction of greenhouse gas emissions'].)" (p. 26).

- **Compliance with GHG Reduction Plans or Climate Action Plans (CAPs).** A lead agency may utilize "geographically specific GHG emission reduction plans" such as climate action plans or greenhouse gas emission reduction plans to provide a basis for the tiering or streamlining of project-level CEQA analysis (p. 26).
- **Compliance with Local Air District Thresholds.** A lead agency may rely on "existing numerical thresholds of significance for greenhouse gas emissions" adopted by, for example, local air districts (p. 27).

Therefore, consistent with CEQA Guidelines Appendix G, the three factors identified in CEQA Guidelines Section 15064.4 and the recently issued Newhall Ranch opinion, the GHG impacts would be considered significant if the project would:

- Conflict with a compliant GHG Reduction Plan if adopted by the lead agency;
- Exceed the SJVAPCD GHG Reduction Threshold; or
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emission of GHGs.

3.3.4 - San Joaquin Valley Air Pollution Control District

Climate Change Action Plan

On August 21, 2008, the SJVAPCD Governing Board approved a proposal called the Climate Change Action Plan (CCAP). The CCAP began with a public process bringing together stakeholders, land use agencies, environmental groups, and business groups to conduct public workshops to develop comprehensive policies for CEQA guidelines, a carbon exchange bank, and voluntary GHG emissions mitigation agreements for the Board's consideration. The CCAP contains the following goals and actions:

- Develop GHG significance thresholds to address CEQA projects with GHG emission increases.
- Develop the San Joaquin Valley Carbon Exchange for banking and trading GHG reductions.
- Authorize use of the SJVAPCD's existing inventory reporting system to allow use for GHG reporting required by AB 32 regulations.
- Develop and administer GHG reduction agreements to mitigate proposed emission increases from new projects.
- Support climate protection measures that reduce greenhouse gas emissions as well as toxic and criteria pollutants. Oppose measures that result in a significant increase in toxic or criteria pollutant emissions in already impacted areas.

On December 17, 2009, the SJVAPCD Governing Board adopted "Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA," and the policy "District Policy—Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency." The SJVAPCD concluded that the existing science is inadequate to support quantification of the impacts that project-specific GHG emissions have on global climatic change. The SJVAPCD found the effects of project-specific emissions to be cumulative, and without mitigation, their incremental contribution to global climatic change could be considered cumulatively considerable. The SJVAPCD found that this cumulative impact is best addressed by requiring all projects to reduce their GHG emissions, whether through project design elements or mitigation.

The SJVAPCD's approach is intended to streamline the process of determining if project-specific GHG emissions would have a significant effect. Projects exempt from the requirements of CEQA, and projects complying with an approved plan or mitigation program would be determined to have a less than significant cumulative impact. Such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources, and must have a certified final CEQA document.

For non-exempt projects, those projects for which there is no applicable approved plan or program, or those projects not complying with an approved plan or program, the lead agency must evaluate the project against performance-based standards and would require the adoption of design elements, known as a Best Performance Standard, to reduce GHG emissions. The Best Performance Standards (BPS) have not yet fully been established, though they must be designed to achieve a 29 percent reduction when compared with the BAU projections identified in ARB's AB 32 Scoping Plan.

BAU represents the emissions that would occur in 2020 if the average baseline emissions during the 2002–2004 period were grown to 2020 levels, without control. Thus, these standards would carry with them pre-quantified emissions reductions, eliminating the need for project-specific quantification. Therefore, projects incorporating BPS would not require specific quantification of GHG emissions, and automatically would be determined to have a less than significant cumulative impact for GHG emissions.

For stationary source permitting projects, BPS means, "The most stringent of the identified alternatives for control of GHG emissions, including type of equipment, design of equipment and operational and maintenance practices, which are achieved-in-practice for the identified service, operation, or emissions unit class." The SJVAPCD has identified BPS for the following sources: boilers; dryers and dehydrators; oil and gas extraction; storage, transportation, and refining operations; cogeneration; gasoline dispensing facilities; volatile organic compound control technology; and steam generators.

For development projects, BPS means, "Any combination of identified GHG emission reduction measures, including project design elements and land use decisions that reduce project-specific GHG emission reductions by at least 29 percent compared with business as usual."

Projects not incorporating BPS would require quantification of GHG emissions and demonstration that BAU GHG emissions have been reduced or mitigated by 29 percent. As stated earlier, ARB's

adjusted inventory reduced the amount required by the State to achieve 1990 emission levels from 29 percent to 21.7 percent to account for slower growth experienced since the 2008 recession. According to SJVAPCD guidance, quantification of GHG emissions would be required for all projects for which the lead agency has determined that an environmental impact report is required, regardless of whether the project incorporates BPS. The SJVAPCD has not yet adopted BPS for development projects, so quantification of project emissions is required.

San Joaquin Valley Carbon Exchange

The SJVAPCD initiated work on the San Joaquin Valley Carbon Exchange in November 2008. The purpose of the carbon exchange is to quantify, verify, and track voluntary GHG emissions reductions generated within the San Joaquin Valley. However, the SJVAPCD has pursued an alternative strategy that incorporates the GHG emissions into its existing Rule 2301—Emission Reduction Credit Offset Banking that formerly only addressed criteria pollutants. The SJVAPCD is also participating with the California Air Pollution Control Officers Association (CAPCOA), of which it is a member, in the CAPCOA Greenhouse Gas Reduction Exchange (GHG Rx). The GHG Rx is operated cooperatively by air districts that have elected to participate. Participating districts have signed a Memorandum of Understanding (MOU) with CAPCOA and agree to post only those credits that meet the Rx standards for quality. The objective is to provide a secure, low-cost, high-quality greenhouse gas exchange for credits created in California. The GHG Rx is intended to help fulfill compliance obligations or mitigation needs of local projects subject to environmental review, reducing the uncertainty of using credits generated in distant locations. The SJVAPCD currently has no credits posted to the GHG Rx website as of this writing (CAPCOA 2018).

Rule 2301

While the Climate Change Action Plan indicated that the GHG emission reduction program would be called the San Joaquin Valley Carbon Exchange, the District incorporated a method to register voluntary GHG emission reductions into its existing Rule 2301—Emission Reduction Credit Banking through amendments of the rule. Amendments to the rule were adopted on January 19, 2012. The purposes of the amendments to the rule include the following:

- Provide an administrative mechanism for sources to bank voluntary GHG emission reductions for later use.
- Provide an administrative mechanism for sources to transfer banked GHG emission reductions to others for any use.
- Define eligibility standards, quantitative procedures, and administrative practices to ensure that banked GHG emission reductions are real, permanent, quantifiable, surplus, and enforceable.

Fresno Council of Governments

Regional Transportation Plan

The Fresno Council of Governments (Fresno COG) is the Regional Transportation Planning Agency (RTPA) for the Fresno County region. The Fresno COG adopted the 2014 Regional Transportation Plan/Sustainable Community Strategy (RTP/SCS) that included the County's first Sustainable Community Strategy to comply with SB 375. The RTP is a planning document prepared in

cooperation with the Federal Highway Administration (FHWA), Federal Transit Administration (FTA), the California Department of Transportation (Caltrans), and other stakeholders, including transportation system users. The SCS is intended to show how integrated land use and transportation planning can lead to lower greenhouse gas (GHG) emissions from autos and light trucks. SB 375 includes the following four primary findings related to the RTP/SCS development process:

- SB 375 required the ARB to develop regional GHG emission reduction targets for cars and light trucks for each of the 18 MPOs in California, including Fresno COG. ARB approved targets for the San Joaquin Valley in January 2013. The target for Fresno is a per capita reduction in GHG emissions from passenger vehicle travel of five percent by 2020 and 10 percent by 2035 relative to 2005 levels. The 2018 RTP indicates that the County continues to pursue the 5 percent reduction by 2020 and 10 percent reduction by 2035 (Fresno COG 2018).
- SB 375 required the preparation of an SCS. Fresno COG included a SCS that specifies how the GHG emission reduction target set by ARB will be achieved in the RTP. If the target cannot be met through the SCS, then an Alternative Planning Strategy (APS) shall be prepared by Fresno COG. Chapter 4 of the 2014 RTP includes the SCS for Fresno COG. Chapter 3 of the 2018 RTP includes the updated SCS.
- SB 375 streamlines CEQA requirements for specific residential and mixed-use developments that are consistent with the Fresno County SCS or APS (as determined by ARB) to achieve regional GHG emissions reduction target.

The 2018 RTP/SCS was adopted by Fresno COG on July 26, 2018 and reflects its latest regional vehicle miles traveled (VMT) targets (Fresno COG 2018).

3.3.5 - Local

The City of Clovis does not currently have formal GHG emissions reduction plans or recommended emissions thresholds for determining significance associated with GHG emissions from development projects. However, the General Plan includes goals and policies to reduce GHG emissions that are listed below.

General Plan

The City of Clovis adopted its 2014 General Plan in August 2014 (City of Clovis 2015a). The 2014 General Plan includes the following applicable goals and policies related to improving air quality that may also co-benefit climate change impacts:

Air Quality Element

- **Goal 1:** A local environment that is protected from air pollution and emissions.
  - **Policy 1.1: Land use and transportation.** Reduce greenhouse gas and other local pollutant emissions through mixed use and transit-oriented development and well-designed transit, pedestrian, and bicycle systems.
  - **Policy 1.6: Alternative fuel infrastructure.** Encourage public and private activity and employment centers to incorporate electric charging and alternative fuel stations.

- **Policy 1.8: Trees.** Maintain or plant trees where appropriate to provide shade, absorb carbon, improve oxygenation, slow stormwater runoff, and reduce the heat island effect.

- **Goal 2:** A region with healthy air quality and lower greenhouse gas emissions.
  - **Policy 2.1: Regional coordination.** Support regional efforts to reduce air pollution (criteria air pollutants and greenhouse gas emissions) and collaborate with other agencies to improve air quality at the emission source and reduce vehicle miles traveled.
  - **Policy 2.2: Cross-jurisdictional issues.** Collaborate with regional agencies and surrounding jurisdictions to address cross-jurisdictional transportation and air quality issues.
  - **Policy 2.6**: **Innovative mitigation.** Encourage innovative mitigation measures to reduce air quality impacts by coordinating with the SJVAPCD, project applicants, and other interested parties.

Circulation Element

- **Goal 1:** A context-sensitive and "complete streets" transportation network that prioritizes effective connectivity and accommodates a comprehensive range of mobility needs.
  - **Policy 1.1: Multimodal network.** The City shall plan, design, operate, and maintain the transportation network to promote safe and convenient travel for all users: pedestrian, bicyclists, transit riders, freight, and motorists.
  - **Policy 1.2: Transportation decisions.** Decisions should balance the comfort, convenience, and safety of pedestrians, bicyclists, and motorists.
  - **Policy 1.4: Jobs and housing.** Encourage infill development that would provide jobs and services closer to housing, and vice versa, to reduce citywide vehicle miles traveled and effectively utilize the existing transportation infrastructure.
  - **Policy 1.5: Neighborhood connectivity.** The transportation network shall provide multimodal access between neighborhoods and neighborhood-serving uses (educational, recreational, or neighborhood commercial uses).
- **Goal 3:** A multimodal transportation network that is safe and comfortable in the context of adjacent neighborhoods.
  - **Policy 3.11: Right-of-way design.** Design landscaped parkways, medians, and right-of-ways as aesthetic buffers to improve the community's appearance and encourage non-motorized transportation.
- **Goal 5:** A complete system of trails and pathways accessible to all residents.
  - **Policy 5.1: Complete street amenities.** Upgrade existing streets and design new streets to include complete street amenities, prioritizing improvements to bicycle and pedestrian connectivity or safety (consistent with the Bicycle Transportation Master Plan and other master plans).
  - **Policy 5.2: Development-funded facilities.** Require development to fund and construct facilities as shown in the Bicycle Transportation Plan when facilities are in or adjacent to the development.
  - **Policy 5.3: Pathways.** Encourage pathways and other pedestrian amenities in urban centers and new development 10 acres or larger.
  - **Policy 5.4: Homeowner associations.** The city may require homeowner associations to maintain pathways and other bicycle and pedestrian facilities within the homeowner association area.

- **Policy 5.5: Pedestrian access.** Require sidewalks, paths, and crosswalks to provide access to schools, parks, and other activity centers and to provide general pedestrian connectivity throughout the city.

Land Use Element

- **Goal 3:** Orderly and sustainable outward growth into three urban centers with neighborhoods that provide a balanced mix of land uses and development types to support a community lifestyle and small town character.
  - **Policy 3.9: Connected development.** New development in urban centers must fully improve roadway, pedestrian, and bicycle systems within and adjacent to the proposed project and connect to existing urbanized development.

Open Space and Conservation Element

- **Goal 3:** A built environment that conserves and protects the use and quality of water and energy resources.
  - **Policy 3.4: Drought-tolerant landscaping.** Promote water conservation through use of drought-tolerant landscaping on existing and new residential properties. Require drought-tolerant landscaping for all new commercial and industrial development and city-maintained landscaping, unless used for recreation purposes.
  - **Policy 3.5: Energy and water conservation.** Encourage new development and substantial rehabilitation projects to exceed energy and water conservation and reduction standards set in the California Building Code.
  - **Policy 3.6: Renewable Energy.** Promote the use of renewable and sustainable energy sources to serve public and private sector development.
  - **Policy 3.7: Construction and design.** Encourage new construction to incorporate energy efficient building and site design strategies.

City of Clovis General Plan Program EIR (PEIR)

The General Plan PEIR (City of Clovis 2015b) includes the following discussion regarding reducing GHG emissions associated with the General Plan Update:

> Prior to issuance of construction permits, the City of Clovis Planning Division shall require that applicants for new development projects submit documentation showing that greenhouse gas (GHG) emissions meet a 29 percent reduction from BAU in accordance with the methodology identified by the San Joaquin Valley Air Pollution Control District (SJVAPCD). The documentation shall identify measures to be incorporated into the considered project that would reduce GHG emissions from BAU. Such measures include but are not limited to the following:
>
> - Provide a pedestrian access network that internally links all uses and connects to existing external streets and pedestrian facilities.
> - Provide the minimum number of parking spaces required.
> - Create a shared parking program, as feasible.
> - Provide bicycle end-of-trip facilities (e.g., bike parking, showers, and lockers).

- Develop rideshare and ride-matching assistance programs.
- For planned residential development, design and incorporate a neighborhood electric vehicle system.
- Design buildings to be electric vehicle charging-station-ready.
- Coordinate with the City of Clovis and/or the Fresno Area Express to install bus stops at or near the project site.
- Design buildings to be energy efficient beyond the requirements of Title 24.
- Design and orient structures to maximize shade in the summer and sun exposure in the winter.
- Install vegetative roofs that cover at least 50 percent of the roof area.
- Design buildings to incorporate passive solar design and solar heaters.
- Install solar panels on carports and parking areas.
- Limit nonessential idling of commercial vehicles beyond Air Toxic Control Measures idling restrictions.

Waste Diversion

With the passage of SB 1016, the Per Capita Disposal Measurement System, only per capita disposal rates are measured. Targets are based on the per capita disposal rates. The disposal rate for the City of Clovis in 2018 was 3.90 pounds per person per day, which is well below the target of 4.7 pounds per person per day (CalRecycle 2019).

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SECTION 4: MODELING PARAMETERS AND ASSUMPTIONS

4.1—Model Selection and Guidance

Air pollutant emissions can be estimated by using emission factors and a level of activity. Emission factors represent the emission rate of a pollutant given the activity over time; for example, grams of NO_X per horsepower-hour or grams of NO_X per vehicle mile traveled. The ARB has published emission factors for on-road mobile vehicles/trucks in the EMFAC mobile source emissions model and emission factors for off-road equipment and vehicles in the OFFROAD emissions model. An air emissions model (or calculator) combines the emission factors and the various levels of activity and outputs the emissions for the various pieces of equipment.

The California Emissions Estimator Model (CalEEMod) version 2016.3.2 was developed by the South Coast Air Quality Management District in cooperation with other air districts throughout the State. CalEEMod is designed as a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions associated with construction and operation from a variety of land uses.

The modeling follows District guidance where applicable from its GAMAQI. The models used in this analysis are summarized as follows:

- Construction emissions: CalEEMod, version 2016.3.2
- Operational emissions: CalEEMod, version 2016.3.2

4.2—Air Pollutants and GHGs Assessed

4.2.1 - Criteria Pollutants Assessed

The following air pollutants are assessed in this analysis:

- Reactive organic gases (ROG)
- Nitrogen oxides (NO_X)
- Carbon monoxide (CO)
- Sulfur dioxide (SO_2)
- Particulate matter less than 10 microns in diameter (PM_{10})
- Particulate matter less than 2.5 microns in diameter ($PM_{2.5}$)

Note that the project would emit ozone precursors ROG and NO_X. However, the project would not directly emit ozone, since it is formed in the atmosphere during the photochemical reaction of ozone precursors. Other criteria pollutants such as vinyl chloride, hydrogen sulfide, lead, and sulfates were not included because of their low levels of emissions from the project.

As noted previously, the project would emit ultrafine particles. However, there is currently no standard separate from the $PM_{2.5}$ standards for ultrafine particles and there is no accepted methodology to quantify or assess the significance of such particles.

4.2.2 - Greenhouse Gases Assessed

This analysis is restricted to GHGs identified by AB 32, which include: carbon dioxide, methane, NO_X, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. The project would generate a variety of GHGs, including several defined by AB 32 such as carbon dioxide, methane, and NO_X.

The project may emit GHGs that are not defined by AB 32. For example, the project may generate aerosols through emissions of DPM from the vehicles and trucks that would access the project site. Aerosols are short-lived particles, as they remain in the atmosphere for about one week. Black carbon is a component of aerosol. Studies have indicated that black carbon has a high global warming potential; however, the Intergovernmental Panel on Climate Change states that it has a low level of scientific certainty (IPCC 2007a).

Water vapor could be emitted from evaporated water used for landscaping, but this is not a significant impact because water vapor concentrations in the upper atmosphere are primarily due to climate feedbacks rather than emissions from project-related activities.

The project would emit nitrogen oxides and volatile organic compounds, which are ozone precursors. Ozone is a GHG; however, unlike the other GHGs, ozone in the troposphere is relatively short-lived and can be reduced in the troposphere on a daily basis. Stratospheric ozone can be reduced through reactions with other pollutants.

Certain GHGs defined by AB 32 would not be emitted by the project. Perfluorocarbons and sulfur hexafluoride are typically used in industrial applications, none of which would be used by the project. Therefore, it is not anticipated that the project would emit perfluorocarbons or sulfur hexafluoride.

4.3—Construction Modeling Assumptions

Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and prevailing weather conditions. Construction emissions result from on-site and off-site activities. On-site emissions principally consist of exhaust emissions from the activity levels of heavy-duty construction equipment, motor vehicle operation, and fugitive dust (mainly PM_{10}) from disturbed soil. Additionally, paving operations and application of architectural coatings would release VOC emissions. Off-site emissions are caused by motor vehicle exhaust from delivery vehicles, worker traffic, and road dust (PM_{10} and $PM_{2.5}$).

4.3.1 - Project Schedule

The project was assumed to begin construction in May 2020 with full buildout completed in December 2023. Occupancy of the first unit is expected to occur in May 2021. The project was assumed to be completed in a single phase with site preparation, and grading occurring over the entire site.

CalEEMod default schedule was revised to reflect the developer's estimated schedule for home buildout while maintaining the default hours of equipment used for each phase from CalEEMod. Site preparation, grading, road paving, and architectural coatings were based on CalEEMod default assumptions. The detailed construction schedule is provided in Appendix A.

CalEEMod default construction equipment and equipment activity are based on surveys of construction projects of various sizes conducted for development in Southern California and may overstate equipment use for larger project sites in regions outside of Southern California. The modeling assumptions can be reviewed in the modeling results included in Appendix A of this report.

4.3.2 - Construction Equipment Emission Factors

CalEEMod contains an inventory of construction equipment that incorporates estimates of the number of equipment, age, horsepower, and equipment emission control level or tier from which rates of emissions are developed. The CalEEMod default equipment assumptions were used in this analysis for the estimation of emissions from on-site construction equipment. CalEEMod's off-road emission factors and load factors are from the ARB OFFROAD model.

4.3.3 - Site Preparation

Site preparation involves clearing vegetation (grubbing and tree/stump removal) and removing stones and other unwanted material or debris prior to grading. During site preparation, emissions are generated from the use of diesel construction equipment. Fugitive dust is generated during soil-disturbing activities and truck loading and unloading.

4.3.4 - Grading

During grading activities, fugitive dust can be generated from the movement of dirt on the project site. CalEEMod estimates dust from dozers moving dirt around, dust from graders or scrapers leveling the land, and loading or unloading dirt into haul trucks. Each activity is calculated differently in CalEEMod, based on the number of acres traversed by the grading equipment.

Only some pieces of equipment generate fugitive dust in CalEEMod. The CalEEMod manual identifies various equipment and the acreage disturbed in an 8-hour day:

- Crawler tractors, graders, and rubber-tired dozers: 0.5 acre per 8-hour day
- Scrapers: 1 acre per 8-hour day

Therefore, the following acres are the total quantities disturbed per day, per phase, according to the acreage disturbed quantities listed above:

- Site preparation = 3.5 acres per day
- Grading = 2.5 acres per day

It was assumed that soil would be balanced on-site so no additional haul truck trips were included in the analysis.

4.3.5 - Building Construction, Paving, and Architectural Coatings

The analysis uses the default modeling assumptions from CalEEMod for construction equipment during building construction, paving, and application of architectural coatings. As previously discussed, the equipment hours for the building construction phases were adjusted to retain the CalEEMod default-generated horsepower hours with a shorter than default schedule.

4.3.6 - Construction Off-site Trips

Worker trips are accounted for during the construction phases, based on 1.25 trips per piece of equipment (the CalEEMod default). The CalEEMod default worker trip length of 10.8 miles was retained. The CalEEMod default vehicle fleet (LD Mix) was used for employee trips.

Vendor trips for the building construction phase are calculated from a study performed by the Sacramento Metropolitan Air Quality Management District (SMAQMD) based on land use and size. The CalEEMod defaults for vendor trips, trip length, and vehicle fleet (Heavy Duty Truck Vehicle Fleet Mix) were used.

4.4—Operation

Operational emissions are those emissions that occur when the project is occupied by the future residents. The major sources are summarized below.

4.4.1 - Motor Vehicles

Motor vehicle emissions refer to exhaust and road dust emissions from the automobiles that would travel to and from the project residences.

Project trip generation rates were obtained from the *Institute of Transportation Engineers Trip Generation Manual, 10th Edition* for single-family dwelling units.

A pass-by trip accounts for vehicles already on the roadway network that stop at the project site as they pass-by; the pass-by trips are existing vehicle trips in the community. CalEEMod default rates of three percent pass-by trips were used in this analysis.

The vehicle fleet mix is defined as the mix of motor vehicle classes active during the operation of the project. Emission factors are assigned to the expected vehicle mix as a function of vehicle class, speed, and fuel use (gasoline and diesel-powered vehicles). The CalEEMod default vehicle fleet mix overstates the percentage of heavy-duty trucks for residential development projects; therefore, the SJVAPCD-approved Residential Fleet Mix was used for the analysis.

4.4.2 - Architectural Coatings (Painting)

Paints release VOC emissions during application and drying. The buildings in the project would be repainted on occasion. The project is required to comply with the SJVAPCD Rule 4601—Architectural Coatings. The rule required flat paints to meet a standard of 50 grams per liter (g/l) and gloss paints 100 g/l by 2012 for an average rate of 65 g/l. Most of the coatings used for residential painting are flat paints.

4.4.3 - Consumer Products

Consumer products are various solvents used in non-industrial applications, which emit VOCs during their product use. “Consumer Product” means a chemically formulated product used by household and institutional consumers, including but not limited to: detergents; cleaning compounds; polishes; floor finishes; cosmetics; personal care products; home, lawn, and garden products; disinfectants; sanitizers; aerosol paints; and automotive specialty products. It does not include other paint

products, furniture coatings, or architectural coatings (ARB 2011b). The default emission factor developed for CalEEMod was used.

4.4.4 - Landscape Equipment

CalEEMod estimated the landscaping equipment using the default assumptions in the model.

4.4.5 - Electricity

Electricity used by the project (for lighting, etc.) would result in emissions from the power plants that would generate electricity distributed on the electrical power grid. Electricity emissions estimates are only used in the GHG analysis. CalEEMod was used to estimate these emissions from the project.

Electricity Emission Factor

The default CalEEMod emission factors for Pacific Gas & Electric (from the CEC's year 2006 data) are as follows:

- Carbon dioxide: 641.35 pounds per megawatt hour (lbs/MWh)
- Methane: 0.029 lb/MWh
- Nitrous oxide: 0.006 lb/MWh

It is assumed that the Renewable Electricity Standards would have taken effect by 2020. The Renewable Electricity Standard requires that electricity providers include a minimum of 33 percent renewable energy in their portfolios by the year 2020. Pacific Gas & Electric provides estimates of its emission factor per megawatt hour of electricity delivered to its customers. The Pacific Gas and Electric Company (PG&E) emissions factor for 2020 for CO_2 is provided below. No projections have been made by PG&E for later years, so the rate is assumed to remain constant through 2030. The rates for methane and nitrous oxide are based on compliance with the Renewable Portfolio Standard.

- Carbon dioxide: 290 lbs/MWh
- Methane: 0.022 lb/MWh
- Nitrous oxide: 0.005 lb/MWh

4.4.6 - Electricity Consumption

CalEEMod has three categories for electricity consumption: electricity that is impacted by Title 24 regulations, non-Title 24 electricity, and lighting. The Title 24 uses are defined as the major building envelope systems covered by California's Building Code Title 24 Part 6, such as space heating, space cooling, water heating, and ventilation. Lighting is separate since it can be both part and not part of Title 24. Since lighting is not considered as part of the building envelope energy budget, CalEEMod does not consider lighting to have any further association with Title 24 references in the program. Non-Title 24 includes everything else such as appliances and electronics. Total electricity consumption in CalEEMod is divided into the three categories. The percentage for each category is determined by using percentages derived from the CalEEMod default electricity intensity factors. The percentages are then applied to the electricity consumption to result in the values used in the analysis.

4.4.7 - Natural Gas

The project would generate emissions from the combustion of natural gas for water heaters, heat, etc. CalEEMod has two categories for natural gas consumption: Title 24 and non-Title 24. CalEEMod defaults were used.

4.4.8 - Water and Wastewater

GHG emissions are emitted from the use of electricity to pump water to the project and to treat wastewater. CalEEMod defaults were used.

4.4.9 - Refrigerants

During operation, there may be leakage of refrigerants (hydrofluorocarbons) from air conditioners and the refrigeration system. Hydrofluorocarbons are typically used for refrigerants, which are long-lived GHGs. Residential uses of refrigerants are minor; therefore, they were not estimated.

4.4.10 - Solid Waste

GHG emissions would be generated from the decomposition of solid waste generated by the project. CalEEMod was used to estimate the GHG emissions from this source. The CalEEMod default for the mix of landfill types is as follows:

- Landfill no gas capture: 6%
- Landfill capture gas flare: 94%
- Landfill capture gas energy recovery: 0%

4.4.11 - Vegetation

There is currently limited carbon sequestration occurring on-site from existing agricultural vegetation. The project would plant trees and integrate landscaping into the project design, which would provide carbon sequestration. However, the number of trees to be planted is unknown and data are insufficient to accurately determine the impact that existing plants have on carbon sequestration. For this analysis, it was assumed that the loss and addition of carbon sequestration that are due to the project would be balanced; therefore, emissions due to carbon sequestration were not included.

SECTION 5: AIR QUALITY IMPACT ANALYSIS

This section calculates the expected emissions from construction and operation of the project as a necessary requisite for assessing the regulatory significance of project emissions on a regional and localized level.

5.1—CEQA Guidelines

The CEQA Guidelines define a significant effect on the environment as "a substantial, or potentially substantial, adverse change in the environment." To determine if a project would have a significant impact on air quality, the type, level, and impact of emissions generated by the project must be evaluated.

The following air quality significance thresholds are contained in Appendix G of the CEQA Guidelines effective December 28, 2018. A significant impact would occur if the project would:

a) Conflict with or obstruct implementation of the applicable air quality plan;

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable national or state ambient air quality standard;

c) Expose sensitive receptors to substantial pollutant concentrations; or

d) Result in other emissions (such as those leading to odors adversely affecting a substantial number of people.

While the final determination of whether a project is significant is within the purview of the lead agency pursuant to Section 15064(b) of the CEQA Guidelines, the District recommends that its quantitative air pollution thresholds be used to determine the significance of project emissions. If the lead agency finds that the project has the potential to exceed these air pollution thresholds, the project should be considered to have significant air quality impacts. The applicable District thresholds and methodologies are contained under each impact statement below.

5.2—Impact Analysis

5.2.1 - Consistency with Air Quality Plan

Impact AIR-1: The project would not conflict with or obstruct implementation of the applicable air quality plan.

Impact Analysis

The CEQA Guidelines indicate that a significant impact would occur if the project would conflict with or obstruct implementation of the applicable air quality plan. The GAMAQI does not provide specific guidance on analyzing conformity with the Air Quality Plan (AQP). Therefore, this document proposes the following criteria for determining project consistency with the current AQPs:

1. Will the project result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQPs? This measure is determined by comparison to the regional and localized thresholds identified by the District for Regional and Local Air Pollutants.
2. Will the project comply with applicable control measures in the AQPs? The primary control measures applicable to development projects is Regulation VIII—Fugitive PM_{10} Prohibitions and Rule 9510 Indirect Source Review.

Contribution to Air Quality Violations

A measure for determining if the project is consistent with the air quality plans is if the project would not result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the air quality plans. Regional air quality impacts and attainment of standards are the result of the cumulative impacts of all emission sources within the air basin. Individual projects are generally not large enough to contribute measurably to an existing violation of air quality standards. Therefore, the cumulative impact of the project is based on its cumulative contribution. Because of the region's nonattainment status for ozone, $PM_{2.5}$, and PM_{10}—if project-generated emissions of either of the ozone precursor pollutants (ROG and NO_X), PM_{10}, or $PM_{2.5}$ would exceed the District's significance thresholds—then the project would be considered to contribute to violations of the applicable standards and conflict with the attainment plans.

As discussed in Impact AIR-2 below, emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$ associated with the construction and operation of the project would not exceed the District's significance thresholds. As shown in Impact AIR-2, the project would not result in CO hotspots that would violate CO standards. Therefore, the project would not contribute to air quality violations.

Compliance with Applicable Control Measures

The AQP contains a number of control measures, which are enforceable requirements through the adoption of rules and regulations. A description of rules and regulations that apply to this project is provided below.

SJVAPCD Rule 9510—Indirect Source Review (ISR) is a control measure in the 2006 PM_{10} Plan that requires NO_X and PM_{10} emission reductions from development projects in the San Joaquin Valley. The NO_X emission reductions help reduce the secondary formation of PM_{10} in the atmosphere (primarily ammonium nitrate and ammonium sulfate) and also reduce the formation of ozone. Reductions in directly emitted PM_{10} reduce particles such as dust, soot, and aerosols. Rule 9510 is also a control measure in the 2016 Plan for the 2008 8-Hour Ozone Standard. Developers of projects subject to Rule 9510 must reduce emissions occurring during construction and operational phases through on-site measures, or pay off-site mitigation fees. The project is required to comply with Rule 9510 and has already completed the ISR process.

Regulation VIII—Fugitive PM_{10} Prohibitions is a control measure that is one main strategies from the 2006 PM_{10} for reducing the PM_{10} emissions that are part of fugitive dust. Projects over 10 acres

are required to file a Dust Control Plan (DCP) containing dust control practices sufficient to comply with Regulation VIII. The project is required to prepare a DCP to comply with Regulation VIII.

Other control measures that apply to the project are Rule 4641—Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operation that requires reductions in VOC emissions during paving and Rule 4601—Architectural Coatings that limits the VOC content of all types of paints and coatings sold in the San Joaquin Valley.

The project would comply with all applicable SJVAPCD rules and regulations. Therefore, the project complies with this criterion and would not conflict with or obstruct implementation of the applicable air quality attainment plan.

The applicable General Plan for the project is the City of Clovis General Plan, which was adopted in 2014 prior to adoption of the SJVAPCD's latest AQPs. The 2016 Plan for the 2008 8-Hour Ozone Standard was adopted in June 2016. The 2015 Plan for the 1997 $PM_{2.5}$ Standard was adopted in April 2015 and the 2016 Moderate Area Plan for the 2012 $PM_{2.5}$ Standard was adopted in September 2016. The site's land use designation in the City of Clovis General Plan is Medium Density Residential, which allows for a density of 4.1 DU per acre to 7.0 DU per acre. The project would construct 255 units on 36.76 acres net for a density of 6.94 DU per acre. The project's density provides an efficient use of the land and helps achieve the density goals of the Fresno RTP/SCS.

The General Plan PEIR found that the growth allowed by the plan was inconsistent with the SJVAPCD AQP because the emissions at buildout exceeded the criteria pollutant emission thresholds (see Impact AIR-2) and thus, the City of Clovis found the impact to be significant and unavoidable and adopted a Statement of Overriding Considerations (SOC). Projects that are consistent with the General Plan policies and comply with the mitigation measures included in the General Plan and Development Code Update Draft PEIR mitigation measures are able to rely upon the SOC finding to address their cumulative air quality impacts. The General Plan PEIR indicates that application of SJVAPCD Rule 9510—Indirect Source Review and implementation of the General Plan policies and implementation actions would reduce impacts to the extent feasible. The project is required to comply with Rule 9510 and is consistent with General Plan policies and implementation actions as described in Table 8.

Table 8: Consistency with General Plan Policies

General Plan Policy	Project Consistency
Air Quality Policy 1.1: Land use and transportation. Reduce greenhouse gas and other local pollutant emissions through mixed use and transit-oriented development and well-designed transit, pedestrian, and bicycle systems.	**Consistent.** Residents would have easy access to the existing bike lanes on Shepherd Avenue and Clovis Avenue that connect to destinations throughout the area. Enhancements to encourage walking and bicycling will reduce driving and related pollutant emissions. In addition, the project is approximately 0.9 mile northeast of Buchanan High School and 0.4 mile from Woods Elementary School.

Table 8 (cont.): Consistency with General Plan Policies

General Plan Policy	Project Consistency
Air Quality Policy 1.2: Sensitive land uses. Prohibit the future siting of sensitive land uses within the distances of emission sources as defined by the California Air Resources Board, without sufficient mitigation.	**Consistent.** As discussed in Section 5.2.3—Sensitive Receptors, the project does not locate sensitive receptors within the distances of emission sources as defined by the California Air Resources Board.
Air Quality Policy 1.3: Construction activities. Encourage the use of best management practices during construction activities to reduce emissions of criteria pollutants as outlined by the San Joaquin Valley Air Pollution Control District (SJVAPCD).	**Consistent.** The project will be required to comply with Regulation VIII—Fugitive PM_{10} Prohibitions.
Air Quality Policy 1.6: Alternative fuel infrastructure. Encourage public and private activity and employment centers to incorporate electric charging and alternative fuel stations.	**Consistent.** The project would not preclude future installment of electrical vehicle charging systems in individual residences.
Air Quality Policy 1.8: Trees. Maintain or plant trees where appropriate to provide shade, absorb carbon, improve oxygenation, slow stormwater runoff, and reduce the heat island effect.	**Consistent.** The project would incorporate landscaping throughout the project site. The incorporated landscaping would provide shade, absorb carbon, improve oxygenation, slow stormwater runoff, and reduce the heat island effect.
Air Quality Policy 2.1: Regional coordination. Support regional efforts to reduce air pollution (criteria air pollutants and greenhouse gas emissions) and collaborate with other agencies to improve air quality at the emission source and reduce vehicle miles traveled.	**Not applicable.** However, residents can participate in educational and grant programs designed to reduce criteria pollutant emissions developed through regional coordination.
Air Quality Policy 2.2: Cross-jurisdictional issues. Collaborate with regional agencies and surrounding jurisdictions to address cross-jurisdictional transportation and air quality issues.	**Not applicable.** This measure applies to government agencies and not to individual development projects.
Air Quality Policy 2.6: Innovative mitigation. Encourage innovative mitigation measures to reduce air quality impacts by coordinating with the SJVAPCD, project applicants, and other interested parties.	**Consistent.** The project would comply with Rule 9510, which may include payment of mitigation fees that can be used for innovative mitigation measures that reduce criteria pollutants and GHG emissions.
Circulation Policy 1.1: Multimodal network. The City shall plan, design, and maintain the transportation network to promote safe and convenient travel for all users: pedestrian, bicyclists, transit riders, freight, and motorists.	**Consistent.** The project area includes a variety of features designed to provide safe and convenient travel for users of all modes of transportation. Residents will have easy access to existing bike lanes that run along Shepherd Avenue and Clovis Avenue.
Circulation Policy 1.2: Transportation decisions. Decisions should balance the comfort, convenience, and safety of pedestrian, bicyclists, and motorists.	**Consistent.** The project will have easy access to bike lanes that will provide convenience and safety for pedestrians and bicyclists.
Circulation Policy 1.4: Jobs and housing. Encourage infill development that would provide jobs and services closer to housing, and vice versa, to reduce citywide vehicle miles traveled and effectively utilize the existing transportation infrastructure.	**Consistent.** The project is residential development that will provide employees for jobs in existing business parks and jobs centers in Clovis. The project is situated less than 1.8 miles west of the nearest small commercial center and is within 2 miles of regional shopping and office development along Herndon Avenue.

Table 8 (cont.): Consistency with General Plan Policies

General Plan Policy	Project Consistency
Circulation Policy 1.5: Neighborhood connectivity. The transportation network shall provide multimodal access between neighborhoods and neighborhood-serving uses (educational, recreational, or neighborhood commercial uses).	**Consistent.** The project is within 2 miles of multiple existing educational, commercial, and business uses.
Circulation Policy 3.11: Right-of-way design. Design landscaped parkways, medians, and right-of-ways as aesthetic buffers to improve the community's appearance and encourage non-motorized transportation.	**Consistent.** The project will comply with City of Clovis design standards and landscaping requirements.
Circulation Policy 5.1: Complete street amenities. Upgrade existing streets and design new streets to include complete street amenities, prioritizing improvements to bicycle and pedestrian connectivity or safety (consistent with the Bicycle Transportation Master Plan and other master plans).	**Consistent.** The project would be required to upgrade existing streets fronting the property in accordance with city standards.
Circulation Policy 5.2: Development-funded facilities. Require development to fund and construct facilities as shown in the Bicycle Transportation Plan when facilities are in or adjacent to the development.	**Not applicable.** There are no new planned trails within or directly adjacent to the development. There are existing bike lanes on East Shepherd Avenue and Clovis Avenue.
Circulation Policy 5.3: Pathways. Encourage pathways and other pedestrian amenities in urban centers and new development 10 acres or larger.	**Consistent.** Future residents will be able to utilize existing and planned sidewalks, bike lanes, and paths constructed in compliance with city requirements in this area.
Circulation Policy 5.5: Pedestrian access. Require sidewalks, paths, and crosswalks to provide access to schools, parks, and other activity centers to provide general pedestrian connectivity throughout the city.	**Consistent.** Future residents will be able to utilize sidewalks and paths constructed in compliance with city requirements in this area.
Land Use Policy 3.9: Connected development. New development in urban centers must fully improve roadway, pedestrian, and bicycle systems within and adjacent to the proposed project and connect to existing urbanized development.	**Consistent.** The project will provide required street improvements and connections to pedestrian and bicycle systems.
Open Space and Conservation Policy 3.5: Energy and water conservation. Encourage new development and substantial rehabilitation projects to exceed energy and water conservation and reduction standards set in the California Building Code.	**Consistent.** The project will meet or exceed energy and water conservation and reduction standards set in the California Building Code.
Source: City of Clovis General Plan 2014.	

The air quality mitigation measures and standard conditions from the General Plan PEIR and a discussion of project compliance with each measure are provided in Table 9.

Table 9: Compliance with General Plan PEIR Mitigation Measures

Mitigation Measure	Project Compliance
SC-1: Prior to project approval, each applicant for individual, site-specific developments under the General Plan shall comply with the San Joaquin Valley Air Pollution Control District rules and regulations, including, without limitation, Indirect Source Rule 9510. The applicant shall document, to the City's reasonable satisfaction, its compliance with this standard condition.	The project is required to submit an Air Impact Assessment Application to the SJVAPCD to comply with Rule 9510.
3-1: Prior to issuance of any construction permits, development project applicants shall prepare and submit to the City of Clovis Planning Division a technical assessment evaluating potential project construction-related air quality impacts.	The analysis of construction emissions is included herein. No criteria pollutant construction emissions exceed SJVPACD thresholds with the application of mitigation measures.
The evaluation shall be prepared in conformance with San Joaquin Valley Air Pollution Control District (SJVAPCD) methodology in assessing air quality impacts. If construction-related criteria air pollutants are determined to have the potential to exceed the SJVAPCD adopted thresholds of significance, as identified in the Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI), the City of Clovis Planning Division shall require that applicants for new development projects incorporate mitigation measures to reduce air pollutant emissions during construction activities to below these thresholds. These identified measures shall be incorporated into all appropriate construction documents (e.g., construction management plans) submitted to the City and shall be verified by the City's Planning Division.	The air quality impact analysis prepared for this project utilizes SJVAPCD guidance and thresholds from the GAMAQI.
3-3: Prior to project approval, development project applicants shall prepare and submit to the City of Clovis Planning Division a technical assessment evaluating potential project operation phase-related air quality impacts. The evaluation shall be prepared in conformance with San Joaquin Valley Air Pollution Control District (SJVAPCD) methodology in assessing air quality impacts. If operational-related criteria air pollutants are determined to have the potential to exceed the SJVAPCD adopted thresholds of significance, as identified in the Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI), the City of Clovis Planning Division shall require that applicants for new development projects incorporate mitigation measures to reduce air pollutant emissions during operational activities. The identified measures shall be included as part of the Standard Conditions of Approval.	The analysis of project operational emissions is included herein. No criteria pollutant operational emissions exceed SJVAPCD thresholds.

Table 9 (cont.): Compliance with General Plan PEIR Mitigation Measures

Mitigation Measure	Project Compliance
3-4: Prior to project approval, the City of Clovis Planning Division shall require applicants for individual, site-specific developments to consider establishing a Voluntary Emission Reduction Agreement (VERA) with the San Joaquin Valley Air Pollution Control District. Under this agreement, project proponents may enter into an agreement where funds are used to develop and implement emission reduction projects.	The project does not exceed SJVAPCD significance thresholds; therefore, no VERA would be required to reduce project impacts.
3-5: Prior to discretionary project approval, the City of Clovis shall evaluate new development proposals for sensitive land uses (e.g., residential, schools, day care centers) within the City for potential incompatibilities with regard to the California Air Resources Board's Air Quality and Land Use Handbook: A Community Health Perspective (April 2005). Applicants for sensitive land uses that are within the recommended buffer distances shall submit a health risk assessment (HRA) to the City of Clovis prior to future discretionary project approval. The HRA shall be prepared in accordance with policies and procedures of the state Office of Environmental Health Hazard Assessment (OEHHA) and the San Joaquin Valley Air Pollution Control District. The latest OEHHA guidelines shall be used for the analysis, including age sensitivity factors, breathing rates, and body weights appropriate for children age 0 to 6 years. If the HRA shows that the incremental cancer risk exceeds ten in one million (10E-06), the appropriate non-cancer hazard index exceeds 1.0, or if the PM_{10} or $PM_{2.5}$ ambient air quality standard increment exceeds 2.5 $\mu g/m^3$, the applicant will be required to identify and demonstrate that mitigation measures are capable of reducing potential cancer and non-cancer risks to an acceptable level (i.e., below ten in one million or a hazard index of 1.0), including appropriate enforcement mechanisms.	The impacts to sensitive receptors were evaluated herein. No sources of toxic emissions identified by the ARB Air Quality and Land Use Handbook were identified within the recommended buffer distances.
3-6: Prior to discretionary project approval, applicants for industrial or warehousing land uses shall coordinate with the San Joaquin Valley Air Pollution Control District (SJVAPCD) or the City of Clovis in conjunction with the SJVAPCD to determine the appropriate level of health risk assessment (HRA) required. All HRAs shall be submitted to the City of Clovis.	The project is a residential development. This mitigation measure is not applicable.

Conclusion

The project's emissions are less than significant for all criteria pollutants and would not result in inconsistency with the AQP for this criterion. The project's land use designation (Medium Density Residential 4.1-7.0 DU/Acre) would provide densities and development patterns consistent with the land use policies of the City of Clovis 2014 General Plan. The project complies with all applicable policies, implementation actions, and mitigation measures of the 2014 General Plan; therefore, the project is consistent with the AQP, and the impact would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant impact.

5.2.2 - Cumulative Criteria Pollutant Impacts

Impact AIR-2: **The project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard.**

Impact Analysis

To result in a less than significant impact, the following criteria must be true:

1. Regional analysis: emissions of nonattainment pollutants must be below the District's regional significance thresholds. This is an approach recommended by the District in its GAMAQI.
2. Summary of projections: the project must be consistent with current air quality attainment plans including control measures and regulations. This is an approach consistent with Section 15130(b) of the CEQA Guidelines.
3. Cumulative health impacts: the project must result in less than significant cumulative health effects from the nonattainment pollutants. This approach correlates the significance of the regional analysis with health effects, consistent with the court decision, *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1219-20.

Regional Emissions

Air pollutant emissions have both regional and localized effects. This analysis assesses the regional effects of the project's criteria pollutant emissions in comparison to SJVAPCD thresholds of significance for short-term construction activities and long-term operation of the project. Localized emissions from project construction and operation are assessed under Impact AIR-3—Sensitive Receptors using concentration-based thresholds that determine if the project would result in a localized exceedance of any ambient air quality standards or would make a cumulatively considerable contribution to an existing exceedance.

The primary pollutants of concern during project construction and operation are ROG, NO_X, PM_{10}, and $PM_{2.5}$. The SJVAPCD GAMAQI adopted in 2015 contains thresholds for CO, NO_X, ROG, SO_X, PM_{10}, and $PM_{2.5}$.

Ozone is a secondary pollutant that can be formed miles from the source of emissions, through reactions of ROG and NO_X emissions in the presence of sunlight. Therefore, ROG and NO_X are termed ozone precursors. The Air Basin often exceeds the state and national ozone standards. Therefore, if the project emits a substantial quantity of ozone precursors, the project may contribute to an exceedance of the ozone standard. The Air Basin also exceeds air quality standards for PM_{10}, and $PM_{2.5}$; therefore, substantial project emissions may contribute to an exceedance for these pollutants. The District's annual emission significance thresholds used for the project define the substantial contribution for both operational and construction emissions as follows:

- 100 tons per year CO
- 10 tons per year NO_X
- 10 tons per year ROG
- 27 tons per year SO_X
- 15 tons per year PM_{10}
- 15 tons per year $PM_{2.5}$

The project does not contain sources that would produce substantial quantities of SO_2 emissions during construction and operation. Modeling conducted for the project shows that SO_2 emissions are well below the SJVAPCD GAMAQI thresholds, as shown in the modeling results contained in Appendix A. No further analysis of SO_2 is required.

Construction Emissions

Construction emissions were modeled using the CalEEMod version 2016.3.2. The results of the modeling are presented in Table 10. The highest emissions that would occur in any year of construction activity were compared with the significance threshold. For assumptions in estimating the emissions, please refer to Section 4, Modeling Parameters and Assumptions. As shown in Table 10, the emissions are below the significance thresholds in each construction year. Therefore, the emissions are less than significant on a project basis.

Table 10: Construction Air Pollutant Emissions Summary (Unmitigated)

Year	Emissions (tons per year)				
	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$
Construction 2020	0.35	3.52	2.42	0.47	0.29
Construction 2021	0.38	3.38	3.18	0.28	0.19
Construction 2022	0.33	2.91	3.00	0.24	0.15
Construction 2023	1.89	0.21	0.31	0.02	0.01
Grand Total for All Years of Construction	**2.95**	**10.03**	**8.92**	**1.02**	**0.65**
Highest Construction Emissions in Any Year	***1.89***	***3.52***	***3.18***	***0.47***	***0.29***
Significance threshold (tons/year)	10	10	100	15	15
Exceed threshold—significant impact?	No	No	No	No	No

Table 10 (cont.): Construction Air Pollutant Emissions Summary (Unmitigated)

Year	Emissions (tons per year)				
	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$
Notes: PM_{10} and $PM_{2.5}$ emissions are from the mitigated output to reflect compliance with Regulation VIII—Fugitive PM_{10} Prohibitions. ROG = reactive organic gases NO_X = nitrogen oxides PM_{10} and $PM_{2.5}$ = particulate matter Calculations use unrounded numbers. Source: CalEEMod output (Appendix A).					

Operational Emissions

Operational emissions occur over the lifetime of the project and are from two main sources: area sources and motor vehicles, or mobile sources. Construction of the project is expected to begin in May 2020 with full buildout completed in December 2023. First occupancy is expected as early as May 2021. The SJVAPCD considers construction and operational emissions separately when making significance determinations.

For assumptions in estimating the emissions, please refer to Section 4, Modeling Parameters and Assumptions. The emissions modeling results for project operation are summarized in Table 11.

As shown in Table 11, the emissions are below the SJVAPCD significance thresholds prior to application of mitigation measures or taking credit for project design features that would reduce project emissions and, therefore, would result in a less than significant impact. The results represent the combined emissions of both phases.

Table 11: Operational Air Pollutant Emissions (Unmitigated)

Source	Emissions (tons per year)				
	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$
Area	2.80	0.23	8.74	1.13	1.13
Energy	0.04	0.31	0.13	0.02	0.02
Mobile	0.82	2.98	0.27	0.03	0.72
Total Project Emissions	3.65	3.52	9.14	1.18	1.88
Significance threshold	10	10	100	15	15
Exceed threshold—significant impact?	No	No	No	No	No
Notes: ROG = reactive organic gases NO_X = nitrogen oxides PM_{10} and $PM_{2.5}$ = particulate matter Area source emissions include emissions from natural gas, landscape, and painting. Source: CalEEMod output (Appendix A).					

Step 2: Plan Approach

Section 15130(b) of the CEQA Guidelines states the following:

> The following elements are necessary to an adequate discussion of significant cumulative impacts: 1) Either: (A) A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency, or (B) A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact.

In accordance with CEQA Guidelines 15130(b), this analysis of cumulative impacts is based on a summary of projections analysis. The District attainment plans are based on a summary of projections that accounts for projected growth throughout the Air Basin, and the controls needed to achieve ambient air quality standards. This analysis considers the current CEQA Guidelines, which includes the amendments approved by the Natural Resources Agency, effective on December 28, 2018. The Air Basin is in nonattainment or maintenance status for ozone and particulate matter (PM_{10} and $PM_{2.5}$), which means that concentrations of those pollutants currently exceed the ambient air quality standards for those pollutants, or that the standards have recently been attained in the case of pollutants with maintenance status. When concentrations of ozone, PM_{10}, or $PM_{2.5}$ exceed the ambient air quality standard, then those sensitive to air pollution (such as children, the elderly, and the infirm) could experience health effects such as: decrease of pulmonary function and localized lung edema in humans and animals; increased mortality risk; and risk to public health, implied by altered connective tissue metabolism, altered pulmonary morphology in animals after long-term exposures, and pulmonary function decrements in chronically exposed humans. See Section 2.3—Existing Air Quality Conditions for additional correlation of the health impacts with the existing pollutant concentrations experienced in the Clovis area.

Under the CEQA Guidelines, cumulative impacts may be analyzed using other plans that evaluate relevant cumulative effects. The geographic scope for cumulative criteria pollution from air quality impacts is the Air Basin, because that is the area in which the air pollutants generated by the sources within the Air Basin circulate and are often trapped. The SJVAPCD is required to prepare and maintain air quality attainment plans and a State Implementation Plan to document the strategies and measures to be undertaken to reach attainment of ambient air quality standards. While the SJVAPCD does not have authority over land use decisions, it is recognized that changes in land use and circulation planning would help the Air Basin achieve clean air mandates. The District evaluated emissions from land uses and transportation in the entire Air Basin when it developed its attainment plans. Emission inventories used to predict attainment of NAAQS must be based on the latest planning assumptions for mobile sources.

In accordance with CEQA Guidelines Section 15064, subdivision (h)(3), a lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project complies with the requirements in a previously approved plan or mitigation program.

The history and development of the SJVAPCD's current Ozone Attainment Plan is described in Section 2.4, Air Quality Plans. The 2007 8-Hour Ozone Plan contains measures to achieve reductions

in emissions of ozone precursors, and sets plans towards attainment of ambient ozone standards by 2023. The 2012 $PM_{2.5}$ Plan and the 2015 $PM_{2.5}$ Plan for the 1997 $PM_{2.5}$ Standard require fewer NO_X reductions to attain the $PM_{2.5}$ standard than the Ozone Plan, so the Ozone Plan is considered the applicable plan for reductions of the ozone precursors NO_X and ROG. The 2012 $PM_{2.5}$ Plan requires reductions in directly emitted $PM_{2.5}$ from combustion sources, such as diesel engines and fireplaces, and from fugitive dust to attain the ambient standard and is the applicable plan for $PM_{2.5}$ emissions. $PM_{2.5}$ is also formed in secondary reactions in the atmosphere involving NO_X and ammonia to form nitrate particles. Reductions in NO_X required for ozone attainment are also sufficient for $PM_{2.5}$ attainment. As discussed in Impact AIR-1, the project is consistent with all applicable control measures in the air quality attainment plans. The project would comply with any District rules and regulations that may pertain to implementation of the AQPs. Therefore, impacts would be less than significant with regard to compliance with applicable rules and regulations.

The Clovis General Plan PEIR found cumulative impacts to be significant and unavoidable because the cumulative impacts of development in accordance with the General Plan and other projects and plans within the SJVAPCD are significant, and the projects implementing the General Plan make an incremental contribution to this impact that itself is cumulatively considerable. The application of SJVAPCD Rule 9510, and implementation of the General Plan air quality-related policies would reduce impacts to the extent feasible. Although the project requires a general plan amendment, the change from low-density residential to medium-density residential use would result more efficient land use and potentially fewer regional impacts per dwelling unit than the existing land use designation. For example, Policy 1.1 of the Air Quality Element focuses on reducing mobile source emissions through land use planning that would reduce overall VMT. In addition, the project fulfills other General Plan objectives by increasing development densities and providing infill development in an area surrounded by existing homes. This project does not exceed SJVAPCD thresholds and will reduce its cumulative impact through compliance with Rule 9510; therefore, the project is considered less than significant for this criterion.

Project Health Impacts

In the 5th District Court of Appeal case *Sierra Club v. County of Fresno (Friant Ranch, L.P.)*, the Court found the project EIR deficient because it did not identify specific health-related effects resulting from the estimated amount of pollutants generated by the project. The ruling stated that the EIR should give a "sense of the nature and magnitude of the 'health and safety problems' caused by a project's air pollution. The EIR should translate the emission numbers into adverse impacts or to understand why such translation is not possible at this time (and what limited translation is, in fact, possible)."

The standard measure of the severity of impact is the concentration of pollutant in the atmosphere compared to the ambient air quality standard for the pollutant for a specified period of time. The severity of the impact increases with the concentration and the amount of time that people are exposed to the pollutant. The change in health impacts with concentration is described in Table 3 and Table 4 using the EPA's Air Quality Index. The pollutants of concern in the Friant Ranch ruling were regional criteria pollutants ozone, and PM_{10}. It is important to note that the potential for localized impacts can be addressed through dispersion modeling. The SJVAPCD includes screening criteria that if exceeded would require dispersion modeling to determine if project emissions would

result in a significant health impact. For this project, no significant localized health impacts would occur. Regional pollutants require more complex modeling as described below.

Ozone concentrations are estimated using regional photochemical models because ozone formation is subject to temperature, inversion strength, sunlight, emissions transport over long distances, dispersion, and the regional nature of the precursor emissions. The emissions from individual projects are too small to produce a measurable change in ozone concentrations—it is the cumulative contribution of emissions from existing and new development that is accounted for in the photochemical model. Ozone concentrations vary widely throughout the day and year even with the same amount of daily emissions. The SJVAPCD indicated in an Amicus Brief on Friant Ranch that running the photochemical model with just Friant Ranch emissions (109.5 tons/year NO_X) is not likely to yield valid information given the relative scale involved. A copy of the SJVAPCD brief is included in Appendix B. The NO_X inventory for the San Joaquin Valley is 224 tons per day in 2019 or 81,760 tons per year. Friant Ranch would result in 0.13 percent increase in NO_X emissions. A project emitting at the SJVAPCD CEQA threshold of 10 tons per year would result in a 0.01 percent increase in NO_X emissions. Most project emissions are generated by motor vehicle travel distributed on regional roadways miles from the project site, and these emissions are not suited to project-level modeling.

Emissions throughout the San Joaquin Valley are projected to markedly decline in the coming decade. The SJVAPCD 2016 Ozone Plan predicts NO_X emissions will decline to 103 tons per day by 2029 or 54 percent from 2019 levels through implementation of control measures included in the plan. This means that ozone health impacts to residents of the San Joaquin Valley will be lower than currently experienced and most areas of the San Joaquin Valley will have attained ozone air quality standards. The plan accounts for growth in population at rates projected by the State of California for the San Joaquin Valley, so only cumulative projects that would exceed regional growth projections would potentially delay attainment and prolong the time and the number of people would experience health impacts. It is unlikely that anyone would experience greater impacts from regional emissions than currently occur. The federal transportation conformity regulation provides a means of ensuring growth in emissions does not exceed emission budgets for each County. Regional Transportation Plans and Regional Transportation Improvement Plans must provide a conformity analysis based on the latest planning assumptions that demonstrates that budgets will be not be exceeded. If budgets are exceeded, the San Joaquin Valley may be subject to Clean Air Act sanctions until the deficiency is addressed.

Particulate emission impacts can be localized and regional. Particulates can be directly emitted and can be formed in the atmosphere with chemical reactions. Small directly emitted particles such as diesel emissions and other combustion emissions can remain in the atmosphere for a long time and can be transported over long distances. Large particles such as fugitive dust tend to be deposited a short distance from where emitted but can also travel long distances during periods of high winds. Particulates can be washed out of the atmosphere by rain and deposited on surfaces. Secondary particulates formed in the atmosphere such as ammonium nitrate require NO_X and ammonia, and they require low inversion levels and certain ranges of temperature and humidity to result in substantial concentrations. These complications make modeling project particulate emissions to determine concentration feasible only for directly emitted particles at receptor locations close to the project site. Regional particulate concentrations are modeled using a gridded inventory (emissions in

tons/day are placed a 4-kilometer, three-dimensional grid to spatially allocate the emissions geographically and vertically in the atmosphere) and an atmospheric chemistry component to simulate the chemical reactions. The model uses relative reduction factors to determine the amount of reductions of each PM component will be needed to attain the air quality standards on the days with the conditions most favorable to high particulate concentrations. A small project would not produce sufficient emissions to determine a project's individual contribution to the particulate concentration.

Step 3: Cumulative Health Impacts

The Air Basin is in nonattainment for ozone, PM_{10} (State only), and $PM_{2.5}$, which means that the background levels of those pollutants are at times higher than the ambient air quality standards. The air quality standards were set to protect public health, including the health of sensitive individuals (such as children, the elderly, and the infirm). Therefore, when the concentration of those pollutants exceeds the standard, it is likely that some sensitive individuals in the population would experience health effects that were described in Table 1. However, the health effects are a factor of the dose-response curve. Concentration of the pollutant in the air (dose), the length of time exposed, and the response of the individual are factors involved in the severity and nature of health impacts. If a significant health impact results from project emissions, it does not mean that 100 percent of the population would experience health effects. Table 2, Table 3, and Table 4 relate the pollutant concentration experienced by residents using air quality data for the nearest air monitoring station to the health impacts ascribed to those concentrations by the EPA Air Quality Index. This provides a more detailed look at the actual impacts currently experienced by area residents.

Since the Basin is nonattainment for ozone, PM_{10}, and $PM_{2.5}$, it is considered to have an existing significant cumulative health impact without the project. When this occurs, the analysis considers whether the project's contribution to the existing violation of air quality standards is cumulatively considerable. The SJVAPCD regional thresholds for NO_X, VOC, PM_{10}, or $PM_{2.5}$ are applied as cumulative contribution thresholds. Projects that exceed the regional thresholds would have a cumulatively considerable health impact. As shown in Table 10 and Table 11, the regional analysis of construction and operational emissions indicates that the project would not exceed the District's significance thresholds and the project is consistent with the applicable Air Quality

The SJVAPCD Air Quality Attainment Plans predict that nonattainment pollutant emissions will continue to decline each year as regulations adopted to reduce these emissions are implemented, accounting for growth projected for the region. Therefore, the cumulative health impact will also decline even with the project's emission contribution.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant impact.

5.2.3 - Sensitive Receptors

Impact AIR-3: The project would not expose sensitive receptors to substantial pollutant concentrations.

Impact Analysis

Sensitive Receptors

Those who are sensitive to air pollution include children, the elderly, and persons with pre-existing respiratory or cardiovascular illness. The District considers a sensitive receptor a location that houses or attracts children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants. Examples of sensitive receptors include hospitals, residences, convalescent facilities, and schools. The closest off-site sensitive receptors are existing residences located adjacent to the project site to the south. Specifically, the closest existing off-site sensitive receptor is located approximately 110 feet east of the project site. As a residential land use development project, proposed residences included as part of the project would be considered sensitive receptors once occupied. As discussed in Section 4 of this report, construction and operations of the project are anticipated to overlap during ground up construction activities.

Impacts to On-site Workers

The project is not a commercial or industrial operation that would have on-site workers. Therefore, a health risk assessment for on-site workers is not required or recommended.

Off-site Sensitive Receptors

Impacts to receptors located outside the project boundaries would occur primarily during project construction. Construction emissions commencing with the year 2020 and would continue until project buildout in 2023. Based on the conceptual construction schedule, construction is expected to last approximately 3 years. For criteria pollutants, impacts to receptors located outside of the project are based on emissions during the highest emissions during any construction year. As shown in Table 12 and Table 13, emissions generated from construction and operation of the project are less than SJVAPCD screening criteria. Therefore, this impact would be less than significant.

On-site Sensitive Receptors

The project is not a significant source of TAC emissions. Construction activities produce short-term emissions that would not contribute substantially to cancer risk, which is estimated on a 70-year exposure period.

Construction: ROG

ROG is emitted during the application of architectural coatings (painting). The amount emitted is dependent on the amount of ROG (or VOC) in the paint. ROG emissions are typically an indoor air quality health hazard concern rather than an outdoor air quality health hazard concern. Therefore, exposure to ROG during architectural coatings would be a less than significant health impact.

There are three types of asphalt that are typically used in paving: asphalt cements, cutback asphalts, and emulsified asphalts. However, SJVAPCD Rule 4641 prohibits the use of the following types of asphalt: rapid cure cutback asphalt; medium cure cutback asphalt; slow cure asphalt that contains more than one-half (0.5) percent of organic compounds that evaporate at 500 degrees Fahrenheit

(°F) or lower; and emulsified asphalt containing organic compounds, in excess of 3 percent by volume, that evaporate at 500°F or lower. An exception to this is medium cure asphalt when the National Weather Service official forecast of the high temperature for the 24-hour period following application is below 50°F.

The acute (short-term) health effects from worker direct exposure to asphalt fumes include irritation of the eyes, nose, and throat. Other effects include respiratory tract symptoms and pulmonary function changes. The studies were based on occupational exposure of fumes. Residents are not in the immediate vicinity of the fumes; therefore, they would not be subjected to concentrations high enough to evoke a negative response. In addition, the restrictions that are placed on asphalt in the San Joaquin Valley reduce ROG emissions from asphalt and exposure. The impact to nearby sensitive receptors from ROG during construction would be less than significant.

Localized Pollutant Screening Analysis

Localized Pollutant Analysis

Emissions occurring at or near the project have the potential to create a localized impact, also referred to as an air pollutant hotspot. Localized emissions are considered significant if, when combined with background emissions, they would result in exceedance of any health-based air quality standard. The impact from localized pollutants is based on the impact to the nearest sensitive receptor.

The SJVAPCD's GAMAQI includes screening thresholds for identifying projects that need detailed analysis for localized impacts. Projects with on-site emission increases from construction activities or operational activities that exceed the 100 pounds per day screening level of any criteria pollutant after compliance with Rule 9510 and implementation of all enforceable mitigation measures would require preparation of an ambient air quality analysis. The criteria pollutants of concern for localized impact in the SJVAB are PM_{10}, $PM_{2.5}$, NO_X, and CO. There is no localized emission standard for ROG and most types of ROG are not toxic and have no health-based standard; however, ROG was included for informational purposes only.

The highest daily emissions occur during project grading activities except for ROG emissions, which are highest during application of architectural coatings. The results of the construction screening analysis are presented in Table 12.

Table 12: Maximum Daily Air Pollutant Emissions during Construction

Maximum Daily Emissions by Year	Emissions (pounds per day)				
	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$
Construction 2020	4.55	50.26	32.60	10.48	6.53
Construction 2021	2.97	25.94	24.66	2.20	1.44
Construction 2022	2.68	23.39	24.12	2.00	1.25
Construction 2023	68.15	10.22	14.95	0.63	0.50
Highest Emissions in Any Year	**68.15**	**50.26**	**32.60**	**10.48**	**6.53**
Screening Thresholds	—	100	100	100	100

Table 12 (cont.): Maximum Daily Air Pollutant Emissions during Construction

Maximum Daily Emissions by Year	Emissions (pounds per day)				
	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$
Exceeds Threshold (Yes or No)	No	No	No	No	No

Notes:
NO_X = nitrogen oxides CO = carbon monoxide PM_{10} and $PM_{2.5}$ = particulate matter
N/A = Not applicable
Emissions were highest in the winter run for NO_X, while emissions for ROG, and CO were higher in the summer run. There is no ambient air quality standard for ROG.
Source: CalEEMod output (Appendix A).

Maximum Daily Operational Emissions

An analysis of maximum daily emissions during operation was conducted to determine if emissions would exceed 100 pounds per day for any pollutant of concern. The maximum daily operational emissions would occur at project buildout. The built-out project was modeled at first occupancy in 2021. Operational emissions include emissions generated on-site by area sources such as natural gas combustion and landscape maintenance, and off-site by motor vehicles accessing the project. Most motor vehicle emissions would occur distant from the site and would not contribute to a violation of ambient air quality standards; therefore, operational emissions from mobile sources were adjusted to reflect the portion of travel that would occur within 0.5 mile of the project site. The results of the screening analysis are presented in Table 13.

Table 13: Maximum Daily Air Pollutant Emissions during Operations

Maximum Daily Emissions per Source Category and Phase	Emissions (pounds per day)				
	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$
Area	11.76	2.57	22.07	0.30	0.30
Energy	0.19	1.58	0.67	0.13	0.13
Mobile	0.40	1.13	3.77	0.97	0.27
Total	12.34	5.28	26.52	1.40	0.70
Screening threshold	—	100	100	100	100
Exceed screening threshold?	No	No	No	No	No

Notes:
NO_X = nitrogen oxides CO = carbon monoxide PM_{10} and $PM_{2.5}$ = particulate matter
N/A = Not applicable
Emissions were highest in the summer run for ROG and CO, while emissions for NO_x were higher in the winter run. There is no ambient air quality standard for ROG.
Source: CalEEMod output (Appendix A).

The project would not exceed SJVAPCD screening thresholds for localized operational criteria pollutant impacts; therefore, the project's localized criteria pollutant impacts would be less than significant.

Operation: ROG

During operation, ROG would be emitted primarily from motor vehicles. Direct exposure to ROG from project motor vehicles would not result in health effects, because the ROG would be distributed across miles and miles of roadway and in the air. The concentrations would not be great enough to result in direct health effects.

Operation: PM_{10}, $PM_{2.5}$, CO, NO_2

As shown in Table 13, localized concentrations of PM_{10}, $PM_{2.5}$, CO, and NO_2 would not exceed the SJVAPCD screening thresholds at full project buildout. Residential development is an insignificant source of these pollutants, except for projects that allow woodburning devices that emit PM_{10}, $PM_{2.5}$ in wood smoke. The project will include only natural gas-fueled fireplaces and inserts that are insignificant sources of $PM_{2.5}$ and PM_{10}. Therefore, the project would not expose sensitive receptors to substantial criteria air pollutant concentrations during operation.

Carbon Monoxide Hot Spot Analysis

Localized high levels of CO are associated with traffic congestion and idling or slow-moving vehicles. The SJVAPCD provides screening criteria to determine when to quantify local CO concentrations based on impacts to the level of service (LOS) of intersections in the project vicinity.

The construction of the project would result in minor increases in traffic for the surrounding road network during the duration of construction. Motor vehicles accessing the site when it becomes operational would result in a minor increase in daily trips that would not substantially reduce the LOS. Furthermore, local roadways are not identified as operating at unacceptable conditions under existing and future buildout conditions, according the City of Clovis General Plan. In addition, the highest background 8-hour average CO concentration during the latest year it was monitored is 2.06 ppm, which is 78 percent lower than the CAAQS of 9.0 ppm or the NAAQS of 9 ppm. Therefore, the project would not significantly contribute to an exceedance of state or federal CO standards.

Operation: Toxic Air Contaminants

The ARB Air Quality and Land Use Handbook contains recommendations that will "help keep California's children and other vulnerable populations out of harm's way with respect to nearby sources of air pollution" (ARB 2005), including recommendations for distances between sensitive receptors and certain land uses. In the *California Building Industry Association v. Bay Area Air Quality Management District*, 62 Cal.4th 369 (2015) (Case No. S213478) the California Supreme Court held that "agencies subject to CEQA generally are not required to analyze the impact of existing environmental conditions on a project's future users or residents. But when a proposed project risks exacerbating those environmental hazards or conditions that already exist, an agency must analyze the potential impact of such hazards on future residents or users. In those specific instances, it is the project's impact on the environment—and not the environment's impact on the project—that compels an evaluation of how future residents or users could be affected by exacerbated conditions." Although the Court ruled that impacts from the existing environment on projects are not required to be addressed under CEQA, land uses such as gasoline stations, dry cleaners, distribution centers, and auto body shops can expose residents to high levels of TAC emissions if they are in proximity of the project site. Information regarding the location of existing TAC sources is provided for disclosure purposes only and not as a measure of the project's significance under CEQA.

Consistency with these recommendations is assessed as follows:

- Heavily traveled roads. ARB recommends avoiding new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day. Epidemiological studies indicate that the distance from the roadway and truck traffic densities were key factors in the correlation of health effects, particularly in children. The project is located on the north side of East Shepherd Avenue at North Clovis Avenue. The traffic volume at East Shepherd Avenue east of Fowler Avenue was 6,210 trips per day in 2005. No roads serving the project would exceed this criterion (Fresno COG 2013).
- Distribution centers. ARB also recommends avoiding siting new sensitive land uses within 1,000 feet of a distribution center. The project is not located within 1,000 feet of a distribution center.
- Fueling stations. ARB recommends avoiding new sensitive land uses within 300 feet of a large fueling station (a facility with a throughput of 3.6 million gallons per year or greater). ARB recommends a 50-foot separation is recommended for typical gas dispensing facilities. The nearest gas station is approximately 2.3 miles south of the project site at 1175 N. Fowler Avenue.
- Dry cleaning operations. ARB recommends avoiding siting new sensitive land uses within 300 feet of any dry-cleaning operation that uses perchloroethylene. For operations with two or more machines, ARB recommends a buffer of 500 feet. For operations with three or more machines, ARB recommends consultation with the local air district. The nearest dry-cleaning operation is approximately 2.5 miles south of the project site at 491 Herndon Avenue.
- Auto body shops. Auto body shops have the potential to emit TACs related to painting. The nearest auto body shop is approximately 2.6 miles south-southeast of the project site at 255 Park Avenue, which is beyond the distance that would result in a measurable impact.

Valley Fever

Valley fever, or coccidioidomycosis, is an infection caused by inhalation of the spores of the fungus, *Coccidioides immitis* (*C. immitis*). The spores live in soil and can live for an extended time in harsh environmental conditions. Activities or conditions that increase the amount of fugitive dust contribute to greater exposure, and they include dust storms, grading, and recreational off-road activities.

The San Joaquin Valley is considered an endemic area for Valley fever. By geographic region, hospitalizations for Valley fever in the San Joaquin Valley increased from 230 (6.9 per 100,000 population) in 2000 to 701 (17.7 per 100,000 population) in 2007. Within the region, Kern County reported the highest hospitalization rates, increasing from 121 (18.2 per 100,000 population) in 2000 to 285 (34.9 per 100,000 population) in 2007, and peaking in 2005 at 353 hospitalizations (45.8 per 100,000 population). The Centers for Disease Control and Prevention indicates that 752 of the 8,657 persons (8.7 percent) hospitalized in California between 2000 and 2007 for Valley fever died (CDC 2009). California experienced 7,466 new cases of Valley fever in 2017. A total of 275 Valley fever cases were reported in Fresno County in 2017 for a rate of 82.4 per 100,000 people (CDPH 2018).

The distribution of *C. immitis* within endemic areas is not uniform and growth sites are commonly small (a few tens of meters) and widely scattered. Known sites appear to have some ecological

factors in common suggesting that certain physical, chemical, and biological conditions are more favorable for *C. immitis* growth. Avoidance, when possible, of sites favorable for the occurrence of *C. immitis* is a prudent risk management strategy. Listed below are ecologic factors and sites favorable for the occurrence of *C. immitis*:

1) Rodent burrows (often a favorable site for *C. immitis*, perhaps because temperatures are more moderate and humidity higher than on the ground surface)
2) Old (prehistoric) Indian campsites near fire pits
3) Areas with sparse vegetation and alkaline soils
4) Areas with high salinity soils
5) Areas adjacent to arroyos (where residual moisture may be available)
6) Packrat middens
7) Upper 30 centimeters of the soil horizon, especially in virgin undisturbed soils
8) Sandy, well-aerated soil with relatively high water-holding capacities

Sites within endemic areas less favorable for the occurrence of *C. immitis* include:

1) Cultivated fields
2) Heavily vegetated areas (e.g. grassy lawns)
3) Higher elevations (above 7,000 feet)
4) Areas where commercial fertilizers (e.g. ammonium sulfate) have been applied
5) Areas that are continually wet
6) Paved (asphalt or concrete) or oiled areas
7) Soils containing abundant microorganisms
8) Heavily urbanized areas where there is little undisturbed virgin soil (USGS 2000).

The project site is situated in a city growth area. The project includes urbanization of a site that was formerly used for agricultural purposes. Therefore, implementation of the project would have a low probability of the site having *C. immitis* growth sites and exposure to the spores from disturbed soil.

Construction activities would generate fugitive dust that could contain *C. immitis* spores. The project will minimize the generation of fugitive dust during construction activities by complying with the District's Regulation VIII. Therefore, this regulation, combined with the relatively low probability of the presence of *C. immitis* spores, would reduce Valley fever impacts to less than significant.

During operations, dust emissions are anticipated to be negligible, because most of the project area would be occupied by buildings, pavement, and landscaped areas. This condition would preclude the possibility of the project from providing habitat suitable for *C. immitis* spores and for generating fugitive dust that may contribute to Valley fever exposure. Impacts would be less than significant.

Naturally Occurring Asbestos

According to a map of areas where naturally occurring asbestos in California are likely to occur (U.S. Geological Survey 2011), there are no such areas in the project area. Therefore, development of the project is not anticipated to expose receptors to naturally occurring asbestos. Impacts would be less than significant.

In summary, the project would not exceed SJVAPCD localized emission daily screening levels for any criteria pollutant. The project is not a significant source of TAC emissions during construction or operation. The project is not in an area with suitable habitat for Valley fever spores and is not in area known to have naturally occurring asbestos. Therefore, the project would not result in significant impacts to sensitive receptors.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant impact.

5.2.4 - Objectionable Odors

Impact AIR-4: The project would not create objectionable odors affecting a substantial number of people.

Impact Analysis

Thresholds of Significance

Odor impacts on residential areas and other sensitive receptors, such as hospitals, day-care centers, schools, etc. warrant the closest scrutiny, but consideration should also be given to other land uses where people may congregate, such as recreational facilities, worksites, and commercial areas.

Two situations create a potential for odor impact. The first occurs when a new odor source is located near an existing sensitive receptor. The second occurs when a new sensitive receptor locates near an existing source of odor. According to the *CBIA v. BAAQMD* ruling, impacts of existing sources of odors on the project are not subject to CEQA review. Therefore, the analysis to determine if the project would locate new sensitive receptors near an existing source of odor is provided for information only. The District has determined the common land use types that are known to produce odors in the Air Basin. These types are shown in Table 14.

Table 14: Screening Levels for Potential Odor Sources

Odor Generator	Screening Distance
Wastewater Treatment Facilities	2 miles
Sanitary Landfill	1 mile
Transfer Station	1 mile

Table 14 (cont.): Screening Levels for Potential Odor Sources

Odor Generator	Screening Distance
Composting Facility	1 mile
Petroleum Refinery	2 miles
Asphalt Batch Plant	1 mile
Chemical Manufacturing	1 mile
Fiberglass Manufacturing	1 mile
Painting/Coating Operations (e.g., auto body shop)	1 mile
Food Processing Facility	1 mile
Feed Lot/Dairy	1 mile
Rendering Plant	1 mile
Source: SJVAPCD 2015a.	

According to the SJVAPCD GAMAQI, analysis of potential odor impacts should be conducted for the following two situations:

- **Generators:** projects that would potentially generate odorous emissions proposed to locate near existing sensitive receptors or other land uses where people may congregate, and
- **Receivers:** residential or other sensitive receptor projects or other projects built for the intent of attracting people located near existing odor sources.

Project Analysis

Project as a Generator

Land uses that are typically identified as sources of objectionable odors include landfills, transfer stations, sewage treatment plants, wastewater pump stations, composting facilities, feed lots, coffee roasters, asphalt batch plants, and rendering plants. The project would not engage in any of these activities. Therefore, the project would not be considered a generator of objectionable odors during operations.

During construction, the various diesel-powered vehicles and equipment in use on-site would create localized odors. These odors would be temporary and would not likely be noticeable for extended periods of time beyond the project's site boundaries. The potential for diesel odor impacts would therefore be less than significant.

Project as a Receiver

With the *CBIA v. BAAQMD* ruling, analysis of odor impacts on receivers is not required for CEQA compliance. Therefore, the following analysis is provided for information only.

As a residential development, the project has the potential to place sensitive receptors near existing odor sources. Other than two facilities that could engage in painting/coating operations, there are no major odor-generating sources (as listed in Table 14) within screening distance of the site.

Therefore, the uses in the vicinity of the project would not cause substantial odor impacts to the project.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant impact.

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SECTION 6: GREENHOUSE GAS IMPACT ANALYSIS

6.1—CEQA Guidelines

CEQA Guidelines define a significant effect on the environment as "a substantial, or potentially substantial, adverse change in the environment." To determine if a project would have a significant impact on GHGs, the type, level, and impact of emissions generated by the project must be evaluated.

The following GHG significance thresholds are contained in Appendix G of the CEQA Guidelines, which were amendments adopted into the Guidelines on March 18, 2010, pursuant to SB 97. A significant impact would occur if the project would:

(a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or

(b) Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

6.2—Impact Analysis

6.2.1 - Greenhouse Gas Inventory

Impact GHG-1: The project would generate direct and indirect greenhouse gas emissions; however, these emissions would not result in a significant impact on the environment.

Impact Analysis

Threshold of Significance

Section 15064.4(b) of the CEQA Guidelines' 2018 amendments for GHG emissions states that a lead agency may take into account the following three considerations in assessing the significance of impacts from GHG emissions.

- **Consideration #1:** The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting.
- **Consideration #2:** Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
- **Consideration #3:** The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. Such regulations or requirements must be adopted by the relevant public agency through a public review process and must include specific requirements that reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project. In determining the significance of impacts, the lead agency may consider a project's consistency with the State's long-term

climate goals or strategies, provided that substantial evidence supports the agency's analysis of how those goals or strategies address the project's incremental contribution to climate change and its conclusion that the project's incremental contribution is not cumulatively considerable.

The City of Clovis has not adopted its own GHG thresholds or prepared a Climate Action Plan that can be used as a basis for determining project significance; however, General Plan PEIR Mitigation Measure 7-1 requires applicants to meet a 29 percent reduction from BAU in accordance with SJVAPCD methodologies. The SJVAPCD's *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA* includes thresholds based on whether the project will reduce or mitigate GHG levels by 29 percent from BAU levels compared with 2005 levels by 2020 (SJVAPCD 2009b). This level of GHG reduction is based on the target established by ARB's AB 32 Scoping Plan, approved in 2008. First occupancy at the project site is expected to occur in 2021 with full buildout in 2023. This date is beyond the AB 32 2020 milestone year, so a new approach based on continued progress toward later goals is included in this analysis.

The General Plan PEIR GHG analysis based significance on achieving a reduction from BAU of 29 percent at project buildout in 2035. Mitigation Measure 7-1 does not differentiate between analysis of projects pre-2020 and post-2020 with its 29 percent reduction from BAU. Therefore, an analysis of the project's reduction from BAU based on emissions in 2030 compared with the 29 percent reduction as one measure of significance was prepared. This approach provides estimates of project emissions in the new milestone year with the existing threshold to address Considerations 1 and 2 above.

The 29 percent GHG reduction level is based on the target established by ARB's AB 32 Scoping Plan, approved in 2008. The GHG reduction level for the State to reach 1990 emission levels by 2020 was reduced to 21.7 percent from BAU in 2020 in the 2014 First Update to the Scoping Plan to account for slower than projected growth after the 2008 recession (ARB 2014). In addition, the State has reported that the 2016 greenhouse gas inventory was below the 2020 target for the first time (ARB 2018). Furthermore, the 2017 Scoping Plan states that California is on track to achieve the 2020 target (ARB 2017c). First occupancy at the project site is expected to occur in 2021, which is the first year after the AB 32 target year. Until a new threshold or BPS are identified for projects constructed after-2020, significance is based on making continued progress toward the SB 32 2030 goal.

A quantitative analysis was prepared for this project to determine the extent to which it may increase or reduce greenhouse gas emissions as compared to the existing environmental setting to fulfill Consideration 1.

Consideration 2 requires the identification of BPS that are determined to meet the 29 percent reduction from BAU. The SJVAPCD intended to develop a list of BPS for development projects that were pre-determined to achieve a 29 percent reduction from BAU, but has not completed the list. However, since the SJVAPCD guidance was adopted in 2009, regulations on sources of GHG emissions applicable to development projects have been implemented that will achieve in excess of a 29 percent reduction from BAU for most projects. A BAU analysis is provided to demonstrate that the project would exceed the current 21.7 percent reduction from the GHG Reduction Plan and the previous SJVAPCD 29 percent reduction threshold.

The analysis also addresses consistency with the SB 32 targets and the 2017 Scoping Plan Update with an assessment of the project's reduction from BAU based on emissions in 2030 compared with the 21.7 percent reduction and with a consistency analysis. This approach provides estimates of project emissions in the new 2030 milestone year with the existing threshold to show the extent of progress achieved with existing regulations and project design features to address Considerations 1 and 2 above.

The ARB adopted the 2017 Scoping Plan Update on December 14, 2017. The plan provides the State's strategy to achieve the SB 32 2030 target of a 40 percent reduction in emissions compared to 1990 levels. The plan includes existing and new measures that when implemented are expected to achieve the SB 32 2030 target. The 2017 Scoping Plan achieves substantial reductions beyond 2020 through continued implementation of existing regulations. Other regulations will be adopted to implement recently enacted legislation including SB 350, which requires an increase in renewable energy from 33 percent to 50 percent and doubling the efficiency of existing buildings by 2030. The Legislature extended the Cap-and-Trade Program through 2030. Cap-and-Trade provides a mechanism to make up shortfalls in other strategies if they occur (ARB 2017c). In addition, the strategy relies on reductions achieved in implementing the ARB Short-Lived Climate Pollutant (SLCP) Reduction Strategy to reduce pollutants not previously controlled for climate change such as black carbon, CH_4, and hydrofluorocarbons (ARB 2017b).

Newhall Ranch

On November 30, 2015, the California Supreme Court issued its decision in *Newhall Ranch,* invalidating the GHG analysis for a large master planned residential development in Los Angeles County consisting of over 20,000 residential dwelling units and other uses. In particular, the Court upheld: (1) use of the statewide emissions reduction goal in AB 32 as a significance criterion (pp. 15–19), (2) use of the Scoping Plan's BAU model "as a comparative tool for evaluating efficiency and conservation efforts" of the Project (pp. 18–19), and (3) a comparison of the project's expected emissions to a BAU model rather than a baseline of pre-project conditions (pp. 15–19). The Court invalidated the GHG analysis on the grounds that the "administrative record discloses no substantial evidence that the Newhall Ranch's project-level reduction of 31 percent in comparison to [BAU] is consistent with achieving AB 32's statewide goal of a 29 percent reduction from [BAU]." The Court indicated that a lead agency may use a BAU comparison based on the Scoping Plan's methodology if it also substantiates the reduction a particular project must achieve to comply with statewide goals. The Court suggested a lead agency could examine the "data behind the Scoping Plan's business-as-usual model" to determine the necessary project-level reductions from new land use development at the proposed location (p. 25). A lead agency "might assess consistency with A.B. 32's goal in whole or part by looking to compliance with regulatory programs designed to reduce greenhouse gas emissions from particular activities."

The substantial evidence needed to support a project BAU threshold can be derived from data used to develop the Scoping Plan inventory and control strategy, and from analysis conducted by the ARB to track progress in achieving the AB 32 2020 target. The critical factor in determining the appropriate project threshold is whether the State requires additional reductions beyond those achieved by existing regulations in order to achieve its target. If no additional reductions are required from individual projects, no nexus exists to require a project to mitigate its emissions. In

that case, the percentage reductions achieved by projects through compliance with regulations is the amount needed to reach the AB 32 target.

The State's regulatory program implementing the 2008 Scoping Plan is now fully mature. All regulations envisioned in the Scoping Plan have been adopted by the responsible agencies and the effectiveness of those regulations have been estimated by the agencies during the adoption process and then are tracked to verify their effectiveness after implementation. The combined effect of this successful effort is that the State now projects that it will meet the 2020 target and achieve continued progress toward meeting post-2020 targets. Governor Brown, in the introduction to Executive Order B-30-15, states "California is on track to meet or exceed the current target of reducing greenhouse gas emissions to 1990 levels by 2020, as established in the California Global Warming Solutions Act of 2006 (AB 32)."

The Supreme Court was concerned that new development may need to do more than existing development to reduce GHGs to demonstrate that it is doing its fair share of reductions. As will be shown below, new development does do more than existing development and, because of the nature of the sources of GHG emissions related to development, existing development is equally responsible for reducing emissions from the most important sources of emissions. It is important to note that most of the State's regulatory program applies to both new and existing development.

The Scoping Plan reduction from BAU accounts for growth projected in the State and assumes that existing development would continue to emit GHGs at the same rate that occurred in the base year (2002-2004 average). The California Department of Finance (DOF) Report E-5 predicts that population growth in California from 2005 to 2020 will be 13.2 percent. This means that development that existed in 2005 will produce nearly 87 percent of the State's emissions in 2020. Conversely, new development is only responsible for about 13 percent of the emissions generated during this timeframe. If measures to reduce emissions from existing development were not available, new development could not provide sufficient reductions to reach the 2020 target even if their emissions were reduced to net zero. This continues to apply to the 2030 target. The DOF forecasts California's population will grow by 8.1 percent between 2020 and 2030, so existing development will be responsible for 92 percent of the emissions that occur in 2030.

The State's regulatory program is able to target both new and existing development because the two most important strategies—motor vehicle fuel efficiency and emissions from electricity generation—obtain reductions equally from existing and new sources. This is because all vehicle operators use cleaner low carbon fuels and buy vehicles subject to the fuel efficiency regulations, and all building owners or operators purchase cleaner energy from the grid that is produced by increasing percentages of renewable fuels. This includes regulations on mobile sources such as: The Pavley standards that apply to all vehicles purchased in California, the Low Carbon Fuel Standard (LCFS) that applies to all fuel used in California, and the Renewable Portfolio Standard and Renewable Energy Standard that apply to utilities providing electricity to all California homes and businesses. The reduction strategy where new development is required to do more than existing development is building energy efficiency and energy use related to water conservation regulations. For example, new projects are subject to Title 24 Energy Efficiency standards and CALGreen Code and Model Water Efficient Landscape Ordinance (MWELO) water conservation requirements. Residential buildings constructed to the 2013 Title 24 standards use 25 percent less energy than buildings

complying with the 2008 standards. The newest version of Title 24 effective January 1, 2017 improves energy efficiency in residential buildings by 28 percent compared to the 2013 Title 24 standards and 46 percent compared with 2008 Title 24 standards. New buildings and landscapes are much more energy efficient and water efficient than the development that has been built over the past decades and will require much less energy. Title 24 is updated about every 3 years with the goal of reaching zero net energy from new residential buildings by 2020 and new commercial buildings by 2030. Some of the project's residential buildings would be constructed after 2020 and would be required to comply with the regulations in effect at the time building permits are issued.

As described above, the State requires an average reduction from all sources of the emission inventory of 21.7 percent to achieve the 2020 target. The Scoping Plan strategy will achieve greater than average reductions from energy and mobile source sectors that are the primary sources related to development projects, and lower than average reductions from other sources such as agriculture. The amount of reduction estimated by the ARB for each sector was based on technical feasibility and cost effectiveness. Review of the 2008 Scoping Plan inventory and strategy shows that the reduction from all development related sources is approximately 29 percent from BAU in order to make up for the below average sectors and achieve the required 21.7 percent average reduction. Achieving the SB 32 2030 target will require an approximate 40 percent reduction from 2020 levels assuming the State achieves the AB 32 target. The 2017 Scoping Plan Update identifies a range of reduction amounts expected from each emission sector, but an amount needed for development's fair share of reductions have not been determined.

As suggested by the Court, a project BAU analysis was prepared for this project that assesses "consistency with AB 32's goal in whole or part by looking to compliance with regulatory programs designed to reduce greenhouse gas emissions from particular activities." The analysis shows the extent to which the project complies with adopted regulations and the additional amount that will be achieved through project design features. At this point in time, no additional reductions are required from new development beyond regulations for the State to achieve its 2020 target. The recently adopted 2030 target will require a reduction from 431 $MTCO_2e$ to 260 $MTCO_2e$ or 40 percent from 1990 levels. After accounting for projected growth of approximately 0.8 percent per year an average decrease of 5.2 percent per year from the State GHG inventory will be required to achieve the target. The 2017 Scoping Plan Update includes a strategy for achieving the needed reductions, but does not identify an amount required specifically from new development. However, all GHG emission sources within development projects are subject to GHG regulations.

Therefore, this analysis demonstrates consistency with the existing 2020 target and shows progress toward achieving the 2030 target. The quantitative analysis prepared for the project provides the reduction from BAU in the 2030 target year to show the progress anticipated prior to applying reductions from new strategies contained in the 2017 Scoping Plan Update. The new reduction strategies from the plan are designed to close the gap between existing commitments and those needed to achieve the 2030 target, but many of the strategies must go through a regulatory process to be implemented. Therefore, the amount of reductions needed from new development beyond regulations, if any, is uncertain.

The analysis prepared for the project also includes qualitative assessments of compliance with the 2008 Scoping Plan, the 2017 Scoping Plan Update, and the City of Clovis General Plan to support GHG significance findings under Impact GHG-2.

To determine significance, the analysis first quantifies project-related GHG emissions under a BAU scenario, and then compares these emissions with emissions that would occur when all project-related design features are accounted for, and when compliance with applicable regulatory measures is assumed. The standard and methodology is explained in further detail below.

Impact Analysis

Construction

Total GHG emissions generated during all phases of construction were combined and are presented in Table 15. The SJVAPCD does not recommend assessing the significance of construction-related emissions. However, other jurisdictions, such as the SCAQMD and the SMAQMD, have concluded that construction emissions should be included since they may remain in the atmosphere for years after construction is complete. In order to account for the construction emissions, amortization of the total emissions generated during construction were based on the life of the development (residential—30 years) and added to the operational emissions.

Table 15: Construction Greenhouse Gas Emissions

Year	$MTCO_2e$ per year
2020	417.47
2021	570.03
2022	540.85
2023	46.01
Total	1,574.35
Amortized over 30 years	***52.48***

Notes:
Calculation totals use unrounded numbers from CalEEMod output.
$MTCO_2e$ = metric tons of carbon dioxide equivalents
Source: CalEEMod output (Appendix A).

Operation

Operational or long-term emissions occur over the life of the project. Sources of emissions may include motor vehicles and trucks, energy usage, water usage, waste generation, and area sources, such as landscaping activities and residential wood burning.

Business As Usual Operational Emissions

Operational emissions under the BAU scenario were modeled using CalEEMod 2016.3.2. Modeling assumptions for the year 2005 were used to represent 2021 and 2030 BAU conditions (without the benefit of regulations adopted to reduce GHG emissions). The SJVAPCD guidance recommends using emissions in 2002–2004 in the baseline scenario to represent conditions—as if regulations had not been adopted -to allow the effect of projected growth on achieving reduction targets to be clearly

defined. CalEEMod defaults were used for project energy usage, water usage, waste generation, and area sources (architectural coating, consumer products, and landscaping). The vehicle fleet mix was revised to reflect the residential fleet mix approved by SJVAPCD for the 2021 buildout year. Full assumptions and CalEEMod model outputs are provided in Appendix A.

2021 and 2030 Operational Emissions

Operational emissions were modeled for the years 2021 and 2030 using CalEEMod. CalEEMod assumes compliance with some, but not all, applicable rules and regulations regarding energy efficiency, vehicle fuel efficiency, renewable energy usage, and other GHG reduction policies, as described in the CalEEMod User's Guide (SCAQMD 2017). The reductions obtained from each regulation and the source of the reduction amount used in the analysis are described below.

Emissions Accounting for Applicable Regulations

The following regulations are incorporated into the CalEEMod emission factors:

- Pavley I and Pavley II (LEV III) motor vehicle emission standards
- ARB Medium and Heavy-Duty Vehicle Regulation
- 2005, 2008, 2013, and 2016 Title 24 Energy Efficiency Standards

The following regulations have not been incorporated into the CalEEMod emission factors and require alternative methods to account for emission reductions provided by the regulations:

- Renewable Portfolio Standards (RPS)
- Low Carbon Fuel Standard (LCFS)
- 2019 Title 24 Energy Efficiency Standards
- Green Building Code Standards (indoor water use)
- California Model Water Efficient Landscape Ordinance (Outdoor Water)

Pavley II/LEV III standards have been incorporated in the latest version of CalEEMod. ARB estimates a 3 percent reduction in 2020 and a 19 percent reduction from the vehicle categories subject to the regulation by 2030 (ARB 2010b and ARB 2013d).

The ARB GHG Regulation for Medium and Heavy-Duty Engines and Vehicles applies to trucks that will be accessing the project site. The benefits of the regulation were incorporated into CalEEMod 2016.3.2. The ARB estimates that this regulation will reduce GHG emissions from the affected vehicles by 7.2 percent (ARB 2013f).

The Low Carbon Fuel Standard (LCFS) is estimated to achieve a 10 percent reduction in emissions by 2020 and an 18 percent reduction by 2030 (ARB 2010). CalEEMod does not include credit for the LCFS. CalEEMod does not include credit for the LCFS, so the reduction is calculated off-model based on reductions required by the regulation.

Title 24 reductions for 2013 and 2016 updates were added to CalEEMod 2016.3.2. The California Energy Commission (CEC) estimates that 2013 Title 24 standards would result in an increase in energy efficiency of 25 percent in residential buildings compared to 2008 Title 24 (CEC 2014a). An additional 28 percent reduction from the 2008 standards have been claimed for compliance with

2016 Title 24. This results in a combined reduction of 46 percent (CEC 2015). Compliance with 2019 Title 24 is expected to reduce residential energy use by 7 percent beyond 2016 Title 24 (CEC 2018).

RPS is not accounted for in CalEEMod 2016.3.2. Reductions from RPS are addressed by revising the electricity emission intensity factor in CalEEMod to account for the utility RPS rate forecast for 2020 (CPUC 2016). PG&E provides emission factors for the electricity it provides to customers and projections for its energy portfolio for 2020 that is used to estimate project emissions. No data to reflect compliance in 2030 was included in the PG&E projections. The utilities will be required by new legislation to increase the use of renewable energy sources to 50 percent, but details on individual utility compliance have not been determined.

Energy savings from water conservation resulting from the Green Building Code Standards for indoor water use and California Model Water Efficient Landscape Ordinance for outdoor water use are not included in CalEEMod. The Water Conservation Act of 2009 mandates a 20 percent reduction in urban water use that is implemented with these regulations (CDWR 2013). Benefits of the water conservation regulations are applied in the CalEEMod mitigation component.

Reductions in emissions from solid waste are based on the City achieving the CalRecycle 75 Percent Initiative by 2020 compared with a 50 percent baseline for 2005. Reductions are taken using the CalEEMod mitigation component.

Regulations applicable to project sources and the percent reduction anticipated from each source are shown in Table 16. The percentage reductions are only applied to the specific sources subject to the regulations. For example, the Pavley LEV Standards apply only to light duty cars and trucks.

Table 16: Reductions from Greenhouse Gas Regulations

Regulation	Project Applicability	Reduction Source	Percent Reduction in 2020/2030
Pavley Low Emission Vehicle Standards	Light-duty cars and trucks accessing the site are subject to the regulation.	CalEEMod defaults (Pavley I)	25.1[1]
		Adjusted GHG emission factor (Pavley II/LEV III) in CalEEMod.	3% 2020 19.5% 2030[2]
Truck and Bus Regulation	Heavy-duty trucks accessing the site for deliveries and services are subject to the regulation.	CalEEMod defaults	7.2%[3]
Low Carbon Fuel Standard (LCFS)	Vehicles accessing the site will use fuel subject to the LCFS.	ARB LCFS estimate calculated off model	10% 2020 18% 2030[1]
Title 24 Energy Efficiency Standards	Project buildings will be constructed to meet the latest version of Title 24 (currently 2019). Reduction applies only to energy consumption subject to the regulation.	CalEEMod defaults Additional reduction from 2019 Title 24 calculated using the CalEEMod mitigation component.	46%[4,5] 7%[10]
Green Building Code Standards	The project will include water conservation features required by the standard.	CalEEMod mitigation component	20%[6]

Table 16 (cont.): Reductions from Greenhouse Gas Regulations

Regulation	Project Applicability	Reduction Source	Percent Reduction in 2020/2030
Water Efficient Land Use Ordinance	The project landscaping will comply with the regulation.	CalEEMod mitigation component	20%[7]
Renewable Portfolio Standard (RPS)	Electricity purchased for use at the project site is subject to the 33 percent RPS mandate.	CalEEMod adjusted energy intensity factors with PG&E emission factors that show the company will exceed the 33 percent mandate.	54.5%[8]
Solid waste	The solid waste service provider will need to provide programs to increase diversion and recycling to meet the 75 percent mandate.	CalEEMod mitigation component	25%[9]

Notes:
Regulations are described in Section 2.3 Regulatory Environment. The source of the percentage reductions from each measure are from the following sources:
1 Pavley 1 + Low Carbon Fuel Standard Postprocessor Version 1.0 User's Guide (ARB 2010b) and (ARB 2017c)
2 ARB Staff Report for LEV III Amendments (ARB 2013e)
3 ARB Staff Report for GHG Regulations for Medium and Heavy-Duty Engines and Vehicles (ARB 2013f)
4 California Energy Commission News Release: New Title 24 Standards Will Cut Residential Energy Use by 25 Percent, Save Water, and Reduce Greenhouse Gas Emissions (CEC 2014b)
5 California Energy Commission Adoption Hearing Presentation: 2016 Buildings Energy Efficiency Standards (CEC 2015)
6 2013 California Green Building Standards Code Section 5.303.2
7 California Water Plan Update 2013 (CDWR 2013)
8 Based on CalEEMod default PG&E rate for 2005 and PG&E projected emission factor for 2020
9 CalRecycle 75 Percent Initiative: Defining the Future (2016).
10 2019 Building Energy Efficiency Standards Frequently Asked Questions (2018).

In addition to rules and regulations, the project would incorporate design features and would obtain benefits from its location and infrastructure that would reduce project VMT compared with default values. The project would construct pedestrian infrastructure connecting to adjacent land uses and is located approximately 3.1 miles from existing development in Downtown Clovis. In addition, the project would provide electrical outlets for landscaping equipment that would be used in accordance with statewide usage rates for this type of equipment.

Note that CalEEMod nominally treats these design elements and conditions as "mitigation measures," despite their inclusion in the project description. Therefore, reported operational emissions are considered to represent unmitigated project conditions. Full assumptions and model outputs are provided in Appendix A and results of this analysis for 2021 are presented in Table 17. A second analysis for 2030 is presented in Table 18.

Table 17: Project Operational Greenhouse Gases 2021

Source	Emissions ($MTCO_2e$ per year)		
	Business as Usual	2021 (with Regulation and Design Features)	Percent Reduction
Area	280.32	114.29	59.23%
Energy	1,010.33	629.98	37.65%
Mobile	3,129.81	2,179.54	30.36%
Waste	131.98	98.99	25.00%
Water	59.58	31.50	47.12%
Amortized Construction Emissions	52.48	52.48	0.00%
Total	**4,664.50**	**3,106.78**	**33.40%**
Reduction from BAU		**1,557.71**	—
Percent Reduction		**33.40%**	—
Significance Threshold		**29.0%**	—
Are emissions significant?		**No**	

Notes:
$MTCO_2e$ = metric tons of carbon dioxide equivalents
The project achieves the SJVAPCD 29 percent reduction from BAU threshold and the 21.7 percent required to show consistency with AB 32 targets. No new target has been set for 2030.
Source: CalEEMod output (Appendix A).

As shown in Table 17, the project would achieve a reduction of 33.4 percent from BAU by the year 2021 with regulations and design features incorporated. This is above the 29 percent reduction required by the SJVAPCD threshold, and the 21.7 percent average reduction from all sources of GHG emissions now required to achieve AB 32 targets. The ARB originally identified a reduction of 29 percent from BAU as needed to achieve AB 32 targets. The 2008 recession and slower growth in the years since 2008 have reduced the growth forecasted for 2020, and the amount needed to be reduced to achieve 1990 levels as required by AB 32. The California Department of Finance (DOF) population forecast for 2020 to 2030 predicts growth in the State of 8.1 percent by the 2030 target year or 0.8 percent per year (DOF 2017).

The project includes design features that would result in reductions in energy use and support walking and bicycling. Measures that are part of the project design do not require additional mitigation measures to ensure they are accomplished.

The 33.4 percent reduction from BAU is 11.7 percent beyond the average reduction required by the State from all sources to achieve the AB 32 2020 target and therefore addresses the concern expressed in Newhall Ranch that projects should likely do more than the average to ensure they are providing a fair share of emission reductions.

Since the project buildout would occur after 2020, additional analysis summarized in Table 18 was prepared to show consistency with SB 32 2030 target.

Table 18: Project Operational Greenhouse Gases 2030

Source	Emissions ($MTCO_2e$ per year)		
	Business as Usual	2030 (with Regulation and Design Features)	Percent Reduction
Area	280.32	114.29	59.23%
Energy	1,010.33	629.98	37.65%
Mobile	3,129.81	1,529.50	51.13%
Waste	131.98	98.99	25.00%
Water	59.58	31.50	47.12%
Amortized Construction Emissions	52.48	52.48	0.00%
Total	**4,664.50**	**2,456.74**	**47.33%**
Reduction from BAU		**2,207.76**	—
Percent Reduction		**47.33%**	—
Significance Threshold		**29.0%**	—
Are emissions significant?		**No**	

Notes:
$MTCO_2e$ = metric tons of carbon dioxide equivalents
The project achieves the SJVAPCD 29 percent reduction from BAU threshold and the 21.7 percent required to show consistency with AB 32 targets. No new target has been set for 2030.
Source: CalEEMod output (Appendix A).

As shown in Table 18, the project would exceed the 21.7 percent reduction required by the State to achieve the 2020 target by 25.6 percent and the SJVAPCD 29.0 percent target by 18.3 percent. No new threshold has been adopted by the City of Clovis for the 2030 target, so in the interim the project must make continued progress toward the 2030 goal.

The analysis presented above does not include new strategies proposed in the 2030 Scoping Plan Update. The update was adopted in December 2017. The update provides alternatives in terms of their likelihood of implementation and ranges of reduction from the strategies. Measures already authorized by legislation are highly likely to be implemented, while measures requiring new legislation are less likely to go forward. The State is highly likely to incorporate zero net energy buildings in future updates to Title 24. A new round of motor vehicle fuel efficiency standards beyond 2025 when LEV III standards are at their maximum reduction level is highly likely. Changing heavy-duty trucks and off-road equipment to alternative fuels face greater technological hurdles and are less likely to provide dramatic reductions by 2030.

The 2030 emission limit is 260 $MMTCO_2e$. The ARB estimates that the 2030 BAU (reference) Inventory will be 392 $MMTCO_2e$—a reduction of 132 $MMCO_2e$, including existing policies and programs but not including known commitments that are already underway. The 2030 Scoping Plan Update includes the estimated GHG emissions by sector compared with 1990 levels that is presented in Table 19. The proposed plan would achieve the bulk of the reductions from Electric Power, Industrial fuel combustion, and Transportation. Cap-and-Trade would provide between 10 and 20 percent of the required reductions depending on the amounts achieved by the other reduction measures.

Table 19: 2030 Scoping Plan Update Estimated Change in GHG Emissions by Sector

Scoping Plan Sector	Emissions ($MMTCO_2e$ per year)		
	1990	2030 Proposed Plan Ranges	Percent Change form 1990
Agriculture	26	24–25	-4 to -8
Residential and Commercial	44	38–40	-9 to -14
Electric Power	108	42–62	-43 to -61
High GWP	3	8–11	167 to 267
Industrial	98	77–87	-11 to -21
Recycling and Waste	7	8–9	14 to 29
Transportation (including TCU)	152	103–111	-27 to -32
Net Sink	-7	TBD	TBD
Subtotal	**431**	**300–345**	**-20 to -30**
Cap-and-Trade Program	N/A	40–85	N/A
Total	**431**	**260**	**-40**
Source: ARB 2030 Scoping Plan Update (ARB 2017).			

Although 2030 Scoping Plan Update focuses on state agency actions necessary to achieve the 2030 GHG limit, the ARB considers local governments essential partners in achieving California's goals to reduce GHG emissions. The 2030 target will require an increase in the rate of emission reductions compared to what was needed to achieve the 2020 limit, and this will require action and collaboration at all levels, including local government action to complement and support State-level actions. For individual projects, the 2030 Scoping Plan Update suggests that all new land use development implement all feasible measures to reduce GHG emissions. The Scoping Plan does not define all feasible measures or attribute an amount of reductions required from new development beyond compliance with regulations. When requiring mitigation of a project's fair share of a cumulative impact, the Lead Agency must show the nexus between the project contribution and its fair share of mitigation to reduce the impact to less than cumulatively considerable. A threshold based on local support and collaboration with State actions as described in the 2017 Scoping Plan Update does not lend itself to a quantitative determination of fair share. Requiring developers and future residents of the development to fully mitigate emissions without accounting for compliance with regulations would result in double mitigation, first by the developer and then by the residents purchasing electricity, fuel, and vehicles compliant with regulations in effect at the time of purchase and beyond that would violate constitutional nexus requirements.

In conclusion, the project would achieve reductions 11.7 percent beyond the ARB 2020 21.7 percent target and 4.4 percent beyond the SJVAPCD 29 percent reduction from BAU requirements from adopted regulations and on-site design features in the 2021 operational year. No new threshold has been adopted by the City for the SB 32 2030 target. Based on this progress and the strong likelihood that the measures included in the 2017 Scoping Plan Update will be implemented, it is reasonable to conclude that the project is consistent with the 2017 Scoping Plan and will contribute a reasonable

fair-share contribution to achieving the 2030 target. The fair share may very well be achieved through compliance with increasingly stringent State regulations that apply to new development, such as Title 24 and CALGreen; regulations on energy production, fuels, and motor vehicles that apply to both new and existing development; and voluntary actions to improve energy efficiency in existing development. In addition, compliance with the VMT targets adopted to comply with SB 375 and implemented through the RTP/SCS may be considered to adequately address GHG emissions from passenger cars and light-duty trucks. As shown in Table 19, the State strategy relies on the Cap-and-Trade Program to make up any shortfalls that may occur from the other regulatory strategies. The costs of Cap-and-Trade emission reductions will ultimately be passed on to the consumers of fuels, electricity and products produced by regulated industries which include future residents of development projects and other purchasers of products and services. Therefore, the impact in terms of Considerations #1 and #2 would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant impact.

6.2.2 - Greenhouse Gas Reduction Plans

Impact GHG-2: The project would not conflict with any applicable plan, policy, or regulation of an agency adopted to reduce the emissions of greenhouse gases.

Impact Analysis

The following analysis assesses the project's compliance with Consideration #3 regarding consistency with adopted plans to reduce GHG emissions. The City of Clovis has not adopted a GHG reduction plan. In addition, the City has not completed the GHG inventory, benchmarking, or goal-setting process required to identify a reduction target and take advantage of the streamlining provisions contained in the CEQA Guidelines amendments adopted for SB 97 and clarifications provided in the CEQA Guidelines amendments adopted on December 28 2018. The SJVAPCD has adopted a Climate Action Plan, but it does not contain measures that are applicable to development projects. Therefore, the SJVAPCD Climate Action Plan cannot be applied to the project. Since no other local or regional Climate Action Plan is in place, the project is assessed for its consistency with ARB's adopted Scoping Plans. This would be achieved with an assessment of the project's compliance with Scoping Plan measures contained in the 2008 Scoping Plan and the 2017 Scoping Plan Update.

Although the City of Clovis General Plan does not meet the CEQA Guidelines 15064.4(b)(3) requirements for an applicable plan to reduce GHG emissions, it contains policies intended to reduce vehicle travel and energy use that would provide GHG reductions. Therefore, the project's consistency with the General Plan policies is also assessed.

AB 32 Scoping Plan

The California State Legislature adopted AB 32 in 2006. AB 32 focuses on reducing GHGs (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride) to 1990 levels by the year 2020. Pursuant to the requirements in AB 32, the ARB adopted the Climate Change Scoping Plan (Scoping Plan) in 2008, which outlines actions recommended to obtain that goal. The Scoping Plan calls for an "ambitious but achievable" reduction in California's GHG emissions, cutting approximately 30 percent from BAU emission levels projected for 2020, or about 10 percent from 2008 levels. On a per-capita basis, that means reducing annual emissions of 14 tons of carbon dioxide for every man, woman, and child in California down to about 10 tons per person by 2020. As stated earlier, the ARB has updated its emission inventory forecasts and now estimates a reduction of 21.7 percent is required from BAU in 2020 to achieve AB 32 targets.

The Scoping Plan contains a variety of strategies to reduce the State's emissions. As shown in Table 20, the project is consistent with most of the strategies, while others are not applicable to the project. As discussed earlier, the 2017 Scoping Plan Update strategies primarily rely on increasing the stringency of existing regulations with which the project would continue to comply, support through the project's design, and implementation of the General Plan goals and policies.

AGENDA ITEM NO.2

Table 20: Project Consistency with AB 32 Scoping Plan

Scoping Plan Sector	Scoping Plan Measure	Implementing Regulations	Project Consistency
Transportation	California Cap-and-Trade Program Linked to Western Climate Initiative	Regulation for the California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanism October 20, 2015 (CCR 95800)	**Consistent.** The Cap-and-Trade Program applies to large industrial sources such as power plants, refineries, and cement manufacturers. However, the regulation indirectly affects people who use the products and services produced by these industrial sources when increased cost of products or services (such as electricity and fuel) are transferred to the consumers. The Cap-and-Trade Program covers the GHG emissions associated with electricity consumed in California, whether generated in-state or imported. Accordingly, GHG emissions associated with CEQA projects' electricity usage are covered by the Cap-and-Trade Program. The Cap-and-Trade Program also covers fuel suppliers (natural gas and propane fuel providers and transportation fuel providers) to address emissions from such fuels and from combustion of other fossil fuels not directly covered at large sources in the Program's first compliance period.
	California Light-Duty Vehicle Greenhouse Gas Standards	Pavley I 2005 Regulations to Control GHG Emissions from Motor Vehicles 2012 LEV III Amendments to the California Greenhouse Gas and Criteria Pollutant Exhaust and Evaporative Emission Standards	**Consistent**. This measure applies to all new vehicles starting with model year 2012. The project would not conflict with its implementation as it would apply to all new passenger vehicles purchased in California. Passenger vehicles, model year 2012 and later, associated with construction and operation of the project would be required to comply with the Pavley emissions standards.
	Low Carbon Fuel Standard.	2009 readopted in 2015. Regulations to Achieve Greenhouse Gas Emission Reductions Subarticle 7. Low Carbon Fuel Standard CCR 95480	**Consistent.** This measure applies to transportation fuels utilized by vehicles in California. The project would not conflict with implementation of this measure. Motor vehicles associated with construction and operation of the project would utilize low carbon transportation fuels as required under this measure.

AGENDA ITEM NO.2

Table 20 (cont.): Project Consistency with AB 32 Scoping Plan

Scoping Plan Sector	Scoping Plan Measure	Implementing Regulations	Project Consistency
	Regional Transportation-Related Greenhouse Gas Targets.	SB 375. Cal. Public Resources Code §§ 21155, 21155.1, 21155.2, 21159.28	**Consistent**. The project will provide residential development in the region that is consistent with the increased development densities promoted in the 2018 Regional Transportation Plan/Sustainable Communities Strategy (SCS). The project is not within an SCS priority area and so is not subject to requirements applicable to those areas.
	Goods Movement	Goods Movement Action Plan January 2007.	**Not applicable**. The project does not propose any changes to maritime, rail, or intermodal facilities or forms of transportation.
	Medium/Heavy-Duty Vehicles	2010 Amendments to the Truck and Bus Regulation, the Drayage Truck Regulation and the Tractor-Trailer Greenhouse Gas Regulation	**Consistent**. This measure applies to medium- and heavy-duty vehicles that operate in the State. The project would not conflict with implementation of this measure. Medium- and heavy-duty vehicles associated with construction and operation of the project would be required to comply with the requirements of this regulation.
	High Speed Rail	Funded under SB 862	**Not applicable**. This is a statewide measure that cannot be implemented by a project applicant or lead agency.
Electricity and Natural Gas	Energy Efficiency	Title 20 Appliance Efficiency Regulation	**Consistent.** The project would not conflict with implementation of this measure. The project will comply with the latest energy efficiency standards and incorporate applicable energy efficiency features designed to reduce project energy consumption.
		Title 24 Part 6 Energy Efficiency Standards for Residential and Non-Residential Building	
		Title 24 Part 11 California Green Building Code Standards	
	Renewable Portfolio Standard/Renewable Electricity Standard.	2010 Regulation to Implement the Renewable Electricity Standard (33% 2020)	**Consistent**. PG&E obtained 33 percent of its power supply from renewable sources such as solar and geothermal in 2017, and about 70 percent of the electricity it delivers is carbon-free, including nuclear and large hydroelectric facilities. The owners of residences within the project would purchase power that consists of a greater percentage of renewable sources and could install renewable solar power systems that will assist the utility in achieving exceeding the renewable mandate.
		SB 350 Clean Energy and Pollution Reduction Act of 2015 (50% 2030)	

AGENDA ITEM NO.2

Table 20 (cont.): Project Consistency with AB 32 Scoping Plan

Scoping Plan Sector	Scoping Plan Measure	Implementing Regulations	Project Consistency
	Million Solar Roofs Program	Tax incentive program	**Consistent.** This measure is intended to increase solar throughout California by means of a variety of electricity providers and existing solar programs. Projects within the plan area will be able to take advantage of incentives that are in place at the time of construction.
Water	Water	Title 24 Part 11 California Green Building Code Standards	**Consistent.** The project will comply with the California Green Building Standards Code, which requires a 20 percent reduction in indoor water use. The project will also comply with the MWELO as required by the City's development code and water ordinance.
		SBX 7-7—The Water Conservation Act of 2009	
		Model Water Efficient Landscape Ordinance	
Green Buildings	Green Building Strategy	Title 24 Part 11 California Green Building Code Standards	**Consistent.** The State will increase the use of green building practices. The project would implement required green building strategies through existing regulation that requires the project to comply with various CALGreen requirements. The project includes sustainability design features that support the Green Building Strategy.
Industry	Industrial Emissions	2010 ARB Mandatory Reporting Regulation	**Not applicable.** The project is not an industrial land use.
Recycling and Waste Management	Recycling and Waste	Title 24 Part 11 California Green Building Code Standards	**Consistent.** The project would not conflict with implementation of these measures. The project is required to achieve the recycling mandates via compliance with the CALGreen code. The project would utilize City of Clovis recycling services.
		AB 341 Statewide 75 Percent Diversion Goal	
Forests	Sustainable Forests	Cap-and-Trade Offset Projects	**Not applicable.** The project site is in an area designated for urban uses. No forested lands exist on-site.
High Global Warming Potential	High Global Warming Potential Gases	ARB Refrigerant Management Program CCR 95380	**Not applicable**. The regulations are applicable to refrigerants used by large air conditioning systems and large commercial and industrial refrigerators and cold storage system. Homes do not use large systems subject to the refrigerant management regulations adopted by ARB.

AGENDA ITEM NO.2

Table 20 (cont.): Project Consistency with AB 32 Scoping Plan

Scoping Plan Sector	Scoping Plan Measure	Implementing Regulations	Project Consistency
Agriculture	Agriculture	Cap-and-Trade Offset Projects for Livestock and Rice Cultivation	**Not applicable**. The project site is designated for urban development. No grazing, feedlot, or other agricultural activities that generate manure occur currently exist on-site or are proposed to be implemented by the project.
Source of ARB Scoping Plan Reduction Measures: California Air Resources Board 2008.			

General Plan Compliance

The City of Clovis updated and adopted its General Plan in August of 2014. The General Plan contains a limited number of goals or policies that relate directly to climate change. However, some of the policies in the Air Quality and Circulation Element would likely reduce GHG emissions as well as the other criteria pollutant emissions, because they attempt to reduce VMT and increase energy efficiency. As shown in Table 21, the project is consistent with the feasible and applicable policies.

Table 21: Consistency with General Plan Policies

General Plan Policy	Project Consistency
Air Quality Policy 1.1: Land use and transportation. Reduce greenhouse gas and other local pollutant emissions through mixed use and transit-oriented development and well-designed transit, pedestrian, and bicycle systems.	**Consistent.** Residents would have easy access to the existing bike lane on East Shepherd Avenue that connects to destinations throughout the area. Enhancements to encourage walking and bicycling will reduce driving and related pollutant emissions. In addition, the project is near existing primary and secondary schools.
Air Quality Policy 1.6: Alternative fuel infrastructure. Encourage public and private activity and employment centers to incorporate electric charging and alternative fuel stations.	**Consistent.** The project would not preclude future installment of electrical vehicle charging systems. Building codes require homes to be wired to allow future installations of charging equipment.
Air Quality Policy 1.8: Trees. Maintain or plant trees where appropriate to provide shade, absorb carbon, improve oxygenation, slow stormwater runoff, and reduce the heat island effect.	**Consistent.** The project would incorporate landscaping throughout the project site. The incorporated landscaping would provide shade, absorb carbon, improve oxygenation, slow stormwater runoff, and reduce the heat island effect.
Air Quality Policy 2.1: Regional coordination. Support regional efforts to reduce air pollution (criteria air pollutants and greenhouse gas emissions) and collaborate with other agencies to improve air quality at the emission source and reduce vehicle miles traveled.	**Not applicable.** This measure applies to local government coordination and not project proponents or residents. However, future residents can participate in educational and grant programs designed to reduce criteria pollutant emissions developed through regional coordination.
Air Quality Policy 2.2: Cross-jurisdictional issues. Collaborate with regional agencies and surrounding jurisdictions to address cross-jurisdictional transportation and air quality issues.	**Not applicable.** This measure applies to local government coordination and not to project proponents or residents.
Air Quality Policy 2.6: Innovative mitigation. Encourage innovative mitigation measures to reduce air quality impacts by coordinating with the SJVAPCD, project applicants, and other interested parties.	**Consistent.** The project would comply with Rule 9510, which may include payment of mitigation fees that can be used for innovative mitigation measures that reduce criteria pollutants and GHG emissions. Residents can participate in educational and grant programs designed to reduce GHG emissions developed through regional coordination.
Circulation Policy 1.1: Multimodal network. The City shall plan, design, operate, and maintain the transportation network to promote safe and convenient travel for all users: pedestrian, bicyclists, transit riders, freight, and motorists.	**Consistent.** The project area includes features designed to provide safe and convenient travel for users of all transportation modes. Residents will have easy access to an existing bike lane on East Shepherd Avenue and connects to the Clovis trail system.

Table 21 (cont.): Consistency with General Plan Policies

General Plan Policy	Project Consistency
Circulation Policy 1.2: Transportation decisions. Decisions should balance the comfort, convenience, and safety of pedestrians, bicyclists, and motorists.	**Consistent.** The project will comply with City of Clovis standards for street design that supports multiple modes of transportation. Residents will have easy access to the regional bikeways and the City of Clovis trail system, which will provide convenience and safety for pedestrians and bicyclists.
Circulation Policy 1.4: Jobs and housing. Encourage infill development that would provide jobs and services closer to housing, and vice versa, to reduce citywide vehicle miles traveled and effectively utilize the existing transportation infrastructure.	**Consistent.** The project is a residential development with 586 units that will provide employees for jobs in existing business parks and jobs centers in Clovis. The project is situated approximately 0.50 mile west of the nearest neighborhood commercial center and is within 2 miles of multiple medical facilities and regional commercial centers on Herndon Avenue.
Circulation Policy 1.5: Neighborhood connectivity. The transportation network shall provide multimodal access between neighborhoods and neighborhood-serving uses (educational, recreational, or neighborhood commercial uses).	**Consistent.** The project is within 1 to 2 miles of multiple existing educational, commercial, and businesses uses.
Circulation Policy 3.11: Right-of-way design. Design landscaped parkways, medians, and right-of-ways as aesthetic buffers to improve the community's appearance and encourage non-motorized transportation.	**Consistent.** The project will comply with City of Clovis design standards regarding landscaping and design of road improvements consistent with this policy.
Circulation Policy 5.1: Complete street amenities. Upgrade existing streets and design new streets to include complete street amenities, prioritizing improvements to bicycle and pedestrian connectivity or safety (consistent with the Bicycle Transportation Master Plan and other master plans).	**Consistent.** The project would be required to upgrade existing streets fronting the property in accordance with city standards. The project is located near bike lanes and trail systems, which provide access and safety for pedestrians and cyclists to jobs, schools, and shopping.
Circulation Policy 5.2: Development-funded facilities. Require development to fund and construct facilities as shown in the Bicycle Transportation Plan when facilities are in or adjacent to the development.	**Not applicable.** There are no planned trails within or directly adjacent to the development.
Circulation Policy 5.3: Pathways. Encourage pathways and other pedestrian amenities in urban centers and new development 10 acres or larger.	**Consistent.** The project will be served by bike lanes along the roads accessing the site.
Circulation Policy 5.4: Homeowner associations. The city may require homeowner associations to maintain pathways and other bicycle and pedestrian facilities within the homeowner association area.	**Consistent.** The project would comply with this policy if a homeowner's association is formed for the development.
Circulation Policy 5.5: Pedestrian access. Require sidewalks, paths, and crosswalks to provide access to schools, parks, and other activity centers to provide general pedestrian connectivity throughout the city.	**Consistent.** Future residents will be able to utilize sidewalks and paths constructed in compliance with city requirements in this area.

Table 21 (cont.): Consistency with General Plan Policies

General Plan Policy	Project Consistency
Land Use Policy 3.9: Connected development. New development in urban centers must fully improve roadway, pedestrian, and bicycle systems within and adjacent to the proposed project and connect to existing urbanized development.	**Not applicable.** The project is not in an urban center, but it will provide required street improvements and connections to pedestrian and bicycle systems.
Open Space and Conservation Policy 3.4: Drought-tolerant landscaping. Promote water conservation through use of drought-tolerant landscaping on existing and new residential properties. Require drought-tolerant landscaping for all new commercial and industrial development and city-maintained landscaping, unless used for recreation purposes.	**Consistent.** The project will promote water conservation through use of drought-tolerant landscaping on new residential properties.
Open Space and Conservation Policy 3.5: Energy and water conservation. Encourage new development and substantial rehabilitation projects to exceed energy and water conservation and reduction standards set in the California Building Code.	**Consistent:** The project will, at a minimum, comply with the 2016 Title 24 energy efficiency standards, which are 28 percent more stringent than previous standards. The 2016 Title 24 energy efficiency standards went into effect in January 2017 and provide a 28 percent reduction in energy use compared with 2013 Title 24. 2019 Title 24 becomes effective on January 1, 2020.
Open Space and Conservation Policy 3.6: Renewable Energy. Promote the use of renewable and sustainable energy sources to serve public and private sector development	**Consistent:** The project will comply with Green Building Code requirements for solar-ready roofs.
Open Space and Conservation Policy 3.7: Construction and design. Encourage new construction to incorporate energy efficient building and site design strategies**.**	**Consistent:** The project will design homes to meet or exceed the latest most stringent energy standards.
Source: City of Clovis General Plan 2014.	

In summary, the project incorporates a number of features that would minimize GHG emissions. These features are consistent with project-level strategies identified by the ARB's Scoping Plan and the City of Clovis General Plan. As demonstrated in the impact analysis above, the project would achieve an approximately 33.4 percent reduction from the BAU inventory by 2021 and a 47.3 percent reduction by 2030 and, therefore, would not significantly hinder or delay the State's ability to meet the reduction targets contained in AB 32 or SB32 or conflict with implementation of the Scoping Plan. The project promotes the goals of the Scoping Plan through implementation of design measures that reduce energy consumption, water consumption, and reduction in VMT. Therefore, the project does not conflict with any plans to reduce GHG emissions. The impact would be less than significant.

Consistency with California's Post-2020 Targets

The State's executive branch adopted several Executive Orders related to GHG emissions. Executive Orders S-3-05 and B-30-15 are two examples. Executive Order S-3-05 sets goals to reduce emissions

to 1990 levels by 2020 and 80 percent below 1990 levels by 2050. The goal of Executive Order S-3-05 to reduce GHG emissions to 1990 levels by 2020 was codified by AB 32. The project, as analyzed above, is consistent with AB 32. Therefore, the project does not conflict with this component of Executive Order S-3-05. Executive Order B-30-15 establishes an interim goal to reduce GHG emissions to 40 percent below 1990 levels by 2030.

The 2030 goal was recently codified under SB 32 and is now addressed by the 2017 Scoping Plan Update. The new plan provides a strategy that is capable of reaching the SB 32 target if the measures included in the plan are implemented and achieve reductions within the ranges expected. Under the Scoping Plan Update, local government plays a supporting role through its land use authority and control over local transportation infrastructure. The Plan Update includes reductions from implementation of SB 375 that applies to VMT from passenger vehicles. Fresno County targets for SB 375 are a 5 percent reduction by 2020 and a 10 percent reduction by 2035. SB 375 is implemented with the Fresno COG Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). The RTP/SCS envisions an increase in development density that would encourage fewer and shorter trips and more trips by transit, walking, and bicycling in amounts sufficient to achieve the SB 375 targets.

Now that the 2017 Scoping Plan has been adopted, new methodologies and threshold approaches are required to determine the fair-share contributions City development projects would need to make to achieve the 2030 target. In the meantime, however, the discussion under “Consistency with SB 32” below addresses the consistency of the proposed project with SB 32, which provides the statutory underpinning of the 2017 Scoping Plan. The SB 32 target requires GHG emissions to be reduced from 1990 levels. No consensus has been reached around the State on a new quantitative target for new development based on consistency with the SB 32 targets.

The Executive Order S-3-05 2050 target has not been codified by legislation. Studies have shown that, in order to meet the 2050 target, aggressive pursuit of technologies in the transportation and energy sectors, including electrification and the decarbonization of fuel, will be required. Because of the technological shifts required and the unknown parameters of the regulatory framework in 2050, quantitatively analyzing the project’s impacts further relative to the 2050 goal is speculative for purposes of CEQA (ARB 2014b).

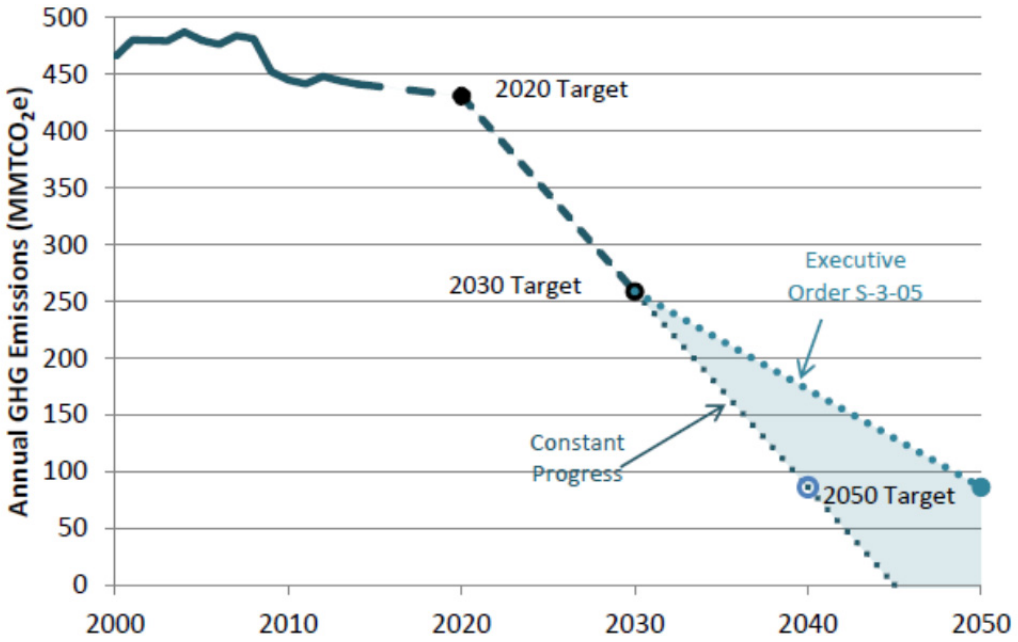
The ARB recognizes that AB 32 establishes an emissions reduction trajectory that will allow California to achieve the more stringent 2050 target: “These [greenhouse gas emission reduction] measures also put the State on a path to meet the long-term 2050 goal of reducing California’s GHG emissions to 80 percent below 1990 levels. This trajectory is consistent with the reductions that are needed globally to stabilize the climate.” In addition, ARB’s First Update “lays the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050,” and many of the emission reduction strategies recommended by ARB would serve to reduce the proposed project’s post-2020 emissions level to the extent applicable by law:

- **Energy Sector:** Continued improvements in California’s appliance and building energy efficiency programs and initiatives, such as the State’s zero net energy building goals, would serve to reduce the proposed project’s emissions level. Additionally, further additions to California’s renewable resource portfolio would favorably influence the project’s emissions level.

- **Transportation Sector:** Anticipated deployment of improved vehicle efficiency, zero emission technologies, lower carbon fuels, and improvement of existing transportation systems all will serve to reduce the project's emissions level.
- **Water Sector:** The project's emissions level will be reduced as a result of further desired enhancements to water conservation technologies.
- **Waste Management Sector:** Plans to further improve recycling, reuse and reduction of solid waste will beneficially reduce the project's emissions level.

For the reasons described above, the project's post-2020 emissions trajectory is expected to follow a declining trend, consistent with the 2030 and 2050 targets. The trajectory required to achieve the post-2020 targets is shown in Figure 8.

Figure 8: California's Path to Achieving the 2050 Target



Source: ARB 2017 Scoping Plan Update (ARB 2017)

In his January 2015 inaugural address, Governor Brown expressed a commitment to achieve "three ambitious goals" that he would like to see accomplished by 2030 to reduce the State's GHG emissions:

- Increasing the State's Renewable Portfolio Standard from 33 percent in 2020 to 50 percent in 2030;
- Cutting the petroleum use in cars and trucks in half; and
- Doubling the efficiency of existing buildings and making heating fuels cleaner.

These expressions of executive branch policy may be manifested in adopted legislative or regulatory action through the state agencies and departments responsible for achieving the State's environmental policy objectives, particularly those relating to global climate change (Brown 2015).

Further, recent studies show that the State's existing and proposed regulatory framework will allow the State to reduce its GHG emissions level to 40 percent below 1990 levels by 2030, and to 80 percent below 1990 levels by 2050. Even though these studies did not provide an exact regulatory and technological roadmap to achieve the 2030 and 2050 goals, they demonstrated that various combinations of policies could allow the statewide emissions level to remain very low through 2050, suggesting that the combination of new technologies and other regulations not analyzed in the studies could allow the State to meet the 2050 target (Energy and Economics 2015).

Given the proportional contribution of mobile source-related GHG emissions to the State's inventory, recent studies also show that relatively new trends—such as the increasing importance of web-based shopping, the emergence of different driving patterns by the "millennial" generation, and the increasing effect of web-based applications on transportation choices—are beginning to substantially influence transportation choices and the energy used by transportation modes. These factors have changed the direction of transportation trends in recent years and will require the creation of new models to effectively analyze future transportation patterns and the corresponding effect on GHG emissions. For the reasons described above, the proposed project's post-2020 emissions trajectory is expected to follow a declining trend, consistent with the 2030 and 2050 targets.

Consistency with SB 32

The 2017 Climate Change Scoping Plan Update (2017 Scoping Plan) includes the strategy that the State intends to pursue to achieve the 2030 targets of Executive Order S-3-05 and SB 32. The 2017 Scoping Plan includes the following summary of its overall strategy for reaching the 2030 target:

- SB 350
  - Achieve 50 percent Renewables Portfolio Standard (RPS) by 2030.
  - Doubling of energy efficiency savings by 2030.
- Low Carbon Fuel Standard (LCFS)
  - Increased stringency (reducing carbon intensity 18 percent by 2030, up from 10 percent in 2020).
- Mobile Source Strategy (Cleaner Technology and Fuels Scenario)
  - Maintaining existing GHG standards for light- and heavy-duty vehicles.
  - Put 4.2 million zero-emission vehicles (ZEVs) on the roads.
  - Increase ZEV buses, delivery and other trucks.
- Sustainable Freight Action Plan
  - Improve freight system efficiency.
  - Maximize use of near-zero emission vehicles and equipment powered by renewable energy.
  - Deploy over 100,000 zero-emission trucks and equipment by 2030.
- Short-Lived Climate Pollutant (SLCP) Reduction Strategy
  - Reduce emissions of methane and hydrofluorocarbons 40 percent below 2013 levels by 2030.
  - Reduce emissions of black carbon 50 percent below 2013 levels by 2030.
- SB 375 Sustainable Communities Strategies
  - Increased stringency of 2035 targets.

- Post-2020 Cap-and-Trade Program
  - Declining caps, continued linkage with Québec, and linkage to Ontario, Canada.
  - ARB will look for opportunities to strengthen the program to support more air quality co-benefits, including specific program design elements. In Fall 2016, ARB staff described potential future amendments including reducing the offset usage limit, redesigning the allocation strategy to reduce free allocation to support increased technology and energy investment at covered entities and reducing allocation if the covered entity increases criteria or toxics emissions over some baseline.
- By 2018, develop Integrated Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

Table 22 provides an analysis of the project's consistency with the 2017 Scoping Plan Update measures.

Table 22: Consistency with SB 32 2017 Scoping Plan Update

Scoping Plan Measure	Project Consistency
SB 350 50% Renewable Mandate. Utilities subject to the legislation will be required to increase their renewable energy mix from 33% in 2020 to 50% in 2030.	**Consistent**: The project will purchase electricity from a utility subject to the SB 350 Renewable Mandate.
SB 350 Double Building Energy Efficiency by 2030. This is equivalent to a 20 percent reduction from 2014 building energy usage compared to current projected 2030 levels	**Not Applicable**. This measure applies to existing buildings. New structures are required to comply with Title 24 Energy Efficiency Standards that are expected to increase in stringency until residential housing achieves zero net energy.
Low Carbon Fuel Standard. This measure requires fuel providers to meet an 18 percent reduction in carbon content by 2030.	**Consistent**. Vehicles accessing the project site will use fuel containing lower carbon content as the fuel standard is implemented.
Mobile Source Strategy (Cleaner Technology and Fuels Scenario). Vehicle manufacturers will be required to meet existing regulations mandated by the LEV III and Heavy-Duty Vehicle programs. The strategy includes a goal of having 4.2 million ZEVs on the road by 2030 and increasing numbers of ZEV trucks and buses.	**Consistent**. Project residents can be expected to purchase increasing numbers of more fuel efficient and zero emission cars and trucks each year. The 2016 CALGreen Code requires electrical service in new single-family housing to be EV charger-ready. Home deliveries will be made by increasing numbers of ZEV delivery trucks.
Sustainable Freight Action Plan. The plan's target is to improve freight system efficiency 25 percent by increasing the value of goods and services produced from the freight sector, relative to the amount of carbon that it produces by 2030. This would be achieved by deploying over 100,000 freight vehicles and equipment capable of zero emission operation and maximize near-zero emission freight vehicles and equipment powered by renewable energy by 2030.	**Not Applicable**. The measure applies to owners and operators of trucks and freight operations. However, home deliveries are expected to be made by increasing number of ZEV delivery trucks.

Table 22 (cont.): Consistency with SB 32 2017 Scoping Plan Update

Scoping Plan Measure	Project Consistency
Short-Lived Climate Pollutant (SLCP) Reduction Strategy. The strategy requires the reduction of SLCPs by 40 percent from 2013 levels by 2030 and the reduction of black carbon by 50 percent from 2013 levels by 2030.	**Consistent**. The project will include only natural gas hearths that produce very little black carbon compared with wood burning fireplaces and heaters.
SB 375 Sustainable Communities Strategies. Requires Regional Transportation Plans to include a sustainable communities strategy for reduction of per capita vehicle miles traveled. The targets for Fresno County are	**Consistent**. The project will provide residential development in the region that is consistent with the Regional Transportation Plan/Sustainable Communities Strategy (SCS) strategy to increase development densities to reduce VMT. The project is not within an SCS priority area and so is not subject to requirements applicable to those areas.
Post-2020 Cap-and-Trade Program. The Post 2020 Cap-and-Trade Program continues the existing program for another 10 years. The Cap-and-Trade Program applies to large industrial sources such as power plants, refineries, and cement manufacturers.	**Consistent.** The post-2020 Cap-and-Trade Program indirectly affects people who use the products and services produced by the regulated industrial sources when increased cost of products or services (such as electricity and fuel) are transferred to the consumers. The Cap-and-Trade Program covers the GHG emissions associated with electricity consumed in California, whether generated in-state or imported. Accordingly, GHG emissions associated with CEQA projects' electricity usage are covered by the Cap-and-Trade Program. The Cap-and-Trade Program also covers fuel suppliers (natural gas and propane fuel providers and transportation fuel providers) to address emissions from such fuels and from combustion of other fossil fuels not directly covered at large sources in the program's first compliance period.
Natural and Working Lands Action Plan. The ARB is working in coordination with several other agencies at the federal, state, and local levels, stakeholders, and with the public, to develop measures as outlined in the Scoping Plan Update and the governor's Executive Order B-30-15 to reduce GHG emissions and to cultivate net carbon sequestration potential for California's natural and working land.	**Not Applicable**. The project is residential development and will not be considered natural or working lands.
Source: ARB 2017 Scoping Plan Update.	

Regarding goals for 2050 under Executive Order S-3-05, at this time it is not possible to quantify the emissions savings from future regulatory measures, as they have not yet been developed; nevertheless, it can be anticipated that operation of the project would comply with whatever measures are enacted that state lawmakers decide would lead to an 80 percent reduction below 1990 levels by 2050. In its 2008 Scoping Plan, ARB acknowledged that the "measures needed to meet the 2050 are too far in the future to define in detail." In the First Scoping Plan Update; however, ARB generally described the type of activities required to achieve the 2050 target: "energy demand

reduction through efficiency and activity changes; large scale electrification of on-road vehicles, buildings, and industrial machinery; decarbonizing electricity and fuel supplies; and rapid market penetration of efficiency and clean energy technologies that requires significant efforts to deploy and scale markets for the cleanest technologies immediately." The 2017 Scoping Plan provides an intermediate target that is intended to achieve reasonable progress toward the 2050 target.

Accordingly, taking into account the proposed project's emissions, project design features, and the progress being made by the State towards reducing emissions in key sectors such as transportation, industry, and electricity, the project would be consistent with State GHG Plans and would further the State's goals of reducing GHG emissions to 1990 levels by 2020, 40 percent below 1990 levels by 2030, and 80 percent below 1990 levels by 2050, and does not obstruct their attainment.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant impact.

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SECTION 7: REFERENCES

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Appendix A: Modeling Assumptions and Results

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Appendix A: Modeling Assumptions and Results

Tract 6050 Modeling Information

Operational Schedule

Single Phase	255 Homes	
Acres (gross)		36.76
Acres (net)		35.22
APN	556-050-11	

Project Schedule

Construction Start	5/1/2020
Ground Up Const	11/15/2020
First Occupancy	5/1/2021
Buildout	12/31/2023

Nearest Land Uses Emitting Toxic Air Contaminants

Fueling Station	1175 N. Fowler Ave	2.30	SE
Dry Cleaners	491 Herndon Ave	2.50	S
Autobody Shop	255 Park Ave.	2.60	SSE
Distance to Clovis Villa Monitoring Station		3.30	SSW
Distance to Downtown Clovis		3.1	

PG&E Emission Factor for 2020 MTCO2/MWh

2020	290

PG&E Greenhouse Gas Emission
Factors:
Guidance for PG&E Customers
November 2015

Solar Panels

19 acres-
Elev8ions product:
Plan 1108 = 2.71kw
Plans 1160, 1212, 1245, 1390, 1413 & 1648 = 1.8kw

19 acres-
Chadwick product:
Plan 2277: 3.97kw
Plan 2378: 3.87kw
Plan 2399: 4.46kw
pLan 2404: 3.95kw
plan 2528: 3.97kw
plan 2700: 4.07kw
plan 3522: 5.28kw
plan 3912: 5.35kw

Wilson Premier Homes Tract No. 6050 Construction Fleet and Schedule

Default Construction Schedule

Phase Name		Phase Type	Start Date	End Date	Num Days Week	Num Days
	1	Site Preparation	Site Preparatior	2020/05/01	2020/06/11	5
	2	Grading	Grading	2020/06/12	2020/09/24	5
	3	Building Construction	Building Constr	2020/09/25	2023/07/27	5
	4	Paving	Paving	2023/07/28	2023/10/12	5
	5	Architectural Coating	Architectural Cc	2023/10/13	2023/12/28	5

Developers Construction Schedule

Phase Name		Phase Type	Start Date	End Date	Num Days Week	Num Days
	1	Site Preparation	Site Preparatior	2020/05/01	2020/06/11	5
	2	Grading	Grading	2020/06/12	2020/09/24	5
	3	Building Construction	Building Constr	2020/09/25	2022/12/01	5
	4	Paving	Paving	2022/12/02	2023/02/16	5
	5	Architectural Coating	Architectural Cc	2023/02/17	2023/05/04	5

Phase Name	Offroad Equipment Type	Amount	Default Hours /Day	No. of Days per Phase	Hours/Phase
Site Preparation	Rubber Tired Dozers	3	8	30	720
Site Preparation	Tractors/Loaders/Backhoes	4	8	30	960
Grading	Excavators	2	8	75	1200
Grading	Graders	1	8	75	600
Grading	Rubber Tired Dozers	1	8	75	600
Grading	Scrapers	2	8	75	1200
Grading	Tractors/Loaders/Backhoes	2	8	75	1200
Building Construction	Cranes	1	7	740	5180
Building Construction	Forklifts	3	8	740	17760
Building Construction	Generator Sets	1	8	740	5920
Building Construction	Tractors/Loaders/Backhoes	3	7	740	15540
Building Construction	Welders	1	8	740	5920
Paving	Pavers	2	8	55	880
Paving	Paving Equipment	2	8	55	880
Paving	Rollers	2	8	55	880
Architectural Coating	Air Compressors	1	6	55	330
					59770

Appendix A: Emission Summary

Tract 6050 Emission Summary

Construction Emissions		**ROG**	**NOX**	**CO**	**PM10**	**PM2.5**
	2020	0.35	3.52	2.42	0.47	0.29
	2021	0.38	3.38	3.18	0.28	0.19
	2022	0.33	2.91	3.00	0.24	0.15
	2023	1.89	0.21	0.31	0.02	0.01
Total		**2.95**	**10.03**	**8.92**	**1.02**	**0.65**

Mitigated results used to reflect compliance with Regulation VIII

Unmitigated Operational Emissions	**ROG**	**NOX**	**CO**	**PM10**	**PM2.5**
Area	2.80	0.23	8.74	1.13	1.13
Energy	0.04	0.31	0.13	0.02	0.02
Mobile	0.82	2.98	0.27	0.03	0.72
Total	**3.65**	**3.52**	**9.14**	**1.18**	**1.88**

Mitigated Operational Emissions	**ROG**	**NOX**	**CO**	**PM10**	**PM2.5**
Area	2.05	0.12	1.94	0.02	0.02
Energy	0.03	0.29	0.12	0.02	0.02
Mobile	0.80	2.86	8.78	2.45	0.67
Total	**2.88**	**3.27**	**10.84**	**2.50**	**0.71**

Construction						
Maximum Daily Emission Summer		**ROG**	**NOX**	**CO**	**PM10**	**PM2.5**
	2020	4.55	50.25	32.60	10.48	6.53
	2021	2.97	25.87	24.66	2.20	1.44
	2022	2.68	23.34	24.12	2.00	1.25
	2023	68.15	10.22	14.95	0.63	0.50
Total		**78.34**	**109.68**	**96.34**	**15.31**	**9.72**
Highest any Year		**68.15**	**50.25**	**32.60**	**10.48**	**6.53**

Maximum Daily Emission Winter		**ROG**	**NOX**	**CO**	**PM10**	**PM2.5**
	2020	4.54	50.26	32.51	10.48	6.53
	2021	2.94	25.94	24.34	2.20	1.44
	2022	2.66	23.39	23.82	2.00	1.25
	2023	68.14	10.22	14.89	0.63	0.50
Total		**78.28**	**109.81**	**95.56**	**15.31**	**9.72**
Highest any Year		**68.14**	**50.26**	**32.51**	**10.48**	**6.53**

Operations Summer					
Maximum Daily Emissions	**ROG**	**NOX**	**CO**	**PM10**	**PM2.5**
Area	11.76	2.57	22.07	0.30	0.30
Energy	0.19	1.58	0.67	0.13	0.13

Operations Winter

Maximum Daily Emissions	ROG	NOX	CO	PM10	PM2.5
Area	11.76	2.57	22.07	0.30	0.30
Energy	0.19	1.58	0.67	0.13	0.13
Mobile	0.28	1.13	3.42	0.97	0.27
	12.22	**5.28**	**26.17**	**1.40**	**0.70**

Area emissions are from mitigated report to reflect no woodburning devices.
Mobile emissions use a 0.5 mile trip length to count only local emissions near the project site

Construction GHG Emissions

Year		**CO2e**
	2020	417.47
	2021	570.03
	2022	540.85
	2023	46.01
Total		**1,574.35**
Amortized over 30 years		52.48

Operational GHG Emissions 2021

	BAU	**2021**	**Percent Reduction**	
Area	280.32	114.29	59.23%	
Energy	1,010.33	629.98	37.65%	
Mobile	3,129.81	2,179.54	30.36%	
Waste	131.98	98.99	25.00%	
Water	59.58	31.50	47.12%	
Total	**4,612.02**	**3,054.30**	**33.78%**	
Construction	52.48	52.48	0.00%	
Total with Amortized Construction	**4,664.50**	**3,106.78**	**33.40%**	33.40%
Reduction from BAU		1,557.71	21.70%	29.00%
			11.70%	4.40%

LCFS 10% reduction for 2020 for calculated by multiplying mitigated mobile by 0.90

Operational GHG Emissions 2030

	BAU	**2030**	**Percent Reduction**	
Area	280.32	114.29	59.23%	
Energy	1,010.33	629.98	37.65%	
Mobile	3,129.81	1,529.50	51.13%	
Waste	131.98	98.99	25.00%	
Water	59.58	31.50	47.12%	
Total	**4,612.02**	**2,404.26**	**47.87%**	
Construction	52.48	52.48	0.00%	
Total with Amortized Construction	**4,664.50**	**2,456.74**	**47.33%**	47.30%
Reduction from BAU		2,207.76	21.70%	29.00%

Appendix A: CalEEMod Output

CalEEMod Output

Construction and Operations (Annual)

Wilson Tract 6050 Clovis Const and Ops 2021

Fresno County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	255.00	Dwelling Unit	36.76	459,000.00	729

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.022	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E Intensity Factors

Land Use - Site plan acreage

Construction Phase - Developers construction schedule

Architectural Coating - Rule 4601 Architectural Coatings compliance

Vehicle Trips - ITE 10th Ed. Trip Generation Rates 9.44, 9.54 8.55

Woodstoves - SJVAPCD Rule 4901 Woodburning

Area Coating - Rule 4601 Architectural Coatings

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation - 2019 Title 24 Standards reduction without solar for residential

Water Mitigation -

Waste Mitigation -

Off-road Equipment - Adjusted hours per day to reflect shorter schedule while retaining default hours of use per phase

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	150.00	65.00
tblArchitecturalCoating	EF_Residential_Interior	150.00	65.00
tblAreaCoating	Area_EF_Residential_Exterior	150	65
tblAreaCoating	Area_EF_Residential_Interior	150	65
tblConstructionPhase	NumDays	740.00	570.00
tblConstructionPhase	PhaseEndDate	7/27/2023	12/1/2022
tblConstructionPhase	PhaseEndDate	10/12/2023	2/16/2023
tblConstructionPhase	PhaseEndDate	12/28/2023	5/4/2023
tblConstructionPhase	PhaseStartDate	7/28/2023	12/2/2022
tblConstructionPhase	PhaseStartDate	10/13/2023	2/17/2023
tblFleetMix	HHD	0.12	0.02

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tblFleetMix	LDA	0.49	0.54
tblFleetMix	LDT1	0.03	0.20
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LHD1	0.02	1.4000e-003
tblFleetMix	LHD2	4.7320e-003	9.0000e-004
tblFleetMix	MCY	5.1540e-003	2.6000e-003
tblFleetMix	MDV	0.12	0.05
tblFleetMix	MH	6.2900e-004	1.6000e-003
tblFleetMix	MHD	0.03	9.0000e-003
tblFleetMix	OBUS	2.3660e-003	0.00
tblFleetMix	SBUS	1.0970e-003	9.0000e-004
tblFleetMix	UBUS	1.5900e-003	4.4000e-003
tblLandUse	LotAcreage	82.79	36.76
tblOffRoadEquipment	UsageHours	7.00	9.10
tblOffRoadEquipment	UsageHours	8.00	10.40
tblOffRoadEquipment	UsageHours	8.00	10.40
tblOffRoadEquipment	UsageHours	7.00	9.10
tblOffRoadEquipment	UsageHours	8.00	10.40
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.022
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblVehicleTrips	HO_TTP	35.70	36.00
tblVehicleTrips	HS_TTP	15.90	16.00
tblVehicleTrips	HW_TTP	48.40	48.00
tblVehicleTrips	ST_TR	9.91	9.54
tblVehicleTrips	SU_TR	8.62	8.55
tblVehicleTrips	WD_TR	9.52	9.44

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.3463	3.5203	2.4243	4.7100e-003	0.6364	0.1662	0.8026	0.2947	0.1539	0.4486	0.0000	414.6682	414.6682	0.1119	0.0000	417.4668
2021	0.3810	3.3832	3.1752	6.4400e-003	0.1193	0.1643	0.2836	0.0323	0.1545	0.1867	0.0000	567.3290	567.3290	0.1082	0.0000	570.0326
2022	0.3270	2.9111	3.0028	6.1200e-003	0.1105	0.1330	0.2436	0.0299	0.1250	0.1549	0.0000	538.2267	538.2267	0.1048	0.0000	540.8460
2023	1.8923	0.2106	0.3135	5.2000e-004	6.0000e-003	0.0107	0.0167	1.5900e-003	9.9600e-003	0.0116	0.0000	45.7176	45.7176	0.0115	0.0000	46.0059
Maximum	**1.8923**	**3.5203**	**3.1752**	**6.4400e-003**	**0.6364**	**0.1662**	**0.8026**	**0.2947**	**0.1545**	**0.4486**	**0.0000**	**567.3290**	**567.3290**	**0.1119**	**0.0000**	**570.0326**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.3463	3.5203	2.4243	4.7100e-003	0.3085	0.1662	0.4746	0.1385	0.1539	0.2925	0.0000	414.6677	414.6677	0.1119	0.0000	417.4663
2021	0.3810	3.3832	3.1752	6.4400e-003	0.1193	0.1643	0.2836	0.0323	0.1545	0.1867	0.0000	567.3285	567.3285	0.1082	0.0000	570.0321
2022	0.3270	2.9111	3.0028	6.1200e-003	0.1105	0.1330	0.2436	0.0299	0.1250	0.1549	0.0000	538.2263	538.2263	0.1048	0.0000	540.8456
2023	1.8923	0.2106	0.3135	5.2000e-004	6.0000e-003	0.0107	0.0167	1.5900e-003	9.9600e-003	0.0116	0.0000	45.7176	45.7176	0.0115	0.0000	46.0058
Maximum	**1.8923**	**3.5203**	**3.1752**	**6.4400e-003**	**0.3085**	**0.1662**	**0.4746**	**0.1385**	**0.1545**	**0.2925**	**0.0000**	**567.3285**	**567.3285**	**0.1119**	**0.0000**	**570.0321**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**37.59**	**0.00**	**24.36**	**43.56**	**0.00**	**19.47**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	5-1-2020	7-31-2020	1.6779	1.6779
2	8-1-2020	10-31-2020	1.4969	1.4969
3	11-1-2020	1-31-2021	1.0133	1.0133
4	2-1-2021	4-30-2021	0.9176	0.9176
5	5-1-2021	7-31-2021	0.9477	0.9477
6	8-1-2021	10-31-2021	0.9481	0.9481
7	11-1-2021	1-31-2022	0.9175	0.9175
8	2-1-2022	4-30-2022	0.8275	0.8275

9	**5-1-2022**	**7-31-2022**	0.8548	0.8548
10	**8-1-2022**	**10-31-2022**	0.8551	0.8551
11	**11-1-2022**	**1-31-2023**	0.5456	0.5456
12	**2-1-2023**	**4-30-2023**	1.8762	1.8762
13	**5-1-2023**	**7-31-2023**	0.0993	0.0993
		Highest	1.8762	1.8762

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.7971	0.2283	8.7415	0.0229		1.1280	1.1280		1.1280	1.1280	148.6105	113.5607	262.1712	0.6998	2.0300e-003	280.2707
Energy	0.0360	0.3072	0.1307	1.9600e-003		0.0248	0.0248		0.0248	0.0248	0.0000	649.6413	649.6413	0.0291	0.0116	653.8227
Mobile	0.8164	2.9842	9.2692	0.0281	2.6107	0.0253	2.6360	0.6989	0.0237	0.7226	0.0000	2,584.3291	2,584.3291	0.1789	0.0000	2,588.8020
Waste						0.0000	0.0000		0.0000	0.0000	53.2730	0.0000	53.2730	3.1483	0.0000	131.9815
Water						0.0000	0.0000		0.0000	0.0000	5.2709	16.6479	21.9188	0.5426	0.0131	39.3797
Total	**3.6494**	**3.5197**	**18.1415**	**0.0530**	**2.6107**	**1.1782**	**3.7889**	**0.6989**	**1.1766**	**1.8755**	**207.1544**	**3,364.1790**	**3,571.3334**	**4.5988**	**0.0267**	**3,694.2565**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.0480	0.1173	1.9381	7.1000e-004		0.0182	0.0182		0.0182	0.0182	0.0000	113.5607	113.5607	5.1100e-003	2.0300e-003	114.2921
Energy	0.0338	0.2888	0.1229	1.8400e-003		0.0234	0.0234		0.0234	0.0234	0.0000	625.9447	625.9447	0.0285	0.0112	629.9827
Mobile	0.8013	2.8644	8.7807	0.0263	2.4305	0.0238	2.4543	0.6507	0.0222	0.6729	0.0000	2,417.4348	2,417.4348	0.1710	0.0000	2,421.7108
Waste						0.0000	0.0000		0.0000	0.0000	39.9547	0.0000	39.9547	2.3613	0.0000	98.9861
Water						0.0000	0.0000		0.0000	0.0000	4.2168	13.3183	17.5351	0.4341	0.0105	31.5038
Total	**2.8830**	**3.2704**	**10.8417**	**0.0289**	**2.4305**	**0.0653**	**2.4958**	**0.6507**	**0.0638**	**0.7144**	**44.1715**	**3,170.2585**	**3,214.4300**	**3.0001**	**0.0237**	**3,296.4754**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**21.00**	**7.08**	**40.24**	**45.54**	**6.90**	**94.46**	**34.13**	**6.90**	**94.58**	**61.91**	**78.68**	**5.76**	**9.99**	**34.77**	**11.39**	**10.77**

3.0 Construction Detail

Construction Phase

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	5/1/2020	6/11/2020	5	30	
2	Grading	Grading	6/12/2020	9/24/2020	5	75	
3	Building Construction	Building Construction	9/25/2020	12/1/2022	5	570	
4	Paving	Paving	12/2/2022	2/16/2023	5	55	
5	Architectural Coating	Architectural Coating	2/17/2023	5/4/2023	5	55	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 187.5

Acres of Paving: 0

Residential Indoor: 929,475; Residential Outdoor: 309,825; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	9.10	231	0.29
Building Construction	Forklifts	3	10.40	89	0.20
Building Construction	Generator Sets	1	10.40	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	9.10	97	0.37
Building Construction	Welders	1	10.40	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	92.00	27.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2710	0.0000	0.2710	0.1490	0.0000	0.1490	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0612	0.6363	0.3227	5.7000e-004		0.0330	0.0330		0.0303	0.0303	0.0000	50.1460	50.1460	0.0162	0.0000	50.5515
Total	**0.0612**	**0.6363**	**0.3227**	**5.7000e-004**	**0.2710**	**0.0330**	**0.3040**	**0.1490**	**0.0303**	**0.1793**	**0.0000**	**50.1460**	**50.1460**	**0.0162**	**0.0000**	**50.5515**

3.2 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1700e-003	7.4000e-004	7.5000e-003	2.0000e-005	2.1600e-003	1.0000e-005	2.1700e-003	5.7000e-004	1.0000e-005	5.9000e-004	0.0000	1.8682	1.8682	5.0000e-005	0.0000	1.8695
Total	**1.1700e-003**	**7.4000e-004**	**7.5000e-003**	**2.0000e-005**	**2.1600e-003**	**1.0000e-005**	**2.1700e-003**	**5.7000e-004**	**1.0000e-005**	**5.9000e-004**	**0.0000**	**1.8682**	**1.8682**	**5.0000e-005**	**0.0000**	**1.8695**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1220	0.0000	0.1220	0.0670	0.0000	0.0670	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0612	0.6363	0.3227	5.7000e-004		0.0330	0.0330		0.0303	0.0303	0.0000	50.1460	50.1460	0.0162	0.0000	50.5514
Total	**0.0612**	**0.6363**	**0.3227**	**5.7000e-004**	**0.1220**	**0.0330**	**0.1549**	**0.0670**	**0.0303**	**0.0974**	**0.0000**	**50.1460**	**50.1460**	**0.0162**	**0.0000**	**50.5514**

3.2 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1700e-003	7.4000e-004	7.5000e-003	2.0000e-005	2.1600e-003	1.0000e-005	2.1700e-003	5.7000e-004	1.0000e-005	5.9000e-004	0.0000	1.8682	1.8682	5.0000e-005	0.0000	1.8695
Total	**1.1700e-003**	**7.4000e-004**	**7.5000e-003**	**2.0000e-005**	**2.1600e-003**	**1.0000e-005**	**2.1700e-003**	**5.7000e-004**	**1.0000e-005**	**5.9000e-004**	**0.0000**	**1.8682**	**1.8682**	**5.0000e-005**	**0.0000**	**1.8695**

3.3 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3253	0.0000	0.3253	0.1349	0.0000	0.1349	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1669	1.8824	1.1984	2.3300e-003		0.0815	0.0815		0.0750	0.0750	0.0000	204.3161	204.3161	0.0661	0.0000	205.9681
Total	**0.1669**	**1.8824**	**1.1984**	**2.3300e-003**	**0.3253**	**0.0815**	**0.4068**	**0.1349**	**0.0750**	**0.2099**	**0.0000**	**204.3161**	**204.3161**	**0.0661**	**0.0000**	**205.9681**

3.3 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2400e-003	2.0500e-003	0.0209	6.0000e-005	6.0000e-003	4.0000e-005	6.0300e-003	1.5900e-003	4.0000e-005	1.6300e-003	0.0000	5.1895	5.1895	1.4000e-004	0.0000	5.1930
Total	**3.2400e-003**	**2.0500e-003**	**0.0209**	**6.0000e-005**	**6.0000e-003**	**4.0000e-005**	**6.0300e-003**	**1.5900e-003**	**4.0000e-005**	**1.6300e-003**	**0.0000**	**5.1895**	**5.1895**	**1.4000e-004**	**0.0000**	**5.1930**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1464	0.0000	0.1464	0.0607	0.0000	0.0607	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1669	1.8824	1.1984	2.3300e-003		0.0815	0.0815		0.0750	0.0750	0.0000	204.3159	204.3159	0.0661	0.0000	205.9679
Total	**0.1669**	**1.8824**	**1.1984**	**2.3300e-003**	**0.1464**	**0.0815**	**0.2279**	**0.0607**	**0.0750**	**0.1357**	**0.0000**	**204.3159**	**204.3159**	**0.0661**	**0.0000**	**205.9679**

3.3 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2400e-003	2.0500e-003	0.0209	6.0000e-005	6.0000e-003	4.0000e-005	6.0300e-003	1.5900e-003	4.0000e-005	1.6300e-003	0.0000	5.1895	5.1895	1.4000e-004	0.0000	5.1930
Total	**3.2400e-003**	**2.0500e-003**	**0.0209**	**6.0000e-005**	**6.0000e-003**	**4.0000e-005**	**6.0300e-003**	**1.5900e-003**	**4.0000e-005**	**1.6300e-003**	**0.0000**	**5.1895**	**5.1895**	**1.4000e-004**	**0.0000**	**5.1930**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0965	0.8730	0.7666	1.2200e-003		0.0508	0.0508		0.0478	0.0478	0.0000	105.3825	105.3825	0.0257	0.0000	106.0253
Total	**0.0965**	**0.8730**	**0.7666**	**1.2200e-003**		**0.0508**	**0.0508**		**0.0478**	**0.0478**	**0.0000**	**105.3825**	**105.3825**	**0.0257**	**0.0000**	**106.0253**

3.4 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.5300e-003	0.1171	0.0187	2.7000e-004	6.2600e-003	6.2000e-004	6.8800e-003	1.8100e-003	5.9000e-004	2.4000e-003	0.0000	25.4853	25.4853	3.1500e-003	0.0000	25.5641
Worker	0.0139	8.8200e-003	0.0895	2.5000e-004	0.0257	1.7000e-004	0.0259	6.8400e-003	1.5000e-004	6.9900e-003	0.0000	22.2804	22.2804	6.0000e-004	0.0000	22.2954
Total	**0.0174**	**0.1259**	**0.1082**	**5.2000e-004**	**0.0320**	**7.9000e-004**	**0.0328**	**8.6500e-003**	**7.4000e-004**	**9.3900e-003**	**0.0000**	**47.7657**	**47.7657**	**3.7500e-003**	**0.0000**	**47.8594**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0965	0.8730	0.7666	1.2200e-003		0.0508	0.0508		0.0478	0.0478	0.0000	105.3824	105.3824	0.0257	0.0000	106.0252
Total	**0.0965**	**0.8730**	**0.7666**	**1.2200e-003**		**0.0508**	**0.0508**		**0.0478**	**0.0478**	**0.0000**	**105.3824**	**105.3824**	**0.0257**	**0.0000**	**106.0252**

3.4 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.5300e-003	0.1171	0.0187	2.7000e-004	6.2600e-003	6.2000e-004	6.8800e-003	1.8100e-003	5.9000e-004	2.4000e-003	0.0000	25.4853	25.4853	3.1500e-003	0.0000	25.5641
Worker	0.0139	8.8200e-003	0.0895	2.5000e-004	0.0257	1.7000e-004	0.0259	6.8400e-003	1.5000e-004	6.9900e-003	0.0000	22.2804	22.2804	6.0000e-004	0.0000	22.2954
Total	**0.0174**	**0.1259**	**0.1082**	**5.2000e-004**	**0.0320**	**7.9000e-004**	**0.0328**	**8.6500e-003**	**7.4000e-004**	**9.3900e-003**	**0.0000**	**47.7657**	**47.7657**	**3.7500e-003**	**0.0000**	**47.8594**

3.4 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3225	2.9574	2.8120	4.5700e-003		0.1626	0.1626		0.1529	0.1529	0.0000	392.9726	392.9726	0.0948	0.0000	395.3428
Total	**0.3225**	**2.9574**	**2.8120**	**4.5700e-003**		**0.1626**	**0.1626**		**0.1529**	**0.1529**	**0.0000**	**392.9726**	**392.9726**	**0.0948**	**0.0000**	**395.3428**

3.4 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0107	0.3966	0.0604	9.9000e-004	0.0234	1.0600e-003	0.0244	6.7500e-003	1.0200e-003	7.7600e-003	0.0000	94.1290	94.1290	0.0114	0.0000	94.4129
Worker	0.0479	0.0293	0.3028	8.9000e-004	0.0960	6.0000e-004	0.0966	0.0255	5.5000e-004	0.0261	0.0000	80.2273	80.2273	1.9800e-003	0.0000	80.2769
Total	**0.0585**	**0.4259**	**0.3632**	**1.8800e-003**	**0.1193**	**1.6600e-003**	**0.1210**	**0.0323**	**1.5700e-003**	**0.0338**	**0.0000**	**174.3563**	**174.3563**	**0.0133**	**0.0000**	**174.6898**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3225	2.9574	2.8120	4.5700e-003		0.1626	0.1626		0.1529	0.1529	0.0000	392.9722	392.9722	0.0948	0.0000	395.3424
Total	**0.3225**	**2.9574**	**2.8120**	**4.5700e-003**		**0.1626**	**0.1626**		**0.1529**	**0.1529**	**0.0000**	**392.9722**	**392.9722**	**0.0948**	**0.0000**	**395.3424**

3.4 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0107	0.3966	0.0604	9.9000e-004	0.0234	1.0600e-003	0.0244	6.7500e-003	1.0200e-003	7.7600e-003	0.0000	94.1290	94.1290	0.0114	0.0000	94.4129
Worker	0.0479	0.0293	0.3028	8.9000e-004	0.0960	6.0000e-004	0.0966	0.0255	5.5000e-004	0.0261	0.0000	80.2273	80.2273	1.9800e-003	0.0000	80.2769
Total	**0.0585**	**0.4259**	**0.3632**	**1.8800e-003**	**0.1193**	**1.6600e-003**	**0.1210**	**0.0323**	**1.5700e-003**	**0.0338**	**0.0000**	**174.3563**	**174.3563**	**0.0133**	**0.0000**	**174.6898**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2651	2.4259	2.5421	4.1800e-003		0.1257	0.1257		0.1183	0.1183	0.0000	359.9852	359.9852	0.0862	0.0000	362.1412
Total	**0.2651**	**2.4259**	**2.5421**	**4.1800e-003**		**0.1257**	**0.1257**		**0.1183**	**0.1183**	**0.0000**	**359.9852**	**359.9852**	**0.0862**	**0.0000**	**362.1412**

3.4 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.0700e-003	0.3441	0.0512	9.0000e-004	0.0214	8.4000e-004	0.0222	6.1800e-003	8.0000e-004	6.9800e-003	0.0000	85.3719	85.3719	0.0101	0.0000	85.6241
Worker	0.0407	0.0239	0.2528	7.8000e-004	0.0879	5.3000e-004	0.0884	0.0234	4.9000e-004	0.0239	0.0000	70.8261	70.8261	1.6200e-003	0.0000	70.8665
Total	**0.0498**	**0.3680**	**0.3040**	**1.6800e-003**	**0.1093**	**1.3700e-003**	**0.1107**	**0.0295**	**1.2900e-003**	**0.0308**	**0.0000**	**156.1980**	**156.1980**	**0.0117**	**0.0000**	**156.4906**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2651	2.4259	2.5421	4.1800e-003		0.1257	0.1257		0.1183	0.1183	0.0000	359.9847	359.9847	0.0862	0.0000	362.1408
Total	**0.2651**	**2.4259**	**2.5421**	**4.1800e-003**		**0.1257**	**0.1257**		**0.1183**	**0.1183**	**0.0000**	**359.9847**	**359.9847**	**0.0862**	**0.0000**	**362.1408**

3.4 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.0700e-003	0.3441	0.0512	9.0000e-004	0.0214	8.4000e-004	0.0222	6.1800e-003	8.0000e-004	6.9800e-003	0.0000	85.3719	85.3719	0.0101	0.0000	85.6241
Worker	0.0407	0.0239	0.2528	7.8000e-004	0.0879	5.3000e-004	0.0884	0.0234	4.9000e-004	0.0239	0.0000	70.8261	70.8261	1.6200e-003	0.0000	70.8665
Total	**0.0498**	**0.3680**	**0.3040**	**1.6800e-003**	**0.1093**	**1.3700e-003**	**0.1107**	**0.0295**	**1.2900e-003**	**0.0308**	**0.0000**	**156.1980**	**156.1980**	**0.0117**	**0.0000**	**156.4906**

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0116	0.1168	0.1531	2.4000e-004		5.9600e-003	5.9600e-003		5.4900e-003	5.4900e-003	0.0000	21.0289	21.0289	6.8000e-003	0.0000	21.1990
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0116**	**0.1168**	**0.1531**	**2.4000e-004**		**5.9600e-003**	**5.9600e-003**		**5.4900e-003**	**5.4900e-003**	**0.0000**	**21.0289**	**21.0289**	**6.8000e-003**	**0.0000**	**21.1990**

3.5 Paving - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.8000e-004	3.4000e-004	3.6200e-003	1.0000e-005	1.2600e-003	1.0000e-005	1.2700e-003	3.3000e-004	1.0000e-005	3.4000e-004	0.0000	1.0147	1.0147	2.0000e-005	0.0000	1.0152
Total	**5.8000e-004**	**3.4000e-004**	**3.6200e-003**	**1.0000e-005**	**1.2600e-003**	**1.0000e-005**	**1.2700e-003**	**3.3000e-004**	**1.0000e-005**	**3.4000e-004**	**0.0000**	**1.0147**	**1.0147**	**2.0000e-005**	**0.0000**	**1.0152**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0116	0.1168	0.1531	2.4000e-004		5.9600e-003	5.9600e-003		5.4900e-003	5.4900e-003	0.0000	21.0289	21.0289	6.8000e-003	0.0000	21.1989
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0116**	**0.1168**	**0.1531**	**2.4000e-004**		**5.9600e-003**	**5.9600e-003**		**5.4900e-003**	**5.4900e-003**	**0.0000**	**21.0289**	**21.0289**	**6.8000e-003**	**0.0000**	**21.1989**

3.5 Paving - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.8000e-004	3.4000e-004	3.6200e-003	1.0000e-005	1.2600e-003	1.0000e-005	1.2700e-003	3.3000e-004	1.0000e-005	3.4000e-004	0.0000	1.0147	1.0147	2.0000e-005	0.0000	1.0152
Total	**5.8000e-004**	**3.4000e-004**	**3.6200e-003**	**1.0000e-005**	**1.2600e-003**	**1.0000e-005**	**1.2700e-003**	**3.3000e-004**	**1.0000e-005**	**3.4000e-004**	**0.0000**	**1.0147**	**1.0147**	**2.0000e-005**	**0.0000**	**1.0152**

3.5 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0176	0.1733	0.2479	3.9000e-004		8.6700e-003	8.6700e-003		7.9800e-003	7.9800e-003	0.0000	34.0457	34.0457	0.0110	0.0000	34.3210
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0176**	**0.1733**	**0.2479**	**3.9000e-004**		**8.6700e-003**	**8.6700e-003**		**7.9800e-003**	**7.9800e-003**	**0.0000**	**34.0457**	**34.0457**	**0.0110**	**0.0000**	**34.3210**

3.5 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.8000e-004	5.0000e-004	5.3500e-003	2.0000e-005	2.0400e-003	1.0000e-005	2.0500e-003	5.4000e-004	1.0000e-005	5.5000e-004	0.0000	1.5812	1.5812	3.0000e-005	0.0000	1.5820
Total	**8.8000e-004**	**5.0000e-004**	**5.3500e-003**	**2.0000e-005**	**2.0400e-003**	**1.0000e-005**	**2.0500e-003**	**5.4000e-004**	**1.0000e-005**	**5.5000e-004**	**0.0000**	**1.5812**	**1.5812**	**3.0000e-005**	**0.0000**	**1.5820**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0176	0.1733	0.2479	3.9000e-004		8.6700e-003	8.6700e-003		7.9800e-003	7.9800e-003	0.0000	34.0456	34.0456	0.0110	0.0000	34.3209
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0176**	**0.1733**	**0.2479**	**3.9000e-004**		**8.6700e-003**	**8.6700e-003**		**7.9800e-003**	**7.9800e-003**	**0.0000**	**34.0456**	**34.0456**	**0.0110**	**0.0000**	**34.3209**

3.5 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.8000e-004	5.0000e-004	5.3500e-003	2.0000e-005	2.0400e-003	1.0000e-005	2.0500e-003	5.4000e-004	1.0000e-005	5.5000e-004	0.0000	1.5812	1.5812	3.0000e-005	0.0000	1.5820
Total	**8.8000e-004**	**5.0000e-004**	**5.3500e-003**	**2.0000e-005**	**2.0400e-003**	**1.0000e-005**	**2.0500e-003**	**5.4000e-004**	**1.0000e-005**	**5.5000e-004**	**0.0000**	**1.5812**	**1.5812**	**3.0000e-005**	**0.0000**	**1.5820**

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8669					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.2700e-003	0.0358	0.0498	8.0000e-005		1.9500e-003	1.9500e-003		1.9500e-003	1.9500e-003	0.0000	7.0215	7.0215	4.2000e-004	0.0000	7.0320
Total	**1.8721**	**0.0358**	**0.0498**	**8.0000e-005**		**1.9500e-003**	**1.9500e-003**		**1.9500e-003**	**1.9500e-003**	**0.0000**	**7.0215**	**7.0215**	**4.2000e-004**	**0.0000**	**7.0320**

3.6 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7100e-003	9.6000e-004	0.0104	3.0000e-005	3.9600e-003	2.0000e-005	3.9800e-003	1.0500e-003	2.0000e-005	1.0700e-003	0.0000	3.0693	3.0693	6.0000e-005	0.0000	3.0710
Total	**1.7100e-003**	**9.6000e-004**	**0.0104**	**3.0000e-005**	**3.9600e-003**	**2.0000e-005**	**3.9800e-003**	**1.0500e-003**	**2.0000e-005**	**1.0700e-003**	**0.0000**	**3.0693**	**3.0693**	**6.0000e-005**	**0.0000**	**3.0710**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8669					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.2700e-003	0.0358	0.0498	8.0000e-005		1.9500e-003	1.9500e-003		1.9500e-003	1.9500e-003	0.0000	7.0214	7.0214	4.2000e-004	0.0000	7.0319
Total	**1.8721**	**0.0358**	**0.0498**	**8.0000e-005**		**1.9500e-003**	**1.9500e-003**		**1.9500e-003**	**1.9500e-003**	**0.0000**	**7.0214**	**7.0214**	**4.2000e-004**	**0.0000**	**7.0319**

3.6 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7100e-003	9.6000e-004	0.0104	3.0000e-005	3.9600e-003	2.0000e-005	3.9800e-003	1.0500e-003	2.0000e-005	1.0700e-003	0.0000	3.0693	3.0693	6.0000e-005	0.0000	3.0710
Total	**1.7100e-003**	**9.6000e-004**	**0.0104**	**3.0000e-005**	**3.9600e-003**	**2.0000e-005**	**3.9800e-003**	**1.0500e-003**	**2.0000e-005**	**1.0700e-003**	**0.0000**	**3.0693**	**3.0693**	**6.0000e-005**	**0.0000**	**3.0710**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.8013	2.8644	8.7807	0.0263	2.4305	0.0238	2.4543	0.6507	0.0222	0.6729	0.0000	2,417.4348	2,417.4348	0.1710	0.0000	2,421.7108
Unmitigated	0.8164	2.9842	9.2692	0.0281	2.6107	0.0253	2.6360	0.6989	0.0237	0.7226	0.0000	2,584.3291	2,584.3291	0.1789	0.0000	2,588.8020

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	2,407.20	2,432.70	2180.25	6,957,693	6,477,612
Total	2,407.20	2,432.70	2,180.25	6,957,693	6,477,612

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	48.00	16.00	36.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.537300	0.200000	0.167100	0.054200	0.001400	0.000900	0.009000	0.020600	0.000000	0.004400	0.002600	0.000900	0.001600

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	291.5244	291.5244	0.0221	5.0300e-003	293.5751
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	293.8629	293.8629	0.0223	5.0700e-003	295.9300
NaturalGas Mitigated	0.0338	0.2888	0.1229	1.8400e-003		0.0234	0.0234		0.0234	0.0234	0.0000	334.4203	334.4203	6.4100e-003	6.1300e-003	336.4076
NaturalGas Unmitigated	0.0360	0.3072	0.1307	1.9600e-003		0.0248	0.0248		0.0248	0.0248	0.0000	355.7784	355.7784	6.8200e-003	6.5200e-003	357.8927

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	6.66704e+006	0.0360	0.3072	0.1307	1.9600e-003		0.0248	0.0248		0.0248	0.0248	0.0000	355.7784	355.7784	6.8200e-003	6.5200e-003	357.8927
Total		**0.0360**	**0.3072**	**0.1307**	**1.9600e-003**		**0.0248**	**0.0248**		**0.0248**	**0.0248**	**0.0000**	**355.7784**	**355.7784**	**6.8200e-003**	**6.5200e-003**	**357.8927**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	6.2668e+006	0.0338	0.2888	0.1229	1.8400e-003		0.0234	0.0234		0.0234	0.0234	0.0000	334.4203	334.4203	6.4100e-003	6.1300e-003	336.4076
Total		**0.0338**	**0.2888**	**0.1229**	**1.8400e-003**		**0.0234**	**0.0234**		**0.0234**	**0.0234**	**0.0000**	**334.4203**	**334.4203**	**6.4100e-003**	**6.1300e-003**	**336.4076**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	2.23399e+006	293.8629	0.0223	5.0700e-003	295.9300
Total		**293.8629**	**0.0223**	**5.0700e-003**	**295.9300**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	2.21621e+006	291.5244	0.0221	5.0300e-003	293.5751
Total		**291.5244**	**0.0221**	**5.0300e-003**	**293.5751**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.0480	0.1173	1.9381	7.1000e-004		0.0182	0.0182		0.0182	0.0182	0.0000	113.5607	113.5607	5.1100e-003	2.0300e-003	114.2921
Unmitigated	2.7971	0.2283	8.7415	0.0229		1.1280	1.1280		1.1280	1.1280	148.6105	113.5607	262.1712	0.6998	2.0300e-003	280.2707

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1867					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.7926					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.7603	0.2064	6.8440	0.0228		1.1176	1.1176		1.1176	1.1176	148.6105	110.4679	259.0784	0.6968	2.0300e-003	277.1029
Landscaping	0.0575	0.0219	1.8975	1.0000e-004		0.0105	0.0105		0.0105	0.0105	0.0000	3.0928	3.0928	3.0000e-003	0.0000	3.1678
Total	**2.7971**	**0.2283**	**8.7415**	**0.0229**		**1.1280**	**1.1280**		**1.1280**	**1.1280**	**148.6105**	**113.5607**	**262.1712**	**0.6998**	**2.0300e-003**	**280.2707**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1867					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.7926					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0112	0.0954	0.0406	6.1000e-004		7.7100e-003	7.7100e-003		7.7100e-003	7.7100e-003	0.0000	110.4679	110.4679	2.1200e-003	2.0300e-003	111.1243
Landscaping	0.0575	0.0219	1.8975	1.0000e-004		0.0105	0.0105		0.0105	0.0105	0.0000	3.0928	3.0928	3.0000e-003	0.0000	3.1678
Total	**2.0480**	**0.1173**	**1.9381**	**7.1000e-004**		**0.0182**	**0.0182**		**0.0182**	**0.0182**	**0.0000**	**113.5607**	**113.5607**	**5.1200e-003**	**2.0300e-003**	**114.2921**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	17.5351	0.4341	0.0105	31.5038
Unmitigated	21.9188	0.5426	0.0131	39.3797

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	16.6143 / 10.4742	21.9188	0.5426	0.0131	39.3797
Total		**21.9188**	**0.5426**	**0.0131**	**39.3797**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	13.2914 / 8.37937	17.5351	0.4341	0.0105	31.5038
Total		**17.5351**	**0.4341**	**0.0105**	**31.5038**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	39.9547	2.3613	0.0000	98.9861
Unmitigated	53.2730	3.1483	0.0000	131.9815

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	262.44	53.2730	3.1483	0.0000	131.9815
Total		**53.2730**	**3.1483**	**0.0000**	**131.9815**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	196.83	39.9547	2.3613	0.0000	98.9861
Total		**39.9547**	**2.3613**	**0.0000**	**98.9861**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

CalEEMod Output

Construction and Operations

(Summer Daily)

Wilson Tract 6050 Clovis Const and Ops 2021

Fresno County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	255.00	Dwelling Unit	36.76	459,000.00	729

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.022	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E Intensity Factors

Land Use - Site plan acreage

Construction Phase - Developers construction schedule

Architectural Coating - Rule 4601 Architectural Coatings compliance

Vehicle Trips - ITE 10th Ed. Trip Generation Rates 9.44, 9.54 8.55

Woodstoves - SJVAPCD Rule 4901 Woodburning

Area Coating - Rule 4601 Architectural Coatings

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation - 2019 Title 24 Standards reduction without solar for residential

Water Mitigation -

Waste Mitigation -

Off-road Equipment - Adjusted hours per day to reflect shorter schedule while retaining default hours of use per phase

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	150.00	65.00
tblArchitecturalCoating	EF_Residential_Interior	150.00	65.00
tblAreaCoating	Area_EF_Residential_Exterior	150	65
tblAreaCoating	Area_EF_Residential_Interior	150	65
tblConstructionPhase	NumDays	740.00	570.00
tblConstructionPhase	PhaseEndDate	7/27/2023	12/1/2022
tblConstructionPhase	PhaseEndDate	10/12/2023	2/16/2023
tblConstructionPhase	PhaseEndDate	12/28/2023	5/4/2023
tblConstructionPhase	PhaseStartDate	7/28/2023	12/2/2022
tblConstructionPhase	PhaseStartDate	10/13/2023	2/17/2023
tblFleetMix	HHD	0.12	0.02

tblFleetMix	LDA	0.49	0.54
tblFleetMix	LDT1	0.03	0.20
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LHD1	0.02	1.4000e-003
tblFleetMix	LHD2	4.7320e-003	9.0000e-004
tblFleetMix	MCY	5.1540e-003	2.6000e-003
tblFleetMix	MDV	0.12	0.05
tblFleetMix	MH	6.2900e-004	1.6000e-003
tblFleetMix	MHD	0.03	9.0000e-003
tblFleetMix	OBUS	2.3660e-003	0.00
tblFleetMix	SBUS	1.0970e-003	9.0000e-004
tblFleetMix	UBUS	1.5900e-003	4.4000e-003
tblLandUse	LotAcreage	82.79	36.76
tblOffRoadEquipment	UsageHours	7.00	9.10
tblOffRoadEquipment	UsageHours	8.00	10.40
tblOffRoadEquipment	UsageHours	8.00	10.40
tblOffRoadEquipment	UsageHours	7.00	9.10
tblOffRoadEquipment	UsageHours	8.00	10.40
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.022
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblVehicleTrips	HO_TTP	35.70	36.00
tblVehicleTrips	HS_TTP	15.90	16.00
tblVehicleTrips	HW_TTP	48.40	48.00
tblVehicleTrips	ST_TR	9.91	9.54
tblVehicleTrips	SU_TR	8.62	8.55
tblVehicleTrips	WD_TR	9.52	9.44

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.5483	50.2485	32.6015	0.0637	18.2141	2.1983	20.4125	9.9699	2.0225	11.9924	0.0000	6,173.1639	6,173.1639	1.9470	0.0000	6,221.8376
2021	2.9685	25.8746	24.6640	0.0502	0.9387	1.2588	2.1975	0.2531	1.1836	1.4367	0.0000	4,868.2498	4,868.2498	0.9101	0.0000	4,891.0028
2022	2.6795	23.3360	24.1246	0.0498	0.9387	1.0631	2.0018	0.2531	1.0002	1.2533	0.0000	4,835.1615	4,835.1615	0.9000	0.0000	4,857.6623
2023	68.1475	10.2189	14.9508	0.0239	0.1479	0.5109	0.6341	0.0392	0.4700	0.5027	0.0000	2,320.0119	2,320.0119	0.7164	0.0000	2,337.9215
Maximum	**68.1475**	**50.2485**	**32.6015**	**0.0637**	**18.2141**	**2.1983**	**20.4125**	**9.9699**	**2.0225**	**11.9924**	**0.0000**	**6,173.1639**	**6,173.1639**	**1.9470**	**0.0000**	**6,221.8376**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.5483	50.2485	32.6015	0.0637	8.2777	2.1983	10.4760	4.5080	2.0225	6.5305	0.0000	6,173.1639	6,173.1639	1.9470	0.0000	6,221.8376
2021	2.9685	25.8746	24.6640	0.0502	0.9387	1.2588	2.1975	0.2531	1.1836	1.4367	0.0000	4,868.2498	4,868.2498	0.9101	0.0000	4,891.0028
2022	2.6795	23.3360	24.1246	0.0498	0.9387	1.0631	2.0018	0.2531	1.0002	1.2533	0.0000	4,835.1615	4,835.1615	0.9000	0.0000	4,857.6623
2023	68.1475	10.2189	14.9508	0.0239	0.1479	0.5109	0.6341	0.0392	0.4700	0.5027	0.0000	2,320.0119	2,320.0119	0.7164	0.0000	2,337.9215
Maximum	**68.1475**	**50.2485**	**32.6015**	**0.0637**	**8.2777**	**2.1983**	**10.4760**	**4.5080**	**2.0225**	**6.5305**	**0.0000**	**6,173.1639**	**6,173.1639**	**1.9470**	**0.0000**	**6,221.8376**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**49.09**	**0.00**	**39.36**	**51.94**	**0.00**	**35.97**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	30.0286	5.2768	188.0108	0.5574		27.3740	27.3740		27.3740	27.3740	3,995.4885	3,007.8808	7,003.3694	18.7717	0.0545	7,488.8887
Energy	0.1970	1.6833	0.7163	0.0107		0.1361	0.1361		0.1361	0.1361		2,148.9238	2,148.9238	0.0412	0.0394	2,161.6938
Mobile	5.9396	16.2609	58.4081	0.1712	15.0700	0.1421	15.2121	4.0255	0.1328	4.1584		17,305.3451	17,305.3451	1.1208		17,333.3649
Total	**36.1653**	**23.2211**	**247.1352**	**0.7393**	**15.0700**	**27.6523**	**42.7222**	**4.0255**	**27.6430**	**31.6685**	**3,995.4885**	**22,462.1498**	**26,457.6383**	**19.9337**	**0.0939**	**26,983.9475**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	11.7566	2.5699	22.0735	0.0160		0.3043	0.3043		0.3043	0.3043	0.0000	3,007.8808	3,007.8808	0.0936	0.0545	3,026.4478
Energy	0.1852	1.5823	0.6733	0.0101		0.1279	0.1279		0.1279	0.1279		2,019.9192	2,019.9192	0.0387	0.0370	2,031.9225
Mobile	5.8481	15.6259	55.0841	0.1601	14.0302	0.1335	14.1636	3.7478	0.1247	3.8725		16,184.8190	16,184.8190	1.0691		16,211.5474
Total	**17.7899**	**19.7780**	**77.8310**	**0.1861**	**14.0302**	**0.5657**	**14.5959**	**3.7478**	**0.5570**	**4.3048**	**0.0000**	**21,212.6190**	**21,212.6190**	**1.2015**	**0.0915**	**21,269.9178**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**50.81**	**14.83**	**68.51**	**74.82**	**6.90**	**97.95**	**65.84**	**6.90**	**97.99**	**86.41**	**100.00**	**5.56**	**19.82**	**93.97**	**2.53**	**21.18**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	5/1/2020	6/11/2020	5	30	
2	Grading	Grading	6/12/2020	9/24/2020	5	75	
3	Building Construction	Building Construction	9/25/2020	12/1/2022	5	570	
4	Paving	Paving	12/2/2022	2/16/2023	5	55	
5	Architectural Coating	Architectural Coating	2/17/2023	5/4/2023	5	55	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 187.5

Acres of Paving: 0

Residential Indoor: 929,475; Residential Outdoor: 309,825; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	9.10	231	0.29
Building Construction	Forklifts	3	10.40	89	0.20
Building Construction	Generator Sets	1	10.40	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	9.10	97	0.37
Building Construction	Welders	1	10.40	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	92.00	27.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.2 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0884	0.0459	0.5789	1.5100e-003	0.1479	9.3000e-004	0.1488	0.0392	8.5000e-004	0.0401		150.5688	150.5688	4.0800e-003		150.6707
Total	**0.0884**	**0.0459**	**0.5789**	**1.5100e-003**	**0.1479**	**9.3000e-004**	**0.1488**	**0.0392**	**8.5000e-004**	**0.0401**		**150.5688**	**150.5688**	**4.0800e-003**		**150.6707**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**8.1298**	**2.1974**	**10.3272**	**4.4688**	**2.0216**	**6.4904**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.2 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0884	0.0459	0.5789	1.5100e-003	0.1479	9.3000e-004	0.1488	0.0392	8.5000e-004	0.0401		150.5688	150.5688	4.0800e-003		150.6707
Total	**0.0884**	**0.0459**	**0.5789**	**1.5100e-003**	**0.1479**	**9.3000e-004**	**0.1488**	**0.0392**	**8.5000e-004**	**0.0401**		**150.5688**	**150.5688**	**4.0800e-003**		**150.6707**

3.3 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000		6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**8.6733**	**2.1739**	**10.8472**	**3.5965**	**2.0000**	**5.5965**		**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

3.3 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0982	0.0510	0.6432	1.6800e-003	0.1643	1.0300e-003	0.1653	0.0436	9.5000e-004	0.0445		167.2986	167.2986	4.5300e-003		167.4119
Total	**0.0982**	**0.0510**	**0.6432**	**1.6800e-003**	**0.1643**	**1.0300e-003**	**0.1653**	**0.0436**	**9.5000e-004**	**0.0445**		**167.2986**	**167.2986**	**4.5300e-003**		**167.4119**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.9030	0.0000	3.9030	1.6184	0.0000	1.6184			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000	0.0000	6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**3.9030**	**2.1739**	**6.0769**	**1.6184**	**2.0000**	**3.6184**	**0.0000**	**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

3.3 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0982	0.0510	0.6432	1.6800e-003	0.1643	1.0300e-003	0.1653	0.0436	9.5000e-004	0.0445		167.2986	167.2986	4.5300e-003		167.4119
Total	**0.0982**	**0.0510**	**0.6432**	**1.6800e-003**	**0.1643**	**1.0300e-003**	**0.1653**	**0.0436**	**9.5000e-004**	**0.0445**		**167.2986**	**167.2986**	**4.5300e-003**		**167.4119**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.7558	24.9419	21.9031	0.0350		1.4522	1.4522		1.3654	1.3654		3,318.9820	3,318.9820	0.8097		3,339.2248
Total	**2.7558**	**24.9419**	**21.9031**	**0.0350**		**1.4522**	**1.4522**		**1.3654**	**1.3654**		**3,318.9820**	**3,318.9820**	**0.8097**		**3,339.2248**

3.4 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0993	3.2999	0.4946	7.7600e-003	0.1830	0.0176	0.2005	0.0527	0.0168	0.0695		813.3331	813.3331	0.0939		815.6815
Worker	0.4519	0.2347	2.9586	7.7300e-003	0.7558	4.7300e-003	0.7605	0.2005	4.3600e-003	0.2048		769.5737	769.5737	0.0208		770.0945
Total	**0.5512**	**3.5346**	**3.4532**	**0.0155**	**0.9387**	**0.0223**	**0.9610**	**0.2531**	**0.0212**	**0.2743**		**1,582.9068**	**1,582.9068**	**0.1148**		**1,585.7761**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.7558	24.9419	21.9031	0.0350		1.4522	1.4522		1.3654	1.3654	0.0000	3,318.9820	3,318.9820	0.8097		3,339.2248
Total	**2.7558**	**24.9419**	**21.9031**	**0.0350**		**1.4522**	**1.4522**		**1.3654**	**1.3654**	**0.0000**	**3,318.9820**	**3,318.9820**	**0.8097**		**3,339.2248**

3.4 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0993	3.2999	0.4946	7.7600e-003	0.1830	0.0176	0.2005	0.0527	0.0168	0.0695		813.3331	813.3331	0.0939		815.6815
Worker	0.4519	0.2347	2.9586	7.7300e-003	0.7558	4.7300e-003	0.7605	0.2005	4.3600e-003	0.2048		769.5737	769.5737	0.0208		770.0945
Total	**0.5512**	**3.5346**	**3.4532**	**0.0155**	**0.9387**	**0.0223**	**0.9610**	**0.2531**	**0.0212**	**0.2743**		**1,582.9068**	**1,582.9068**	**0.1148**		**1,585.7761**

3.4 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.4712	22.6617	21.5478	0.0350		1.2462	1.2462		1.1717	1.1717		3,319.3731	3,319.3731	0.8008		3,339.3936
Total	**2.4712**	**22.6617**	**21.5478**	**0.0350**		**1.2462**	**1.2462**		**1.1717**	**1.1717**		**3,319.3731**	**3,319.3731**	**0.8008**		**3,339.3936**

3.4 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0801	3.0040	0.4265	7.6900e-003	0.1830	8.0200e-003	0.1910	0.0527	7.6800e-003	0.0604		805.6907	805.6907	0.0908		807.9596
Worker	0.4172	0.2089	2.6897	7.4600e-003	0.7558	4.5800e-003	0.7603	0.2005	4.2200e-003	0.2047		743.1861	743.1861	0.0185		743.6497
Total	**0.4973**	**3.2129**	**3.1162**	**0.0152**	**0.9387**	**0.0126**	**0.9513**	**0.2531**	**0.0119**	**0.2650**		**1,548.8767**	**1,548.8767**	**0.1093**		**1,551.6092**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.4712	22.6617	21.5478	0.0350		1.2462	1.2462		1.1717	1.1717	0.0000	3,319.3731	3,319.3731	0.8008		3,339.3935
Total	**2.4712**	**22.6617**	**21.5478**	**0.0350**		**1.2462**	**1.2462**		**1.1717**	**1.1717**	**0.0000**	**3,319.3731**	**3,319.3731**	**0.8008**		**3,339.3935**

3.4 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0801	3.0040	0.4265	7.6900e-003	0.1830	8.0200e-003	0.1910	0.0527	7.6800e-003	0.0604		805.6907	805.6907	0.0908		807.9596
Worker	0.4172	0.2089	2.6897	7.4600e-003	0.7558	4.5800e-003	0.7603	0.2005	4.2200e-003	0.2047		743.1861	743.1861	0.0185		743.6497
Total	**0.4973**	**3.2129**	**3.1162**	**0.0152**	**0.9387**	**0.0126**	**0.9513**	**0.2531**	**0.0119**	**0.2650**		**1,548.8767**	**1,548.8767**	**0.1093**		**1,551.6092**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2181	20.3003	21.2724	0.0350		1.0517	1.0517		0.9895	0.9895		3,320.6337	3,320.6337	0.7955		3,340.5219
Total	**2.2181**	**20.3003**	**21.2724**	**0.0350**		**1.0517**	**1.0517**		**0.9895**	**0.9895**		**3,320.6337**	**3,320.6337**	**0.7955**		**3,340.5219**

3.4 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0745	2.8492	0.3947	7.6100e-003	0.1830	6.8900e-003	0.1899	0.0527	6.5900e-003	0.0593		798.0697	798.0697	0.0880		800.2688
Worker	0.3869	0.1866	2.4575	7.1900e-003	0.7558	4.4500e-003	0.7602	0.2005	4.0900e-003	0.2046		716.4581	716.4581	0.0165		716.8717
Total	**0.4614**	**3.0357**	**2.8522**	**0.0148**	**0.9387**	**0.0113**	**0.9501**	**0.2531**	**0.0107**	**0.2638**		**1,514.5278**	**1,514.5278**	**0.1045**		**1,517.1404**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2181	20.3003	21.2724	0.0350		1.0517	1.0517		0.9895	0.9895	0.0000	3,320.6337	3,320.6337	0.7955		3,340.5219
Total	**2.2181**	**20.3003**	**21.2724**	**0.0350**		**1.0517**	**1.0517**		**0.9895**	**0.9895**	**0.0000**	**3,320.6337**	**3,320.6337**	**0.7955**		**3,340.5219**

3.4 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0745	2.8492	0.3947	7.6100e-003	0.1830	6.8900e-003	0.1899	0.0527	6.5900e-003	0.0593		798.0697	798.0697	0.0880		800.2688
Worker	0.3869	0.1866	2.4575	7.1900e-003	0.7558	4.4500e-003	0.7602	0.2005	4.0900e-003	0.2046		716.4581	716.4581	0.0165		716.8717
Total	**0.4614**	**3.0357**	**2.8522**	**0.0148**	**0.9387**	**0.0113**	**0.9501**	**0.2531**	**0.0107**	**0.2638**		**1,514.5278**	**1,514.5278**	**0.1045**		**1,517.1404**

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1028**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**		**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

3.5 Paving - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0631	0.0304	0.4007	1.1700e-003	0.1232	7.2000e-004	0.1240	0.0327	6.7000e-004	0.0334		116.8138	116.8138	2.7000e-003		116.8813
Total	**0.0631**	**0.0304**	**0.4007**	**1.1700e-003**	**0.1232**	**7.2000e-004**	**0.1240**	**0.0327**	**6.7000e-004**	**0.0334**		**116.8138**	**116.8138**	**2.7000e-003**		**116.8813**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1028**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**	**0.0000**	**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

3.5 Paving - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0631	0.0304	0.4007	1.1700e-003	0.1232	7.2000e-004	0.1240	0.0327	6.7000e-004	0.0334		116.8138	116.8138	2.7000e-003		116.8813
Total	**0.0631**	**0.0304**	**0.4007**	**1.1700e-003**	**0.1232**	**7.2000e-004**	**0.1240**	**0.0327**	**6.7000e-004**	**0.0334**		**116.8138**	**116.8138**	**2.7000e-003**		**116.8813**

3.5 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694		2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0327**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**		**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

3.5 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0587	0.0272	0.3666	1.1300e-003	0.1232	7.1000e-004	0.1239	0.0327	6.5000e-004	0.0333		112.4277	112.4277	2.4100e-003		112.4879
Total	**0.0587**	**0.0272**	**0.3666**	**1.1300e-003**	**0.1232**	**7.1000e-004**	**0.1239**	**0.0327**	**6.5000e-004**	**0.0333**		**112.4277**	**112.4277**	**2.4100e-003**		**112.4879**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694	0.0000	2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0327**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**	**0.0000**	**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

3.5 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0587	0.0272	0.3666	1.1300e-003	0.1232	7.1000e-004	0.1239	0.0327	6.5000e-004	0.0333		112.4277	112.4277	2.4100e-003		112.4879
Total	**0.0587**	**0.0272**	**0.3666**	**1.1300e-003**	**0.1232**	**7.1000e-004**	**0.1239**	**0.0327**	**6.5000e-004**	**0.0333**		**112.4277**	**112.4277**	**2.4100e-003**		**112.4879**

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	67.8855					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**68.0771**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.6 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0704	0.0327	0.4399	1.3500e-003	0.1479	8.5000e-004	0.1487	0.0392	7.8000e-004	0.0400		134.9133	134.9133	2.8900e-003		134.9855
Total	**0.0704**	**0.0327**	**0.4399**	**1.3500e-003**	**0.1479**	**8.5000e-004**	**0.1487**	**0.0392**	**7.8000e-004**	**0.0400**		**134.9133**	**134.9133**	**2.8900e-003**		**134.9855**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	67.8855					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**68.0771**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.6 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0704	0.0327	0.4399	1.3500e-003	0.1479	8.5000e-004	0.1487	0.0392	7.8000e-004	0.0400		134.9133	134.9133	2.8900e-003		134.9855
Total	**0.0704**	**0.0327**	**0.4399**	**1.3500e-003**	**0.1479**	**8.5000e-004**	**0.1487**	**0.0392**	**7.8000e-004**	**0.0400**		**134.9133**	**134.9133**	**2.8900e-003**		**134.9855**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.8481	15.6259	55.0841	0.1601	14.0302	0.1335	14.1636	3.7478	0.1247	3.8725		16,184.8190	16,184.8190	1.0691		16,211.5474
Unmitigated	5.9396	16.2609	58.4081	0.1712	15.0700	0.1421	15.2121	4.0255	0.1328	4.1584		17,305.3451	17,305.3451	1.1208		17,333.3649

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	2,407.20	2,432.70	2180.25	6,957,693	6,477,612
Total	2,407.20	2,432.70	2,180.25	6,957,693	6,477,612

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	48.00	16.00	36.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.537300	0.200000	0.167100	0.054200	0.001400	0.000900	0.009000	0.020600	0.000000	0.004400	0.002600	0.000900	0.001600

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.1852	1.5823	0.6733	0.0101		0.1279	0.1279		0.1279	0.1279		2,019.9192	2,019.9192	0.0387	0.0370	2,031.9225
NaturalGas Unmitigated	0.1970	1.6833	0.7163	0.0107		0.1361	0.1361		0.1361	0.1361		2,148.9238	2,148.9238	0.0412	0.0394	2,161.6938

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	18265.9	0.1970	1.6833	0.7163	0.0107		0.1361	0.1361		0.1361	0.1361		2,148.9238	2,148.9238	0.0412	0.0394	2,161.6938
Total		**0.1970**	**1.6833**	**0.7163**	**0.0107**		**0.1361**	**0.1361**		**0.1361**	**0.1361**		**2,148.9238**	**2,148.9238**	**0.0412**	**0.0394**	**2,161.6938**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	17.1693	0.1852	1.5823	0.6733	0.0101		0.1279	0.1279		0.1279	0.1279		2,019.9192	2,019.9192	0.0387	0.0370	2,031.9225
Total		**0.1852**	**1.5823**	**0.6733**	**0.0101**		**0.1279**	**0.1279**		**0.1279**	**0.1279**		**2,019.9192**	**2,019.9192**	**0.0387**	**0.0370**	**2,031.9225**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	11.7566	2.5699	22.0735	0.0160		0.3043	0.3043		0.3043	0.3043	0.0000	3,007.8808	3,007.8808	0.0936	0.0545	3,026.4478
Unmitigated	30.0286	5.2768	188.0108	0.5574		27.3740	27.3740		27.3740	27.3740	3,995.4885	3,007.8808	7,003.3694	18.7717	0.0545	7,488.8887

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.0229					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	9.8226					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	18.5443	5.0335	166.9273	0.5562		27.2578	27.2578		27.2578	27.2578	3,995.4885	2,970.0000	6,965.4885	18.7350	0.0545	7,450.0902
Landscaping	0.6388	0.2434	21.0835	1.1100e-003		0.1162	0.1162		0.1162	0.1162		37.8808	37.8808	0.0367		38.7986
Total	**30.0286**	**5.2768**	**188.0108**	**0.5574**		**27.3740**	**27.3740**		**27.3740**	**27.3740**	**3,995.4885**	**3,007.8808**	**7,003.3694**	**18.7717**	**0.0545**	**7,488.8887**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.0229					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	9.8226					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.2723	2.3265	0.9900	0.0149		0.1881	0.1881		0.1881	0.1881	0.0000	2,970.0000	2,970.0000	0.0569	0.0545	2,987.6492
Landscaping	0.6388	0.2434	21.0835	1.1100e-003		0.1162	0.1162		0.1162	0.1162		37.8808	37.8808	0.0367		38.7986
Total	**11.7566**	**2.5699**	**22.0735**	**0.0160**		**0.3043**	**0.3043**		**0.3043**	**0.3043**	**0.0000**	**3,007.8808**	**3,007.8808**	**0.0936**	**0.0545**	**3,026.4478**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

CalEEMod Output

Construction and Operations

(Winter Daily)

Wilson Tract 6050 Clovis Const and Ops 2021

Fresno County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	255.00	Dwelling Unit	36.76	459,000.00	729

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.022	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E Intensity Factors

Land Use - Site plan acreage

Construction Phase - Developers construction schedule

Architectural Coating - Rule 4601 Architectural Coatings compliance

Vehicle Trips - ITE 10th Ed. Trip Generation Rates 9.44, 9.54 8.55

Woodstoves - SJVAPCD Rule 4901 Woodburning

Area Coating - Rule 4601 Architectural Coatings

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation - 2019 Title 24 Standards reduction without solar for residential

Water Mitigation -

Waste Mitigation -

Off-road Equipment - Adjusted hours per day to reflect shorter schedule while retaining default hours of use per phase

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	150.00	65.00
tblArchitecturalCoating	EF_Residential_Interior	150.00	65.00
tblAreaCoating	Area_EF_Residential_Exterior	150	65
tblAreaCoating	Area_EF_Residential_Interior	150	65
tblConstructionPhase	NumDays	740.00	570.00
tblConstructionPhase	PhaseEndDate	7/27/2023	12/1/2022
tblConstructionPhase	PhaseEndDate	10/12/2023	2/16/2023
tblConstructionPhase	PhaseEndDate	12/28/2023	5/4/2023
tblConstructionPhase	PhaseStartDate	7/28/2023	12/2/2022
tblConstructionPhase	PhaseStartDate	10/13/2023	2/17/2023
tblFleetMix	HHD	0.12	0.02

tblFleetMix	LDA	0.49	0.54
tblFleetMix	LDT1	0.03	0.20
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LHD1	0.02	1.4000e-003
tblFleetMix	LHD2	4.7320e-003	9.0000e-004
tblFleetMix	MCY	5.1540e-003	2.6000e-003
tblFleetMix	MDV	0.12	0.05
tblFleetMix	MH	6.2900e-004	1.6000e-003
tblFleetMix	MHD	0.03	9.0000e-003
tblFleetMix	OBUS	2.3660e-003	0.00
tblFleetMix	SBUS	1.0970e-003	9.0000e-004
tblFleetMix	UBUS	1.5900e-003	4.4000e-003
tblLandUse	LotAcreage	82.79	36.76
tblOffRoadEquipment	UsageHours	7.00	9.10
tblOffRoadEquipment	UsageHours	8.00	10.40
tblOffRoadEquipment	UsageHours	8.00	10.40
tblOffRoadEquipment	UsageHours	7.00	9.10
tblOffRoadEquipment	UsageHours	8.00	10.40
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.022
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblVehicleTrips	HO_TTP	35.70	36.00
tblVehicleTrips	HS_TTP	15.90	16.00
tblVehicleTrips	HW_TTP	48.40	48.00
tblVehicleTrips	ST_TR	9.91	9.54
tblVehicleTrips	SU_TR	8.62	8.55
tblVehicleTrips	WD_TR	9.52	9.44

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.5412	50.2575	32.5061	0.0635	18.2141	2.1983	20.4125	9.9699	2.0225	11.9924	0.0000	6,152.4863	6,152.4863	1.9464	0.0000	6,201.1465
2021	2.9428	25.9366	24.3419	0.0490	0.9387	1.2591	2.1978	0.2531	1.1839	1.4370	0.0000	4,751.1832	4,751.1832	0.9202	0.0000	4,774.1871
2022	2.6565	23.3887	23.8228	0.0487	0.9387	1.0634	2.0021	0.2531	1.0005	1.2536	0.0000	4,721.5135	4,721.5135	0.9101	0.0000	4,744.2654
2023	68.1428	10.2236	14.8925	0.0238	0.1479	0.5109	0.6341	0.0392	0.4700	0.5027	0.0000	2,306.1332	2,306.1332	0.7161	0.0000	2,324.0353
Maximum	**68.1428**	**50.2575**	**32.5061**	**0.0635**	**18.2141**	**2.1983**	**20.4125**	**9.9699**	**2.0225**	**11.9924**	**0.0000**	**6,152.4863**	**6,152.4863**	**1.9464**	**0.0000**	**6,201.1465**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.5412	50.2575	32.5061	0.0635	8.2777	2.1983	10.4760	4.5080	2.0225	6.5305	0.0000	6,152.4863	6,152.4863	1.9464	0.0000	6,201.1465
2021	2.9428	25.9366	24.3419	0.0490	0.9387	1.2591	2.1978	0.2531	1.1839	1.4370	0.0000	4,751.1832	4,751.1832	0.9202	0.0000	4,774.1871
2022	2.6565	23.3887	23.8228	0.0487	0.9387	1.0634	2.0021	0.2531	1.0005	1.2536	0.0000	4,721.5135	4,721.5135	0.9101	0.0000	4,744.2654
2023	68.1428	10.2236	14.8925	0.0238	0.1479	0.5109	0.6341	0.0392	0.4700	0.5027	0.0000	2,306.1332	2,306.1332	0.7161	0.0000	2,324.0353
Maximum	**68.1428**	**50.2575**	**32.5061**	**0.0635**	**8.2777**	**2.1983**	**10.4760**	**4.5080**	**2.0225**	**6.5305**	**0.0000**	**6,152.4863**	**6,152.4863**	**1.9464**	**0.0000**	**6,201.1465**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**49.09**	**0.00**	**39.36**	**51.94**	**0.00**	**35.97**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	30.0286	5.2768	188.0108	0.5574		27.3740	27.3740		27.3740	27.3740	3,995.4885	3,007.8808	7,003.3694	18.7717	0.0545	7,488.8887
Energy	0.1970	1.6833	0.7163	0.0107		0.1361	0.1361		0.1361	0.1361		2,148.9238	2,148.9238	0.0412	0.0394	2,161.6938
Mobile	4.1684	17.2205	52.5332	0.1529	15.0700	0.1432	15.2132	4.0255	0.1338	4.1594		15,477.7753	15,477.7753	1.1327		15,506.0937
Total	**34.3940**	**24.1806**	**241.2604**	**0.7210**	**15.0700**	**27.6533**	**42.7233**	**4.0255**	**27.6440**	**31.6695**	**3,995.4885**	**20,634.5800**	**24,630.0685**	**19.9457**	**0.0939**	**25,156.6762**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	11.7566	2.5699	22.0735	0.0160		0.3043	0.3043		0.3043	0.3043	0.0000	3,007.8808	3,007.8808	0.0936	0.0545	3,026.4478
Energy	0.1852	1.5823	0.6733	0.0101		0.1279	0.1279		0.1279	0.1279		2,019.9192	2,019.9192	0.0387	0.0370	2,031.9225
Mobile	4.0853	16.5143	49.9508	0.1430	14.0302	0.1345	14.1647	3.7478	0.1257	3.8735		14,476.9577	14,476.9577	1.0849		14,504.0798
Total	**16.0270**	**20.6664**	**72.6977**	**0.1691**	**14.0302**	**0.5668**	**14.5969**	**3.7478**	**0.5580**	**4.3058**	**0.0000**	**19,504.7577**	**19,504.7577**	**1.2172**	**0.0915**	**19,562.4501**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**53.40**	**14.53**	**69.87**	**76.55**	**6.90**	**97.95**	**65.83**	**6.90**	**97.98**	**86.40**	**100.00**	**5.48**	**20.81**	**93.90**	**2.53**	**22.24**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	5/1/2020	6/11/2020	5	30	
2	Grading	Grading	6/12/2020	9/24/2020	5	75	
3	Building Construction	Building Construction	9/25/2020	12/1/2022	5	570	
4	Paving	Paving	12/2/2022	2/16/2023	5	55	
5	Architectural Coating	Architectural Coating	2/17/2023	5/4/2023	5	55	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 187.5

Acres of Paving: 0

Residential Indoor: 929,475; Residential Outdoor: 309,825; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	9.10	231	0.29
Building Construction	Forklifts	3	10.40	89	0.20
Building Construction	Generator Sets	1	10.40	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	9.10	97	0.37
Building Construction	Welders	1	10.40	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	92.00	27.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.2 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0820	0.0540	0.4930	1.3300e-003	0.1479	9.3000e-004	0.1488	0.0392	8.5000e-004	0.0401		131.9590	131.9590	3.5900e-003		132.0487
Total	**0.0820**	**0.0540**	**0.4930**	**1.3300e-003**	**0.1479**	**9.3000e-004**	**0.1488**	**0.0392**	**8.5000e-004**	**0.0401**		**131.9590**	**131.9590**	**3.5900e-003**		**132.0487**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**8.1298**	**2.1974**	**10.3272**	**4.4688**	**2.0216**	**6.4904**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.2 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0820	0.0540	0.4930	1.3300e-003	0.1479	9.3000e-004	0.1488	0.0392	8.5000e-004	0.0401		131.9590	131.9590	3.5900e-003		132.0487
Total	**0.0820**	**0.0540**	**0.4930**	**1.3300e-003**	**0.1479**	**9.3000e-004**	**0.1488**	**0.0392**	**8.5000e-004**	**0.0401**		**131.9590**	**131.9590**	**3.5900e-003**		**132.0487**

3.3 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000		6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**8.6733**	**2.1739**	**10.8472**	**3.5965**	**2.0000**	**5.5965**		**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

3.3 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0911	0.0600	0.5478	1.4700e-003	0.1643	1.0300e-003	0.1653	0.0436	9.5000e-004	0.0445		146.6211	146.6211	3.9900e-003		146.7208
Total	**0.0911**	**0.0600**	**0.5478**	**1.4700e-003**	**0.1643**	**1.0300e-003**	**0.1653**	**0.0436**	**9.5000e-004**	**0.0445**		**146.6211**	**146.6211**	**3.9900e-003**		**146.7208**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.9030	0.0000	3.9030	1.6184	0.0000	1.6184			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000	0.0000	6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**3.9030**	**2.1739**	**6.0769**	**1.6184**	**2.0000**	**3.6184**	**0.0000**	**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

3.3 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0911	0.0600	0.5478	1.4700e-003	0.1643	1.0300e-003	0.1653	0.0436	9.5000e-004	0.0445		146.6211	146.6211	3.9900e-003		146.7208
Total	**0.0911**	**0.0600**	**0.5478**	**1.4700e-003**	**0.1643**	**1.0300e-003**	**0.1653**	**0.0436**	**9.5000e-004**	**0.0445**		**146.6211**	**146.6211**	**3.9900e-003**		**146.7208**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.7558	24.9419	21.9031	0.0350		1.4522	1.4522		1.3654	1.3654		3,318.9820	3,318.9820	0.8097		3,339.2248
Total	**2.7558**	**24.9419**	**21.9031**	**0.0350**		**1.4522**	**1.4522**		**1.3654**	**1.3654**		**3,318.9820**	**3,318.9820**	**0.8097**		**3,339.2248**

3.4 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1038	3.3379	0.5879	7.5200e-003	0.1830	0.0180	0.2009	0.0527	0.0172	0.0699		787.9017	787.9017	0.1064		790.5625
Worker	0.4192	0.2759	2.5198	6.7700e-003	0.7558	4.7300e-003	0.7605	0.2005	4.3600e-003	0.2048		674.4569	674.4569	0.0184		674.9157
Total	**0.5230**	**3.6138**	**3.1077**	**0.0143**	**0.9387**	**0.0227**	**0.9614**	**0.2531**	**0.0216**	**0.2747**		**1,462.3587**	**1,462.3587**	**0.1248**		**1,465.4782**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.7558	24.9419	21.9031	0.0350		1.4522	1.4522		1.3654	1.3654	0.0000	3,318.9820	3,318.9820	0.8097		3,339.2248
Total	**2.7558**	**24.9419**	**21.9031**	**0.0350**		**1.4522**	**1.4522**		**1.3654**	**1.3654**	**0.0000**	**3,318.9820**	**3,318.9820**	**0.8097**		**3,339.2248**

3.4 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1038	3.3379	0.5879	7.5200e-003	0.1830	0.0180	0.2009	0.0527	0.0172	0.0699		787.9017	787.9017	0.1064		790.5625
Worker	0.4192	0.2759	2.5198	6.7700e-003	0.7558	4.7300e-003	0.7605	0.2005	4.3600e-003	0.2048		674.4569	674.4569	0.0184		674.9157
Total	**0.5230**	**3.6138**	**3.1077**	**0.0143**	**0.9387**	**0.0227**	**0.9614**	**0.2531**	**0.0216**	**0.2747**		**1,462.3587**	**1,462.3587**	**0.1248**		**1,465.4782**

3.4 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.4712	22.6617	21.5478	0.0350		1.2462	1.2462		1.1717	1.1717		3,319.3731	3,319.3731	0.8008		3,339.3936
Total	**2.4712**	**22.6617**	**21.5478**	**0.0350**		**1.2462**	**1.2462**		**1.1717**	**1.1717**		**3,319.3731**	**3,319.3731**	**0.8008**		**3,339.3936**

3.4 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0843	3.0294	0.5123	7.4500e-003	0.1830	8.3400e-003	0.1913	0.0527	7.9800e-003	0.0607		780.4594	780.4594	0.1030		783.0352
Worker	0.3873	0.2454	2.2819	6.5400e-003	0.7558	4.5800e-003	0.7603	0.2005	4.2200e-003	0.2047		651.3507	651.3507	0.0163		651.7584
Total	**0.4716**	**3.2748**	**2.7941**	**0.0140**	**0.9387**	**0.0129**	**0.9516**	**0.2531**	**0.0122**	**0.2653**		**1,431.8101**	**1,431.8101**	**0.1193**		**1,434.7935**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.4712	22.6617	21.5478	0.0350		1.2462	1.2462		1.1717	1.1717	0.0000	3,319.3731	3,319.3731	0.8008		3,339.3935
Total	**2.4712**	**22.6617**	**21.5478**	**0.0350**		**1.2462**	**1.2462**		**1.1717**	**1.1717**	**0.0000**	**3,319.3731**	**3,319.3731**	**0.8008**		**3,339.3935**

3.4 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0843	3.0294	0.5123	7.4500e-003	0.1830	8.3400e-003	0.1913	0.0527	7.9800e-003	0.0607		780.4594	780.4594	0.1030		783.0352
Worker	0.3873	0.2454	2.2819	6.5400e-003	0.7558	4.5800e-003	0.7603	0.2005	4.2200e-003	0.2047		651.3507	651.3507	0.0163		651.7584
Total	**0.4716**	**3.2748**	**2.7941**	**0.0140**	**0.9387**	**0.0129**	**0.9516**	**0.2531**	**0.0122**	**0.2653**		**1,431.8101**	**1,431.8101**	**0.1193**		**1,434.7935**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2181	20.3003	21.2724	0.0350		1.0517	1.0517		0.9895	0.9895		3,320.6337	3,320.6337	0.7955		3,340.5219
Total	**2.2181**	**20.3003**	**21.2724**	**0.0350**		**1.0517**	**1.0517**		**0.9895**	**0.9895**		**3,320.6337**	**3,320.6337**	**0.7955**		**3,340.5219**

3.4 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0784	2.8693	0.4746	7.3700e-003	0.1830	7.1900e-003	0.1901	0.0527	6.8800e-003	0.0596		772.9121	772.9121	0.1000		775.4128
Worker	0.3599	0.2190	2.0757	6.3000e-003	0.7558	4.4500e-003	0.7602	0.2005	4.0900e-003	0.2046		627.9677	627.9677	0.0145		628.3308
Total	**0.4384**	**3.0883**	**2.5504**	**0.0137**	**0.9387**	**0.0116**	**0.9503**	**0.2531**	**0.0110**	**0.2641**		**1,400.8798**	**1,400.8798**	**0.1146**		**1,403.7436**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2181	20.3003	21.2724	0.0350		1.0517	1.0517		0.9895	0.9895	0.0000	3,320.6337	3,320.6337	0.7955		3,340.5219
Total	**2.2181**	**20.3003**	**21.2724**	**0.0350**		**1.0517**	**1.0517**		**0.9895**	**0.9895**	**0.0000**	**3,320.6337**	**3,320.6337**	**0.7955**		**3,340.5219**

3.4 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0784	2.8693	0.4746	7.3700e-003	0.1830	7.1900e-003	0.1901	0.0527	6.8800e-003	0.0596		772.9121	772.9121	0.1000		775.4128
Worker	0.3599	0.2190	2.0757	6.3000e-003	0.7558	4.4500e-003	0.7602	0.2005	4.0900e-003	0.2046		627.9677	627.9677	0.0145		628.3308
Total	**0.4384**	**3.0883**	**2.5504**	**0.0137**	**0.9387**	**0.0116**	**0.9503**	**0.2531**	**0.0110**	**0.2641**		**1,400.8798**	**1,400.8798**	**0.1146**		**1,403.7436**

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1028**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**		**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

3.5 Paving - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0587	0.0357	0.3384	1.0300e-003	0.1232	7.2000e-004	0.1240	0.0327	6.7000e-004	0.0334		102.3860	102.3860	2.3700e-003		102.4452
Total	**0.0587**	**0.0357**	**0.3384**	**1.0300e-003**	**0.1232**	**7.2000e-004**	**0.1240**	**0.0327**	**6.7000e-004**	**0.0334**		**102.3860**	**102.3860**	**2.3700e-003**		**102.4452**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1028**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**	**0.0000**	**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

3.5 Paving - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0587	0.0357	0.3384	1.0300e-003	0.1232	7.2000e-004	0.1240	0.0327	6.7000e-004	0.0334		102.3860	102.3860	2.3700e-003		102.4452
Total	**0.0587**	**0.0357**	**0.3384**	**1.0300e-003**	**0.1232**	**7.2000e-004**	**0.1240**	**0.0327**	**6.7000e-004**	**0.0334**		**102.3860**	**102.3860**	**2.3700e-003**		**102.4452**

3.5 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694		2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0327**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**		**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

3.5 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0547	0.0320	0.3083	9.9000e-004	0.1232	7.1000e-004	0.1239	0.0327	6.5000e-004	0.0333		98.5490	98.5490	2.1100e-003		98.6017
Total	**0.0547**	**0.0320**	**0.3083**	**9.9000e-004**	**0.1232**	**7.1000e-004**	**0.1239**	**0.0327**	**6.5000e-004**	**0.0333**		**98.5490**	**98.5490**	**2.1100e-003**		**98.6017**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694	0.0000	2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0327**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**	**0.0000**	**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

3.5 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0547	0.0320	0.3083	9.9000e-004	0.1232	7.1000e-004	0.1239	0.0327	6.5000e-004	0.0333		98.5490	98.5490	2.1100e-003		98.6017
Total	**0.0547**	**0.0320**	**0.3083**	**9.9000e-004**	**0.1232**	**7.1000e-004**	**0.1239**	**0.0327**	**6.5000e-004**	**0.0333**		**98.5490**	**98.5490**	**2.1100e-003**		**98.6017**

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	67.8855					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**68.0771**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.6 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0657	0.0383	0.3699	1.1900e-003	0.1479	8.5000e-004	0.1487	0.0392	7.8000e-004	0.0400		118.2588	118.2588	2.5300e-003		118.3221
Total	**0.0657**	**0.0383**	**0.3699**	**1.1900e-003**	**0.1479**	**8.5000e-004**	**0.1487**	**0.0392**	**7.8000e-004**	**0.0400**		**118.2588**	**118.2588**	**2.5300e-003**		**118.3221**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	67.8855					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**68.0771**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.6 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0657	0.0383	0.3699	1.1900e-003	0.1479	8.5000e-004	0.1487	0.0392	7.8000e-004	0.0400		118.2588	118.2588	2.5300e-003		118.3221
Total	**0.0657**	**0.0383**	**0.3699**	**1.1900e-003**	**0.1479**	**8.5000e-004**	**0.1487**	**0.0392**	**7.8000e-004**	**0.0400**		**118.2588**	**118.2588**	**2.5300e-003**		**118.3221**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.0853	16.5143	49.9508	0.1430	14.0302	0.1345	14.1647	3.7478	0.1257	3.8735		14,476.9577	14,476.9577	1.0849		14,504.0798
Unmitigated	4.1684	17.2205	52.5332	0.1529	15.0700	0.1432	15.2132	4.0255	0.1338	4.1594		15,477.7753	15,477.7753	1.1327		15,506.0937

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	2,407.20	2,432.70	2180.25	6,957,693	6,477,612
Total	2,407.20	2,432.70	2,180.25	6,957,693	6,477,612

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	48.00	16.00	36.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.537300	0.200000	0.167100	0.054200	0.001400	0.000900	0.009000	0.020600	0.000000	0.004400	0.002600	0.000900	0.001600

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.1852	1.5823	0.6733	0.0101		0.1279	0.1279		0.1279	0.1279		2,019.9192	2,019.9192	0.0387	0.0370	2,031.9225
NaturalGas Unmitigated	0.1970	1.6833	0.7163	0.0107		0.1361	0.1361		0.1361	0.1361		2,148.9238	2,148.9238	0.0412	0.0394	2,161.6938

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	18265.9	0.1970	1.6833	0.7163	0.0107		0.1361	0.1361		0.1361	0.1361		2,148.9238	2,148.9238	0.0412	0.0394	2,161.6938
Total		**0.1970**	**1.6833**	**0.7163**	**0.0107**		**0.1361**	**0.1361**		**0.1361**	**0.1361**		**2,148.9238**	**2,148.9238**	**0.0412**	**0.0394**	**2,161.6938**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	17.1693	0.1852	1.5823	0.6733	0.0101		0.1279	0.1279		0.1279	0.1279		2,019.9192	2,019.9192	0.0387	0.0370	2,031.9225
Total		**0.1852**	**1.5823**	**0.6733**	**0.0101**		**0.1279**	**0.1279**		**0.1279**	**0.1279**		**2,019.9192**	**2,019.9192**	**0.0387**	**0.0370**	**2,031.9225**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	11.7566	2.5699	22.0735	0.0160		0.3043	0.3043		0.3043	0.3043	0.0000	3,007.8808	3,007.8808	0.0936	0.0545	3,026.4478
Unmitigated	30.0286	5.2768	188.0108	0.5574		27.3740	27.3740		27.3740	27.3740	3,995.4885	3,007.8808	7,003.3694	18.7717	0.0545	7,488.8887

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.0229					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	9.8226					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	18.5443	5.0335	166.9273	0.5562		27.2578	27.2578		27.2578	27.2578	3,995.4885	2,970.0000	6,965.4885	18.7350	0.0545	7,450.0902
Landscaping	0.6388	0.2434	21.0835	1.1100e-003		0.1162	0.1162		0.1162	0.1162		37.8808	37.8808	0.0367		38.7986
Total	**30.0286**	**5.2768**	**188.0108**	**0.5574**		**27.3740**	**27.3740**		**27.3740**	**27.3740**	**3,995.4885**	**3,007.8808**	**7,003.3694**	**18.7717**	**0.0545**	**7,488.8887**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.0229					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	9.8226					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.2723	2.3265	0.9900	0.0149		0.1881	0.1881		0.1881	0.1881	0.0000	2,970.0000	2,970.0000	0.0569	0.0545	2,987.6492
Landscaping	0.6388	0.2434	21.0835	1.1100e-003		0.1162	0.1162		0.1162	0.1162		37.8808	37.8808	0.0367		38.7986
Total	**11.7566**	**2.5699**	**22.0735**	**0.0160**		**0.3043**	**0.3043**		**0.3043**	**0.3043**	**0.0000**	**3,007.8808**	**3,007.8808**	**0.0936**	**0.0545**	**3,026.4478**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

CalEEMod Output

GHG Business as Usual

Wilson Tract 6050 Clovis GHG BAU

Fresno County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	255.00	Dwelling Unit	36.76	459,000.00	729

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2005
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E Intensity Factors

Land Use - Site plan acreage

Construction Phase - Developers construction schedule

Architectural Coating - Rule 4601 Architectural Coatings compliance

Vehicle Trips - ITE 10th Ed. Trip Generation Rates 9.44, 9.54 8.55

Woodstoves - SJVAPCD Rule 4901 Woodburning

Area Coating - Rule 4601 Architectural Coatings

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation - 2019 Title 24 Standards reduction without solar for residential

Water Mitigation -

Waste Mitigation -

Off-road Equipment - Adjusted hours per day to reflect shorter schedule while retaining default hours of use per phase

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	150.00	65.00
tblArchitecturalCoating	EF_Residential_Interior	150.00	65.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150
tblAreaCoating	Area_EF_Nonresidential_Interior	250	150
tblAreaCoating	Area_EF_Residential_Exterior	250	65
tblAreaCoating	Area_EF_Residential_Interior	250	65
tblConstructionPhase	PhaseEndDate	12/28/2023	5/4/2023
tblConstructionPhase	PhaseStartDate	10/13/2023	2/17/2023
tblFleetMix	HHD	0.11	0.02
tblFleetMix	LDA	0.42	0.54
tblFleetMix	LDT1	0.06	0.20

tblFleetMix	LDT2	0.15	0.17
tblFleetMix	LHD1	0.04	1.4000e-003
tblFleetMix	LHD2	6.9730e-003	9.0000e-004
tblFleetMix	MCY	5.2690e-003	2.6000e-003
tblFleetMix	MDV	0.18	0.05
tblFleetMix	MH	1.5690e-003	1.6000e-003
tblFleetMix	MHD	0.03	9.0000e-003
tblFleetMix	OBUS	2.0990e-003	0.00
tblFleetMix	SBUS	1.2120e-003	9.0000e-004
tblFleetMix	UBUS	1.7870e-003	4.4000e-003
tblLandUse	LotAcreage	82.79	36.76
tblVehicleTrips	HO_TTP	35.70	36.00
tblVehicleTrips	HS_TTP	15.90	16.00
tblVehicleTrips	HW_TTP	48.40	48.00
tblVehicleTrips	ST_TR	9.91	9.54
tblVehicleTrips	SU_TR	8.62	8.55
tblVehicleTrips	WD_TR	9.52	9.44

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023											0.0000	10.0908	10.0908	4.9000e-004	0.0000	10.1029
Maximum											**0.0000**	**10.0908**	**10.0908**	**4.9000e-004**	**0.0000**	**10.1029**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023											0.0000	10.0908	10.0908	4.9000e-004	0.0000	10.1029
Maximum											**0.0000**	**10.0908**	**10.0908**	**4.9000e-004**	**0.0000**	**10.1029**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											148.6105	113.5607	262.1712	0.7018	2.0300e-003	280.3196
Energy											0.0000	1,005.6714	1,005.6714	0.0362	0.0126	1,010.3321
Mobile											0.0000	3,116.7581	3,116.7581	0.5220	0.0000	3,129.8087
Waste											53.2730	0.0000	53.2730	3.1483	0.0000	131.9815
Water											5.2709	36.8176	42.0886	0.5430	0.0131	59.5766
Total											**207.1544**	**4,272.8078**	**4,479.9622**	**4.9514**	**0.0278**	**4,612.0185**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											0.0000	113.5607	113.5607	7.0700e-003	2.0300e-003	114.3410
Energy											0.0000	979.1416	979.1416	0.0356	0.0122	983.6551
Mobile											0.0000	2,913.4675	2,913.4675	0.5013	0.0000	2,925.9993
Waste											39.9547	0.0000	39.9547	2.3613	0.0000	98.9861
Water											4.2168	29.4541	33.6709	0.4344	0.0105	47.6613
Total											**44.1715**	**4,035.6239**	**4,079.7954**	**3.3396**	**0.0247**	**4,170.6427**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**78.68**	**5.55**	**8.93**	**32.55**	**11.06**	**9.57**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	2/17/2023	5/4/2023	5	55	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 929,475; Residential Outdoor: 309,825; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	7.0215	7.0215	4.2000e-004	0.0000	7.0320
Total											**0.0000**	**7.0215**	**7.0215**	**4.2000e-004**	**0.0000**	**7.0320**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	3.0693	3.0693	6.0000e-005	0.0000	3.0710
Total											**0.0000**	**3.0693**	**3.0693**	**6.0000e-005**	**0.0000**	**3.0710**

3.2 Architectural Coating - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	7.0214	7.0214	4.2000e-004	0.0000	7.0319
Total											**0.0000**	**7.0214**	**7.0214**	**4.2000e-004**	**0.0000**	**7.0319**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	3.0693	3.0693	6.0000e-005	0.0000	3.0710
Total											**0.0000**	**3.0693**	**3.0693**	**6.0000e-005**	**0.0000**	**3.0710**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated											0.0000	2,913.4675	2,913.4675	0.5013	0.0000	2,925.9993
Unmitigated											0.0000	3,116.7581	3,116.7581	0.5220	0.0000	3,129.8087

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	2,407.20	2,432.70	2180.25	6,957,693	6,477,612
Total	2,407.20	2,432.70	2,180.25	6,957,693	6,477,612

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	48.00	16.00	36.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.537300	0.200000	0.167100	0.054200	0.001400	0.000900	0.009000	0.020600	0.000000	0.004400	0.002600	0.000900	0.001600

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated											0.0000	644.7213	644.7213	0.0292	6.0300e-003	647.2475
Electricity Unmitigated											0.0000	649.8929	649.8929	0.0294	6.0800e-003	652.4394
NaturalGas Mitigated											0.0000	334.4203	334.4203	6.4100e-003	6.1300e-003	336.4076
NaturalGas Unmitigated											0.0000	355.7784	355.7784	6.8200e-003	6.5200e-003	357.8927

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	6.66704e+006											0.0000	355.7784	355.7784	6.8200e-003	6.5200e-003	357.8927
Total												**0.0000**	**355.7784**	**355.7784**	**6.8200e-003**	**6.5200e-003**	**357.8927**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	6.2668e+006											0.0000	334.4203	334.4203	6.4100e-003	6.1300e-003	336.4076
Total												**0.0000**	**334.4203**	**334.4203**	**6.4100e-003**	**6.1300e-003**	**336.4076**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	2.23399e+006	649.8929	0.0294	6.0800e-003	652.4394
Total		**649.8929**	**0.0294**	**6.0800e-003**	**652.4394**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	2.21621e+006	644.7213	0.0292	6.0300e-003	647.2475
Total		**644.7213**	**0.0292**	**6.0300e-003**	**647.2475**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated											0.0000	113.5607	113.5607	7.0700e-003	2.0300e-003	114.3410
Unmitigated											148.6105	113.5607	262.1712	0.7018	2.0300e-003	280.3196

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth											148.6105	110.4679	259.0784	0.6968	2.0300e-003	277.1029
Landscaping											0.0000	3.0928	3.0928	4.9500e-003	0.0000	3.2167
Total											**148.6105**	**113.5607**	**262.1712**	**0.7018**	**2.0300e-003**	**280.3196**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth											0.0000	110.4679	110.4679	2.1200e-003	2.0300e-003	111.1243
Landscaping											0.0000	3.0928	3.0928	4.9500e-003	0.0000	3.2167
Total											**0.0000**	**113.5607**	**113.5607**	**7.0700e-003**	**2.0300e-003**	**114.3410**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	33.6709	0.4344	0.0105	47.6613
Unmitigated	42.0886	0.5430	0.0131	59.5766

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	16.6143 / 10.4742	42.0886	0.5430	0.0131	59.5766
Total		**42.0886**	**0.5430**	**0.0131**	**59.5766**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	13.2914 / 8.37937	33.6709	0.4344	0.0105	47.6613
Total		**33.6709**	**0.4344**	**0.0105**	**47.6613**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	39.9547	2.3613	0.0000	98.9861
Unmitigated	53.2730	3.1483	0.0000	131.9815

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	262.44	53.2730	3.1483	0.0000	131.9815
Total		**53.2730**	**3.1483**	**0.0000**	**131.9815**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	196.83	39.9547	2.3613	0.0000	98.9861
Total		**39.9547**	**2.3613**	**0.0000**	**98.9861**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

CalEEMod Output

GHG 2030 Mitigated

Wilson Tract 6050 Clovis GHG 2030

Fresno County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	255.00	Dwelling Unit	36.76	459,000.00	729

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.022	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E Intensity Factors

Land Use - Site plan acreage

Construction Phase - Developers construction schedule

Architectural Coating - Rule 4601 Architectural Coatings compliance

Vehicle Trips - ITE 10th Ed. Trip Generation Rates 9.44, 9.54 8.55

Woodstoves - SJVAPCD Rule 4901 Woodburning

Area Coating - Rule 4601 Architectural Coatings

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation - 2019 Title 24 Standards reduction without solar for residential

Water Mitigation -

Waste Mitigation -

Off-road Equipment - Adjusted hours per day to reflect shorter schedule while retaining default hours of use per phase

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	150.00	65.00
tblArchitecturalCoating	EF_Residential_Interior	150.00	65.00
tblAreaCoating	Area_EF_Residential_Exterior	150	65
tblAreaCoating	Area_EF_Residential_Interior	150	65
tblConstructionPhase	PhaseEndDate	12/28/2023	5/4/2023
tblConstructionPhase	PhaseStartDate	10/13/2023	2/17/2023
tblFleetMix	HHD	0.13	0.02
tblFleetMix	LDA	0.52	0.54
tblFleetMix	LDT1	0.03	0.20
tblFleetMix	LDT2	0.18	0.17
tblFleetMix	LHD1	9.7000e-003	1.4000e-003

tblFleetMix	LHD2	3.4040e-003	9.0000e-004
tblFleetMix	MCY	4.5630e-003	2.6000e-003
tblFleetMix	MDV	0.09	0.05
tblFleetMix	MH	4.3600e-004	1.6000e-003
tblFleetMix	MHD	0.03	9.0000e-003
tblFleetMix	OBUS	2.3060e-003	0.00
tblFleetMix	SBUS	9.9800e-004	9.0000e-004
tblFleetMix	UBUS	1.1850e-003	4.4000e-003
tblLandUse	LotAcreage	82.79	36.76
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.022
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblVehicleTrips	HO_TTP	35.70	36.00
tblVehicleTrips	HS_TTP	15.90	16.00
tblVehicleTrips	HW_TTP	48.40	48.00
tblVehicleTrips	ST_TR	9.91	9.54
tblVehicleTrips	SU_TR	8.62	8.55
tblVehicleTrips	WD_TR	9.52	9.44

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023											0.0000	10.0908	10.0908	4.9000e-004	0.0000	10.1029
Maximum											**0.0000**	**10.0908**	**10.0908**	**4.9000e-004**	**0.0000**	**10.1029**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023											0.0000	10.0908	10.0908	4.9000e-004	0.0000	10.1029
Maximum											**0.0000**	**10.0908**	**10.0908**	**4.9000e-004**	**0.0000**	**10.1029**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											148.6105	113.5607	262.1712	0.6998	2.0300e-003	280.2694
Energy											0.0000	649.6413	649.6413	0.0291	0.0116	653.8227
Mobile											0.0000	1,991.0381	1,991.0381	0.1036	0.0000	1,993.6279
Waste											53.2730	0.0000	53.2730	3.1483	0.0000	131.9815
Water											5.2709	16.6479	21.9188	0.5426	0.0131	39.3797
Total											**207.1544**	**2,770.8880**	**2,978.0424**	**4.5235**	**0.0267**	**3,099.0812**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											0.0000	113.5607	113.5607	5.0600e-003	2.0300e-003	114.2909
Energy											0.0000	625.9447	625.9447	0.0285	0.0112	629.9827
Mobile											0.0000	1,863.1446	1,863.1446	0.0992	0.0000	1,865.6238
Waste											39.9547	0.0000	39.9547	2.3613	0.0000	98.9861
Water											4.2168	13.3183	17.5351	0.4341	0.0105	31.5038
Total											**44.1715**	**2,615.9683**	**2,660.1398**	**2.9281**	**0.0237**	**2,740.3873**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**78.68**	**5.59**	**10.67**	**35.27**	**11.39**	**11.57**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	2/17/2023	5/4/2023	5	55	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 929,475; Residential Outdoor: 309,825; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	7.0215	7.0215	4.2000e-004	0.0000	7.0320
Total											**0.0000**	**7.0215**	**7.0215**	**4.2000e-004**	**0.0000**	**7.0320**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	3.0693	3.0693	6.0000e-005	0.0000	3.0710
Total											**0.0000**	**3.0693**	**3.0693**	**6.0000e-005**	**0.0000**	**3.0710**

3.2 Architectural Coating - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	7.0214	7.0214	4.2000e-004	0.0000	7.0319
Total											**0.0000**	**7.0214**	**7.0214**	**4.2000e-004**	**0.0000**	**7.0319**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	3.0693	3.0693	6.0000e-005	0.0000	3.0710
Total											**0.0000**	**3.0693**	**3.0693**	**6.0000e-005**	**0.0000**	**3.0710**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated											0.0000	1,863.1446	1,863.1446	0.0992	0.0000	1,865.6238
Unmitigated											0.0000	1,991.0381	1,991.0381	0.1036	0.0000	1,993.6279

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	2,407.20	2,432.70	2180.25	6,957,693	6,477,612
Total	2,407.20	2,432.70	2,180.25	6,957,693	6,477,612

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	48.00	16.00	36.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.537300	0.200000	0.167100	0.054200	0.001400	0.000900	0.009000	0.020600	0.000000	0.004400	0.002600	0.000900	0.001600

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated											0.0000	291.5244	291.5244	0.0221	5.0300e-003	293.5751
Electricity Unmitigated											0.0000	293.8629	293.8629	0.0223	5.0700e-003	295.9300
NaturalGas Mitigated											0.0000	334.4203	334.4203	6.4100e-003	6.1300e-003	336.4076
NaturalGas Unmitigated											0.0000	355.7784	355.7784	6.8200e-003	6.5200e-003	357.8927

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	6.66704e+006											0.0000	355.7784	355.7784	6.8200e-003	6.5200e-003	357.8927
Total												**0.0000**	**355.7784**	**355.7784**	**6.8200e-003**	**6.5200e-003**	**357.8927**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	6.2668e+006											0.0000	334.4203	334.4203	6.4100e-003	6.1300e-003	336.4076
Total												**0.0000**	**334.4203**	**334.4203**	**6.4100e-003**	**6.1300e-003**	**336.4076**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	2.23399e+006	293.8629	0.0223	5.0700e-003	295.9300
Total		**293.8629**	**0.0223**	**5.0700e-003**	**295.9300**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	2.21621e+006	291.5244	0.0221	5.0300e-003	293.5751
Total		**291.5244**	**0.0221**	**5.0300e-003**	**293.5751**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated											0.0000	113.5607	113.5607	5.0600e-003	2.0300e-003	114.2909
Unmitigated											148.6105	113.5607	262.1712	0.6998	2.0300e-003	280.2694

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth											148.6105	110.4679	259.0784	0.6968	2.0300e-003	277.1029
Landscaping											0.0000	3.0928	3.0928	2.9500e-003	0.0000	3.1665
Total											**148.6105**	**113.5607**	**262.1712**	**0.6998**	**2.0300e-003**	**280.2694**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth											0.0000	110.4679	110.4679	2.1200e-003	2.0300e-003	111.1243
Landscaping											0.0000	3.0928	3.0928	2.9500e-003	0.0000	3.1665
Total											**0.0000**	**113.5607**	**113.5607**	**5.0700e-003**	**2.0300e-003**	**114.2909**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	17.5351	0.4341	0.0105	31.5038
Unmitigated	21.9188	0.5426	0.0131	39.3797

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	16.6143 / 10.4742	21.9188	0.5426	0.0131	39.3797
Total		**21.9188**	**0.5426**	**0.0131**	**39.3797**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	13.2914 / 8.37937	17.5351	0.4341	0.0105	31.5038
Total		**17.5351**	**0.4341**	**0.0105**	**31.5038**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	39.9547	2.3613	0.0000	98.9861
Unmitigated	53.2730	3.1483	0.0000	131.9815

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	262.44	53.2730	3.1483	0.0000	131.9815
Total		**53.2730**	**3.1483**	**0.0000**	**131.9815**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	196.83	39.9547	2.3613	0.0000	98.9861
Total		**39.9547**	**2.3613**	**0.0000**	**98.9861**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix B: San Joaquin Valley Air Pollution Control District Amicus Brief on Friant Ranch Supreme Court Decision

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AGENDA ITEM NO.2

CASE NO. S219783

IN THE SUPREME COURT OF CALIFORNIA

SIERRA CLUB, REVIVE THE SAN JOAQUIN, and
LEAGUE OF WOMEN VOTERS OF FRESNO,
Plaintiffs and Appellants

v.

COUNTY OF FRESNO,
Defendant and Respondent

FRIANT RANCH, L.P.,
Real Party in Interest and Respondent

After a Decision by the Court of Appeal, filed May 27, 2014
Fifth Appellate District Case No. F066798

Appeal from the Superior Court of California, County of Fresno
Case No. 11CECG00726

APPLICATION FOR LEAVE TO FILE AMICUS CURIAE BRIEF OF SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT IN SUPPORT OF DEFENDANT AND RESPONDENT, COUNTY OF FRESNO AND REAL PARTY IN INTEREST AND RESPONDENT, FRIANT RANCH, L.P.

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APPLICATION

Pursuant to California Rules of Court 8.520(f)(1), proposed Amicus Curiae San Joaquin Valley Unified Air Pollution Control District hereby requests permission from the Chief Justice to file an amicus brief in support of Defendant and Respondent, County of Fresno, and Defendant and Real Parties in Interest Friant Ranch, L.P. Pursuant to Rule 8.520(f)(5) of the California Rules of Court, the proposed amicus curiae brief is combined with this Application. The brief addresses the following issue certified by this Court for review:

> Is an EIR adequate when it identifies the health impacts of air pollution and quantifies a project's expected emissions, or does CEQA further require the EIR to *correlate* a project's air quality emissions to specific health impacts?

As of the date of this filing, the deadline for the final reply brief on the merits was March 5, 2015. Accordingly, under Rule 8.520(f)(2), this application and brief are timely.

1. Background and Interest of San Joaquin Valley Unified Air Pollution Control District

The San Joaquin Valley Unified Air Pollution Control District ("Air District") regulates air quality in the eight counties comprising the San Joaquin Valley ("Central Valley"): Kern, Tulare, Madera, Fresno, Merced, San Joaquin, Stanislaus, and Kings, and is primarily responsible for attaining air quality standards within its jurisdiction. After billions of dollars of investment by Central Valley businesses, pioneering air quality regulations, and consistent efforts by residents, the Central Valley air basin has made historic improvements in air quality.

The Central Valley's geographical, topographical and meteorological features create exceptionally challenging air quality

conditions. For example, it receives air pollution transported from the San Francisco Bay Area and northern Central Valley communities, and the southern portion of the Central Valley includes three mountain ranges (Sierra, Tehachapi, and Coastal) that, under some meteorological conditions, effectively trap air pollution. Central Valley air pollution is only a fraction of what the Bay Area and Los Angeles produce, but these natural conditions result in air quality conditions that are only marginally better than Los Angeles, even though about ten times more pollution is emitted in the Los Angeles region. Bay Area air quality is much better than the Central Valley's, even though the Bay Area produces about six times more pollution. The Central Valley also receives air pollution transported from the Bay Area and northern counties in the Central Valley, including Sacramento, and transboundary anthropogenic ozone from as far away as China.

Notwithstanding these challenges, the Central Valley has reduced emissions at the same or better rate than other areas in California and has achieved unparalleled milestones in protecting public health and the environment:

- In the last decade, the Central Valley became the first air basin classified by the federal government under the Clean Air Act as a "serious nonattainment" area to come into attainment of health-based National Ambient Air Quality Standard ("NAAQS") for coarse particulate matter (PM10), an achievement made even more notable given the Valley's extensive agricultural sector. Unhealthy levels of particulate matter can cause and exacerbate a range of chronic and acute illnesses.
- In 2013, the Central Valley became the first air basin in the country to improve from a federal designation of "extreme" nonattainment to

actually attain (and quality for an attainment designation) of the 1-hour ozone NAAQS; ozone creates "smog" and, like PM10, causes adverse health impacts.

- The Central Valley also is in full attainment of federal standards for lead, nitrogen dioxide, sulfur dioxide, and carbon monoxide.
- The Central Valley continues to make progress toward compliance with its last two attainment standards, with the number of exceedences for the 8-hour ozone NAAQS reduced by 74% (for the 1997 standard) and 38% (for the 2008 standard) since 1991, and for the small particulate matter (PM2.5) NAAQS reduced by 85% (for the 1997 standard) and 61% (for the 2006 standard).

Sustained improvement in Central Valley air quality requires a rigorous and comprehensive regulatory framework that includes prohibitions (e.g., on wood-burning fireplaces in new residences), mandates (e.g., requiring the installation of best available pollution reduction technologies on new and modified equipment and industrial operations), innovations (e.g., fees assessed against residential development to fund pollution reduction actions to "offset" vehicular emissions associated with new residences), incentive programs (e.g., funding replacements of older, more polluting heavy duty trucks and school buses)[1], ongoing planning for continued air quality improvements, and enforcement of Air District permits and regulations.

The Air District is also an expert air quality agency for the eight counties and cities in the San Joaquin Valley. In that capacity, the Air District has developed air quality emission guidelines for use by the Central

[1] San Joaquin's incentive program has been so successful that through 2012, it has awarded over $ 432 million in incentive funds and has achieved 93,349 tons of lifetime emissions reductions. *See* SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT, 2012 PM2.5 PLAN, 6-6 (2012) *available at* http://www.valleyair.org/Workshops/postings/2012/12-20-12PM25/FinalVersion/06%20Chapter%206%20Incentives.pdf.

Valley counties and cities that implement the California Environment Quality Act (CEQA).[2] In its guidance, the Air District has distinguished between toxic air contaminants and criteria air pollutants.[3] Recognizing this distinction, the Air District's CEQA Guidance has adopted distinct thresholds of significance for *criteria* pollutants (i.e., ozone, PM2.5 and their respective precursor pollutants) based upon scientific and factual data which demonstrates the level that can be accommodated on a cumulative basis in the San Joaquin Valley without affecting the attainment of the applicable NAAQS.[4] For *toxic air* pollutants, the District has adopted different thresholds of significance which scientific and factual data demonstrates has the potential to expose sensitive receptors (i.e., children, the elderly) to levels which may result in localized health impacts.[5]

The Air District's CEQA Guidance was followed by the County of Fresno in its environment review of the Friant Ranch project, for which the Air District also served as a commenting agency. The Court of Appeal's holding, however, requiring correlation between the project's criteria

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[2] *See, e.g.*, SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT, PLANNING DIVISION, GUIDE FOR ASSESSING AND MITIGATING AIR QUALITY IMPACTS (2015), *available at* http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf ("CEQA Guidance").

[3] Toxic air contaminants, also known as hazardous air pollutants, are those pollutants that are known or suspected to cause cancer or other serious health effects, such as birth defects. There are currently 189 toxic air contaminants regulated by the United States Environmental Protection Agency ("EPA") and the states pursuant to the Clean Air Act. 42 U.S.C. § 7412. Common TACs include benzene, perchloroethylene and asbestos. *Id.* at 7412(b).

In contrast, there are only six (6) criteria air pollutants: ozone, particulate matter, carbon monoxide, nitrogen oxides, sulfur dioxide and lead. Although criteria air pollutants can also be harmful to human health, they are distinguishable from toxic air contaminants and are regulated separately. For instance, while criteria pollutants are regulated by numerous sections throughout Title I of the Clean Air Act, the regulation of toxic air contaminants occurs solely under section 112 of the Act. Compare 42 U.S.C. §§ 7407 – 7411 & 7501 – 7515 with 42 U.S.C. § 7411.

[4] See, e.g., CEQA Guidance at http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf, pp. 64-66, 80.

[5] See, e.g., CEQA Guidance at http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf, pp. 66, 99-101.

pollutants and local health impacts, departs from the Air District's Guidance and approved methodology for assessing criteria pollutants. A close reading of the administrative record that gave rise to this issue demonstrates that the Court's holding is based on a misunderstanding of the distinction between toxic air contaminants (for which a local health risk assessment is feasible and routinely performed) and criteria air pollutants (for which a local health risk assessment is not feasible and would result in speculative results).[6] The Air District has a direct interest in ensuring the lawfulness and consistent application of its CEQA Guidance, and will explain how the Court of Appeal departed from the Air District's long-standing CEQA Guidance in addressing criteria pollutants and toxic air contaminants in this amicus brief.

2. How the Proposed Amicus Curiae Brief Will Assist the Court

As counsel for the proposed amicus curiae, we have reviewed the briefs filed in this action. In addition to serving as a "commentary agency" for CEQA purposes over the Friant Ranch project, the Air District has a strong interest in assuring that CEQA is used for its intended purpose, and believes that this Court would benefit from additional briefing explaining the distinction between criteria pollutants and toxic air contaminants and the different methodologies employed by local air pollution control agencies such as the Air District to analyze these two categories of air pollutants under CEQA. The Air District will also explain how the Court of Appeal's opinion is based upon a fundamental misunderstanding of these two different approaches by requiring the County of Fresno to correlate the project's *criteria* pollution emissions with *local* health impacts. In doing

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[6] CEQA does not require speculation. *See, e.g.*, *Laurel Heights Improvement Ass'n v. Regents of Univ. of Cal.*, 6 Cal. 4th 1112, 1137 (1993) (upholding EIR that failed to evaluate cumulative toxic air emission increases given absence of any acceptable means for doing so).

so, the Air District will provide helpful analysis to support its position that at least insofar as criteria pollutants are concerned, CEQA does not require an EIR to correlate a project's air quality emissions to specific health impacts, because such an analysis is not reasonably feasible.

Rule 8.520 Disclosure

Pursuant to Cal. R. 8.520(f)(4), neither the Plaintiffs nor the Defendant or Real Party In Interest or their respective counsel authored this brief in whole or in part. Neither the Plaintiffs nor the Defendant or Real Party in Interest or their respective counsel made any monetary contribution towards or in support of the preparation of this brief.

CONCLUSION

On behalf of the San Joaquin Valley Unified Air Pollution Control District, we respectfully request that this Court accept the filing of the attached brief.

Dated: April 2, 2015

Annette A. Ballatore-Williamson
District Counsel
Attorney for Proposed Amicus Curiae

SAN JOAQUIN VALLEY UNIFIED
AIR POLLUTION CONTROL
DISTRICT

CASE NO. S219783

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I. INTRODUCTION.

The San Joaquin Valley Unified Air Pollution Control District ("Air District") respectfully submits that the Court of Appeal erred when it held that the air quality analysis contained in the Environmental Impact Report ("EIR") for the Friant Ranch development project was inadequate under the California Environmental Quality Act ("CEQA") because it did not include an analysis of the correlation between the project's criteria air pollutants and the potential adverse human health impacts. A close reading of the portion of the administrative record that gave rise to this issue demonstrates that the Court's holding is based on a misunderstanding of the distinction between toxic air contaminants and criteria air pollutants.

Toxic air contaminants, also known as hazardous air pollutants, are those pollutants that are known or suspected to cause cancer or other serious health effects, such as birth defects. There are currently 189 toxic air contaminants (hereinafter referred to as "TACs") regulated by the United States Environmental Protection Agency ("EPA") and the states pursuant to the Clean Air Act. 42 U.S.C. § 7412. Common TACs include benzene, perchloroethylene and asbestos. *Id.* at 7412(b).

In contrast, there are only six (6) criteria air pollutants: ozone, particulate matter, carbon monoxide, nitrogen oxides, sulfur dioxide and lead. Although criteria air pollutants can also be harmful to human health,

they are distinguishable from TACs and are regulated separately. For instance, while criteria pollutants are regulated by numerous sections throughout Title I of the Clean Air Act, the regulation of TACs occurs solely under section 112 of the Act. *Compare* 42 U.S.C. §§ 7407 – 7411 & 7501 – 7515 *with* 42 U.S.C. § 7411.

The most relevant difference between criteria pollutants and TACs for purposes of this case is the manner in which human health impacts are accounted for. While it is common practice to analyze the correlation between an individual facility's TAC emissions and the expected localized human health impacts, such is not the case for criteria pollutants. Instead, the human health impacts associated with criteria air pollutants are analyzed and taken into consideration when EPA sets the national ambient air quality standard ("NAAQS") for each criteria pollutant. 42 U.S.C. § 7409(b)(1). The health impact of a particular criteria pollutant is analyzed on a regional and not a facility level based on how close the area is to complying with (attaining) the NAAQS. Accordingly, while the type of individual facility / health impact analysis that the Court of Appeal has required is a customary practice for TACs, it is not feasible to conduct a similar analysis for criteria air pollutants because currently available computer modeling tools are not equipped for this task.

It is clear from a reading of both the administrative record and the Court of Appeal's decision that the Court did not have the expertise to fully

appreciate the difference between TACs and criteria air pollutants. As a result, the Court has ordered the County of Fresno to conduct an analysis that is not practicable and not likely yield valid information. The Air District respectfully requests that this portion of the Court of Appeal's decision be reversed.

II. THE COURT OF APPEAL ERRED IN FINDING THE FRIANT RANCH EIR INADEQUATE FOR FAILING TO ANALYZE THE SPECIFIC HUMAN HEALTH IMPACTS ASSOCIATED CRITERIA AIR POLLUTANTS.

Although the Air District does not take lightly the amount of air emissions at issue in this case, it submits that the Court of Appeal got it wrong when it required Fresno County to revise the Friant Ranch EIR to include an analysis correlating the criteria air pollutant emissions associated with the project with specific, localized health-impacts. The type of analysis the Court of Appeal has required will not yield reliable information because currently available modeling tools are not well suited for this task. Further, in reviewing this issue de novo, the Court of Appeal failed to appreciate that it lacked the scientific expertise to appreciate the significant differences between a health risk assessment commonly performed for toxic air contaminants and a similar type of analysis it felt should have been conducted for criteria air pollutants.

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A. Currently Available Modeling Tools are not Equipped to Provide a Meaningful Analysis of the Correlation between an Individual Development Project's Air Emissions and Specific Human Health Impacts.

In order to appreciate the problematic nature of the Court of Appeals' decision requiring a health risk type analysis for criteria air pollutants, it is important to understand how the relevant criteria pollutants (ozone and particulate matter) are formed, dispersed and regulated.

Ground level ozone (smog) is not directly emitted into the air, but is formed when precursor pollutants such as oxides of nitrogen (NOx) and volatile organic compounds (VOCs) are emitted into the atmosphere and undergo complex chemical reactions in the process of sunlight.[1] Once formed, ozone can be transported long distances by wind.[2] Because of the complexity of ozone formation, a specific tonnage amount of NOx or VOCs emitted in a particular area does not equate to a particular concentration of ozone in that area. In fact, even rural areas that have relatively low tonnages of emissions of NOx or VOCs can have high levels of ozone concentration simply due to wind transport.[3] Conversely, the San Francisco Bay Area has six times more NOx and VOC emissions per square mile than the San Joaquin Valley, but experiences lower

[1] *See* United States Environmental Protection Agency, *Ground-level Ozone: Basic Information*, available at: http://www.epa.gov/airquality/ozonepollution/basic.html (visited March 10, 2015).
[2] *Id.*
[3] *Id.*

concentrations of ozone (and better air quality) simply because sea breezes disperse the emissions.[4]

Particulate matter ("PM") can be divided into two categories: directly emitted PM and secondary PM.[5] While directly emitted PM can have a localized impact, the tonnage emitted does not always equate to the local PM concentration because it can be transported long distances by wind.[6] Secondary PM, like ozone, is formed via complex chemical reactions in the atmosphere between precursor chemicals such as sulfur dioxides (SOx) and NOx.[7] Because of the complexity of secondary PM formation, the tonnage of PM-forming precursor emissions in an area does not necessarily result in an equivalent concentration of secondary PM in that area.

The disconnect between the *tonnage* of precursor pollutants (NOx, SOx and VOCs) and the *concentration* of ozone or PM formed is important because it is not necessarily the tonnage of precursor pollutants that causes human health effects, but the concentration of resulting ozone or PM. Indeed, the national ambient air quality standards ("NAAQS"), which are statutorily required to be set by the United States Environmental Protection

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[4] *San Joaquin Valley Air Pollution Control District 2007 Ozone Plan*, Executive Summary p. ES-6, available at: http://www.valleyair.org/Air_Quality_Plans/docs/AQ_Ozone_2007_Adopted/03%20Executive%20Summary.pdf (visited March 10, 2015).

[5] United States Environmental Protection Agency, *Particulate Matter: Basic Information*, available at: http://www.epa.gov/airquality/particlepollution/basic.html (visited March 10, 2015).

[6] *Id.*

[7] *Id.*

Agency ("EPA") at levels that are "requisite to protect the public health," 42 U.S.C. § 7409(b)(1), are established as concentrations of ozone or particulate matter and not as tonnages of their precursor pollutants.[8]

Attainment of a particular NAAQS occurs when the concentration of the relevant pollutant remains below a set threshold on a consistent basis throughout a particular region. For example, the San Joaquin Valley attained the 1-hour ozone NAAQS when ozone concentrations remained at or below 0.124 parts per million Valley-wide on 3 or fewer days over a 3-year period.[9] Because the NAAQS are focused on achieving a particular concentration of pollution region-wide, the Air District's tools and plans for attaining the NAAQS are regional in nature.

For instance, the computer models used to simulate and predict an attainment date for the ozone or particulate matter NAAQS in the San Joaquin Valley are based on regional inputs, such as regional inventories of precursor pollutants (NOx, SOx and VOCs) and the atmospheric chemistry and meteorology of the Valley.[10] At a very basic level, the models simulate future ozone or PM levels based on predicted changes in precursor

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[8] See, e.g., United States Environmental Protection Agency, *Table of National Ambient Air Quality Standards*, available at: http://www.epa.gov/air/criteria.html#3 (visited March 10, 2015).

[9] *San Joaquin Valley Unified Air Pollution Control District 2013 Plan for the Revoked 1-Hour Ozone Standard*, Ch. 2 p. 2-16, available at: http://www.valleyair.org/Air_Quality_Plans/OzoneOneHourPlan2013/02Chapter2ScienceTrendsModeling.pdf (visited March 10, 2015).

[10] *Id.* at Ch. 2 p. 2-19 (visited March 12, 2015); *San Joaquin Valley Unified Air Pollution Control District 2008 PM2.5 Plan*, Appendix F, pp. F-2 – F-5, available at: http://www.valleyair.org/Air_Quality_Plans/docs/AQ_Final_Adopted_PM2.5/20%20Appendix%20F.pdf (visited March 19, 2015).

emissions Valley wide.[11] Because the NAAQS are set levels necessary to protect human health, the closer a region is to attaining a particular NAAQS, the lower the human health impact is from that pollutant.

The goal of these modeling exercises is not to determine whether the emissions generated by a particular factory or development project will affect the date that the Valley attains the NAAQS. Rather, the Air District's modeling and planning strategy is regional in nature and based on the extent to which *all* of the emission-generating sources in the Valley (current and future) must be controlled in order to reach attainment.[12]

Accordingly, the Air District has based its thresholds of significance for CEQA purposes on the levels that scientific and factual data demonstrate that the Valley can accommodate without affecting the attainment date for the NAAQS.[13] The Air District has tied its CEQA significance thresholds to the level at which stationary pollution sources permitted by the Air District must "offset" their emissions.[14] This "offset"

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[11] *Id.*

[12] Although the Air District does have a dispersion modeling tool used during its air permitting process that is used to predict whether a particular project's directly emitted PM will either cause an exceedance of the PM NAAQS or contribute to an existing exceedance, this model bases the prediction on a worst case scenario of emissions and meteorology and has no provision for predicting any associated human health impacts. Further, this analysis is only performed for stationary sources (factories, oil refineries, etc.) that are required to obtain a New Source Review permit from the Air District and not for development projects such as Friant Ranch over which the Air District has no preconstruction permitting authority. *See* San Joaquin Valley Unified Air Pollution Control District Rule 2201 §§ 2.0; 3.3.9; 4.14.1, available at: http://www.valleyair.org/rules/currntrules/Rule2201041l.pdf (visited March 19, 2015).

[13] *San Joaquin Valley Unified Air Pollution Control District Guide to Assessing and Mitigating Air Quality Impacts*, (March 19, 2015) p. 22, available at: http://www.valleyair.org/transportation/CEQA%20Rules/GAMAQI%20Jan%202002%20Rev.pdf (visited March 30, 2015).

[14] *Id.* at pp. 22, 25.

level allows for growth while keeping the cumulative effects of all new sources at a level that will not impede attainment of the NAAQS.[15] In the Valley, these thresholds are 15 tons per year of PM, and 10 tons of NOx or VOC per year. *Sierra Club*, *supra*, 172 Cal.Rptr.3d at 303; AR 4554. Thus, the CEQA air quality analysis for criteria pollutants is not really a localized, project-level impact analysis but one of regional, "cumulative impacts."

Accordingly, the significance thresholds applied in the Friant Ranch EIR (15 tons per year of PM and 10 tons of NOx or VOCs) are not intended to be indicative of any localized human health impact that the project may have. While the health effects of air pollution are of primary concern to the Air District (indeed, the NAAQS are established to protect human health), the Air District is simply not equipped to analyze whether and to what extent the criteria pollutant emissions of an individual CEQA project directly impact human health in a particular area. This is true even for projects with relatively high levels of emissions of criteria pollutant precursor emissions.

For instance, according to the EIR, the Friant Ranch project is estimated to emit 109.52 tons per year of ROG (VOC), 102.19 tons per year of NOx, and 117.38 tons per year of PM. Although these levels well

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[15] [15] *San Joaquin Valley Unified Air Pollution Control District Environmental Review Guidelines* (Aug. 2000) p. 4-11, available at: http://www.valleyair.org/transportation/CEQA%20Rules/ERG%20Adopted%20_August%202000_.pdf (visited March 12, 2015).

exceed the Air District's CEQA significance thresholds, this does not mean that one can easily determine the concentration of ozone or PM that will be created at or near the Friant Ranch site on a particular day or month of the year, or what specific health impacts will occur. Meteorology, the presence of sunlight, and other complex chemical factors all combine to determine the ultimate concentration and location of ozone or PM. This is especially true for a project like Friant Ranch where most of the criteria pollutant emissions derive not from a single "point source," but from area wide sources (consumer products, paint, etc.) or mobile sources (cars and trucks) driving to, from and around the site.

In addition, it would be extremely difficult to model the impact on NAAQS attainment that the emissions from the Friant Ranch project may have. As discussed above, the currently available modeling tools are equipped to model the impact of *all* emission sources in the Valley on attainment. According to the most recent EPA-approved emission inventory, the NOx inventory for the Valley is for the year 2014 is 458.2 tons per day, or 167,243 tons per year and the VOC (or ROG) inventory is 361.7 tons per day, or 132,020.5 tons per year.[16] Running the photochemical grid model used for predicting ozone attainment with the

[16] *San Joaquin Valley Unified Air Pollution Control District 2007 Ozone Plan*, Appendix B pp. B-6, B-9,
available at:
http://www.valleyair.org/Air_Quality_Plans/docs/AQ_Ozone_2007_Adopted/19%20Appendix%20B%20April%202007.pdf (visited March 12, 2015).

emissions solely from the Friant Ranch project (which equate to less than one-tenth of one percent of the total NOx and VOC in the Valley) is not likely to yield valid information given the relative scale involved.

Finally, even once a model is developed to accurately ascertain local increases in concentrations of photochemical pollutants like ozone and some particulates, it remains impossible, using today's models, to correlate that increase in concentration to a specific health impact. The reason is the same: such models are designed to determine regional, population-wide health impacts, and simply are not accurate when applied at the local level.

For these reasons, it is not the norm for CEQA practitioners, including the Air District, to conduct an analysis of the localized health impacts associated with a project's criteria air pollutant emissions as part of the EIR process. When the accepted scientific method precludes a certain type of analysis, "the court cannot impose a legal standard to the contrary." *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 717 n. 8. However, that is exactly what the Court of Appeal has done in this case. Its decision upends the way CEQA air quality analysis of criteria pollutants occurs and should be reversed.

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B. The Court of Appeal Improperly Extrapolated a Request for a Health Risk Assessment for Toxic Air Contaminants into a Requirement that the EIR contain an Analysis of Localized Health Impacts Associated with Criteria Air Pollutants.

The Court of Appeal's error in requiring the new health impact analysis for criteria air pollutants clearly stems from a misunderstanding of terms of art commonly used in the air pollution field. More specifically, the Court of Appeal (and Appellants Sierra Club et al.) appear to have confused the health risk analysis ("HRA") performed to determine the health impacts associated with a project's toxic air contaminants ("TACs"), with an analysis correlating a project's criteria air pollutants (ozone, PM and the like) with specific localized health impacts.

The first type of analysis, the HRA, is commonly performed during the Air District's stationary source permitting process for projects that emit TACs and is, thus, incorporated into the CEQA review process. An HRA is a comprehensive analysis to evaluate and predict the dispersion of TACs emitted by a project and the potential for exposure of human populations. It also assesses and quantifies both the individual and population-wide health risks associated with those levels of exposure. There is no similar analysis conducted for criteria air pollutants. Thus, the second type of analysis (required by the Court of Appeal), is not currently part of the Air District's process because, as outlined above, the health risks associated

with exposure to criteria pollutants are evaluated on a regional level based on the region's attainment of the NAAQS.

The root of this confusion between the types of analyses conducted for TACs versus criteria air pollutants appears to stem from a comment that was presented to Fresno County by the City of Fresno during the administrative process.

In its comments on the draft EIR, the City of Fresno (the only party to raise this issue) stated:

> [t]he EIR must disclose the human health related effects of the Project's air pollution impacts. (CEQA Guidelines section 15126.2(a).) The EIR fails completely in this area. The EIR should be revised to disclose and determine the significance of TAC impacts, and of human health risks due to exposure to Project-related air emissions.

(AR 4602.)

In determining that the issue regarding the correlation between the Friant Ranch project's criteria air pollutants and adverse health impacts was adequately exhausted at the administrative level, the Court of Appeal improperly read the first two sentences of the City of Fresno's comment in isolation rather than in the context of the entire comment. *See Sierra Club v. County of Fresno* (2014) 172 Cal.Rptr.3d 271, 306. Although the comment first speaks generally in terms of "human health related effects" and "air pollution," it requests only that the EIR be revised to disclose "the significance of TACs" and the "human health risks due to exposure."

The language of this request in the third sentence of the comment is significant because, to an air pollution practitioner, the language would only have indicated only that a HRA for TACs was requested, and not a separate analysis of the health impacts associated with the project's criteria air pollutants. Fresno County clearly read the comment as a request to perform an HRA for TACs and limited its response accordingly. (AR 4602.)[17] The Air District submits that it would have read the City's comment in the same manner as the County because the City's use of the terms "human health risks" and "TACs" signal that an HRA for TACs is being requested. Indeed, the Air District was also concerned that an HRA be conducted, but understood that it was not possible to conduct such an analysis until the project entered the phase where detailed site specific information, such as the types of emission sources and the proximity of the sources to sensitive receptors became available. (AR 4553.)[18] The City of Fresno was apparently satisfied with the County's discussion of human health risks, as it did not raise the issue again when it commented on the final EIR. (AR 8944 – 8960.)

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[17] Appellants do not challenge the manner in which the County addressed TACs in the EIR. (Appellants' Answer Brief p. 28 fn. 7.)

[18] Appellants rely on the testimony of Air District employee, Dan Barber, as support for their position that the County should have conducted an analysis correlating the project's criteria air pollutant emissions with localized health impacts. (Appellants Answer Brief pp. 10-11; 28.) However, Mr. Barber's testimony simply reinforces the Air District's concern that a risk assessment (HRA) be conducted once the actual details of the project become available. (AR 8863.) As to criteria air pollutants, Mr. Barber's comments are aimed at the Air District's concern about the amount of emissions and the fact that the emissions will make it "more difficult for Fresno County and the Valley to reach attainment which means that the health of Valley residents maybe [sic] adversely impacted." Mr. Barber says nothing about conducting a separate analysis of the localized health impacts the project's emissions may have.

The Court of Appeal's holding, which incorrectly extrapolates a request for an HRA for TACs into a new analysis of the localized health impacts of the project's criteria air pollutants, highlights two additional errors in the Court's decision.

First, the Court of Appeal's holding illustrates why the Court should have applied the deferential substantial evidence standard of review to the issue of whether the EIR's air quality analysis was sufficient. The regulation of air pollution is a technical and complex field and the Court of Appeal lacked the expertise to fully appreciate the difference between TACs and criteria air pollutants and tools available for analyzing each type of pollutant.

Second, it illustrates that the Court likely got it wrong when it held that the issue regarding the criteria pollutant / localized health impact analysis was properly exhausted during the administrative process. In order to preserve an issue for the court, '[t]he "exact issue" must have been presented to the administrative agency....' [Citation.] *Citizens for Responsible Equitable Environmental Development v. City of San Diego*, (2011) 196 Cal.App.4th 515, 527 129 Cal.Rptr.3d 512, 521; *Sierra Club v. City of Orange* (2008) 163 Cal.App.4th 523, 535, 78 Cal.Rptr.3d 1, 13. "'[T]he objections must be sufficiently specific so that the agency has the

opportunity to evaluate and respond to them.' [Citation.]" *Sierra Club v. City of Orange*,163 Cal.App.4th at 536.[19]

As discussed above, the City's comment, while specific enough to request a commonly performed HRA for TACs, provided the County with no notice that it should perform a new type of analysis correlating criteria pollutant tonnages to specific human health effects. Although the parties have not directly addressed the issue of failure to exhaust administrative remedies in their briefs, the Air District submits that the Court should consider how it affects the issues briefed by the parties since "[e]xhaustion of administrative remedies is a jurisdictional prerequisite to maintenance of a CEQA action." *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1199, 22 Cal.Rptr.3d 203.

III. CONCLUSION

For all of the foregoing reasons, the Air District respectfully requests that the portion of the Court of Appeal's decision requiring an analysis correlating the localized human health impacts associated with an individual project's criteria air pollutant emissions be reversed.

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[19] *Sierra Club v. City of Orange*, is illustrative here. In that case, the plaintiffs challenged an EIR approved for a large planned community on the basis that the EIR improperly broke up the various environmental impacts by separate project components or "piecemealed" the analysis in violation of CEQA. In evaluating the defense that the plaintiffs had failed to adequately raise the issue at the administrative level, the Court held that comments such as *"the use of a single document for both a project-level and a program-level EIR [is] 'confusing',"* and *"[t]he lead agency should identify any potential adverse air quality impacts that could occur from all phases of the project and all air pollutant sources related to the project,"* were too vague to fairly raise the argument of piecemealing before the agency. *Sierra Club v. City of Orange*, 163 Cal.App.4th at 537.

correlating the localized human health impacts associated with an individual project's criteria air pollutant emissions be reversed.

Respectfully submitted,

Dated: April 2, 2015

Catherine T. Redmond
Attorney for Proposed Amicus Curiae

SAN JOAQUIN VALLEY
UNIFIED
AIR POLLUTION CONTROL
DISTRICT

CERTIFICATE OF WORD COUNT

Pursuant to Rule 8.204 of the California Rules of Court, I hereby certify that this document, based on the Word County feature of the Microsoft Word software program used to compose and print this document, contains, exclusive of caption, tables, certificate of word count, signature block and certificate of service, 3806 words.

Dated: April 2, 2015

Annette A. Ballatore-Williamson
District Counsel (SBN 192176)

Sierra Club et al, v. County of Fresno, et al
Supreme Court of California Case No.: S219783
Fifth District Court of Appeal Case No.: F066798
Fresno County Superior Court Case No.: 11CECG00726

PROOF OF SERVICE

I am over the age of 18 years and not a p[arty to the above-captioned action; that my business address is San Joaquin Valley Unified Air Pollution Control District located at 1990 E. Gettysburg Avenue, Fresno, California 93726.

On April 2, 2015, I served the document described below:

APPLICATION FOR LEAVE TO FILE AMICUS CURIAE BRIEF OF SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT IN SUPPORT OF DEFENDANT AND RESPONDENT, COUNTY OF FRESNO

On all parties to this action at the following addresses and in the following manner:

PLEASE SEE ATTACHED SERVICE LIST

(XX) **(BY MAIL)** I caused a true copy of each document(s) to be laced in a sealed envelope with first-class postage affixed and placed the envelope for collection. Mail is collected daily at my office and placed in a United State Postal Service collection box for pick-up and delivery that same day.

( ) **(BY ELECTRONIC MAIL)** I caused a true and correct scanned image (.PDF file) copy to be transmitted via electronic mail transfer system in place at the San Joaquin Valley Unified Air Pollution Control District ("District"), originating from the undersigned at 1990 E. Gettysburg Avenue, Fresno, CA, to the address(es) indicated below.

( ) **(BY OVERNIGHT MAIL)** I caused a true and correct copy to be delivered via Federal Express to the following person(s) or their representative at the address(es) listed below.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that I executed this document on April 2, 2015, at Fresno, California.

Esthela Soto

SERVICE LIST

Sierra Club et al, v. County of Fresno, et al
Supreme Court of California Case No.: S219783
Fifth District Court of Appeal Case No.: F066798
Fresno County Superior Court Case No.: 11CECG00726

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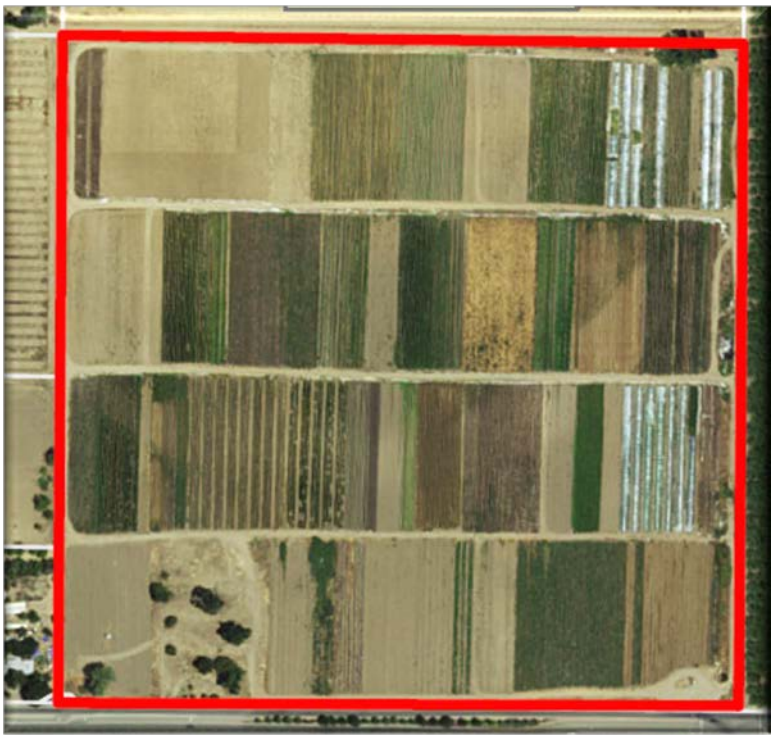
AGENDA ITEM NO.2

BIOLOGICAL ASSESSMENT

OF THE

TRACT 6050, APN 556-050-11

CLOVIS, FRESNO COUNTY, CALIFORNIA



ARGONAUT ECOLOGICAL CONSULTING, INC.

September 1, 2016

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APPENDIX C

BIOLOGICAL ASSESSMENT

OF THE

Tract 6050

Clovis, Fresno County, California

Prepared For:

6060 Enterprise, LP.

Prepared By:

ARGONAUT ECOLOGICAL CONSULTING, INC.

2377 Gold Meadow Way, Suite 100
Gold River, CA 95

September 1, 2016

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SECTION 1 INTRODUCTION

Argonaut Ecological, Inc. conducted a biological review of the Tract 6050 northwest of the intersection of N. Clovis Avenue and Shepherd Avenue in Clovis, California. The parcel totals approximately 39.1 acres (See Figure 1). This report presents the findings of a field review conducted to assess the biological resources present and potential biological impacts of site development.

1.1 STUDY OBJECTIVES

This review identifies biological resources within the Study Area and describes the suitability of the Study Area to support species of special concern. This review does not, nor was it designed to include exhaustive surveys for special status plant and animal species. Instead the review included a field survey designed to determine the potential for the site to support habitat that may be used or occupied by special status plant and animals species. The study also is designed to determine the approximate extent of potential wetland habitat on the site. "Wetland habitat" includes those areas that may be considered both "Waters of the U.S., as defined by the U.S. Army Corps of Engineers, and/or wetlands as defined by the Army Corps and the State of California. As described in Section 1.2, wetlands are a subset of "Waters of the U.S." under the Federal Clean Water Act.

This report can be used to assess the potential effects on biological resources if the current land use changes. The specific type of land use change would dictate the type of regulatory approvals or permits required. This review focused on the extent of the Waters of the U.S., including any wetlands that would potentially be subject to regulation under Section 404 of the Clean Water Act or by the State of California Wetland Policy (Resolution 2008-0026) which is designed to protect all waters of the State, including wetlands dredge and fill discharges. These reviews also focused on assessing and identify any potential impacts site development may have on species protected by the Federal Endangered Species Act or protected under the California Environmental Quality Act.

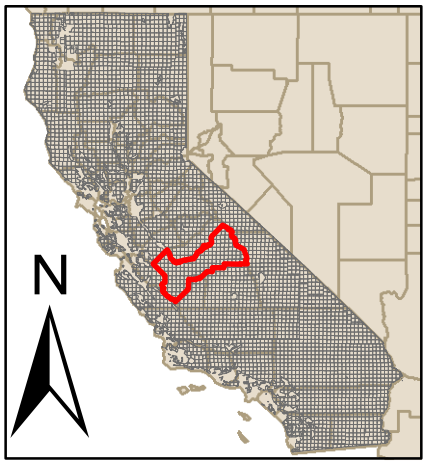
1.2 REGULATORY JURISDICTION AND BACKGROUND

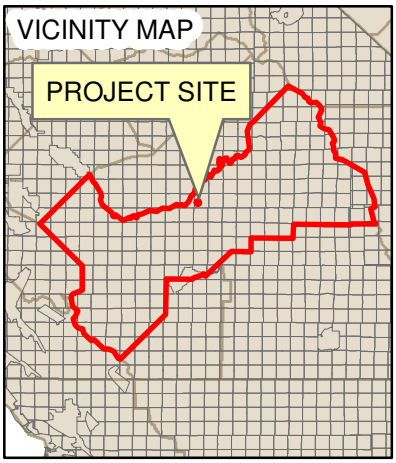
Regulatory jurisdiction over biological resources within the Study Area is shared by several agencies. The following is a brief description of the primary agencies and their respective jurisdiction.

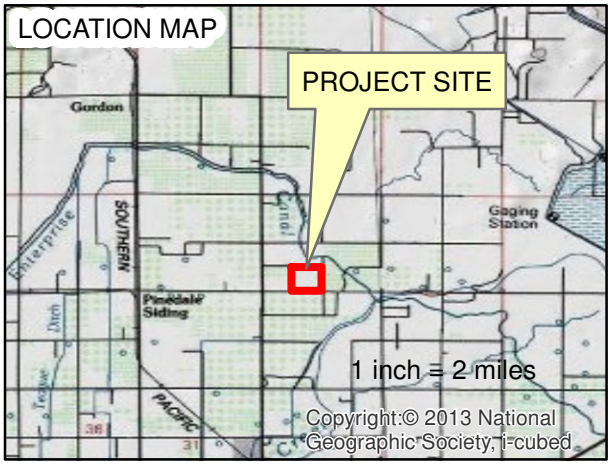
VICINITY AND LOCATION MAP

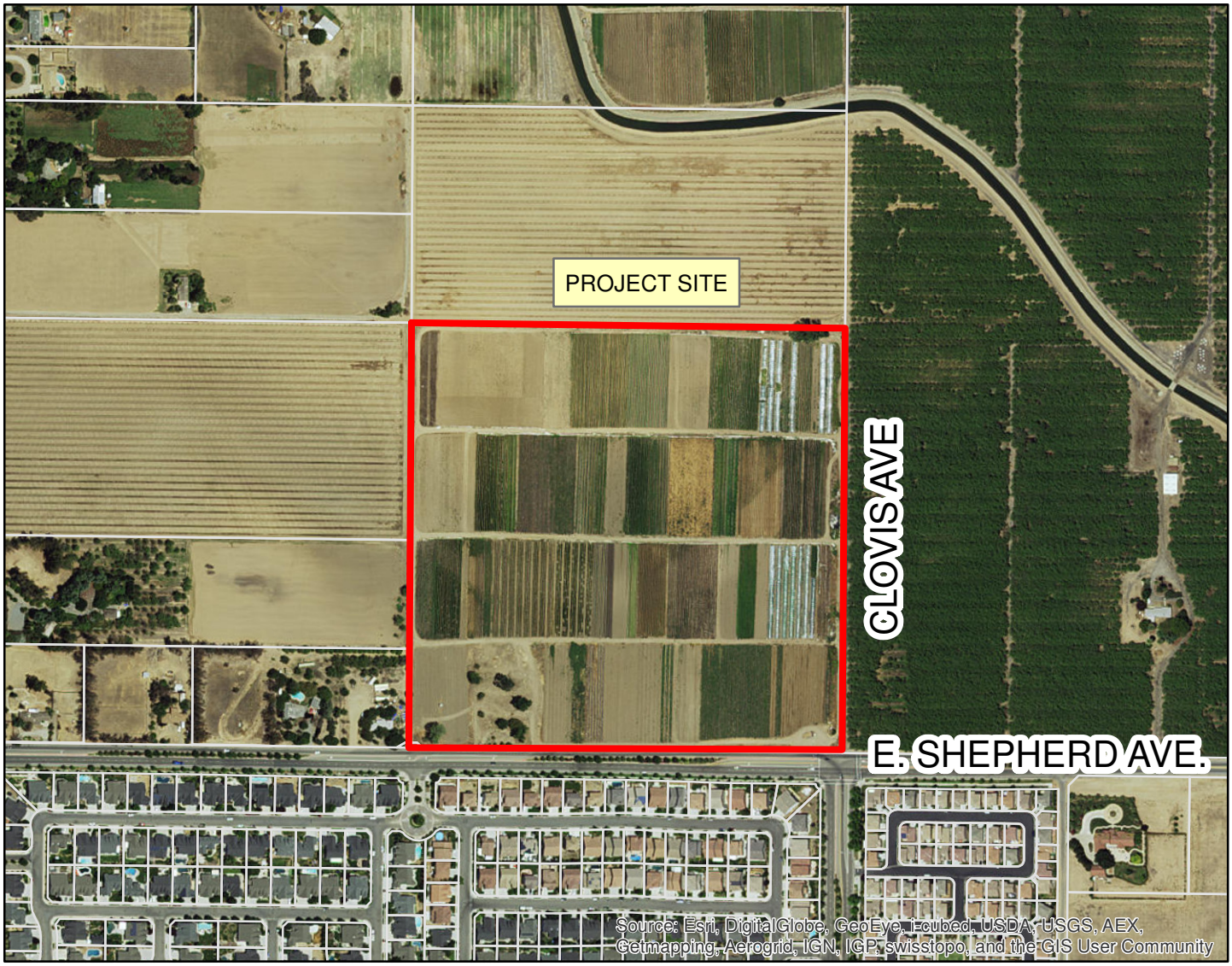
CLIENT NAME: 6050 Enterprise, LP PROJECT NAME:Tract 6050,
PROJECT LOCATION: Section 20, T. 12S., R.21E., Mount Diablo Base and Me
City of Clovis, Fresno County California,

AGENDA ITEM NO.2









500 250 0 500 Feet

1 in = 500 ft

Legend

Approximate boundary(+/-39.1AC.)

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Date: 8/8/2016

Wetland Protection

U.S. Army Corps of Engineers

The U.S. Army Corps of Engineers (Army Corps) and the U.S. Environmental Protection Agency regulates placement of fill into the Waters of the U.S under Section 404 of the Federal Clean Water Act and Section 10 of the Rivers and Harbor Act. The term "Waters of the U.S." Include wetlands, special aquatic sites, and other non-wetland waters such as bays, rivers, and lakes. The jurisdictional limit of tidal Waters of the U.S. under Section 10 of the Rivers and Harbor Act is the Mean High Water line. However, Section 404 of the Federal Clean Water Act extends the jurisdictional limit to the High Tide line. The High Tide Line is the highest elevation of the tide in a normal year, excluding storm events. Wetlands adjacent to the Mean High Water line or High Tide Line are also under the USACE jurisdiction. For purposes of this document, the term "Waters of the U.S." is legally defined under Section 404 of the Federal Clean Water Act. It includes seasonal drainages that have a defined channel and support wetland species, but lack positive indicators of wetland soils.

As previously stated Waters of the U.S. includes wetlands. The Army Corps defines wetland as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (Environmental Laboratory 1987). Seasonally inundated areas that meet the criteria of all three wetland parameters as defined in the recently issued Wetland Delineation Manual for the Arid West (USACE 2006) are also considered jurisdictional wetlands. However, drainage ditches excavated on dry land that do not convey flows from historical streams and/or channels are usually considered non-jurisdictional as defined in Title 33 CFR Part 328.3 (a). A determination of whether any particular area is considered non-jurisdictional varies on a case-by-case basis.

Since 2001, the U.S. Supreme Court found in several court rulings that regulation of isolated intrastate waters by the Army Corps under the Migratory Bird Rule and other arguments is unconstitutional and impinges on state rights to regulate intrastate commerce. The decisions, which include both *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* (SWANCC) and *Rapanos v. United States* (Rapanos) limited the scope of federal jurisdiction under the Federal Clean Water Act and excluded many California wetlands from federal regulation.

In May 2015 the U.S. Environmental Protection Agency and the U.S. Army finalized the "Clean Water Rule " with the intent of clarifying what constitutes a waters of the U.S., and presumably, acts to more precisely define and making permitting more predictable, thus less costly and easier. According to the U,S.EPA, the rule was not intended to create any new permitting requirements for agriculture and maintains all previous exemptions and exclusions. However, many individuals in the regulated community disagree. The new Clean Water Rule went in effect at the end of August, 2015. On October 9, 2015 the Sixth U.S. Circuit Court of Appeals issued a nationwide stay of the rule pending further court action. Therefore, currently, application of the Clean Water Rule is not enforced and the current regulatory definition of waters of the U.S. remains.

Executive Order 11990

Executive Order 11990 (signed May 24, 1977) directs all federal agencies to refrain from assisting in or giving financial support to projects that encroach on publicly or privately owned wetlands. It further requires that federal agencies support a policy to minimize the destruction, loss, or degradation of wetlands. A project that encroaches on wetlands may not be undertaken unless the agency in question has determined that: (1) there are no practicable alternatives to such construction; (2) the project includes all practicable measures to minimize harm to wetlands that would be affected by the project; and (3) the resulting impact will be minor.

The Executive Order, the Order does not apply to issuance by Federal Agencies of permits, licenses, or allocation to private parties for activities involving wetland on non-Federal property. Executive Order 1190 is also not intended to be applied on a project by project basis. Section 1 of the order states the following: "*This Order does not apply to the issuance by Federal agencies of permits, licenses, or allocations to private parties for activities involving wetlands on non-Federal property."*

California State Water Resources Control Board

Since 1993, California has had a Wetlands Conservation Policy (a.k.a., the Executive Order W-51 59-93). Commonly referred to as the *No Net Loss Policy* for wetlands, this order establishes for the State the mandate that it develops and adopts a policy framework and strategy to protect the State's wetland ecosystems.

The State Water Board's Policy is only proposed and no new regulatory authority has been granted to the State of California to regulate wetlands other than what currently exists. Bring a uniform regulatory approach between the State Water Resources Control Board, other agencies involved in aquatic resource protection and the federal Clean Water Act Section 404 program for dredge and fill discharges by establishing procedures and criteria for the application, review and approval of permits to discharge dredged or fill material to waters of the State.

Under the State's 401 Water Quality Certification and Wetland Program, the state provides certification for any proposed fill of waters of the U.S.. Although the State has not historically regulated fills of wetlands/waters of the state, they have boldly asseredt they have the regulatory authority to regulate fills of isolated wetlands/waters under the Porter-Cologne Water Quality Control Act.

Under California's Porter-Cologne Water Quality Control Act (Porter-Cologne), the regional boards regulate the "discharge of waste" to "waters of the state". All parties proposing to discharge waste that could affect waters of the state must file a report of waste discharge with the appropriate regional board. The regional board will then respond to the report of waste discharge by issuing waste discharge requirements (WDRs) in a public hearing, or by waiving WDRs (with or without conditions) for that proposed discharge.

Both of the terms "discharge of waste" and "waters of the state" are broadly defined in Porter-Cologne, such that discharges of waste include fill, any material resulting from human activity, or any other "discharge" that may directly or indirectly impact "waters of the state". While all "waters of the United States" that are within the borders of California are also "waters of the

state", the converse is not true - "waters of the United States" is a subset of "waters of the state."

It is important to note that, while Section 404 permits and 401 certifications are required when the activity results in fill or discharge directly below the ordinary high water line of waters of the United States, any activity that results or may result in a discharge that directly or indirectly impacts waters of the state or the beneficial uses of those waters are subject to waste discharge requirements (WDRs). In practice, most regional boards rely on applications for 401 certification to determine whether WDRs need also be issued for a proposed project.

Listed Protected Species and Habitat Protection

U.S. Fish and Wildlife Service

The U.S. Fish and Wildlife Service (USFWS) implements the Migratory Bird Treaty Act (16 USC Section 703-711), Bald and Golden Eagle Protection Act (16 United States Code [USC] Section 668), and Federal Endangered Species Act (FESA; 16 USC § 153 *et seq.)*. Projects that would result in "take" of any federally-listed threatened or endangered species are required to obtain authorization from the USFWS through either Section 7 (interagency consultation) or Section 10(a) (incidental take permit) of FESA, depending on whether the federal government is involved in permitting or funding the project. The authorization process is used to determine if a project would jeopardize the continued existence of a listed species and what mitigation measures would be required to avoid jeopardizing the species.

"Take" under the federal definition means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. "Candidate species" do not have the full protection of FESA. However, the USFWS advises project applicants that it is prudent to address these species since they could be elevated to "listed status" prior to completion of projects with long planning or development schedules.

California Department of Fish and Wildlife

The California Department of Fish and Wildlife (CDFW), formally known as the California Department of Fish and Game, is a Trustee Agency with responsibility under the CEQA for commenting on projects that could impact plant and wildlife resources. In addition, pursuant to the Fish and Game Code Section 1802, the CDFW has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and the habitat necessary for biologically sustainable populations of those species. The California Fish and Game Code also provide authority for the CDFW to regulate projects that could result in the "take" of any species listed by the State as threatened or endangered (Section 2081).

Perennial and intermittent streams also fall under the jurisdiction of CDFW pursuant to Sections 1601-1603 of the Fish and Game Code (Streambed Alteration Agreements). The CDFW's jurisdiction over work within the stream zone includes, but is not limited to, the diversion or obstruction of the natural flow or changes in the channel, bed, or bank of any river, stream or lake. Prior to issuing a 1601 or 1603 Streambed Alteration Agreement, the CDFW must demonstrate compliance with CEQA. In most cases, CDFW relies on the CEQA review performed by the local lead agency. However, in cases where no CEQA review was required for the project, CDFW would act as the lead agency under CEQA.

The CDFW also has authority for protection state-listed species issues Section 2081 Incidental Take Permit if a project has the potential to negatively affect state-protected plant or animal species or their habitats, either directly or indirectly. Protected species include those "listed" by the state as endangered or threatened. Besides listed species, there are other categories of species protection, including "fully protected" and California Species of Special Concern (CSC). Adverse impacts to species that have the "fully protected" designation are prohibited.

Under current California Fish & Game Code (FGC Section 3503) "it is unlawful to take, possess or needlessly destroys the nest or eggs of any bird…" Birds of prey (falcons, hawks, owls and eagles) get extra protection under the law (FGC Section 3503.5). To help clarify the state nesting bird laws, California Department of Fish and Wildlife (CDFW) proposed to "clarify" its regulations, and in doing so, would expand regulatory reach to all nesting birds. Following a lengthy comment period, on August 5, 2016 CDFW issued a notice that they were not going to proceed with this proposed regulation (Notice of Decision Not Proceed for Proposed Nest Regulations (Section 681, Title 14, CCR).

California Endangered Species Act

The California Endangered Species Act (CESA) provides protection for candidate plants and animal species as well as those listed as rare, threatened, or endangered by the California Department of Fish and Game (CDFG). This act prohibits the take of any such species unless authorized. Section 2081 authorizes the state to issue incidental take permits. The state definition of take applies only to acts that result in the death of or adverse impacts to protected species.

California Environmental Quality Act

The CEQA Guidelines require review of projects to determine their environmental effects and to identify mitigation for significant effects. The Guidelines state an effect may be significant if it affects rare and endangered species. Section 15380 of the Guidelines defines *rare* to include listed species, and allows agencies to consider rare species other than those designated as State or federal threatened or endangered, but that meet the standards for rare under the federal or State endangered species acts. On this basis, plants designated as rare by non-regulatory organizations (e.g., California Native Plant Society), species of special concern as defined by CDFW, candidate species as defined by USFWS and other designations may need to be considered in CEQA analyses.

City of Clovis

The Study Area falls within the limits of the City of Clovis, California. The City is responsible for all local land use decisions within its jurisdictional boundary. For any project review, the City would serve as the local land use agency as defined by CEQA.

SECTION 2 METHODS

The following section describes the methods used to assess the Study Area, which includes a combination of data review and evaluation, field studies, and aerial photograph interpretations.

2.1 DATA AND LITERATURE REVIEW

The approximately 39.1-acre project area is located within an historically agricultural area. The following documents and/or sources were used in preparing this report.

- U.S. Department of Agricultural, Natural Resources Conservation Service, Soil Survey of Fresno Area (Soils mapper).
- Aerial photography (Google Earth®, Bing®, and historic aerials dating back to 1983).
- The California Department of Fish and Game, California Natural Diversity Database (CNDDB/RareFind - Recent version with updates).
- U.S. Fish and Wildlife Service National Wetland Inventory Map
- U.S. Geologic Survey, Historic topographic Map, Clovis Quadrangle, 1919, University of Texas, Austin, Perry-Castañeda Map Collection

2.2 AERIAL PHOTOGRAPHY AND WETLAND MAPPING

A series of aerial photographs of the Study Area were reviewed to assess changes in land use over time, dating back to 1998. Specifically, black and white and color aerial photographs ranging in resolution from 0.5 meters to 1.0 meters. We also reviewed wetland mapping and the aerials to determine if the Study Area recently supported wetlands.

2.3 FIELD RECONNAISSANCE

Prior to conducting a site review, we reviewed the California Natural Diversity Database/ Rarefind (CNDDB/Rarefind). The CNDDB includes records of reported observations for special status plant and animal species. A search radius that included two USGS quadrangles was performed. The results of the CNDDB/RareFind were reviewed to identify which species would present the greatest likelihood of being present on the site based on the distance of the site from known records and the similarity in habitats between the Study Area and the habitats that the species required and/or preferred. Also prior to the field work, a high resolution aerial was reviewed to determine if there are any areas on the site that appear to support waters of the U.S., or other water features.

On August 3, 2016 a site review was conducted. The site was walked in meandering transects for full coverage. The primary objective of the field work was to identify any areas on the site, or immediately adjacent to the site, that potentially supports habitat for sensitive species or aquatic habitat.

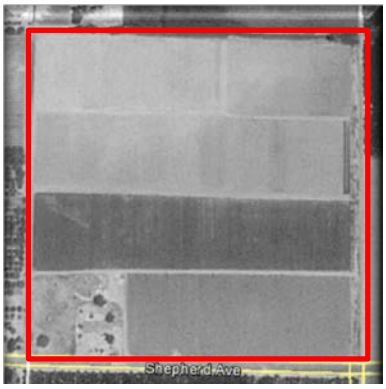
SECTION 3 RESULTS

The following section describes the physical (i.e., topography, drainage, and soils) and the biological resources present, or potentially present, within the Study Area. Section 3.1 describes the physical components (i.e., soils, hydrology, etc.) of the Study Area. The physical components strongly influence the types of plants and animals present. Section 3.2, is an overview of the resources and habitats present within the Study Area, including descriptions of the specific biological resources observed. The information presented is not an exhaustive inventory of plants or animals present. Rather it is designed to provide sufficient information to identify what, if any, biological resources are present that may be considered unique, sensitive, or protected by current law and the potential impacts to those resources if the site is developed.

3.1 PHYSICAL RESOURCES AND ELEMENTS

Land Use and Habitat Types

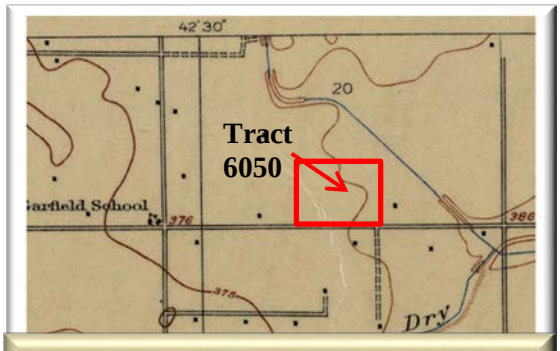
The property was in full agricultural production since at least 1998 till 2015 in row crops. There is home parcel within southwest corner of the property that has been there since at least 1998.. Between 1998 and 2015 the site appears to have been in continuous agricultural production with periodic years when the ground was fallow. Cropping patterns changed but at no time was the land taken out of production.



Tract 6050
1998

Site Topography

The property lies within the Central Valley. The Study Area site has historically been nearly level. Historically elevations within the area ranged from 372 ft msl just west of the Enterprise Canal (within the Study Area) to 390 msl just west of Minniwawa Avenue based on a 1919 topographic map. Current conditions do not appear to have significantly changed.



1919 USGS
Topographic Map

Drainage and Watershed and Wetlands

The project site historically drained to the southeast, toward the direction of Dry Creek. There is somewhat of a road ditch fronting the property along Shepherd Avenue. A query of the National Wetland Inventory Map does not show any stream, creeks, or wetland on or near the Study Area (within roughly a ½ mile) other than Dry Creek to the southeast. There are no ephemeral drainages or creeks in this area of the City, nor were there any mapped on a 1919 topographic map (see previous) other than the Enterprise Canal and Dry Creek. Over many decades portions of Dry Creek has been realigned, channelized and pipped underground. Dry Creek is managed by Fresno Metropolitan Flood Control District as part of their responsibilities to provide stormwater and flood flow conveyance. The Enterprise Canal is used for irrigation delivery and some storm water conveyance/storage as needed.

Climate/Soils

Climate in the Study Area is typical of the central San Joaquin Valley with summers that are long, hot, and dry and winters that are cool and mild. Rainfall in the winter averages approximately 10.9 inches per year, falling mainly between November and April (Western Regional Climate Center, 2004).

The Natural Resources Conservation Service (NRCS) soil survey mapped five types of soils within the Study Area. Table 1 shows the mapped soil units. Only one mapped soil is considered predominantly hydric (Alamo clay). This soil type occurs in the extreme northwest corner of the Study Area and only makes up 0.2% of the site. A hydric soil is readily formed under ponded condition and is a strong indicator of areas experiencing prolonged ponding (e.g., wetlands). The presence of mapped hydric soils may indicate that the soils could support wetlands; but, there is no a direct correlation. Wetlands can occur in areas where no hydric soil are mapped and may be absent in areas mapped as hydric soils.

Table 1
Tract 6050 Study Area - Mapped Soil Units

Soil Series	Map Symbol	Hydric Soil	% of Study Area
Alamo clay	AM	Y	0.2
Exeter sandy loam	ES	N	14
Hanford fine sandy loam, hard substratum	HR	N	8.6
Tujunga loamy sand, 0 to 3 % slopes	TZBA	N	6.3
Visalia sandy loam, 0 to 3% slopes	VaA	N	63

3.2 RESULTS OF SITE INVESTIGATION

Our field investigation confirmed the accuracy of the U.S. Fish and Wildlife Service's Wetland Inventory Map. No wetlands, waters, or any aquatic habitat is present within the Study Area. The site is dominated by an upland plant community that is indicative of non-native grassland/agricultural land.

Habitats and Waters of the U.S. and Waters of the State

The entire site is dominated by a non-native grassland habitat intermixed with some agricultural crop types (wheat, barly, oats, etc.). The plant community includes mustard,, rip gut (*Bromus mollis*), wild oats (*Avena* sp.), filaree (*Erodium* sp.), fiddleneck (*Amsinckia* sp.), and numerous other upland grasses. There are several old orchard trees planted along the northern edge of the site and that persist on the east side of the site.

Based on a review of historical records, readily available wetland mapping databases, and a site review, there are no waters of the U.S., including wetlands or waters of the state present within the Study Area.

Special Status Species

A search of the California Natural Diversity Database (CNDDB, 2016) was reviewed to determine which special status species could be present within the Study Area. Table 2 provides a summary of the species identified in the CNDDB that would have the highest likelihood of being present based on habitat requirements. Species that are dependent on the presence of seasonal water bodies, such as vernal pool or other seasonal wetlands, for breeding or completion of their life cycle are not present because no wetland, vernal pools, or seasonal wetland are present within the Study Area. The species most likely potentially present is the Western burrowing owl. This species relies on using underground burrows excavated by ground squirrels, culverts, or other manmade structures to nest. The site does supports a ground squirrel population and may be considered suitable habitat. The potential for any other species of concern to be present or to use the site is extremely low. There is no critical habitat for any listed species present within or near the Study Area.

Although the database did not include migratory birds/ and raptors, such species could use the site to forage for food or next is large trees in the southwest corner of the Study Area. No nests were observed but raptors could occupy the trees during future breeding periods.

Table 2 Tract 6050
Summary of Special Status Species Impacts

Common Name	*Scientific Name*[1]	*Status*	*Habitat Present*[2]	*Occurrence in the Study Area*[3]
Birds				
Western burrowing owl	*Athene cunicularia*	MB	No	**Potentially Present:** Some suitable habitat may be present.
Swainson's hawk	*Buteo swainsoni*	FT	Yes	**Potentially Present**: Hawk may use the farmland for foraging and potentially nesting
Mammals				
San Joaquin kit fox	*Vulpes macrotis mutica*	FE,ST	No	**Absent.** No suitable habitat present. Recurring disking precludes occupation.
Repitles				
Blunt-nosed leopard lizard	*Gambelia silva*	FE, SE	No	**Absent**. Occurs in valley and foothill grassland, brush scrubland, habitat. Burrow in pond loam in sparsely vegetated areas. The site does not support suitable habitat required by this species.
Invertebrates				
Valley elderberry longhorn beetle	*Desocerus californicus dimorphus*	FT	No	**Absent.** This species is dependent upon the of mature elderberry species (*Sambucus sp.*). No elderberry shrubs are present.

1 Status= Listing of special status species, unless otherwise indicated
CE: California listed as Endangered
CT: California listed as Threatened
FE: Federally listed as Endangered
FT: Federally listed as Threatened
MB: Migratory Bird
3 Definition Of Occurrence Indicators
Potentially Present: Species recorded in area and suitable habitat appears to be present.
Absent/Likely Absent: Species not recorded in study area and/or habitat requirements not met
4 CNDDB = California Natural Diversity Database provided by CDFG 2016

There may be numerous migratory birds present within the Study Area at any given time. Suitable nesting habitat is present for small migratory bird species. This list does not include all the migratory birds potentially present.
There is no aquatic habitat (creeks, ponds, ditches, seasonal wetlands, etc.), present within the Study Area, therefore, any species that requires aquatic habitat for breeding or nesting is not included in this table.

3.3 CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The Tract 6050 Study Area has been in continuous intensive agricultural production since at least the 1998s and was still production up until sometime between 2015 and 2016. The Study Area also does not support any aquatic habitat, wetlands, or waters of the U.S., nor is there any historical evidence to suggest the property supported any waters of the U.S. and/or wetland habitat. No evidence of any raptor nest(s) was observed. However, there are a few potential nest trees located in the southwest corner of the property and the ground nesting burrowing owl could occupy the site at some point in the future. We did not observe any evidence of current occupation by the owl.

Our recommendations for protection of nesting birds if this property is developed is as follows:

- Conduct a preconstruction survey for burrowing ow,l or signs of owl occupation within 30 days prior to ground disturbance, regardless of the time of year construction commences. If evidence of current occupation is discovered, the biologist should implement passive relocation in accordance with the California Department of Fish and Game Staff Report on Burrowing Owl Mitigation.[1]

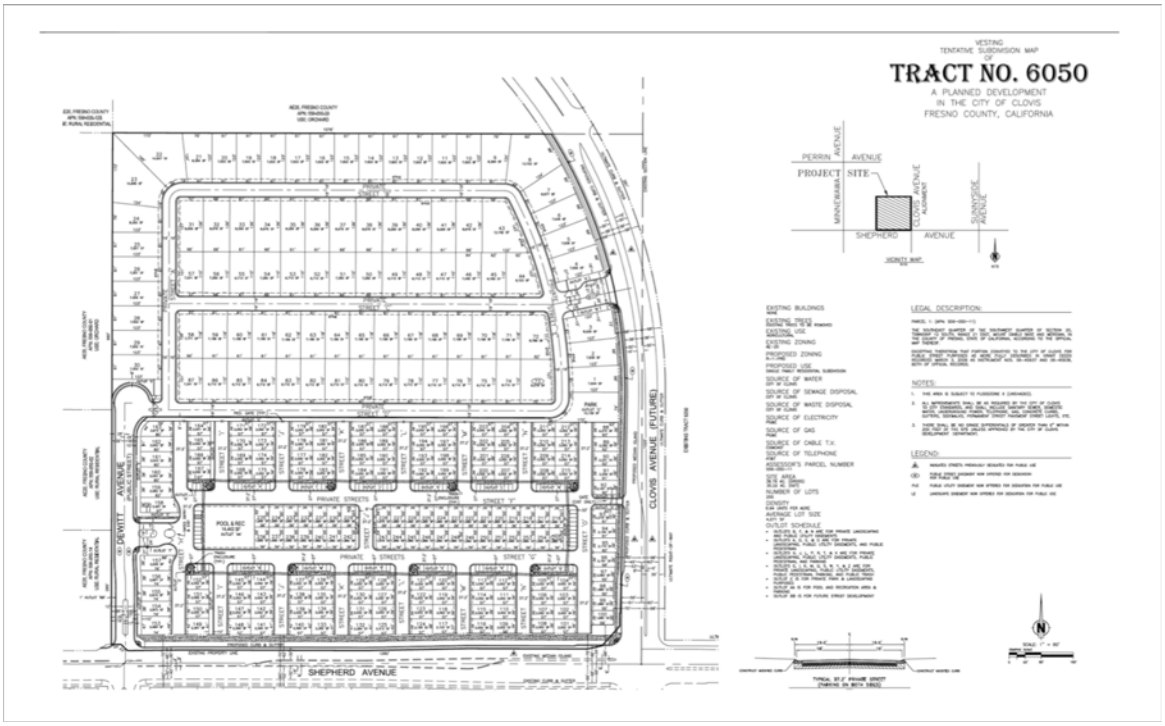
- If any trees or shrubs are to be removed during the nesting season (commences approximately February 1 and ends around August 31th) then a preconstruction survey should be conducted within 30-15 days of commencement of construction. This survey can be performed concurrent with the burrowing owl survey.

1 State of California, Natural Resources Agency, Department of Fish and Game, March 7, 2012

BIOLOGICAL HABITAT ASSESSMENT (Update)

Tract 6050 Development

Clovis, California



Prepared For:

6050 Enterprises, LP
7550 N. Palm Avenue, Suite 102
Fresno, CA 93711

February 19, 2020

APPENDIX D

BIOLOGICAL HABITAT ASSESSMENT (Update)

Tract 6050 Development

Clovis, California

Prepared For:

6050 Enterprises, LP
7550 N. Palm Avenue, Suite 102
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Prepared By:

ARGONAUT ECOLOGICAL CONSULTING, INC.

2377 Gold Meadow Way, Suite 100
Gold River, CA 95670

February 19, 2020

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1.0 EXECUTIVE SUMMARY AND INTRODUCTION

EXECUTIVE SUMMARY

Argonaut Ecological, Inc. conducted a biological review of Tract 6050 located northwest of the intersection of N. Clovis Avenue, and Shepherd Avenue in Clovis, California. This parcel was evaluated in 2016 for biological resouces. However, because of the length of time that has passed since the last review, Argonaut was asked to update the previous biological habitat assessment. The parcels total 36.76 acre Study Area. The biological study focused on mapping existing habitat types based on a field review aerial photographs, and other published reports and available data. The study included assessment of the types of habitats present and sensitive species that may be associated with those habitats. The study found that the majority of the Study Area has been used and managed for decades as agricultural land.

The findings of this report are that the likelihood of the Study Area to support special status species is low. The site does not support any aquatic habitat or suitable habitat for any special status species. There is no suitable raptor nesting habitat within or adjacent to the site.

1.1 INTRODUCTION

The project area lies in the south half of the north half of the southeast quarter of section 20, Township 12 South, Range 21 East, mapped on the Clovis USGS topographic quadrangle (Figure 1).

1.2 STUDY OBJECTIVES

This biological assessment presents the findings of a biological study conducted within the study area. This report provides an overall assessment of the biological resources potentially present, describes the biological characteristics of the area, and the likelihood of the area to support sensitive biological resources (such as wetlands or creeks/drainages). This study used available literature, aerial photography, historic topographic and aerial maps, and a site visit to verify the aerial photography. The review focused on the potential for the study area to support habitat that may be used or occupied by special status species, especially within the Study Area. "Wetland habitat" for purposes of this study, includes those areas that may be considered both "Waters of the U.S., as defined by the U.S. Army Corps of Engineers, and or wetlands as defined by the Army

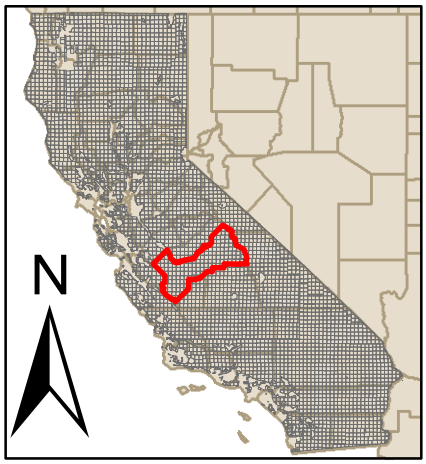
Corps and the State of California. As described in Section 1.2.1, wetlands are a subset of "Waters of the U.S." under the Federal Clean Water Act.

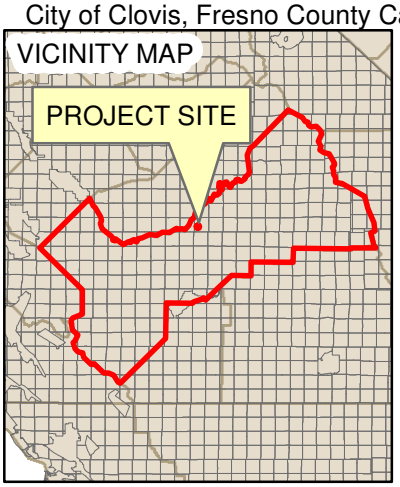
This report assesses the potential effects on biological resources if the current land use changes. The specific type of land use change would dictate the type of regulatory approvals or permits required. This review focused on the extent of the Waters of the U.S., including any wetlands or waters of the State. We considered any wetland that could be subject to regulation under Section 404 of the Clean Water Act or by the State of California. The review also focused on assessing and identifying any potential impacts site development may have o species protected by the Federal Endangered Species Act or protected under the California Environmental Quality Act or State Endangered Species.

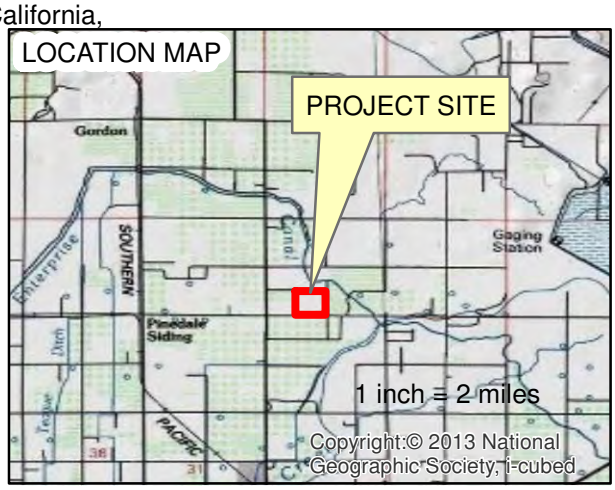
FIGURE 1-VICINITY AND LOCATION MAP

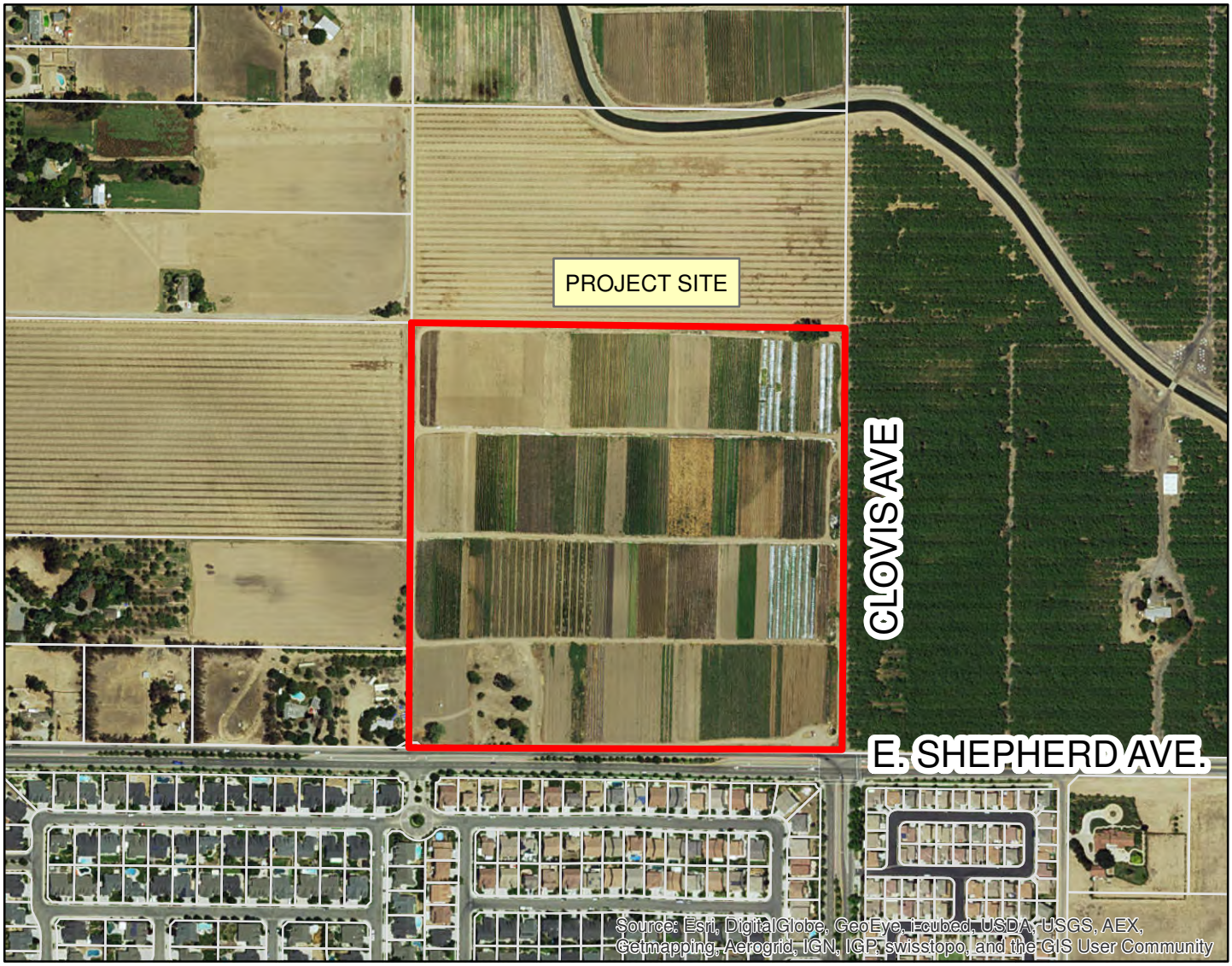
CLIENT NAME: 6050 Enterprise, LP PROJECT NAME:Tract 6050,
PROJECT LOCATION: Section 20, T. 12S., R.21E., Mount Diablo Base and Me
City of Clovis, Fresno County California,

AGENDA ITEM NO.2









500 250 0 500 Feet

1 in = 500 ft

Legend

Approximate boundary(+/-36.1AC.)

ARGONAUT ECOLOGICAL CONSULTING, INC.

696

Date: 2/8/2020

1.3 REGULATORY JURISDICTION AND BACKGROUND

Several agencies share regulatory jurisdiction over biological resources within the Study Area. The following is a brief description of the primary agencies and their respective jurisdictions.

Wetland Protection

U.S. Army Corps of Engineers

The U.S. Army Corps of Engineers (Army Corps) and the U.S. Environmental Protection Agency regulates the placement of fill into the Waters of the U.S. under Section 404 of the Federal Clean Water Act and Section 10 of the Rivers and Harbor Act. The term "Waters of the U.S." includes wetlands, special aquatic sites, and other non-wetland waters such as bays, rivers, and lakes. The jurisdictional limit of tidal Waters of the U.S. under Section 10 of the Rivers and Harbor Act is the Mean High-Water line. However, Section 404 of the Federal Clean Water Act extends the jurisdictional limit to the High Tide line. The High Tide Line is the highest elevation of the tide in a normal year, excluding storm events. Wetlands adjacent to the Mean High-Water line or High Tide Line are also under the USACE jurisdiction. For purposes of this document, the term "Waters of the U.S." is legally defined under Section 404 of the Federal Clean Water Act. It includes seasonal drainages that have a defined channel and support wetland species, but lack positive indicators of wetland soils.

As previously stated Waters of the U.S. includes wetlands. The Army Corps defines wetlands as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (Environmental Laboratory 1987). Seasonally inundated areas that meet the criteria of all three wetland parameters, as defined in the recently issued Wetland Delineation Manual for the Arid West (USACE 2006), are also considered jurisdictional wetlands. However, drainage ditches excavated on dry land that does not convey flows from historical streams and/or channels are usually considered non-jurisdictional as defined in Title 33 CFR Part 328.3 (a). A determination of whether any particular area is considered non-jurisdictional varies on a case-by-case basis.

Since 2001, the U.S. Supreme Court found in several court rulings that regulation of isolated, intrastate waters by the Army Corps under the Migratory Bird Rule and other arguments is unconstitutional and impinges on state rights to regulate intrastate commerce. The decisions, which include both Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers (SWANCC) and Rapanos v. United States (Rapanos) limited the scope of federal jurisdiction and excluded many California wetlands from federal regulation.

In May 2015, the U.S. Environmental Protection Agency and the U.S. Army finalized the "Clean Water Rule "with the intent of clarifying what constitutes waters of the U.S., and presumably, acts to define and make permitting more predictable. The rule was not intended to create any new permitting requirements for agriculture and maintains all previous exemptions and exclusions. However, many in the regulated community believe the rule expands the definition of

waters/wetlands and broadens the Federal government's regulatory reach. The new Clean Water Rule went into effect at the end of August 2015. On October 9, 2015, the Sixth U.S. Circuit Court of Appeals issued a nationwide stay of the rule pending further court action. Therefore, currently, application of the Clean Water Rule is not enforced in 11 states, and the current regulatory definition of waters of the U.S. remains unchanged in 22 states. California is one of the states where the rule is in effect.

Executive Order 11990

Executive Order 11990 (signed May 24, 1977) directs all federal agencies to refrain from assisting in or giving financial support to projects that encroach on publicly or privately-owned wetlands. It requires federal agencies to support a policy to minimize the destruction, loss, or degradation of wetlands. A federal project that encroaches on wetlands may not be undertaken unless the agency in question has determined that: (1) there are no practicable alternatives to such construction; (2) the project includes all practicable measures to minimize harm to wetlands that would be affected by the project; and (3) the resulting impact will be minor.

The Executive Order does not apply to issuance by Federal Agencies of permits, licenses, or allocation to private parties for activities involving wetland on non-Federal property. Executive Order 1190 is also not intended to be applied on a project by project basis. Section 1 of the order states the following: "This Order does not apply to the issuance by Federal agencies of permits, licenses, or allocations to private parties for activities involving wetlands on non-Federal property."

California State Water Resources Control Board

Since 1993, California has had a Wetlands Conservation Policy (a.k.a., the Executive Order W-51 59-93). Commonly referred to as the No Net Loss Policy for wetlands, this order establishes for the State the mandate that it develops and adopt a policy framework and strategy to protect the State's wetland ecosystems. However, contrary to common belief, and the State Water Resources Control Board's insistence, this policy was only meant to be implemented voluntarily and is was expressly not to be implemented on a "project-by-project" basis (See EO W-59-93, Section III).

In April 2019, the State adopted its proposed State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State. According to the State, these new procedures" (i.e., regulation by anyone's definition but the State's) conform with EO W-59-93. However, in conflict with EO W-59-93, there is nothing "voluntary" about the procedures, and they are applied on a project by project basis. The newly adopted "procedure" is intended to bring uniformity throughout the State concerning wetland regulation and to capture those waters/wetland not subject to jurisdiction under Section 404. The Procedure is also supposed to use the same definition of "wetlands" as the federal definition, but it does not (it's much broader).

The wetland fill procedures (the Procedure) was adopted by the State Water Quality Control Board on August 28, 2019 and will be in effect on May 28, 2020. The Procedures are implemented through the existing State permitting structures. Most often, they are applied through regional

water board sign-off (or "certification") of Corps of Engineers wetland permits. They are applied where the federal government has no jurisdiction.

Listed Protected Species and Habitat Protection

U.S. Fish and Wildlife Service

The U.S. Fish and Wildlife Service (USFWS) implements the Migratory Bird Treaty Act (16 USC Section 703-711), Bald and Golden Eagle Protection Act (16 United States Code [USC] Section 668), and Federal Endangered Species Act (FESA; 16 USC § 153 et seq.). Authorization of "take" of any federally-listed threatened or endangered species is obtained from the USFWS through either Section 7 (interagency consultation) or Section 10(a) (incidental take permit) of FESA, depending on whether the federal government is involved in permitting or funding the project. The authorization process determines if a project would jeopardize the continued existence of a listed species and the mitigation measures required to avoid jeopardizing the species.

The Migratory Bird Treaty Act (MBTA) of 1916 protects migratory birds. The MBTA makes it illegal for anyone to take, possess, import, transport, purchase, barter, or offer for sale or purchase any migratory birds, its nests or eggs unless the federal agency has issued a permit. The USFWS has statutory authority and responsibility for enforcing the MBTA. Per the MBTA Reform Act (MBTARA) of 2004 protects all species native to the U.S. or its territories which occur as a result of natural biological or ecological processes (70 FR 12710, March 15, 2005) and does not include nonnative species whose occurrences in the U.S. are solely the result of intentional or unintentional human introduction. The USFWS maintains a list of bird species protected under the MCTA and the MBTRA. However, on December 22, 2017 the Deputy Solicitor General issued an opinion (Order 3345) that the MBTA does not prohibit the "incidental take" of a migratory bird as the result of an otherwise lawful activity.

Federal Endangered Species Act prohibits "take" of any federally listed species. "Take" under the federal definition means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. "Candidate species" do not have the full protection of FESA. However, the USFWS advises project applicants that it is prudent to address these species since they could be elevated to "listed status" before completion of projects with long planning or development schedules. "Incidental take" is defined as that that may occur during the implementation of an otherwise lawful activity.

Under the Endangered Species Act (federal or State), an Incidental Take Permit or Take Permit is required when an activity would either kill, harm, harass, or interrupt the breeding or nesting of a listed species or remove a known population of endangered plants. However, the ESA definition of "harm" has been somewhat less definitive since it captures ubiquitous activities. In 1999 the USFWS published in the Federal Register a clarification of the term "harm" as it applies to the ESA. As stated, the final ruled defined the term "harm" to include any act which kills or injures fish or wildlife, and emphasizes that such acts may include significant habitat modification or degradation that significantly impairs essential behavioral patterns of fish or wildlife. Further clarification within the Federal Register includes the following: For a modification to be

significant, it must be capable of resulting in the death or injury of fish or wildlife. Habitat modification or degradation can be considered significant even if it is of limited physical extent, if it causes injury or death to fish or wildlife", however, the mere potential for harm is not in and of its "take." Assessing the significance of a given act of habitat modification or degradation depends on an evaluation of all the related factors.

There are two regulatory processes under the Federal ESA that allows an individual to obtain legal coverage from prosecution. A landowner/permittee can either obtain authorization for "take" under Section 7 or Section 10 of the ESA. Section 7 is triggered when there is a federal nexus that requires a federal agency to initiate consultation with the USFWS under Section 7 of the ESA. If there is no federal agency involvement (i.e., a landowner does not need a federal entitlement or is not receiving federal funding), then an Incidental Take permit can be obtained through Section 10(a)(1)(B) of the Act.

The USFWS cannot require or compel a landowner to obtain an Incidental Take permit, especially under Section 10. On April 25, 2018, the USFWS issued a guidance memorandum intended to help the USFWS' Regional Directors clarify the appropriate trigger for an incidental take permit (ITP) under the Endangered Species Act (ESA). While this guidance was directed internally to USFWS staff to aid in a determination of whether project-related habitat modification is likely to result in "take" of a listed species, it also provides a tool for project proponents to determine whether to seek an ITP. The guidance emphasizes that the decision to pursue an ITP or whether to cover a species is the project proponent's choice to make and is not up to the USFWS. Further, the guidance recognizes that "[t]he biological, legal, and economic risk assessment regarding whether to seek a permit belongs with the private party determining how to proceed."

Of significance is that the guidance provides that habitat modification, in and of itself, does not constitute "take" unless the three components of "harm" are met. Thus, to find that habitat modification constitutes an incidental take of listed species, the following questions must all be answered in the affirmative:

- Is the modification of habitat significant?
- Does that modification also significantly impair an essential behavior pattern of a listed species?
- Is the significant modification of the habitat likely to result in the actual killing or injury of wildlife?

California Department of Fish and Wildlife

The California Department of Fish and Wildlife (CDFW), formally known as the California Department of Fish and Game, is a Trustee Agency with responsibility under the CEQA for commenting/providing recommendations on projects that could impact plant and wildlife resources. Also, under the Fish and Game Code Section 1802, the CDFW has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and the habitat necessary for biologically sustainable populations of those species. The California Fish and Game Code also

provide authority for the CDFW to regulate projects that could result in the "take" of any species listed by the State as threatened or endangered (Section 2081). CDFW also has authority over all state streams, as described below.

Perennial and intermittent streams also fall under the jurisdiction of CDFW under Sections 1601-1603 of the Fish and Game Code (Streambed Alteration Agreements). The CDFW's jurisdiction includes work within the stream zone, but is not limited to the diversion or obstruction of the natural flow or changes in the channel, bed, or bank of any river, stream or lake. Before issuing a 1601 or 1603 Streambed Alteration Agreement, the CDFW must demonstrate compliance with CEQA. In most cases, CDFW relies on the CEQA review performed by the local lead agency. However, if no CEQA review was completed, CDFW would act as the lead agency under CEQA.

The CDFW also has authority for protection state-listed species issues under Section 2081 Incidental Take Permit if a project has the potential to negatively affect state-protected plant or animal species or their habitats, either directly or indirectly. Protected species include those "listed" by the State as endangered or threatened. Besides listed species, there are other categories of species protection, including "fully protected" and California Species of Special Concern (CSC). Adverse impacts to species that have the "fully protected" designation are prohibited.

Under the current California Fish & Game Code (FGC Section 3503), "it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird…" Birds of prey (falcons, hawks, owls, and eagles) get extra protection under the law (FGC Section 3503.5). As is the case with USFW, CDFW does not have the authority to require a landowner to apply for an Incidental Take Permit (ITP) authorizing take. Instead, it is the landowner that has the legal obligation to avoid any take of CTS if it does not seek an ITP, or to apply for and receive an ITP which authorizes take. That said, CDFW (and USFWS) can initiate an enforcement action if they believe that illegal take has occurred or will occur.

California Endangered Species Act

The California Endangered Species Act (CESA) provides protection for candidate plants and animal species as well as those listed as rare, threatened, or endangered by the California Department of Fish and Game (CDFG). This Act prohibits the take of any such species unless authorized. Section 2081 authorizes the State to issue incidental take permits. The state definition of take applies only to acts that result in the death of or adverse impacts to protected species. The CAESA mirrors the federal regulation as it relates to "take"; however, there is no State equivalent definition of "harm" or "harass." Incidental take is also not defined by the CAESA statute or regulation. Unlike the federal ESA, CAESA does not exclude " take" that occurs as a result of normal farm or ranch activities in the course of an otherwise lawful routine and ongoing agricultural activity. Where disagreement occurs (and in some cases, this has been the subject of court cases) is in the common understanding of "routine and ongoing agricultural activity."

California Environmental Quality Act

The CEQA Guidelines require a review of projects to determine their environmental effects and to identify mitigation for significant effects. The Guidelines state an effect may be significant if it

affects rare and endangered species. Section 15380 of the Guidelines defines rare to include listed species and allows agencies to consider rare species other than those designated as State or Federal threatened or endangered, but that meet the standards for rare under the Federal or State endangered species acts. On this basis, plants designated as rare by non-regulatory organizations (e.g., California Native Plant Society), species of special concern as defined by CDFW, candidate species as defined by USFWS, and other designations are considered in the CEQA analyses.

Land Use Entitlements

City of Clovis

The Study Area falls within the City of Clovis, California. The City is responsible for all local land use decisions and entitlements within its jurisdictional boundary. Fresno County is also the local lead agency under CEQA. As the lead agency under CEQA, the City3 considers recommendations made by other responsible agencies during the CEQA review.

2.0 RESOURCES CONSULTED AND METHODS

The following section describes the methods used to assess the Study Area and includes a combination of data review and evaluation, field studies, and aerial photograph interpretations.

2.1 DATA AND LITERATURE REVIEW

The 36.76 acre Study Area is in a historically agricultural area in Fresno, California. The following documents and/or sources used in preparing this report.

- U.S. Department of Agricultural, Natural Resources Conservation Service, Soil Survey of Fresno Area (Soils mapper).
- Aerial photography (Google Earth®, Bing®, and historic aerials dating back to 1983).
- The California Department of Fish and Game, California Natural Diversity Database (CNDDB/RareFind - Recent version with updates)
- U.S. Fish and Wildlife Service National Wetland Inventory Map
- U.S. Geologic Survey, Historic topographic Map, Clovis Quadrangle, 1919, University of Texas, Austin, Perry-Castañeda Map Collection
- Henry Madden Library, Fresno State University. Historic Aerial Photography collection dating back to 1938

2.2 AERIAL PHOTOGRAPHY AND WETLAND MAPPING

Aerial photographs of the Study Area were reviewed to assess changes in land use over time, dating back to the early 1940s. Both black and white and color aerial photographs ranging in resolution from 0.5 meters to 1.0 meter. We also reviewed historic aerial photographs to evaluate land use changes.

2.3 FIELD REVIEW

The original biological field work was conducted in August 2016. The Study Area was revisited on February 7, 2020. Before conducting a site review, we reviewed the California Natural Diversity Database/ RareFind (CNDDB/RareFind). The CNDDB includes records of reported observations for special status plant and animal species. The results of the CNDDB/RareFind identify which species would present the highest likelihood of being present on the site based on the distance of the site from known records and the similarity in habitats between the Study Area and the habitats that the species required and/or preferred. High-resolution aerials were reviewed photographs to determine if any areas on the site appear to support waters of the U.S., or other water features. We walked to identify habitat types, identify any wetlands potentially present, and assess habitat conditions and land use. This information formed the basis of our evaluation.

3.0 RESULTS AND CONCLUSIONS

This section describes the physical (i.e., topography, drainage, and soils) and the biological resources present, or potentially present, within the Study Area. Section 3.1 describes the physical components (i.e., soils, hydrology, etc.) of the Study Area. The physical components strongly influence the types of plants and animals present. Section 3.2 is an overview of the resources and habitats present within the Study Area, including descriptions of the specific biological resources observed.

The information presented is not an exhaustive inventory of plants or animals present. Rather provides sufficient information to identify what, if any, biological resources are present that may be considered unique, sensitive, or protected by current law and the potential impacts to those resources if the site is developed. This section also includes recommended avoidance and minimization measures to minimize potential impacts.

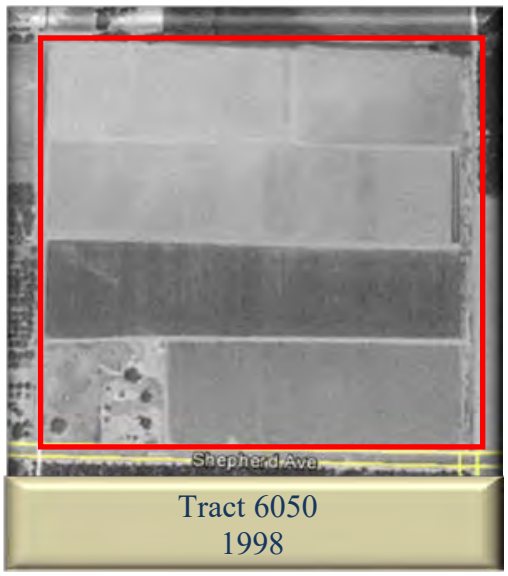
3.1 PHYSICAL RESOURCES AND NATURAL RESOUCES

Climate

Climate in the Study Area is typical of the central San Joaquin Valley with summers that are long, hot, and dry and winters that are cool and mild. Rainfall in the winter averages approximately 10.9 inches per year, falling mainly between November and April (Western Regional Climate Center, 2004). During this rainy season (Oct – May/to date) the total rainfall has been over 11 inches as recorded at California State University, Fresno.

Land Use and Habitat Types

The Study Area is located within the City of Clovis within an mixed agricultural and urban environment. The land is currently zoned as agricultural land, AE-20. The zoning is proposed to be changed to residential. The proposed land use will be single family residential subdivision. At the time of the 2016 biological review, the entire property was in full agrincultural production. The property has been in agricultural production since at least 1998 (See right). There was a home parcel within southwest corner of the property that has been there since at least 1998. Between 1998 and 2017 the site appears to have been in continuous agricultural production with periodic years when the ground was fallow. Cropping patterns changed but at no time was the land taken out of production.



During the February 7, 2020 field review the land was tilled but not planted. A portion of the eastern edge of the Study Area has been disturbed by an adjacent construction project (immediately east).

See Figure 2, Habitat Map of the Study Area.

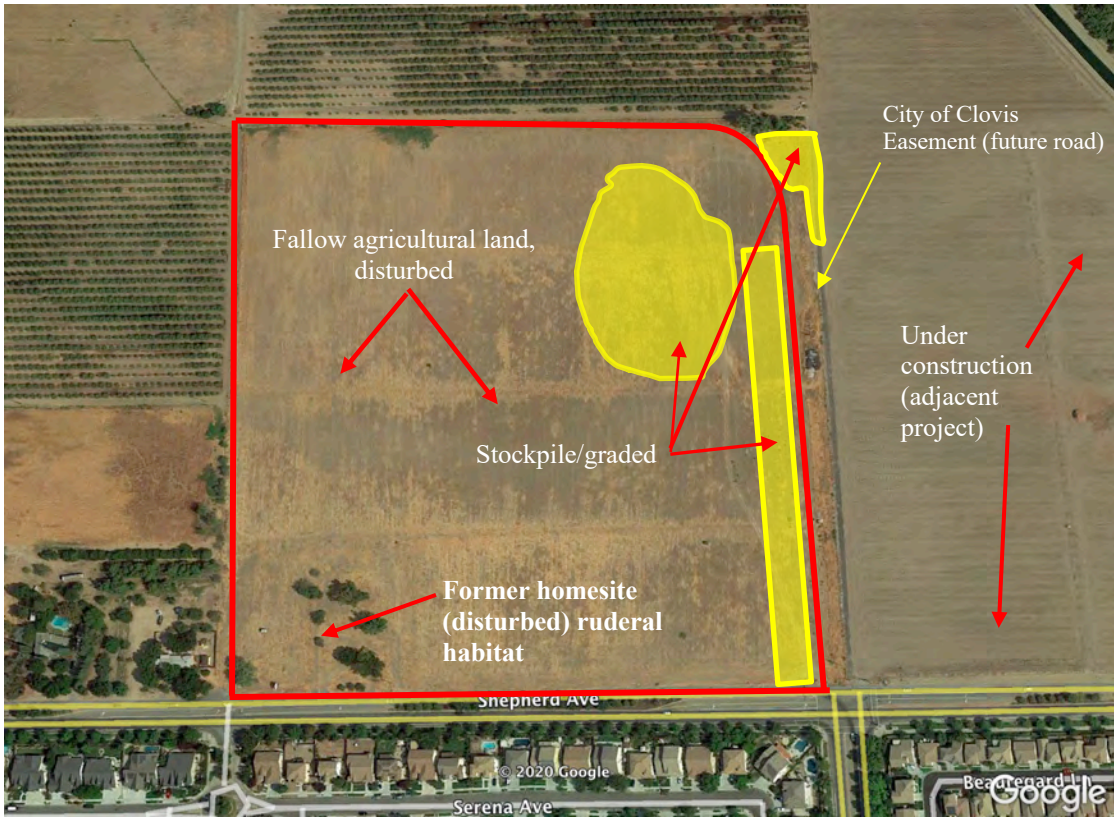


Figure 2
Habitat Map of Tract 6050 Clovis, CA

Topography, Drainage and Waters/Wetlands

Topography and Drainage

The property lies within the Central Valley. The Study Area site has historically been nearly level. Historically elevations within the area ranged from 372 ft msl just west of the Enterprise Canal (within the Study Area) to 390 msl just west of Minniwawa Avenue based on a 1919 topographic map. Current conditions do not appear to have significantly changed but, as mentioned previously, the eastern edge of the Study Area has been disturbed by an adjacent construction project. The elevation has been raised by about 2 feet.

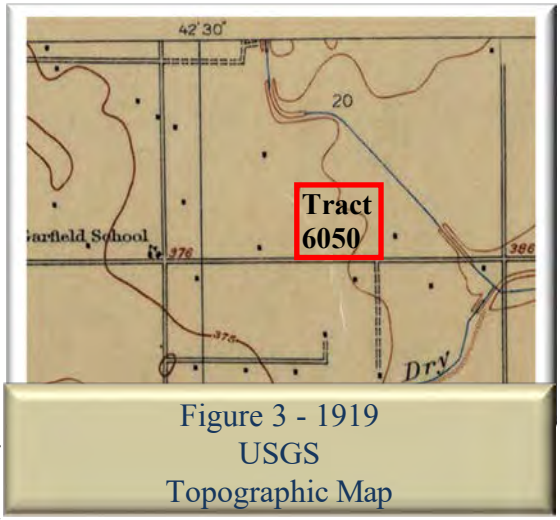


Figure 3 - 1919 USGS Topographic Map

Historically (1919) no drainage facilities or creeks/streams were present within the Study Area. The Study Area is located within the Upper Dry Watershed (HUC 18030009). The project site historically drained to the southeast, toward the direction of Dry Creek. There is somewhat of a road ditch fronting the property along Shepherd Avenue. A query of the National Wetland Inventory Map does not show any stream, creeks, or wetland on or near the Study Area (within roughly a ½ mile) other than Dry Creek to the southeast. Over many decades portions of Dry Creek has been realigned, channelized and pipped underground. Dry Creek is managed by Fresno Metropolitan Flood Control District as part of their responsibilities to provide stormwater and flood flow conveyance. The Enterprise Canal is used for irrigation delivery and some storm water conveyance/storage as needed.

Waters/Wetland

A query of the National Wetland Inventory (NWI) Map (Figure 5, below) shows no wetlands, waters, or riparian areas within the Study Area but there is a farm ditch shown along the northern boundary. Th farm ditch is no longer present at the northern edge of the Study Area nor is it present on the land to the east of the Study Area. No other wetlands or ponds are within the Study Area.

Figure 4
USFWS National Wetland Inventory Map

Soils

The Natural Resources Conservation Service (NRCS) soil survey mapped two soil types within the Study Area. Neither soil is mapped as hydric soils. Hydric soils area is readily formed under ponded conditions. The presence of mapped hydric soils may indicate that the soils could support wetlands but, there is no direct correlation. Wetlands can occur in areas where no hydric soil are mapped and may be absent in areas mapped as hydric soils. There was no indication of any wetlands/waters within the Study Area. The following is a summary of the soil type present.

Table 1
Tract 6050 Study Area - Mapped Soil Units

Soil Series	Map Symbol	Hydric Soil	% of Study Area
Alamo clay	AM	Y	0.2
Exeter sandy loam	ES	N	14
Hanford fine sandy loam, hard substratum	HR	N	8.6
Tujunga loamy sand, 0 to 3 % slopes	TZBA	N	6.3
Visalia sandy loam, 0 to 3% slopes	VaA	N	63

Special Status Species

A search of the California Natural Diversity Database (CNDDB) was reviewed to determine whetherspecial status species could be present within the Study Area. There is no critical habitat for any listed species within or near the Study Area. Table 2 provides a summary of the species identified in the CNDDB that would have the highest likelihood of being present based on habitat requirements. Species that only reside in aquatic habitat are not included in the table since there is no aquatic habitat within or near the Study Area. Figure 6 shows the location of known special status species records within the vicinity of the Study Area.

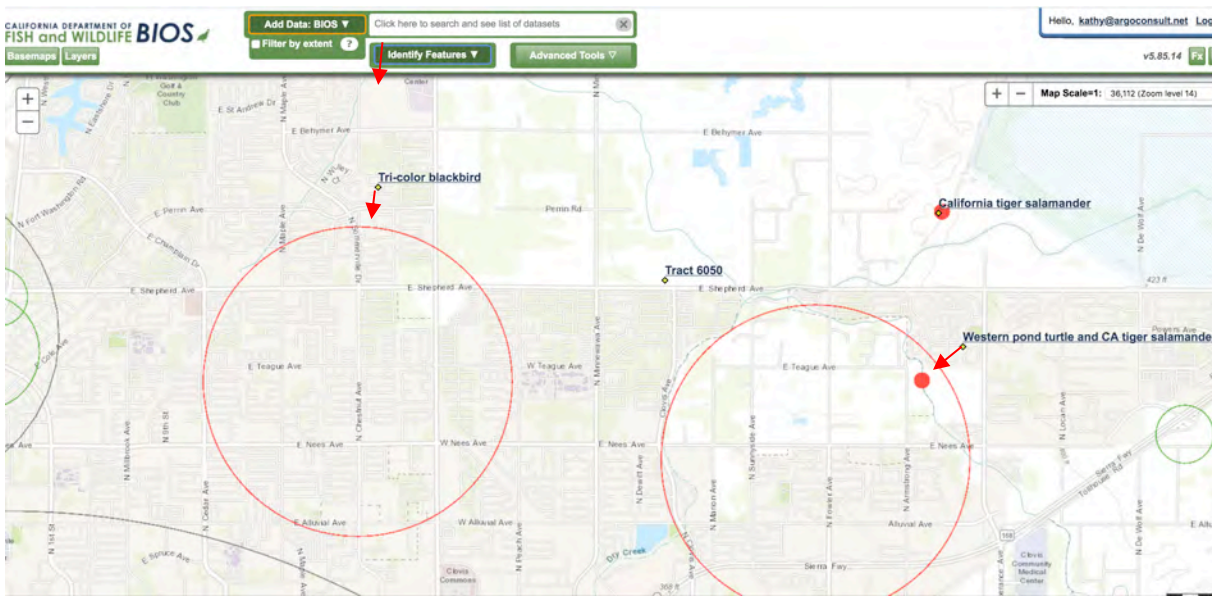


Figure **5**
California Natural Diversity Database (CNDDB) Query Results

Table 2
Special Status Species Summary For Tract 6050 Study Area

Common Name	Scientific Name	Status[1]	Effects[2]	Occurrence in the Study Area[3]
Birds				
Swainson's hawk	*Buteo swainsoni*	CT	NE	**Absent.** No raptor nests were observed. Species may use the site for foraging. Species could use trees on adjacent property for nesting but no evidence of potential presence.
Tricolored blackbird	*Agesaius tricolor*	CT	NE	**Absent.** Suitable breeding habitat is not within or near the Study Area.
Burrowing owl	*Athene Cunicularia*	BCC	NE	**Absent**. No evidenc of burrowing owl habitat is present. No ground squirrel population is present and the site is disturbed frequently. No ground squirrels are present, which would be indivitative of potential suitable habitat.
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	FT/CE	NE	**Absent.** The study area does not support riparian streams or riparian habitat that this species requires.
least Bell's vireo	*Vireo bellii pusillus*	FE/CE	NE	**Absent**. No suitable breeding habitat is present within or near the Study Area.
Mammals, Amphibians, and Reptiles				
Fresno kangaroo rat	*Dipodomys nitratoides*	CE, FE	NE	**Absent**. Species requires a land surface with hummocks as sites for its extensive, but shallow burrow system, and a substrate of suitable compactness to permit burrowing. No suitable habitat is present.
San Joaquin kit fox	*Vulpes macrotis mutica*	CT, FE	NE	**Absent**. No suitable habitat present to support species, no dens and minimal prey base evident.
California tiger salamander	*Ambystoma californiense*	CT, FT	NE	**Absent.** Species requires aquatic breeding habitat and no breeding habitat is present within or near the Study Area.
Plants				
Hartweg's golden Sunburst	*Pseudobahia bahiifolia*	CE, FE 1B	NE	**Absent.** Found in Valley grassland habitat. The study area does not support grassland habitat. Habitat appears to be routinely disturbed by agricultural activities and likely precludes establishment.
San Joaquin adobe sunburst	*Pseudobahia peirsonii*	CE, FT 1B	NE	**Absent.** Found in Valley grassland habitat. The study area does not support grassland habitat.

California jewelflower	*Caulanthus californicus*	CE, FE 1B	NE	**Absent.** Found in Chenopod scrub, valley and foohill grassland, and juniper woodland. Suitable habitat not present within or near Study Area.
Caper-gruited tropidocarpum	*Tripodocarpum capparideum*	--, --	NE	**Absent.** Occurs within Valley and foothill grassland**.** Only source of information for this species is from 1930 record. No grassland habitat present within the Study Area**.**
Sanford's arrowhead	*Sagittaria sandordii*	1B	NE	**Absent:** Occurs in slow moving waters and irrigation canals, ditches, and detention basins. No suitable habitat present.

1 Status= Listing of special status species, unless otherwise indicated
- CE: California listed as Endangered
- CT: California listed as Threatened
- FE: Federally listed as Endangered
- FT: Federally listed as Threatened

2 Effects = Effect determination
- NE: No Effect
- ME: May effect, not likely to adversely affect

3 Definition Of Occurrence Indicators
- Present/Potentially: Species recorded in area
- Absent/Likely Absent: Species not recorded in study area and/or
- CNDDB = California Natural Diversity Database provided by CDFG

The habitt is highly disturbed as a result of recurring heavy agricultural production. The vegetation is characteristic of fallow agricultural plants include rye and oats. Some non-native ruderal species including prickly oax tongue, wild mustard, erodium, and wild oats. The site was uniformily tilled. Soils were inspected to look for the potential presence of wetland soils but none were found. Little wildlife was observed. The majority of the wildlife included mourning doves, crows, and during the site review red-tailed hawk perched in a dead tree in the southwest corner of the Study Area (where the old farmhouse once stood) for a few minutes before resuming to hunt over the property to the east (under construction). There was no ground squirrel population present nor any ground squirrel burrows.

There are no potential nest trees for raptors within the Study Area. There is one large dead tree in the southwest corner but no raptor nest.

Althought there is a known California tiger salamander (CTS) breeding site within 1.5 miles from the Study Area (See Figure 6), the site does not support any suitable habitat for CTS. CTS requires the presence of burrowing mammals to create underground burrows for aestivation during the hot, dry summers. The Study Area has no ground burrowing mammals (ground squirrels), therefore CTS upland habitat is not present.

Several plant species identified within the CNDDB occur within this region of Fresno County. Based on the habitat condition (ruderal, and fallow agricultural but no grassland component) the likelihood of any of the species identified in Table 2 is very low.

3.2 Conclusions And Recommendations

- Habitat within the Study Area consists of primarily of currently fallow agricultural land and ruderal habitat.
- There are no wetlands or waters of the U.S. or waters of the State present within the Study Area.
- There are no suitable nest trees for raptors or migratory birds.
- There is no suitable nesting habitat for migratory birds within the Study Area.
- There is no suitable habitat within or adjacent to the Study Area for any listed species of plants or animals.
- No avoidance or minimization measures are recommended.

Appendix A: Photographs

ARGONAUT ECOLOGICAL CONSULTING, INC.

Photographic Documentation

Client: Tract 6050 Enterprises, LP
Project: Tract 6050, Clovis CA
Photographer: K. Kinsland

Date: February 2020

Photograph No. 1:

View of Eastern edge of Study Area, area disturbed.

Photograph 2:

View looking south from the northeast corner of the Study Area.

ARGONAUT ECOLOGICAL CONSULTING, INC.

Photographic Documentation

Client: Tract 6050 Enterprises, LP
Project: Tract 6050, Clovis CA
Photographer: K. Kinsland

Date: February 2020

Photograph No 3:

View of stockpile area

Photograph 4:

View looking east (adjacent land under construction)

ARGONAUT ECOLOGICAL CONSULTING, INC.

Photographic Documentation

Client: Tract 6050 Enterprises, LP
Project: Tract 6050, Clovis CA
Photographer: K. Kinsland

Date: February 2020

Photograph 5:

View along center of Study Area looking east.

Photo 6:

View of Study Area looking northwest

Appendix B: Soils Report

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

AGENDA ITEM NO.2

Custom Soil Re
Report for
Eastern Fresno Area, California

Tract 6050

February 18, 2020

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

AGENDA ITEM NO.2

Map Scale: 1:3,390 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Eastern Fresno Area, California
Survey Area Data: Version 12, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 1, 2018—Jul 1, 2018

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
An	Alamo clay	0.0	0.0%
Es	Exeter sandy loam	5.5	13.5%
Hr	Hanford fine sandy loam, hard substratum	3.8	9.5%
TzbA	Tujunga loamy sand, 0 to 3 percent slopes	6.1	15.0%
VaA	Visalia sandy loam, 0 to 3 percent slopes	25.1	62.0%
Totals for Area of Interest		**40.5**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Eastern Fresno Area, California

An—Alamo clay

Map Unit Setting

National map unit symbol: hl0s
Elevation: 300 to 500 feet
Mean annual precipitation: 10 to 15 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 250 to 275 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Alamo and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Alamo

Setting

Landform: Depressions on fan remnants
Landform position (two-dimensional): Toeslope, shoulder
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from mixed and/or alluvium derived from granite

Typical profile

A - 0 to 11 inches: clay
Bss1 - 11 to 15 inches: clay
Bss2 - 15 to 23 inches: clay
Bqm - 23 to 33 inches: cemented

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 20 to 40 inches to duripan
Natural drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: Occasional
Frequency of ponding: Occasional
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): 3w
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: D
Ecological site: TERRACE 12-14" (R018XE052CA)
Hydric soil rating: Yes

Minor Components

Unnamed, hummock

Percent of map unit: 10 percent
Landform: Hummocks on fan remnants
Hydric soil rating: No

San joaquin

Percent of map unit: 5 percent
Landform: Hummocks on fan remnants
Hydric soil rating: No

Es—Exeter sandy loam

Map Unit Setting

National map unit symbol: hl3t
Elevation: 200 to 450 feet
Mean annual precipitation: 9 to 14 inches
Mean annual air temperature: 61 to 64 degrees F
Frost-free period: 225 to 275 days
Farmland classification: Not prime farmland

Map Unit Composition

Exeter and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Exeter

Setting

Landform: Stream terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

Ap - 0 to 15 inches: sandy loam
Bt - 15 to 30 inches: sandy loam
Bqm - 30 to 40 inches: cemented

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 20 to 40 inches to duripan
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.01 in/hr)
Depth to water table: More than 80 inches

Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Unnamed

Percent of map unit: 14 percent
Landform: Stream terraces
Hydric soil rating: No

Unnamed, ponded

Percent of map unit: 1 percent
Landform: Depressions on stream terraces
Hydric soil rating: Yes

Hr—Hanford fine sandy loam, hard substratum

Map Unit Setting

National map unit symbol: hl5t
Elevation: 200 to 500 feet
Mean annual precipitation: 8 to 15 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 250 to 275 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Hanford and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hanford

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

A - 0 to 16 inches: fine sandy loam
C - 16 to 40 inches: fine sandy loam
2Bqmb - 40 to 50 inches: cemented

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 20 to 40 inches to duripan
Natural drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low (0.01 to 0.14 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 5.2 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Unnamed, clay substratum

Percent of map unit: 15 percent
Landform: Alluvial fans
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

TzbA—Tujunga loamy sand, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: hlc1
Elevation: 180 to 400 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 62 to 64 degrees F
Frost-free period: 225 to 275 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Tujunga and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tujunga

Setting

Landform: Flood plains, alluvial fans
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear

Parent material: Alluvium derived from granite

Typical profile

A - 0 to 4 inches: loamy sand
C - 4 to 60 inches: stratified sand to loamy sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Available water storage in profile: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): 4s
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Unnamed, loamy coarse sand

Percent of map unit: 12 percent
Landform: Flood plains, alluvial fans
Hydric soil rating: No

Unnamed, compact substratum

Percent of map unit: 2 percent
Landform: Alluvial fans, flood plains
Hydric soil rating: No

Unnamed, flooded

Percent of map unit: 1 percent
Landform: Flood plains
Hydric soil rating: Yes

VaA—Visalia sandy loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: hlc6
Elevation: 300 to 3,400 feet
Mean annual precipitation: 11 to 31 inches
Mean annual air temperature: 59 to 62 degrees F
Frost-free period: 175 to 275 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Visalia and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Visalia

Setting

Landform: Depressions on valleys, depressions on drainageways
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Parent material: Recent alluvium derived from granite

Typical profile

A - 0 to 10 inches: sandy loam
AC - 10 to 48 inches: sandy loam
C - 48 to 60 inches: sandy loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 8.0 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 4c
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Unnamed, somewhat poorly drained

Percent of map unit: 3 percent
Landform: Depressions on valleys, depressions on drainageways
Hydric soil rating: Yes

Unnamed, moderately deep gravelly substratum

Percent of map unit: 3 percent
Landform: Depressions on drainageways, depressions on valleys
Hydric soil rating: No

Hildreth

Percent of map unit: 3 percent
Landform: Swales on flood plains
Hydric soil rating: Yes

Chualar

Percent of map unit: 2 percent

Landform: Flood plains
Hydric soil rating: No

Foster

Percent of map unit: 2 percent
Landform: Depressions on flood plains
Hydric soil rating: Yes

Chino

Percent of map unit: 2 percent
Landform: Alluvial fans, flood plains
Hydric soil rating: No

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PEAK & ASSOCIATES, INC.
CONSULTING ARCHEOLOGY

July 19, 2016

Kathy Kinsland
President/Scientist
Argonaut Ecological Consulting, Inc.
2377 Gold Meadow Way, Suite 100
Gold River, CA 95670

Subject: Tract 6050 Project, Fresno County (Job #16-051)

Dear Ms. Kinsland:

The project area lies on the north side of Shepherd Avenue, between Minnewawa and Sunnyside Avenues. A record search was requested for the project area from the South San Joaquin Valley Information Center of the California Historical Resources Information System (RS# 16-287, letter and map attached). In addition, older maps were checked for the possible presence of historic period resources.

The project area lies in the northwest quarter of the southwest quarter of section 20 of Township 12 South Range 20 East, mapped on the Clovis 7.5' USGS topographic quadrangle.

The record search revealed two prior surveys had been conducted, totally covering the project area (Varner 2006—report FR-02203; Nettles and Baloian 2006—report FR-02289). There are no prehistoric or historic period recorded within the project area.

The Clovis 1923 1:31,680 and the 1946 and 1964 1:24,000 USGS maps show a building in the project site; it was not recorded by either of the 2006 surveys. The building appears to have been demolished by 2014.

Conclusions

Although no prehistoric or historic period sites were found during the research, there is a slight possibility that a site may exist and be totally obscured by vegetation, fill, or other historic activities, leaving no surface evidence. Should artifacts or unusual amounts of stone, bone, or shell be uncovered during construction activities, an archeologist should be consulted for in field evaluation of the discovery.

If the bone appears to be human, state law requires that the Fresno County Coroner be contacted. If the Coroner determines that the bone is human and is most likely Native American in origin, he must contact the Native American Heritage Commission (916-373-3710).

If I can provide any further information, do not hesitate to call.

Sincerely,

Melinda A. Peak

Melinda A. Peak
President

Enclosures:

Record search results

California Historical Resources Information System

Fresno
Kern
Kings
Madera
Tulare

Southern San Joaquin Valley Information Center
California State Univ
Mail Stop: 72 DOB
9001 Stockdale Highway
Bakersfield, California 93311-1022
(661) 654-2289
E-mail: ssjvic@csub.edu
Website: www.csub.edu/ssjvic

AGENDA ITEM NO.2

7/14/2016

Neal Neuenschwander
Peak & Associates, Inc.
3161 Godman Avenue
Chico, CA 95973

Re: Clovis Tract 6050 Project
Records Search File No.: 16-287

The Southern San Joaquin Valley Information Center received your record search request for the project area referenced above, located on the Clovis USGS 7.5' quad. The following reflects the results of the records search for the project area and the 500 foot radius:

As indicated on the data request form, the locations of resources and reports are provided in the following format: ☐ custom GIS maps ☐ shapefiles ☒ hand-drawn maps (custom GIS maps & shapefiles are not currently available for reports in this area)

Resources within project area:	None
Resources within 500 foot radius:	None
Reports within project area:	FR-02203, 02289
Reports within 500 foot radius:	None

Resource Database Printout (list):	☐ enclosed	☐ not requested	☒ nothing listed
Resource Database Printout (details):	☐ enclosed	☒ not requested	☐ nothing listed
Resource Digital Database Records:	☐ enclosed	☒ not requested	☐ nothing listed
Report Database Printout (list):	☒ enclosed	☐ not requested	☐ nothing listed
Report Database Printout (details):	☐ enclosed	☒ not requested	☐ nothing listed
Report Digital Database Records:	☐ enclosed	☒ not requested	☐ nothing listed
Resource Record Copies:	☐ enclosed	☐ not requested	☒ nothing listed
Report Copies:	☒ enclosed	☐ not requested	☐ nothing listed
OHP Historic Properties Directory:	☐ enclosed	☐ not requested	☒ nothing listed
Archaeological Determinations of Eligibility:	☐ enclosed	☐ not requested	☒ nothing listed
CA Inventory of Historic Resources (1976):	☐ enclosed	☐ not requested	☒ nothing listed

Caltrans Bridge Survey: Not available at SSJVIC; please see http://www.dot.ca.gov/hq/structur/strmaint/historic.htm

Ethnographic Information: Not available at SSJVIC

Historical Literature: Not available at SSJVIC

Historical Maps: Not available at SSJVIC; please see http://historicalmaps.arcgis.com/usgs/

Local Inventories: Not available at SSJVIC

GLO and/or Rancho Plat Maps: Not available at SSJVIC

Shipwreck Inventory: Not available at SSJVIC; please see http://shipwrecks.slc.ca.gov/ShipwrecksDatabase/Shipwrecks_Database.asp

Soil Survey Maps: Not available at SSJVIC; please see http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

Please forward a copy of any resulting reports from this project to the office as soon as possible. Due to the sensitive nature of archaeological site location data, we ask that you do not include resource location maps and resource location descriptions in your report if the report is for public distribution. If you have any questions regarding the results presented herein, please contact the office at the phone number listed above.

The provision of CHRIS Data via this records search response does not in any way constitute public disclosure of records otherwise exempt from disclosure under the California Public Records Act or any other law, including, but not limited to, records related to archeological site information maintained by or on behalf of, or in the possession of, the State of California, Department of Parks and Recreation, State Historic Preservation Officer, Office of Historic Preservation, or the State Historical Resources Commission.

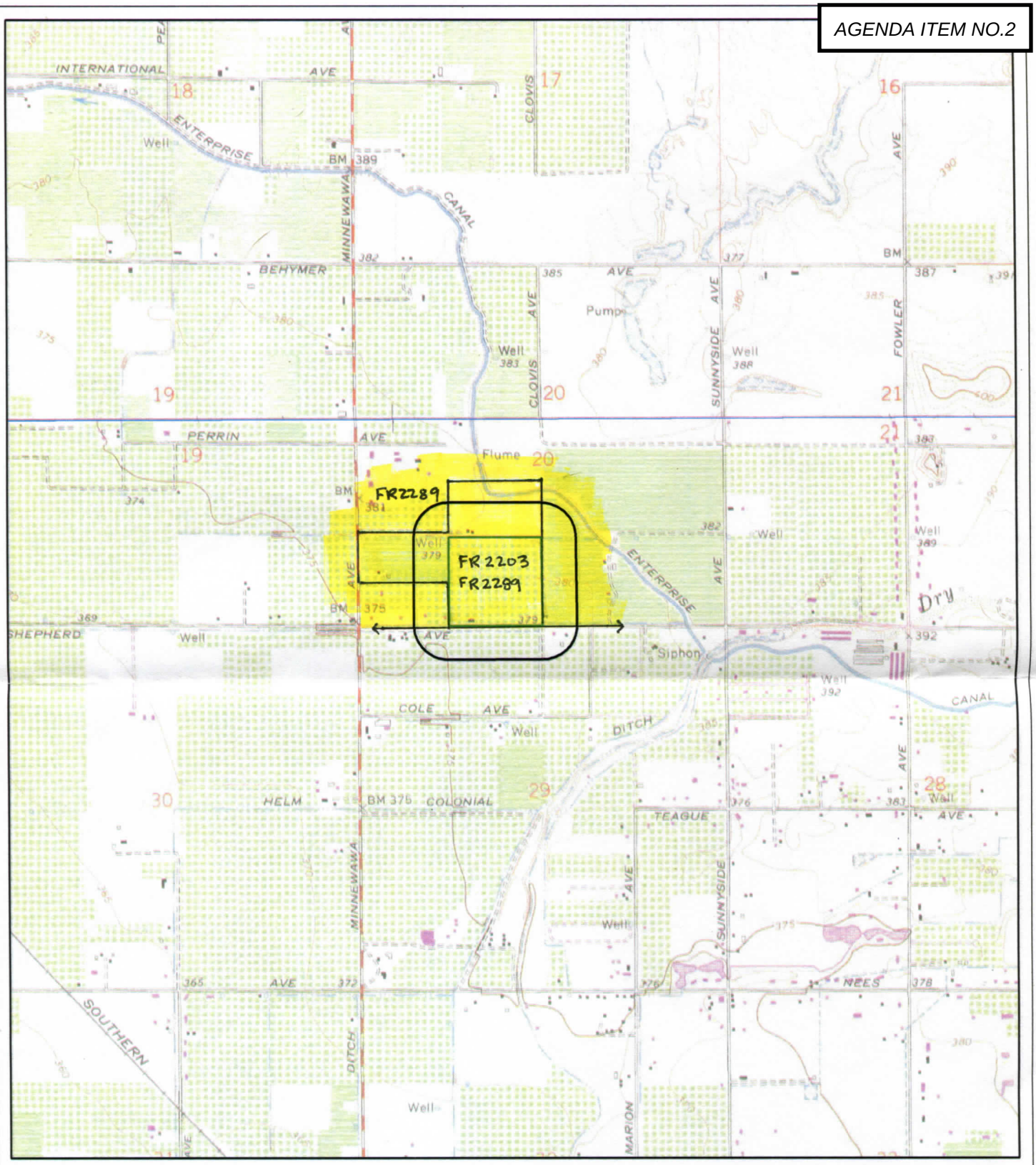
Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the CHRIS Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

Should you require any additional information for the above referenced project, reference the record search number listed above when making inquiries. Invoices for Information Center services will be sent under separate cover from the California State University, Bakersfield Accounting Office.

Thank you for using the California Historical Resources Information System (CHRIS).

Sincerely,

Celeste M. Thomson
Coordinator



May depict confidential cultural resource locations.
Do not distribute.

Miles
0 0.3 0.6

Kilometers
0 0.35 0.7

N

SSJVIC Record Search 16-287
Clovis 7.5'
Fresno County, CA
Reports Only

Report List

SSJVIC Record Search 16-287

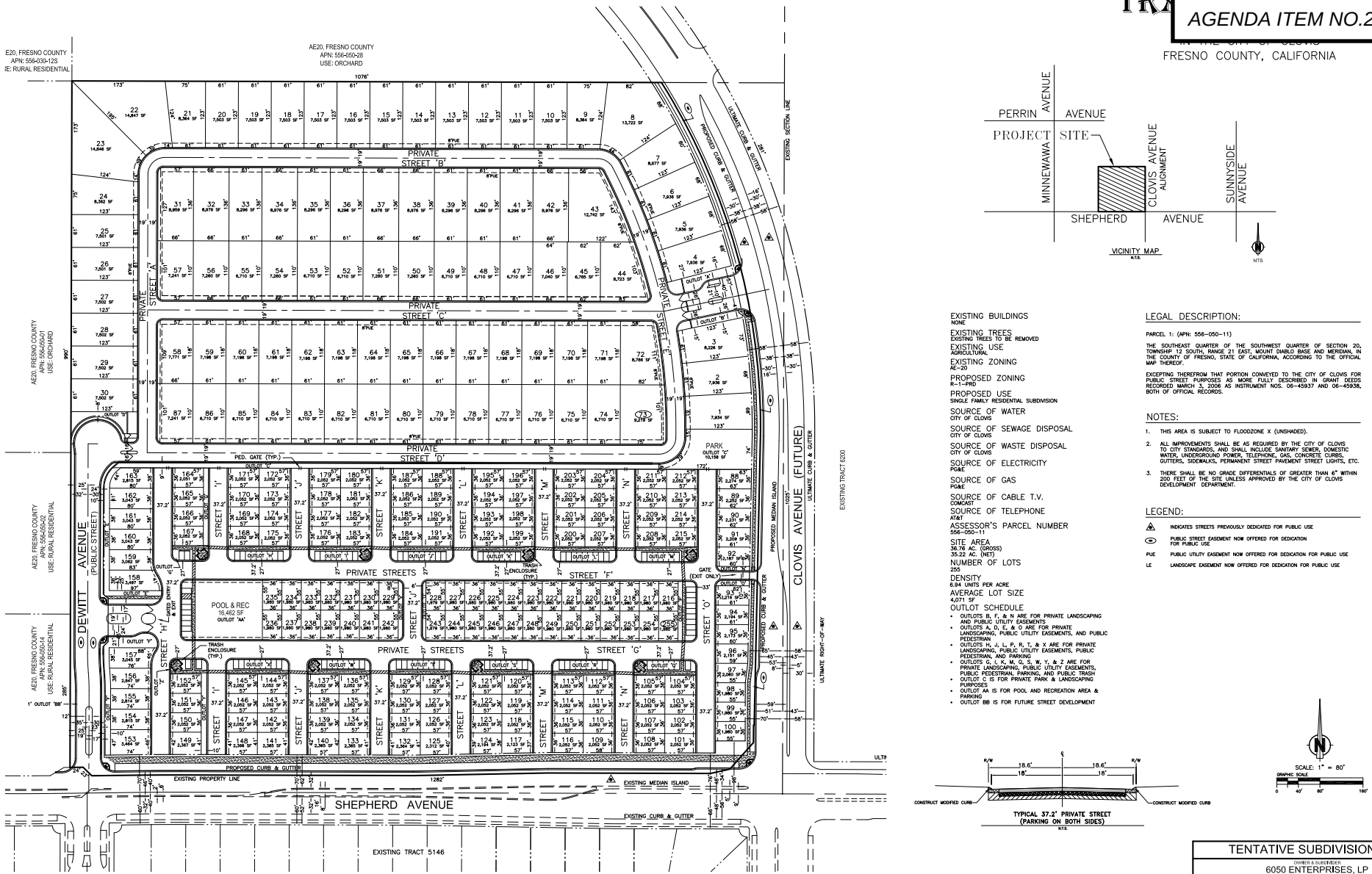
Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Res
FR-02203		2006	Varner, Dudley M.	A Cultural Resource Study of the Battlin Brooks Property, Fresno County, California	Varner Associates	
FR-02289		2006	Nettles, Wendy M. and Baloian, Randy	Cultural Resources Reconnaissance Survey of the City of Clovis Northwest Urban Center Specific Plan Area, Fresno County, California	Applied EarthWorks, Inc.	

VESTING
TENTATIVE SUBDIVISION MAP
OF

TRACT NO. 6050

IN THE CITY OF CLOVIS
FRESNO COUNTY, CALIFORNIA

AGENDA ITEM NO.2



EXISTING BUILDINGS
NONE

EXISTING TREES
EXISTING TREES TO BE REMOVED

EXISTING USE
AGRICULTURAL

EXISTING ZONING
AE-20

PROPOSED ZONING
R-1-PRD

PROPOSED USE
SINGLE FAMILY RESIDENTIAL SUBDIVISION

SOURCE OF WATER
CITY OF CLOVIS

SOURCE OF SEWAGE DISPOSAL
CITY OF CLOVIS

SOURCE OF WASTE DISPOSAL
CITY OF CLOVIS

SOURCE OF ELECTRICITY
PG&E

SOURCE OF GAS

SOURCE OF CABLE T.V.
COMCAST

SOURCE OF TELEPHONE
AT&T

ASSESSOR'S PARCEL NUMBER
556-050-11

SITE AREA
36.76 AC. (GROSS)
35.22 AC. (NET)

NUMBER OF LOTS
255

DENSITY
6.94 UNITS PER ACRE

AVERAGE LOT SIZE
4,071 SF

OUTLOT SCHEDULE

- OUTLOTS B, F, & N ARE FOR PRIVATE LANDSCAPING AND PUBLIC UTILITY EASEMENTS
- OUTLOTS A, D, E, & O ARE FOR PRIVATE LANDSCAPING, PUBLIC UTILITY EASEMENTS, AND PUBLIC PEDESTRIAN
- OUTLOTS H, J, L, P, R, T, & X ARE FOR PRIVATE LANDSCAPING, PUBLIC UTILITY EASEMENTS, PUBLIC PEDESTRIAN, AND PARKING
- OUTLOTS G, I, K, M, O, S, W, Y, & Z ARE FOR PRIVATE LANDSCAPING, PUBLIC UTILITY EASEMENTS, PUBLIC PEDESTRIAN, PARKING, AND PUBLIC TRASH
- OUTLOT C IS FOR PRIVATE PARK & LANDSCAPING PURPOSES
- OUTLOT AA IS FOR POOL AND RECREATION AREA & PARKING
- OUTLOT BB IS FOR FUTURE STREET DEVELOPMENT

LEGAL DESCRIPTION:

PARCEL 1: (APN: 556-050-11)

THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 20, TOWNSHIP 12 SOUTH, RANGE 21 EAST, MOUNT DIABLO BASE AND MERIDIAN, IN THE COUNTY OF FRESNO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL MAP THEREOF.

EXCEPTING THEREFROM THAT PORTION CONVEYED TO THE CITY OF CLOVIS FOR PUBLIC STREET PURPOSES AS MORE FULLY DESCRIBED IN GRANT DEEDS RECORDED MARCH 3, 2006 AS INSTRUMENT NOS. 06-45937 AND 06-45938, BOTH OF OFFICIAL RECORDS.

NOTES:

1. THIS AREA IS SUBJECT TO FLOODZONE X (UNSHADED).
2. ALL IMPROVEMENTS SHALL BE AS REQUIRED BY THE CITY OF CLOVIS TO CITY STANDARDS, AND SHALL INCLUDE SANITARY SEWER, DOMESTIC WATER, UNDERGROUND POWER, TELEPHONE, GAS, CONCRETE CURBS, GUTTERS, SIDEWALKS, PERMANENT STREET PAVEMENT STREET LIGHTS, ETC.
3. THERE SHALL BE NO GRADE DIFFERENTIALS OF GREATER THAN 6" WITHIN 200 FEET OF THE SITE UNLESS APPROVED BY THE CITY OF CLOVIS DEVELOPMENT DEPARTMENT.

LEGEND:

▲	INDICATES STREETS PREVIOUSLY DEDICATED FOR PUBLIC USE
⬭	PUBLIC STREET EASEMENT NOW OFFERED FOR DEDICATION FOR PUBLIC USE
PUE	PUBLIC UTILITY EASEMENT NOW OFFERED FOR DEDICATION FOR PUBLIC USE
LE	LANDSCAPE EASEMENT NOW OFFERED FOR DEDICATION FOR PUBLIC USE

TYPICAL 37.2' PRIVATE STREET
(PARKING ON BOTH SIDES)
N.T.S.

TENTATIVE SUBDIVISION MAP

OWNER & SUBDIVIDER
6050 ENTERPRISES, LP
7550 NORTH PALM AVENUE SUITE 102
FRESNO, CA 93711
559-432-6700

Harbour & Associates
Civil Engineers
389 Clovis Avenue, Suite 300 • Clovis, California 93612
(559) 325-7676 • Fax (559) 325-7699 • e-mail: jtimm@harbourengineering.com

REVISIONS	SHEET NO.
	1 OF 1

DATE: 1-8-20 | SCALE: 1"= 80' | DRAWN BY: SDH

W.O. #13-032

D-876

California Historical Resources Information System

Fresno
Kern
Kings
Madera
Tulare

Southern San Joaquin Valley Information Center
California State Univ
Mail Stop: 72 DOB
9001 Stockdale Highway
Bakersfield, California 93311-1022
(661) 654-2289
E-mail: ssjvic@csub.edu
Website: www.csub.edu/ssjvic

AGENDA ITEM NO.2

7/14/2016

Neal Neuenschwander
Peak & Associates, Inc.
3161 Godman Avenue
Chico, CA 95973

Re: Clovis Tract 6050 Project
Records Search File No.: 16-287

The Southern San Joaquin Valley Information Center received your record search request for the project area referenced above, located on the Clovis USGS 7.5' quad. The following reflects the results of the records search for the project area and the 500 foot radius:

As indicated on the data request form, the locations of resources and reports are provided in the following format: ☐ custom GIS maps ☐ shapefiles ☒ hand-drawn maps (custom GIS maps & shapefiles are not currently available for reports in this area)

Resources within project area:	None
Resources within 500 foot radius:	None
Reports within project area:	FR-02203, 02289
Reports within 500 foot radius:	None

Resource Database Printout (list):	☐ enclosed	☐ not requested	☒ nothing listed
Resource Database Printout (details):	☐ enclosed	☒ not requested	☐ nothing listed
Resource Digital Database Records:	☐ enclosed	☒ not requested	☐ nothing listed
Report Database Printout (list):	☒ enclosed	☐ not requested	☐ nothing listed
Report Database Printout (details):	☐ enclosed	☒ not requested	☐ nothing listed
Report Digital Database Records:	☐ enclosed	☒ not requested	☐ nothing listed
Resource Record Copies:	☐ enclosed	☐ not requested	☒ nothing listed
Report Copies:	☒ enclosed	☐ not requested	☐ nothing listed
OHP Historic Properties Directory:	☐ enclosed	☐ not requested	☒ nothing listed
Archaeological Determinations of Eligibility:	☐ enclosed	☐ not requested	☒ nothing listed
CA Inventory of Historic Resources (1976):	☐ enclosed	☐ not requested	☒ nothing listed

Caltrans Bridge Survey: Not available at SSJVIC; please see http://www.dot.ca.gov/hq/structur/strmaint/historic.htm

Ethnographic Information: Not available at SSJVIC

Historical Literature: Not available at SSJVIC

Historical Maps: Not available at SSJVIC; please see http://historicalmaps.arcgis.com/usgs/

Local Inventories: Not available at SSJVIC

GLO and/or Rancho Plat Maps: Not available at SSJVIC

Shipwreck Inventory: Not available at SSJVIC; please see http://shipwrecks.slc.ca.gov/ShipwrecksDatabase/Shipwrecks_Database.asp

Soil Survey Maps: Not available at SSJVIC; please see http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

Please forward a copy of any resulting reports from this project to the office as soon as possible. Due to the sensitive nature of archaeological site location data, we ask that you do not include resource location maps and resource location descriptions in your report if the report is for public distribution. If you have any questions regarding the results presented herein, please contact the office at the phone number listed above.

The provision of CHRIS Data via this records search response does not in any way constitute public disclosure of records otherwise exempt from disclosure under the California Public Records Act or any other law, including, but not limited to, records related to archeological site information maintained by or on behalf of, or in the possession of, the State of California, Department of Parks and Recreation, State Historic Preservation Officer, Office of Historic Preservation, or the State Historical Resources Commission.

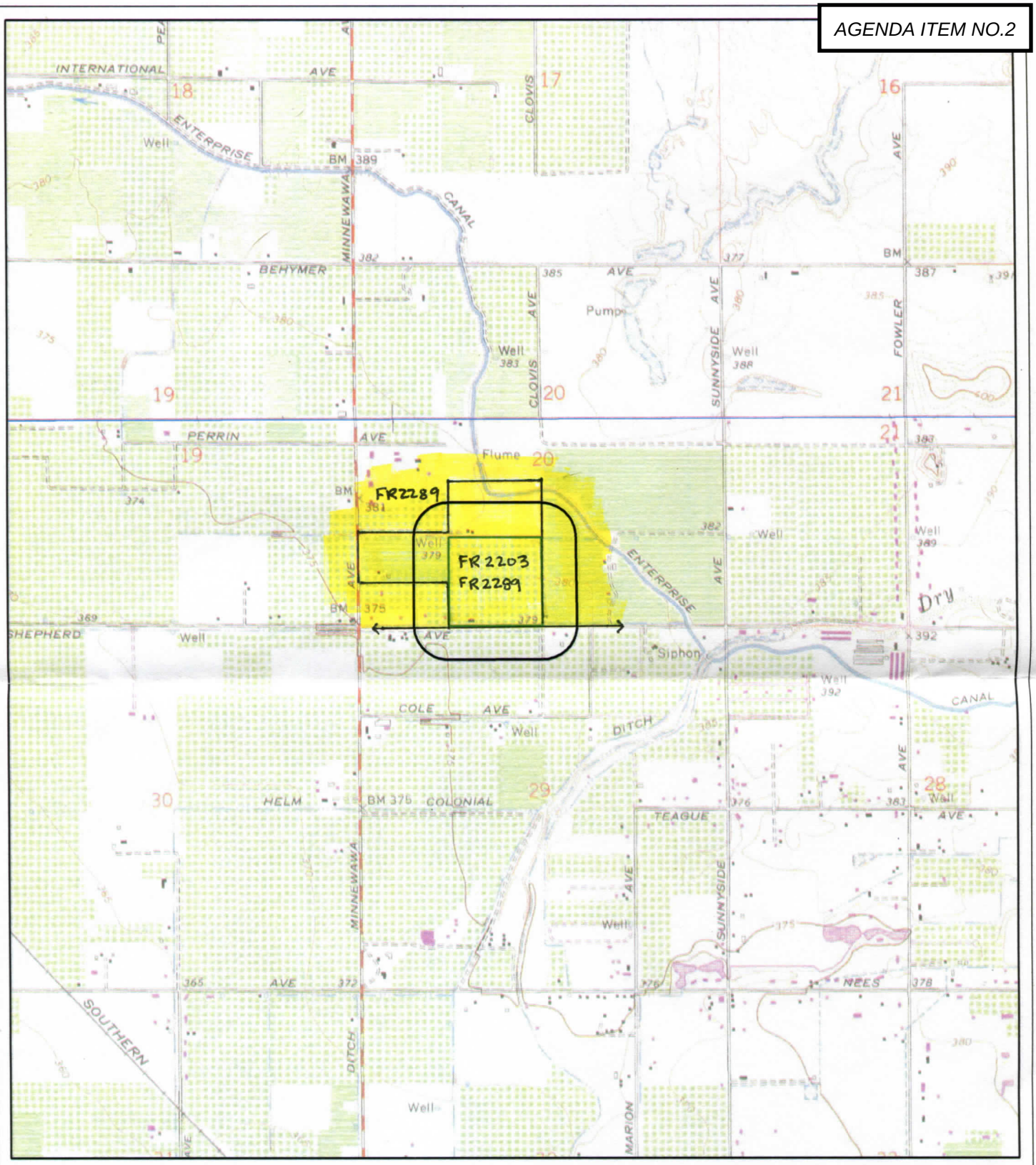
Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the CHRIS Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

Should you require any additional information for the above referenced project, reference the record search number listed above when making inquiries. Invoices for Information Center services will be sent under separate cover from the California State University, Bakersfield Accounting Office.

Thank you for using the California Historical Resources Information System (CHRIS).

Sincerely,

Celeste M. Thomson
Coordinator



May depict confidential cultural resource locations.
Do not distribute.

Miles
0 0.3 0.6

Kilometers
0 0.35 0.7

N

SSJVIC Record Search 16-287
Clovis 7.5'
Fresno County, CA
Reports Only

Report List

SSJVIC Record Search 16-287

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
FR-02203		2006	Varner, Dudley M.	A Cultural Resource Study of the Battlin Brooks Property, Fresno County, California	Varner Associates	
FR-02289		2006	Nettles, Wendy M. and Baloian, Randy	Cultural Resources Reconnaissance Survey of the City of Clovis Northwest Urban Center Specific Plan Area, Fresno County, California	Applied EarthWorks, Inc.	

AGENDA ITEM NO.2

Traffic Impact Analysis

Tentative Tract 6050
(Single-Family Housing)

Located on the Northwest Corner of
Clovis Avenue and Shepherd Avenue

In the City of Clovis, California

Prepared for:
6050 Enterprises, L.P.
7550 N. Palm Ave., Ste. 102
Fresno, CA 93711

April 14, 2020

Project No. 006-034

Traffic Engineering, Transportation Planning, & Parking Solutions
516 W. Shaw Ave., Ste. 103
Fresno, CA 93704
Phone: (559) 570-8991
www.JLBtraffic.com

749

APPENDIX G

Traffic Engineering, Transportation Planning, & Parking Solutions

Traffic Impact Analysis

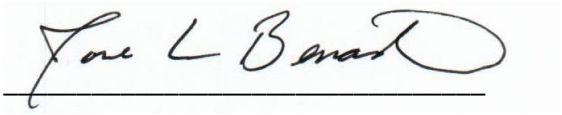
For Tentative Tract 6050 (Single-Family Housing) located on the Northwest Corner of Clovis Avenue and Shepherd Avenue

In the City of Clovis, CA

April 14, 2020

This Traffic Impact Analysis Report has been prepared under the direction of a licensed Traffic Engineer. The licensed Traffic Engineer attests to the technical information contained therein and has judged the qualifications of any technical specialists providing engineering data from which recommendations, conclusions, and decisions are based.

Prepared by:



Jose Luis Benavides, P.E., T.E.

President

Traffic Engineering, Transportation Planning, & Parking Solutions
516 W. Shaw Ave., Ste. 103
Fresno, CA 93704
Phone: (559) 570-8991
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Introduction and Summary

Introduction

This report describes a Traffic Impact Analysis (TIA) Report prepared by JLB Traffic Engineering, Inc. (JLB) for the proposed Tentative Tract 6050 (Project) located on the northwest corner of Clovis Avenue and Shepherd Avenue in the City of Clovis. The Project proposes to develop 255 single-family residential units on 35.22 net acres with an overall density of 7.24 dwelling units per acre. Based on the information provided to JLB, the Project is consistent with the City of Clovis 2035 General Plan. Figure 1 shows the location of the proposed Project site relative to the surrounding roadway network.

The purpose of this TIA is to evaluate the potential traffic impacts, identify short-term roadway and circulation needs, determine potential mitigation measures and identify any critical traffic issues that should be addressed in the on-going planning process. The study primarily focused on evaluating traffic conditions at study intersections that may be impacted by the proposed Project. The scope of work was prepared via consultation with City of Clovis, City of Fresno, County of Fresno and Caltrans staff.

Summary

The potential traffic impacts of the proposed project were evaluated in accordance with the standards set forth by the level of service (LOS) policies of the City of Clovis and Fresno County.

Existing Traffic Conditions

- At present, the intersection of Minnewawa Avenue and Behymer Avenue is projected to exceed its LOS threshold during both peak periods. To improve the LOS at this intersection, the addition of turn lanes is recommended. Additional details as to the recommended improvements for this intersection are presented later in this Report.
- At present, all study segments operate at an acceptable LOS.

Existing plus Project Traffic Conditions

- JLB qualitatively analyzed the location of the proposed access points relative to the existing local roads and driveways in the Project's vicinity. A review of the Project roadways to be constructed indicates that the new access points are located at points that minimize traffic operational impacts to the existing street network.
- At buildout, the Project is estimated to generate a maximum of 2,407 daily trips, 189 AM peak hour trips and 252 PM peak hour trips.
- It is recommended that the Project implement Class II bike lanes along its frontages to Clovis Avenue and Shepherd Avenue.
- To promote alternative modes of transportation to Granite Ridge Intermediate School and Clovis North High School, it is recommended that the Clovis Unified School District work with the City of Clovis and County of Fresno to implement a Safe Routes to School plan and to seek grant funding to help build bikeways and walkways where they are lacking within a 2.5-mile radius of the existing school site.
- Based on the Fresno COG model run, the Project is anticipated to generate an average of 6.7 VMT per trip.

- Under this scenario, the intersection of Minnewawa Avenue and Behymer Avenue is projected to exceed its LOS threshold during both peak periods. To improve the LOS at this intersection, the addition of turn lanes is recommended. Additional details as to the recommended improvements for this intersection are presented later in this Report.
- Under this scenario, all study segments are projected to operate at an acceptable LOS.

Near Term plus Project Traffic Conditions

- The total trip generation for the Near Term Projects is 78,460 daily trips, 6,256 AM peak hour trips and 8,167 PM peak hour trips.
- Between the Existing Traffic Conditions scenario and the Near Term plus Project Traffic Conditions scenario, the Project accounts for 2.98 percent of the daily trips, 2.93 percent of the AM peak hour trips and 2.99 percent of the PM peak hour trips of growth in traffic, while the rest of the growth is attributable to the near term projects. Therefore, one can deduce that the mitigation measures presented under this scenario may not be necessary immediately upon completion of the proposed Project.
- Under this scenario, the intersections of Minnewawa Avenue and Behymer Avenue and Peach Avenue and Shepherd Avenue are projected to exceed their LOS threshold during one or both peak periods. To improve the LOS at these intersections, the addition of lanes and modification of traffic control mechanisms are recommended. Additional details as to the recommended improvements for this intersection are presented later in this Report.
- Under this scenario, the segments of Shepherd Avenue between Minnewawa Avenue and Clovis Avenue and between Clovis Avenue and Sunnyside Avenue are projected to slightly exceed their LOS threshold by approximately 430 daily trips or less (the equivalent of approximately 46 single family residential units). If approximately eleven percent or more of the Near Term Project Daily Trips are not developed by the time that the Project is built out, these segments will continue to operate at an acceptable LOS under the Near Term plus Project Scenario. However, if less than eleven percent of the Near Term Projects remain to be developed by the time the Project is built out then and under those circumstances, changes may be necessary to improve the LOS of these segments, it is recommended that additional lanes be added. Additional details as to the recommended improvements for these segments are presented later in this Report.

Cumulative Year 2040 plus Project Traffic Conditions

- Under this scenario, the intersections of Minnewawa Avenue and Behymer Avenue, Peach Avenue and Shepherd Avenue, Minnewawa Avenue and Shepherd Avenue, and Sunnyside Avenue and Shepherd Avenue are projected to exceed their LOS threshold during one or both peak periods. To improve the LOS at these intersections, the addition of lanes and modification of traffic control mechanisms are recommended. Additional details as to the recommended improvements for these intersections are presented later in this Report.
- Under this scenario, all study segments are projected to exceed their LOS threshold. To improve the LOS of these segments, it is recommended that additional lanes be added. Additional details as to the recommended improvements for these segments are presented later in this Report.

Queuing Analysis

- It is recommended that the City consider left-turn and right-turn lane storage lengths as indicated in the Queuing Analysis.

Scope of Work

The study focused on evaluating traffic conditions at study intersections that may potentially be impacted by the proposed Project. On January 31, 2020, a draft scope of work for the preparation of a TIA for this Project was provided to the City of Clovis, City of Fresno, County of Fresno and Caltrans for their review and comment.

On February 18, 2020, the City of Clovis requested the intersection of Minnewawa Avenue and Behymer Avenue be included in the analysis. On February 25, 2020, Caltrans responded and approved the draft scope of work as presented. On February 25, 2020, the County of Fresno requested the following be included in the analysis: a) Bicyclists be included in the traffic counts; b) Existing plus Approved and Pending also known as Near Term no Project scenario; c) Trip distribution map; d) Segments of 1) Shepherd Avenue between Peach Avenue and Minnewawa Avenue, 2) Shepherd Avenue between Minnewawa Avenue and Clovis Avenue, and 3) Shepherd Avenue between Peach Avenue and Minnewawa Avenue. On February 5, 2020, the City of Fresno requested a proposed trip trace for the Project. JLB supplied a trip trace map to the City of Fresno on March 16, 2020. On March 19, 2020, the City of Fresno indicated they had no further comments to the draft scope of work.

Based on the comments received, this TIA includes in its analysis the additional intersection of Minnewawa Avenue and Behymer Avenue, bicyclists volumes in traffic counts, a trip distribution map and the segment LOS for the three (3) segments requested by the County of Fresno. Although the County of Fresno requested that a Near Term No Project Traffic Conditions scenario be included in the analysis, JLB deemed it unnecessary since the Project is consistent with the City of Clovis 2035 General Plan. The draft scope of work and the comments received from the lead agency and responsible agencies are included in Appendix A.

Study Facilities

The existing peak hour turning movement counts were conducted between February 2020 and March 2020. Segment counts were conducted in November 2019, however the count for the segment of Shepherd Avenue between Minnewawa Avenue and Clovis Avenue was not able to be collected prior to the State of California Shelter in Place Order. Therefore, in order to derive a daily volume count for this segment the average of the two adjacent Shepherd Avenue segment volume counts were used. All existing peak hour turning movements counts and segment volume counts were conducted while schools in the vicinity of the proposed Project were in session. The intersection movements counts included pedestrian and bicycle volumes. The traffic counts for the existing study intersections and segments are contained in Appendix B. The existing intersection turning movement volumes, intersection geometrics and traffic controls are illustrated in Figure 2.

Study Intersections

1. Minnewawa Avenue / Behymer Avenue
2. Peach Avenue / Shepherd Avenue
3. Minnewawa Avenue / Shepherd Avenue
4. Clovis Avenue / Shepherd Avenue
5. Sunnyside Avenue / Shepherd Avenue

Study Segments

1. Shepherd Avenue between Peach Avenue and Minnewawa Avenue
2. Shepherd Avenue between Minnewawa Avenue and Clovis Avenue
3. Shepherd Avenue between Clovis Avenue and Sunnyside Avenue

Study Scenarios

Existing Traffic Conditions

This scenario evaluates the Existing Traffic Conditions based on existing and historical traffic volumes and roadway conditions from traffic counts and field surveys conducted in 2019 and 2020.

Existing plus Project Traffic Conditions

This scenario evaluates total traffic volumes and roadway conditions based on the Existing plus Project Traffic Conditions. The Existing plus Project traffic volumes were obtained by adding the Project Only Trips to the Existing Traffic Conditions scenario. The Project Only Trips to the study intersections were based on existing travel patterns, the Fresno COG Project Select Zone, the existing roadway network, engineering judgment, data provided by the developer, knowledge of the study area, existing residential and commercial densities, and the City of Clovis 2035 General Plan Circulation Element in the vicinity of the Project. The Fresno COG Models for the Project Select Zone are contained in Appendix C.

Near Term plus Project Traffic Conditions

This scenario evaluates total traffic volumes and roadway conditions based on the Near Term plus Project Traffic Conditions. The Near Term plus Project traffic volumes were obtained by adding the Near Term related trips to the Existing plus Project Traffic Conditions scenario.

Cumulative Year 2040 plus Project Traffic Conditions

This scenario evaluates total traffic volumes and roadway conditions based on the Cumulative Year 2040 plus Project Traffic Conditions. The Cumulative Year 2040 plus Project traffic volumes were obtained from the Fresno COG traffic model runs (Base Year 2020 and Cumulative Year 2035) and existing traffic counts. Under this scenario, the increment method, as recommended by the Model Steering Committee, and an average annual growth rate were utilized to determine the Cumulative Year 2040 plus Project traffic volumes. Since Fresno COG did not have a traffic model for the Cumulative Year 2040 at the time of the preparation of this TIA, JLB utilized an average annual growth rate of 4.35 percent to expand the increment volumes by five (5) years. The average annual growth rate of 4.35 percent was based on a review of the Base Year 2020 and Cumulative Year 2035 Fresno COG models. It should be noted that by the year 2040, additional major streets will be implemented in the vicinity of the proposed Project that will result in changes in travel patterns and volumes. Namely, both Clovis Avenue and Peach Avenue are anticipated to exist north of Shepherd Avenue.

Level of Service Analysis Methodology

Level of Service (LOS) is a qualitative index of the performance of an element of the transportation system. LOS is a rating scale running from "A" to "F", with "A" indicating no congestion of any kind and "F" indicating unacceptable congestion and delays. LOS in this study describes the operating conditions for signalized and unsignalized intersections.

The *Highway Capacity Manual* (HCM) 6th Edition is the standard reference published by the Transportation Research Board and contains the specific criteria and methods to be used in assessing LOS. U-turn movements were analyzed using HCM 2000 methodologies and would yield more accurate results for the reason that HCM 2010 methodologies do not allow the analysis of U-turns. Synchro software was used to define LOS in this study. Details regarding these calculations are included in Appendix D.

Criteria of Significance

The City of Clovis 2035 General Plan has established LOS D as the acceptable level of traffic congestion on most major streets. Therefore, LOS D is used to evaluate the potential significance of LOS impacts to City of Clovis roadway facilities pursuant to the City of Clovis 2035 General Plan.

The County of Fresno has established LOS C as the acceptable level of traffic congestion on county roads and streets that fall entirely outside the Sphere of Influence (SOI) of a City. For those areas that fall within the SOI of a City, the LOS criteria of the City are the criteria of significance used in this report. LOS C is used to evaluate the potential significance of LOS impacts to Fresno County intersections and segments that fall outside the City of Clovis SOI. In this case, all study intersections and segments fall within the City of Clovis SOI, therefore the City of Clovis LOS D threshold was utilized.

Caltrans endeavors to maintain a target LOS at the transition between LOS C and D on State highway facilities consistent with the Caltrans Guide for the Preparation of Traffic Impact Studies dated December 2002. However, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. In this TIA, all study intersections and segments operated by Caltrans utilized LOS C threshold to evaluate the potential significance of impacts to the roadway facilities.

Operational Analysis Assumptions and Defaults

The following operational analysis values, assumptions and defaults were used in this study to ensure a consistent analysis of LOS among the various scenarios.

- Yellow time consistent with the California Manual of Uniform Traffic Control Devices (CA MUTCD) based on approach speeds
- All-red clearance intervals of 1.0 second for all phases
- Walk intervals of 7.0 seconds
- Flashing Don't Walk based on 3.5 feet/second walking speed with yellow plus all-red clearance subtracted
- All new or modified signals utilize protective left-turn phasing
- A 3 percent heavy vehicle factor;
- An average of 3 pedestrian calls per hour at signalized intersections
- At existing intersections, the observed Peak Hour Factor (PHF) is utilized in the Existing, Existing plus Project and Near Term plus Project scenarios
- A PHF of 0.92, or the existing PHF, if higher, is utilized in Cumulative 2040 plus Project scenario

Existing Traffic Conditions

Roadway Network

The Project site and surrounding study area are illustrated in Figure 1. Important roadways serving the Project are discussed below.

Behymer Avenue is an existing east-west two-lane rural collector in the vicinity of the proposed Project site. In this area, Behymer Avenue is a four-lane divided arterial between Chestnut Avenue and Willow Avenue, a two-lane undivided rural between Willow Avenue and Fowler Avenue, and a two-lane undivided local roadway east of Fowler Avenue. The City of Clovis 2035 General Plan Circulation Element designates Behymer Avenue as an arterial between Chestnut Avenue and Clovis Avenue and a rural collector between Clovis Avenue and Fowler Avenue in the City of Clovis.

Shepherd Avenue is an existing east-west three-lane divided arterial adjacent to the proposed Project site. In this area, Shepherd Avenue is a two- to four-lane divided arterial between Chestnut Avenue and Clovis Avenue, a two- to four-lane rural arterial between Clovis Avenue and Fowler Avenue, a two- to four-lane divided expressway between Fowler Avenue and State Route 168. The City of Clovis 2035 General Plan Circulation Element designates Shepherd Avenue as an arterial west of Clovis Avenue, an expressway between Fowler Avenue and State Route 168, and an arterial east of State Route 168 in the City of Clovis.

Peach Avenue is an existing north-south two-lane collector divided by a two-way left-turn lane in the vicinity of the proposed Project site. In this area, Peach Avenue exists as a two-lane collector divided by a two-way left-turn lane between Shepherd Avenue and Herndon Avenue, a two-lane collector between Herndon Avenue and Sierra Avenue, a two-lane local roadway between Sierra Avenue and Shaw Avenue, a four-lane collector between Shaw Avenue and Dakota Avenue into City of Fresno SOI. The City of Clovis 2035 General Plan Circulation Element designates Peach Avenue as a collector between Behymer Avenue and Sierra Avenue and a collector south of Dakota Avenue through the City of Clovis SOI.

Minnewawa Avenue is an existing north-south two-lane rural collector in the vicinity of the proposed Project site. In this area, Minnewawa Avenue exists as a two-lane rural collector between Copper Avenue and Shepherd Avenue, a four-lane arterial between Shepherd Avenue and Herndon Avenue, a four-lane collector between Bullard Avenue and Santa Ana Avenue, a two-lane collector between Santa Ana Avenue and Ashlan Avenue, and a two-lane local roadway south of Ashlan Avenue through the City of Clovis SOI. The City of Clovis 2035 General Plan Circulation Element designates Minnewawa Avenue as a rural collector between Copper Avenue and Behymer Avenue, an arterial between Behymer Avenue and Herndon Avenue, a collector between Bullard Avenue and Ashlan Avenue, and a local roadway south of Ashlan Avenue through the City of Clovis SOI.

Clovis Avenue is an existing north-south four-lane divided arterial adjacent to the proposed Project site. In this area, Clovis Avenue exists as a four-lane divided arterial between Shepherd Avenue and Sierra Avenue, a four-lane undivided arterial between Sierra Avenue and Eighth Street, a four-lane arterial divided by a two-way left-turn lane between Eighth Street and San Jose Avenue, a four- to six-lane divided arterial between San Jose Avenue and Shaw Avenue, and a six-lane divided arterial south of Shaw Avenue through the City of Clovis SOI and into the City of Fresno. The City of Clovis 2035 General Plan Circulation Element designates Clovis Avenue as an arterial south of Copper Avenue through the City of Clovis SOI.

Sunnyside Avenue is an existing north-south two-lane undivided rural collector in the vicinity of the proposed Project site. In this area, Sunnyside Avenue exists as a two-lane undivided local roadway north of Shepherd Avenue, a two-lane undivided rural collector between Shepherd Avenue and Nees Avenue, a four- to three-lane undivided collector between Nees Avenue and Third Street, a two-lane collector divided by a two-way left-turn lane between Third Street and Fifth Street, and a four-lane undivided collector between Fifth Street and Gettysburg Avenue. The City of Clovis 2035 General Plan Circulation Element designates Sunnyside Avenue as a collector south of Perrin Road through the City of Clovis SOI.

Traffic Signal Warrants

Peak hour traffic signal warrants, as appropriate, were prepared for the Existing Traffic Conditions scenario. These warrants are found in Appendix I. The effects of right-turning traffic from the minor approach onto the major approach were taken into account using engineering judgment pursuant to CA MUTCD guidelines for the preparation of traffic signal warrants. Under this scenario, the intersections of Minnewawa Avenue and Behymer Avenue and Sunnyside Avenue and Shepherd Avenue satisfy peak hour signal warrant during both peak periods.

Based on the signal warrants, the intersection operational analysis and traffic engineering judgement, signalization of these intersections is not recommended. It is worth noting that CA MUTCD states “satisfaction of a signal warrant or warrants shall not in itself require the installation of a traffic signal.” Therefore, it is recommended that prior to the installation of a traffic signal, investigation of CA MUTCD warrants 1, 4 and 7, as applicable, be conducted for these intersections.

Results of Existing Level of Service Analysis

Figure 2 illustrates the Existing turning movement volumes, intersection geometrics and traffic controls. LOS worksheets for the Existing Traffic Conditions scenario are provided in Appendix E. Table I presents a summary of the Existing peak hour LOS at the study intersections, while Table II presents a summary of the Existing LOS for the study segments.

Under this scenario, the intersection of Minnewawa Avenue and Behymer Avenue exceeds its LOS threshold during both peak periods. To improve the LOS at this intersection, it is recommended that the following improvements be implemented.

- Minnewawa Avenue / Behymer Avenue
  - Add a northbound left-turn lane;
  - Modify the northbound left-through-right lane to a through-right lane;
  - Add a southbound left-turn lane; and
  - Modify the southbound left-through-right lane to a through-right lane.

At present, all study segments operate at an acceptable LOS.

Table I: Existing Intersection LOS Results

ID	*Intersection*	*Intersection Control*	*AM (7-9) Peak Hour*		*PM (4-6) Peak Hour*	
			Average Delay (sec/veh)	*LOS*	*Average Delay (sec/veh)*	*LOS*
1	Minnewawa Avenue / Behymer Avenue	All-Way Stop	**68.9**	**F**	**37.3**	**E**
		All-Way Stop (Improved)	33.7	D	18.4	C
2	Peach Avenue / Shepherd Avenue	One-Way Stop	15.3	C	20.0	C
3	Minnewawa Avenue / Shepherd Avenue	Signalized	21.2	C	18.7	B
4	Clovis Avenue / Shepherd Avenue	Signalized	10.1	B	10.3	B
5	Sunnyside Avenue / Shepherd Avenue	All-Way Stop	28.8	D	21.5	C

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls
LOS for two-way and one-way STOP controlled intersections are based on the worst approach/movement of the minor street.

Table II: Existing Segment LOS Results

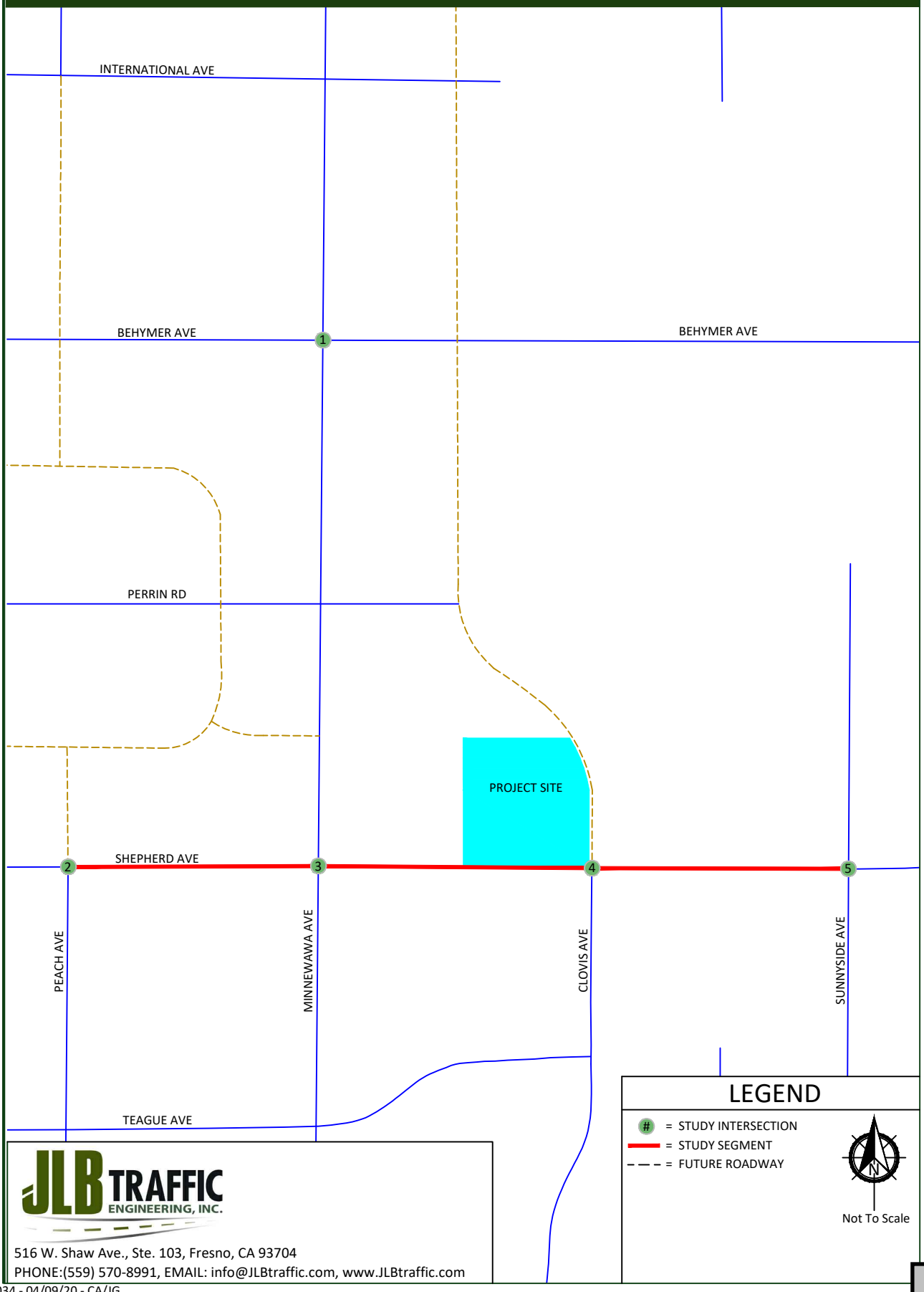
ID	*Segment*	*Limits*	*Lanes*	*24-hour Volume*	*LOS*
1	Shepherd Avenue	Peach Avenue and Minnewawa Avenue	3	12,205	C
2	Shepherd Avenue	Minnewawa Avenue and Clovis Avenue	3	11,564	C
3	Shepherd Avenue	Clovis Avenue and Sunnyside Avenue	2	10,922	C

Note: LOS = Level of Service per the Florida Roadway Segment LOS Tables

Tract 6050 TIA - City of Clovis
Vicinity Map

Figure 1

AGENDA ITEM NO.2

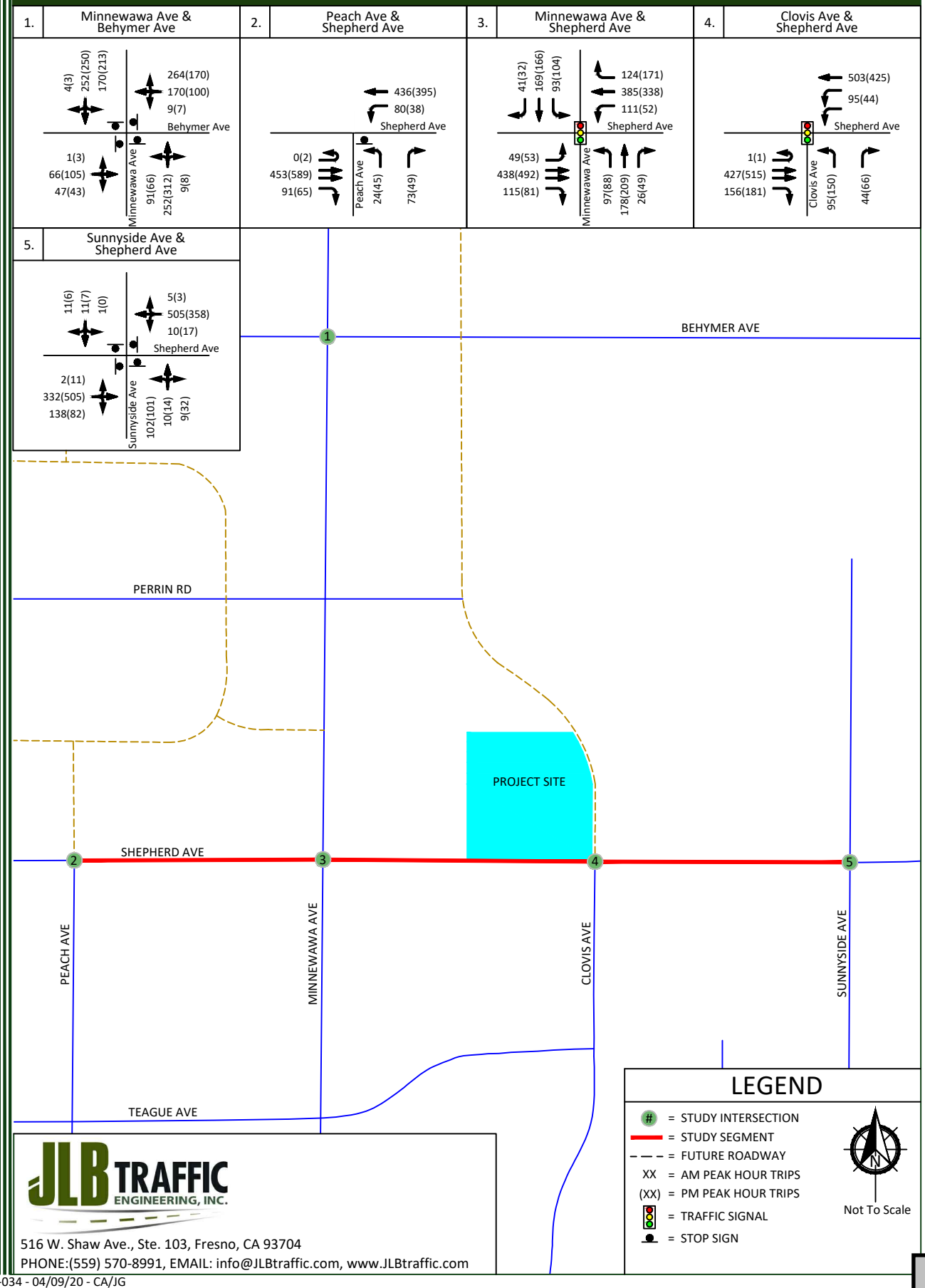


JLB TRAFFIC ENGINEERING, INC.
516 W. Shaw Ave., Ste. 103, Fresno, CA 93704
PHONE:(559) 570-8991, EMAIL: info@JLBtraffic.com, www.JLBtraffic.com

Tract 6050 TIA - City of Clovis
Existing - Traffic Volumes, Geometrics and Controls

Figure 2

AGENDA ITEM NO.2



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Existing plus Project Traffic Conditions

Project Description

The Project proposes to develop 255 single-family residential units on 35.22 net acres with an overall density of 7.24 dwelling units per acre. Based on the information provided to JLB, the Project is consistent with the City of Clovis 2035 General Plan. Figure 3 illustrates the latest Project Site Plan.

Project Access

Based on the latest Project Site Plan, access to and from the Project site will be from three (3) access points located along either Clovis Avenue or Shepherd Avenue. Two (2) access points are located along the west side of Clovis Avenue approximately 350 and 875 feet north of Shepherd Avenue. The northern access point to Clovis Avenues as proposed as a left-in, right-in and right-out access, while the southern is proposed as an exit only. This southern access point will also serve as an emergency access for the City of Clovis fire department. The last access point is located along the north side of Shepherd Avenue approximately 1,275 feet west of Clovis Avenue and is proposed to be limited to left-in, right-in, right-out access only.

JLB qualitatively analyzed the location of the proposed access points relative to the existing local roads and driveways in the Project's vicinity. A review of the Project roadways to be constructed indicates that the new access points are located at points that minimize traffic operational impacts to the existing street network.

Trip Generation

Trip generation rates for the proposed Project were obtained from the10th Edition of the Trip Generation Manual published by the Institute of Transportation Engineers (ITE). Table III provides the trip generation for 255 Single-Family Detached Housing units. At buildout, the Project is estimated to generate a maximum of 2,407 daily trips, 189 AM peak hour trips and 252 PM peak hour trips.

Table III: Project Trip Generation based on Latest Project Site Plan

Land Use (ITE Code)	*Size*	*Unit*	*Daily*		*AM (7-9) Peak Hour*						*PM (4-6) Peak Hour*					
			Rate	*Total*	*Trip Rate*	*In*	*Out*	*In*	*Out*	*Total*	*Trip Rate*	*In*	*Out*	*In*	*Out*	*Total*
						%						*%*				
Single-Family Detached Housing (210)	255	d.u.	9.44	2,700	0.74	25	75	47	142	189	0.99	63	37	159	93	252
Total Project Trips				**2,407**				**47**	**142**	**189**				**159**	**93**	**252**

Note: d.u. = dwelling units

Trip Distribution

The trip distribution assumptions were developed based on existing travel patterns, the Fresno COG Project Select Zone, the existing roadway network, engineering judgement, data provided by the developer, knowledge of the study area, existing residential and commercial densities, and the City of Clovis 2035 General Plan Circulation Element. Figure 4 illustrates the 2022 Project Only Trips to the study intersections.

Transit

Clovis Stageline and Round Up are transit operators in the City of Clovis. Clovis Stageline operates along fixed routes with regularly scheduled stops from 6:15 AM to 6:30 PM on weekdays and limited Saturday service. At present, there are no transit routes operating adjacent to the proposed Project site. The closest is Route 80 which runs in the vicinity of the proposed Project on Teague Avenue. Route 80 provides a direct connection to Buchannan High School and the Clovis City Office. Route 80 operates on Clovis Unified School Schedule only and its stop nearest to the Project site is located at Buchannan High School located on the southwest corner of Minnewawa Avenue at Teague Avenue. Retention of the existing and expansion of future transit routes is dependent on transit ridership demand and on available funding.

Round Up offers service throughout the metropolitan area, providing rides for disabled residents of Clovis who need to travel in Clovis, Fresno and nearby areas. Riders must complete and submit an Americans with Disabilities Act form and be approved for eligibility before using Round Up for the first time. Riders must also call in advance to schedule trips during service hours. Service hours are from 6:15 AM to 7:15 PM on weekdays and 7:30 AM to 3:00 PM on weekends.

Bikeways

Currently, bike lanes exist in the vicinity to the proposed Project site along Shepherd Avenue, Peach Avenue, Minnewawa Avenue, and Clovis Avenue. Bike lanes on Shepherd Avenue exist west of Clovis Avenue. Bike lanes on Peach Avenue exist between Shepherd Avenue and Herndon Avenue. Bike lanes on Minnewawa Avenue exist between Shepherd Avenue and Alluvial Avenue. Bike lanes on Clovis Avenue exist between Shepherd Avenue and Palo Alto Avenue and the Fresno-Clovis Rail Trail runs parallel to Clovis Avenue from Sierra Avenue to Shields Avenue. It should also be noted that the Dry Creek trail runs in the vicinity of the Project connecting Fresno-Clovis Rail Trail. Additionally, the City of Clovis 2035 General Plan Circulation Element contains bike lanes along the entirety of Behymer Avenue, Peach Avenue, Minnewawa Avenue, Clovis Avenue and Sunnyside Avenue in the City of Clovis. Therefore, it is recommended that the Project implement Class II bike lanes along its frontages to Clovis Avenue and Shepherd Avenue.

Safe Routes to School

Kindergarten through 12th grade students from the Project will be served by the Clovis Unified School District. The Clovis Unified School District (District) provides transportation for students who live in excess of an established radius zone. The zone is a radius of 1.00 mile for grades Kindergarten through 6th and 2.50 miles for grades 7th through 12th. The District allows student living inside the radius zone parameters to walk to an existing bus stop in order to receive a ride to and from school provided a fee is payed.

Based on the attendance area boundaries at the time of the preparation of this TIA, elementary school students would attend Riverview Elementary School located on the southeast corner of Chestnut Avenue and Behymer Avenue. Riverview Elementary School is located 1.85 to 2.15 miles from the nearest and farthest future home on the Project site. Therefore, it is anticipated that elementary school students will be bused from the Project to school.

Based on the attendance area boundaries at the time of the preparation of this TIA, middle school students would attend Granite Ridge Intermediate School located on the northwest corner of Willow Avenue and International Avenue. Granite Ridge Intermediate School is located 2.05 to 2.35 miles from the nearest and farthest future home on the Project site. Therefore, it is anticipated that middle school students will need to walk, bike or be driven to school.

The most direct path from the Project to Granite Ridge Intermediate School would begin from the northwest corner of Clovis Avenue and Shepherd Avenue. Due to a lack of walkways along the north side of Shepherd Avenue west of Clovis Avenue, students would cross Shepherd Avenue along the west side of Clovis Avenue and proceed west along the south side of Shepherd Avenue toward the intersection of Minnewawa Avenue and Shepherd Avenue. This intersection is signalized and contains marked crosswalks on all approaches. Students would proceed to cross Minnewawa Avenue along the south side of Shepherd Avenue and continue west toward the intersection of Peach Avenue and Shepherd Avenue. This intersection is controlled by a one-way stop on Peach Avenue and contains unmarked crosswalks on all approaches. Students would proceed to cross Peach Avenue along the south side of Shepherd Avenue and continue west toward the intersection of Willow Avenue and Shepherd Avenue. This intersection is signalized and contains marked crosswalks on all approaches. Students would proceed to cross Shepherd Avenue and Willow Avenue to arrive at the northwest corner and continue north along the west side of Willow Avenue toward the intersection of Perrin Avenue and Willow Avenue. This intersection is signalized and contains a marked crosswalk on the eastbound approach. Students would proceed to cross Perrin Avenue along the west side of Willow Avenue and continue north toward the intersection of Behymer Avenue and Willow Avenue. This intersection is signalized and contains marked crosswalks on all approaches. Students would proceed to cross Behymer Avenue along the west side of Willow Avenue and continue north along the west side of Willow Avenue toward the intersection of International Avenue and Willow Avenue. This intersection is signalized and contains high-visibility crosswalks on all approaches. Students would proceed to cross International Avenue along the west side of Willow Avenue and continue west along the north side of International until reaching the nearest campus entrance.

Based on the attendance area boundaries at the time of the preparation of this TIA, high school students would attend Clovis North High School located on the northeast corner of Willow Avenue and International Avenue. Clovis North High School is located 1.95 to 2.30 miles from the nearest and farthest future home on the Project site. Therefore, it is anticipated that high school students will need to walk, bike or be driven to school.

The most direct path from the Project to Clovis North High School would begin from the northwest corner of Clovis Avenue and Shepherd Avenue. Due to a lack of walkways along the north side of Shepherd Avenue west of Clovis Avenue, students would cross Shepherd Avenue along the west side of Clovis Avenue and proceed west along the south side of Shepherd Avenue toward the intersection of Minnewawa Avenue and Shepherd Avenue. This intersection is signalized and contains marked crosswalks on all approaches. Students would proceed to cross Minnewawa Avenue along the south side of Shepherd Avenue and continue west toward the intersection of Peach Avenue and Shepherd Avenue. This intersection is controlled by a one-way stop on Peach Avenue and contains unmarked crosswalks on all approaches. Students would proceed to cross Peach Avenue along the south side of Shepherd Avenue and continue west toward the intersection of Willow Avenue and Shepherd Avenue. This intersection is signalized and contains marked crosswalks on all approaches. Students would proceed to cross Shepherd Avenue and Willow Avenue to arrive at the northwest corner and continue north along the west side of Willow Avenue toward the intersection of Perrin Avenue and Willow Avenue. This intersection is signalized and contains a marked crosswalk on the eastbound approach. Students would proceed to cross Perrin Avenue along the west side of Willow Avenue and continue north toward the intersection of Behymer Avenue and Willow Avenue. This intersection is signalized and contains marked crosswalks on all approaches. Students would proceed to cross Behymer Avenue along the west side of Willow Avenue and continue north along the west side of Willow Avenue toward the intersection of International Avenue and Willow Avenue. This intersection is signalized and contains high-visibility crosswalks on all approaches. Students would proceed to cross International Avenue along the west side of Willow Avenue and continue west along the north side of International until reaching the nearest campus entrance.

Since there is a lack of walkways between the Project site and Granite Ridge Intermediate School and Clovis North High School, it is anticipated that a majority of middle and high school students will likely be driven to school. To promote alternative modes of transportation to Granite Ridge Intermediate School and Clovis North High School, it is recommended that the Clovis Unified School District work with the City of Clovis and County of Fresno to implement a Safe Routes to School plan and to seek grant funding to help build bikeways and walkways where they are lacking within a 2.5-mile radius of the existing school site.

Vehicle Miles Traveled Evaluation

Senate Bill (SB) 743 (Steinberg 2013) was approved by then Governor Brown on September 27, 2013. SB 743 created a path to revise the definition of transportation impacts according to CEQA. The revised CEQA Guidelines requiring VMT analysis became effective December 28, 2018; however, agencies have until July 1, 2020 to finalize their local guidelines on VMT analysis. Therefore, as agencies finalize their VMT analysis protocol, CEQA transportation impacts are to be determined using LOS of intersections and roadways, which is a measure of congestion. The intent of SB 743 is to align CEQA transportation study methodology with and promote the statewide goals and policies of reducing vehicle miles traveled (VMT) and greenhouse gases (GHG). Three objectives of SB 743 related to development are to reduce GHG, diversify land uses, and focus on creating a multimodal environment. It is hoped that this will spur infill development.

The Technical Advisory on Evaluating Transportation Impacts in CEQA published by the Governor's Office of Planning and Research (OPR) dated December 2018 acknowledges that lead agencies should set criteria and thresholds for VMT and transportation impacts. However, the Technical Advisory provides guidance to residential, office and retail uses, citing these as the most common land uses. Beyond these three land uses, there is no guidance provided for any other land use type. The Technical Advisory also notes that land uses may have a less than significant impact if located within low VMT areas of a region and suggests that screening maps be used for this determination.

VMT is simply the product of a number of trips and those trips' lengths. The first step in a VMT analysis is to establish the baseline average VMT, which requires the definition of a region. The Technical Advisory states that existing VMT may be measured at the regional or city level. On the contrary, the Technical Advisory also notes that VMT analyses should not be truncated due to "jurisdictional or other boundaries."

Currently, Fresno COG and its member agencies, which include the City of Clovis, have begun the process to develop recommended criteria and thresholds that balance the direction from OPR and the goals of SB 743 with the vision of Clovis and economic development, access to goods and services, and overall quality of life. While these regional recommended criteria are not anticipated to be completed until mid-2020, Fresno COG was able to provide estimated VMT data for the proposed Project. Based on the Fresno COG model run, the Project is anticipated to generate an average of 6.70 VMT per trip.

Traffic Signal Warrants

Peak hour traffic signal warrants, as appropriate, were prepared for the Existing plus Project Traffic Conditions scenario. These warrants are found in Appendix I. The effects of right-turning traffic from the minor approach onto the major approach were taken into account using engineering judgment pursuant to CA MUTCD guidelines for the preparation of traffic signal warrants. Under this scenario, the intersections of Minnewawa Avenue and Behymer Avenue and Sunnyside Avenue and Shepherd Avenue satisfy peak hour signal warrant during both peak periods.

Based on the signal warrants, the intersection operational analysis and traffic engineering judgement, signalization of these intersections is not recommended. It is worth noting that CA MUTCD states "satisfaction of a signal warrant or warrants shall not in itself require the installation of a traffic signal." Therefore, it is recommended that prior to the installation of a traffic signal, investigation of CA MUTCD warrants 1, 4 and 7, as applicable, be conducted for these intersections.

Results of Existing plus Project Level of Service Analysis

The Existing plus Project Traffic Conditions scenario assumes that the existing roadway geometrics and traffic controls will remain in place with a few exceptions. The Project will construct Clovis Avenue north of Shepherd Avenue and modify Shepherd Avenue to have two (2) westbound through lanes along its frontage. Figure 5 illustrates the Existing plus Project turning movement volumes, intersection geometrics and traffic controls. LOS worksheets for the Existing plus Project Traffic Conditions scenario are provided in Appendix F. Table IV presents a summary of the Existing plus Project peak hour LOS at the study intersections, while Table V presents a summary of the Existing plus Project LOS for the study segments.

Under this scenario, the intersection of Minnewawa Avenue and Behymer Avenue is projected to exceed its LOS threshold during both peak periods. To improve the LOS at this intersection, it is recommended that the following improvements be implemented.

- Minnewawa Avenue / Behymer Avenue
  - Add a northbound left-turn lane;
  - Modify the northbound left-through-right lane to a through-right lane;
  - Add a southbound left-turn lane; and
  - Modify the southbound left-through-right lane to a through-right lane.

Under this scenario, all study segments are projected to operate at an acceptable LOS.

Table IV: Existing plus Project Intersection LOS Results

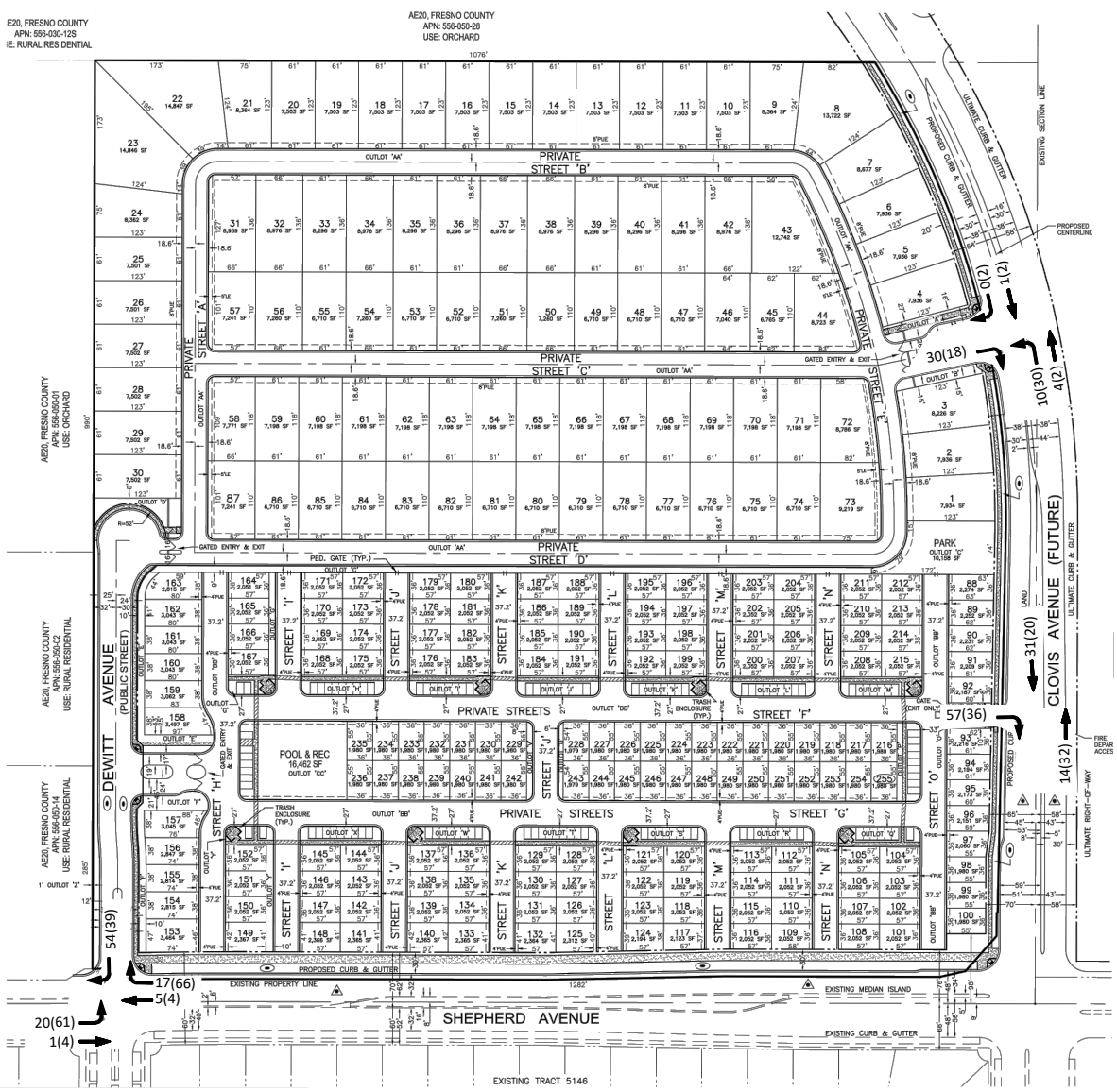
ID	Intersection	Intersection Control	AM (7-9) Peak Hour		PM (4-6) Peak Hour	
			Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS
1	Minnewawa Avenue / Behymer Avenue	All-Way Stop	**71.5**	**F**	**39.6**	**E**
		All-Way Stop (Mitigated)	34.5	D	18.8	C
2	Peach Avenue / Shepherd Avenue	One-Way Stop	16.0	C	22.1	C
3	Minnewawa Avenue / Shepherd Avenue	Signalized	22.5	C	19.5	B
4	Clovis Avenue / Shepherd Avenue	Signalized	17.6	B	17.6	B
5	Sunnyside Avenue / Shepherd Avenue	All-Way Stop	33.0	D	24.8	C

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls
LOS for two-way and one-way STOP controlled intersections are based on the worst approach/movement of the minor street.

Table V: Existing plus Project Segment LOS Results

ID	Segment	Limits	Lanes	24-hour Volume	LOS
1	Shepherd Avenue	Peach Avenue and Minnewawa Avenue	3	12,889	C
2	Shepherd Avenue	Minnewawa Avenue and Clovis Avenue	3	12,715	C
3	Shepherd Avenue	Clovis Avenue and Sunnyside Avenue	2	11,411	C

Note: LOS = Level of Service per the Florida Roadway Segment LOS Tables



Not To Scale

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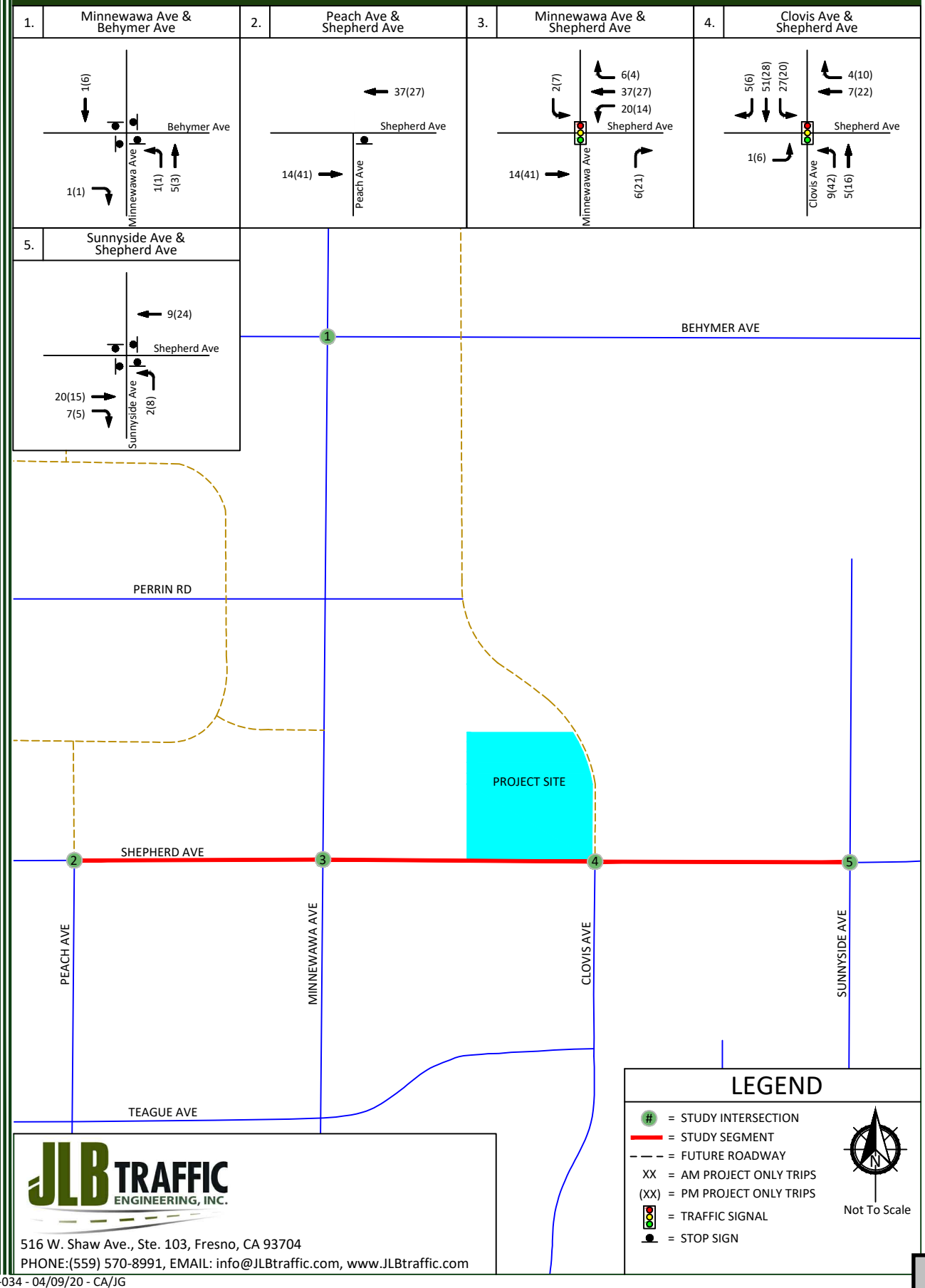
Tract 6050 - City of Clovis
2022 Project Only Trips

Figure 4

AGENDA ITEM NO.2



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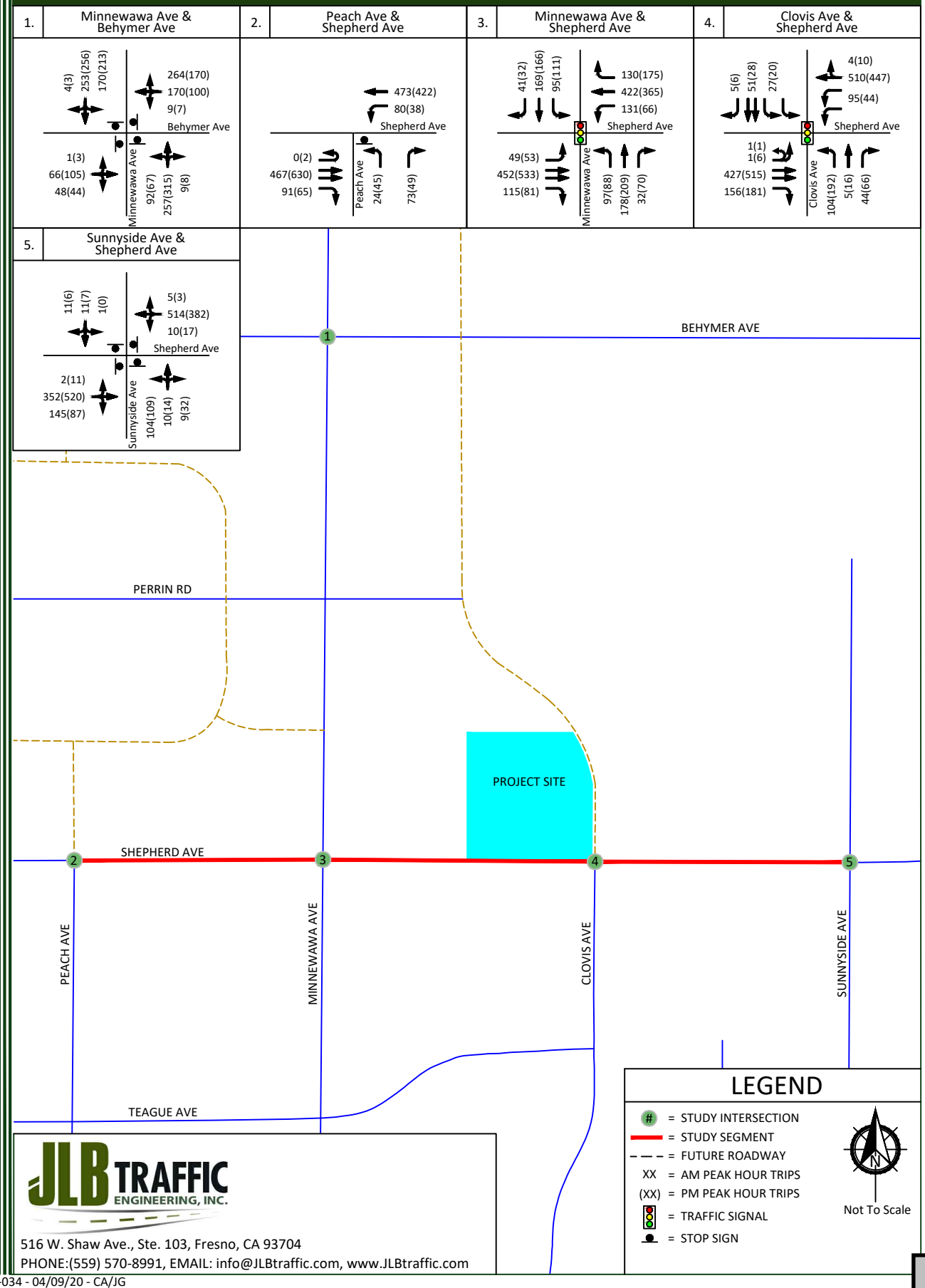
Tract 6050 TIA - City of Clovis
Existing plus Project - Traffic Volumes, Geometrics and Controls

Figure 5

AGENDA ITEM NO.2



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Near Term plus Project Traffic Conditions

Description of Near Term Projects

Near Term Projects are approved and/or known projects that are either under construction, built but not fully occupied, are not built but have final site development review (SDR) approval, or for which the lead agency or responsible agencies have knowledge of. The City of Clovis, City of Fresno, County of Fresno and Caltrans staff were consulted throughout the preparation of the TIA regarding approved and/or known projects that could potentially impact the study intersections. JLB staff conducted a reconnaissance of the surrounding area to confirm the near term projects. Subsequently, it was agreed that the projects listed in Table VI were approved, near approval, or in the pipeline within the proximity of the Project site.

The trip generation listed in Table VI is that which is anticipated to be added to the streets and highways from near term projects between the time of the preparation of this report and five years after Project build-out. As shown in Table VI, the total trip generation for the Near Term Projects is 78,460 daily trips, 6,256 AM peak hour trips and 8,167 PM peak hour trips. Figure 6 illustrates the location of the approved, near approval, or pipeline projects and their combined trip assignment to the study intersections under this scenario.

Table VI: Near Term Project's Trip Generation

Approved Project Location	*Approved or Pipeline Project Name*	*Daily Trips*	*AM Peak Hour*	*PM Peak Hour*
A	TT 5546[2]	312	24	33
B	TT 5836[1]	378	30	40
C	TT 6023[1]	3,578	280	375
D	TT 6109[2]	1,775	139	186
E	TT 6120[1]	1,076	84	113
F	TT 6123[1]	1,444	113	151
G	TT 6134[1]	132	10	14
H	TT 6145[1]	255	20	27
I	TT 6154[1]	897	70	94
J	TT 6161[1]	1,340	105	141
K	TT 6166[1]	812	64	85
L	TT 6168[2]	1,425	112	149
M	TT 6180[1]	378	30	40
N	TT 6181 & 6182[1]	1,322	104	139
O	TT 6186[2]	2,351	184	247
P	TT 6190[1]	9	1	1
Q	TT 6193[1]	1,038	81	109
R	TT 6200[1]	5,853	459	614
S	TT 6239[1]	1,397	110	147
T	TT 6263[2]	1,293	101	136
U	TT 6264[1]	349	27	37

Note: 1 = Trip Generation prepared by JLB Traffic Engineering, Inc. based on readily available information
2 = Trip Generation based on JLB Traffic Engineering, Inc. Traffic Impact Analysis Report

Table VI: Near Term Project's Trip Generation (cont.)

Approved Project Location	*Approved or Pipeline Project Name*	*Daily Trips*	*AM Peak Hour*	*PM Peak Hour*
V	Tract 6304[1]	1,425	112	149
W	Harlan Ranch Commercial[1]	4,687	105	407
X	20 KSF Office Building[1]	195	15	23
Y	Clovis Community Medical Center[2]	28,686	1,527	2,558
Z	Research and Technology Park[1]	16,053	2,349	2,152
Total Approved and Pipeline Project Trips		**78,460**	**6,256**	**8,167**

Note: 1 = Trip Generation prepared by JLB Traffic Engineering, Inc. based on readily available information
2 = Trip Generation based on JLB Traffic Engineering, Inc. Traffic Impact Analysis Report

Roadway Network

The Near Term plus Project Traffic Conditions scenario assumes that the Existing plus Project roadway geometrics and traffic controls will remain in place with a few exceptions. This scenario assumes that the north leg of Clovis Avenue and Shepherd Avenue will have two (2) available northbound receiving lanes. Also, this scenario assumes dual northbound left-turn lanes are available at the intersection of Sunnyside Avenue and Shepherd Avenue. Furthermore, this scenario assumes that Shepherd Avenue will be built to have two (2) westbound through lanes between Clovis Avenue and Sunnyside Avenue and a dedicated westbound right-turn lane at Clovis Avenue. Lastly, this scenario assumes that the intersection of Sunnyside Avenue and Shepherd Avenue is signalized with protective left-turn phasing in all directions. Figure 7 illustrates the assumed intersection geometrics and traffic controls for these intersections under this scenario.

Traffic Signal Warrants

Peak hour traffic signal warrants, as appropriate, were prepared for the Near Term plus Project Traffic Conditions scenario. These warrants are found in Appendix I. The effects of right-turning traffic from the minor approach onto the major approach were taken into account using engineering judgment pursuant to CA MUTCD guidelines for the preparation of traffic signal warrants. Under this scenario, the intersection of Minnewawa Avenue and Behymer Avenue is projected to satisfy the peak hour signal warrant during the both peak periods. While the intersection of Peach Avenue and Shepherd Avenue is not projected to satisfy peak hour warrants, it is projected to need only one and thirteen trips during the PM and AM peaks, respectively.

Based on the signal warrants, the intersection operational analysis and traffic engineering judgement, signalization of the intersection of Minnewawa Avenue and Behymer Avenue is not recommended. While the intersection of Peach Avenue and Shepherd Avenue is not projected to satisfy the peak hour warrant, it only falls short a few trips. Other traffic controls, such as an all-way stop, are not projected to improve its LOS to D or better. As a result, it is recommended that this intersection be signalized with protective left-turn phasing in all directions. It is worth noting that CA MUTCD states "satisfaction of a signal warrant or warrants shall not in itself require the installation of a traffic signal." Therefore, it is recommended that prior to the installation of a traffic signal, investigation of CA MUTCD warrants 1, 4 and 7, as applicable, be conducted for these intersections.

Results of Near Term plus Project Level of Service Analysis

The Near Term plus Project Traffic Conditions scenario assumes additional lanes along Clovis Avenue, Shepherd Avenue and Sunnyside Avenue and signalization of the intersection of Sunnyside Avenue and Shepherd Avenue with protective left-turn phasing in all directions. Figure 7 illustrates the Near Term plus Project turning movement volumes, intersection geometrics and traffic controls. LOS worksheets for the Near Term plus Project Traffic Conditions scenario are provided in Appendix G. Table VII presents a summary of the Near Term plus Project peak hour LOS at the study intersections, while Table VIII presents a summary of the Near Term plus Project LOS for the study segments.

Under this scenario, the intersection of Minnewawa Avenue and Behymer Avenue and Peach Avenue and Shepherd Avenue are projected to exceed their LOS threshold during one or both peak periods. To improve the LOS at these intersections, it is recommended that the following improvements be implemented.

- Minnewawa Avenue / Behymer Avenue
  - Modify the westbound left-through-right lane to a left-through lane;
  - Add a westbound right-turn lane;
  - Add a northbound left-turn lane;
  - Modify the northbound left-through-right lane to a through-right lane;
  - Add a southbound left-turn lane; and
  - Modify the southbound left-through-right lane to a through-right lane.
- Peach Avenue / Shepherd Avenue
  - Signalize the intersection with protective left-turn phasing in all directions.

Under this scenario, the segments of Shepherd Avenue between Minnewawa Avenue and Clovis Avenue and Clovis Avenue and Sunnyside Avenue are projected to slightly exceed their LOS threshold by approximately 430 daily trips or less (the equivalent of approximately 46 single family residential units). If approximately eleven percent or more of the Near Term Project Daily Trips are not developed by the time that the Project is built out, these segments will continue to operate at an acceptable LOS under the Near Term plus Project Scenario. However, if less than eleven percent of the Near Term Projects remain to be developed by the time the Project is built out then and under those circumstances, changes may be necessary to improve the LOS of these segments, it is recommended that the following improvements be implemented.

- Shepherd between Minnewawa Avenue and Clovis Avenue
  - Add a second westbound lane.
- Shepherd between Clovis Avenue and Sunnyside Avenue
  - Add a second westbound lane; and
  - Complete the missing segments of the second eastbound lane.

Between the Existing Traffic Conditions scenario and the Near Term plus Project Traffic Conditions scenario, the Project accounts for 2.98 percent of the daily trips, 2.93 percent of the AM peak hour trips and 2.99 percent of the PM peak hour trips of growth in traffic, while the rest of the growth is attributable to the near term projects. Therefore, one can deduce that the mitigation measures presented under this scenario may not be necessary immediately upon completion of the proposed Project. However, if all of the near term projects are developed close to the completion date of the proposed Project, the detailed recommended improvements presented above may be necessary in order to improve the LOS to D or better.

Table VII: Near Term plus Project Intersection LOS Results

ID	*Intersection*	*Intersection Control*	*AM (7-9) Peak Hour*		*PM (4-6) Peak Hour*	
			Average Delay (sec/veh)	*LOS*	*Average Delay (sec/veh)*	*LOS*
1	Minnewawa Avenue / Behymer Avenue	All-Way Stop	**94.9**	**F**	**65.5**	**F**
		All-Way Stop (Mitigated)	22.2	C	21.1	C
2	Peach Avenue / Shepherd Avenue	One-Way Stop	31.8	D	**65.5**	**F**
		Signalized (Mitigated)	10.5	B	9.0	A
3	Minnewawa Avenue / Shepherd Avenue	Signalized	39.2	D	40.4	D
4	Clovis Avenue / Shepherd Avenue	Signalized	21.2	C	21.6	C
5	Sunnyside Avenue / Shepherd Avenue	Signalized	41.0	D	28.7	C

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls
LOS for two-way and one-way STOP controlled intersections are based on the worst approach/movement of the minor street.

Table VIII: Near Term plus Project Segment LOS Results

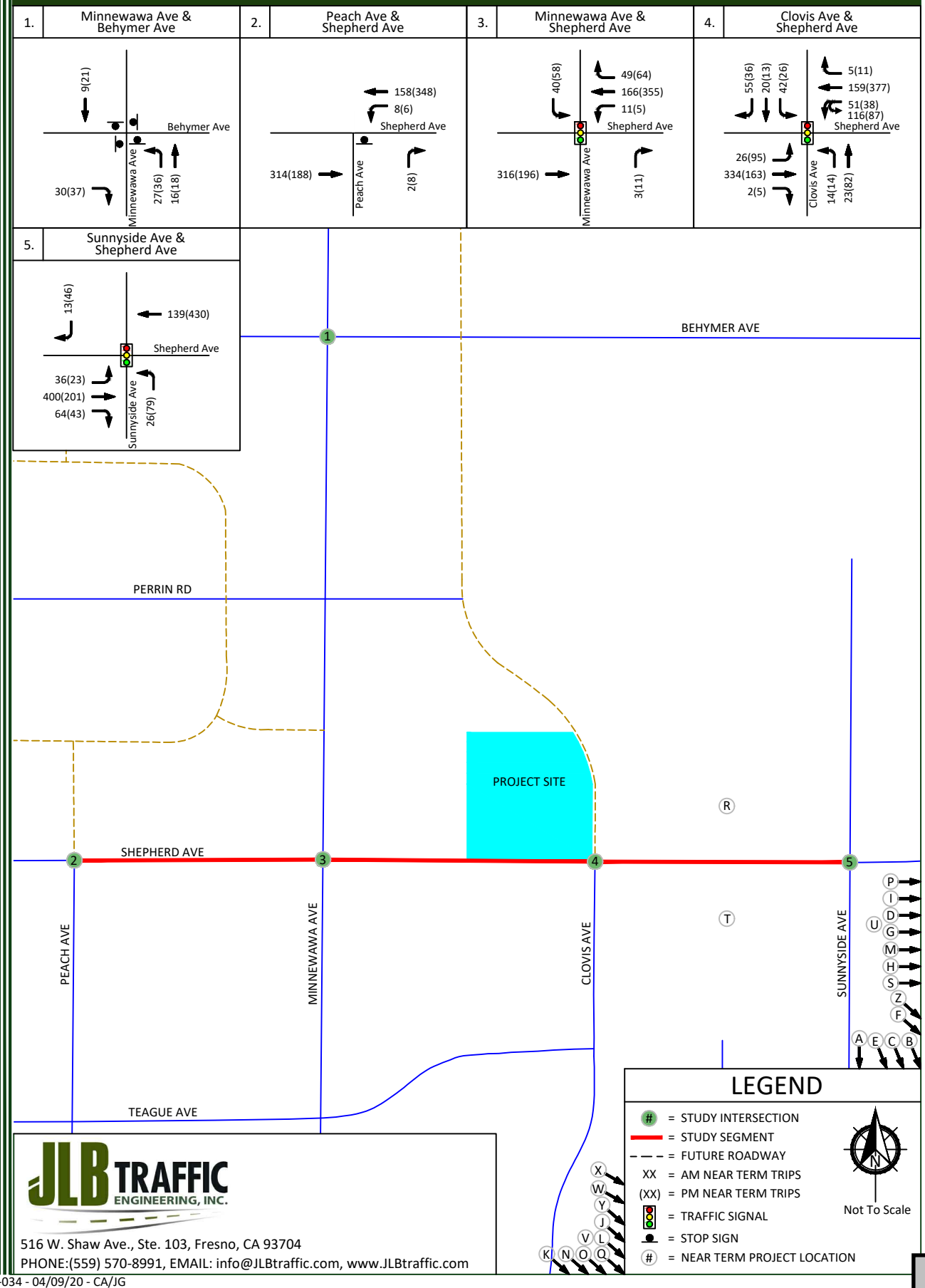
ID	*Segment*	*Limits*	*Lanes*	*24-hour Volume*	*LOS*
1	Shepherd Avenue	Peach Avenue and Minnewawa Avenue	3	18,399	D
2	Shepherd Avenue	Minnewawa Avenue and Clovis Avenue	3	19,615	D
			4 (Mitigated)		C
3	Shepherd Avenue	Clovis Avenue and Sunnyside Avenue	2	19,631	D
			4 (Mitigated)		C

Note: LOS = Level of Service per the Florida Roadway Segment LOS Tables

Tract 6050 - City of Clovis
Near Term Projects' Trip Assignment

Figure 6

AGENDA ITEM NO.2



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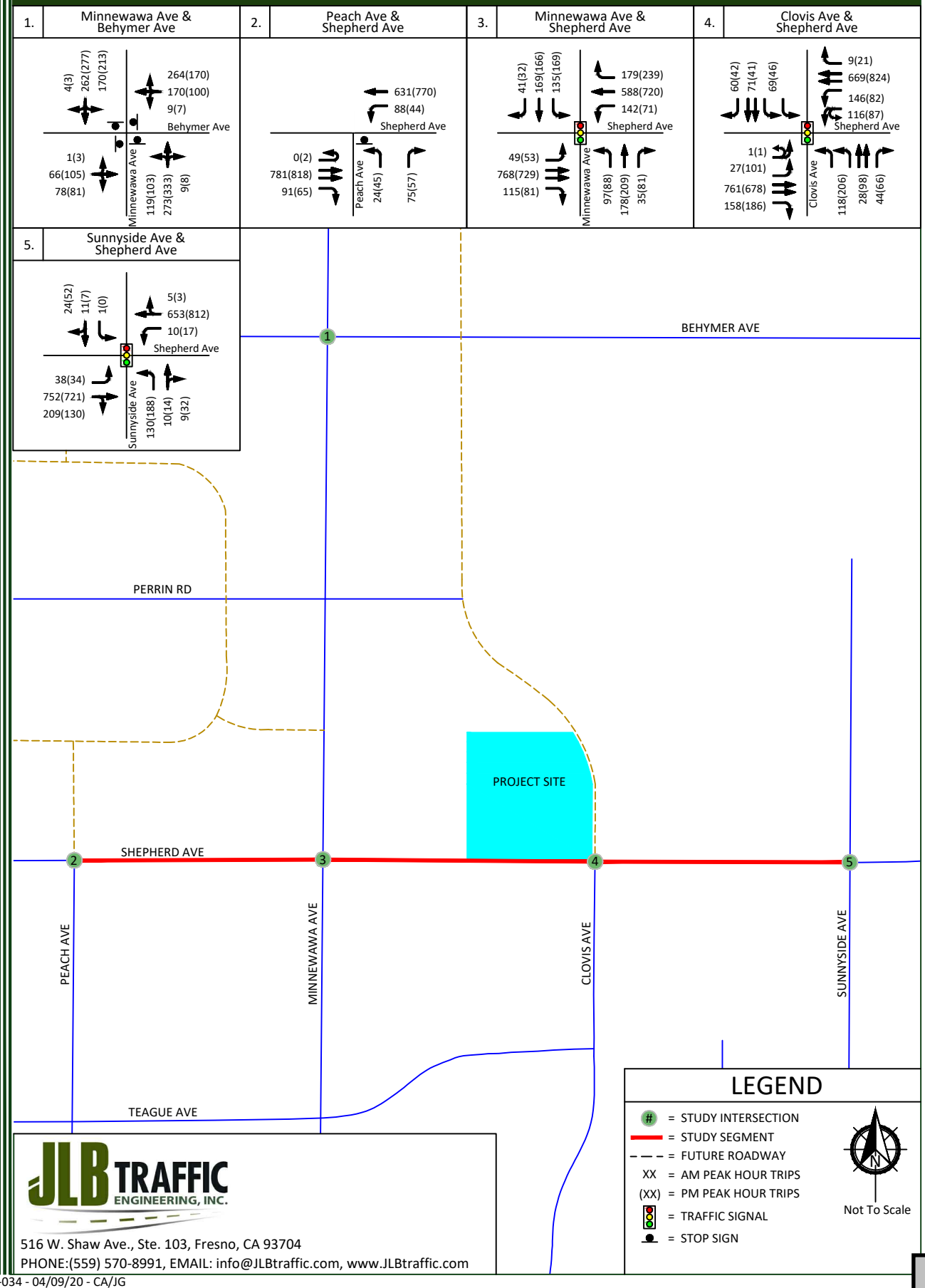
Tract 6050 TIA - City of Clovis
Near Term plus Project - Traffic Volumes, Geometrics and Control

Figure 7

AGENDA ITEM NO.2



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Cumulative Year 2040 plus Project Traffic Conditions

Roadway Network

The Cumulative Year 2040 plus Project Traffic Conditions scenario assumes that the Near Term plus Project roadway geometrics and traffic controls will remain in place with a few exceptions. This scenario assumes that Clovis Avenue and Peach Avenue extend north of Shepherd Avenue toward Copper Avenue. Considering the potential changes in the existing roadway network, it is projected that travel patterns and volumes may differ from what is anticipated for the immediate Project buildout. Therefore, Figure 8 illustrates the Year 2040 Project Only Trips to the study intersections.

Traffic Signal Warrants

Peak hour traffic signal warrants, as appropriate, were prepared for the Cumulative Year 2040 plus Project Traffic Conditions scenario. These warrants are found in Appendix I. The effects of right-turning traffic from the minor approach onto the major approach were taken into account using engineering judgment pursuant to CA MUTCD guidelines for the preparation of traffic signal warrants. Under this scenario, the intersections of Minnewawa Avenue and Behymer Avenue and Peach Avenue and Shepherd Avenue are projected to satisfy the peak hour signal warrant during both peak periods. Based on the signal warrants, the intersection operational analysis and traffic engineering judgement, signalization of these intersections is recommended.

Results of Cumulative Year 2040 plus Project Level of Service Analysis

The Cumulative Year 2040 plus Project Traffic Conditions scenario assumes that Clovis Avenue and Peach Avenue extend north of Shepherd Avenue toward Copper Avenue. Figure 9 illustrates the Cumulative Year 2040 plus Project total turning movement volumes, intersection geometrics and traffic controls. LOS worksheets for the Cumulative Year 2040 plus Project Traffic Conditions scenario are provided in Appendix H. Table IX presents a summary of the Cumulative Year 2040 plus Project peak hour LOS at the study intersections, while Table X presents a summary of the Cumulative Year 2040 plus Project segment LOS.

Under this scenario, the intersections of Minnewawa Avenue and Behymer Avenue, Peach Avenue and Shepherd Avenue, Minnewawa Avenue and Shepherd Avenue, and Sunnyside Avenue and Shepherd Avenue are projected to exceed their LOS threshold during one or both peak periods. To improve the LOS at these intersections, it is recommended that the following improvements be implemented.

- Minnewawa Avenue / Behymer Avenue
  - Add an eastbound left-turn lane;
  - Modify the eastbound left-through-right lane to a through-right lane;
  - Add a westbound left-turn lane;
  - Modify the westbound left-through-right lane to a through lane;
  - Add a westbound right-turn lane;
  - Add a northbound left-turn lane;
  - Modify the northbound left-through-right lane to a through-right lane;
  - Add a southbound left-turn lane;
  - Modify the southbound left-through-right lane to a through-right lane; and
  - Signalize the intersection with protective left-turn phasing in all directions.
- Peach Avenue / Shepherd Avenue
  - Signalize the intersection with protective left-turn phasing in all directions.
- Minnewawa Avenue / Shepherd Avenue
  - Modify the westbound right-turn lane to a through-right lane with a receiving lane west of Minnewawa Avenue;
  - Extend the storage lengths for the southbound left-turn and right-turn lanes; and
  - Modify the traffic signal to accommodate the added lanes.
- Sunnyside Avenue / Shepherd Avenue
  - Modify the eastbound through-right lane to a through lane;
  - Add a second eastbound through lane with a receiving lane east of Sunnyside Avenue;
  - Add an eastbound right-turn lane;
  - Modify the westbound through-right lane to a through lane;
  - Add a second westbound through lane with a receiving lane west of Sunnyside Avenue;
  - Add a westbound right-turn lane;
  - Modify the southbound through-right lane to a through lane;
  - Add a southbound right-turn lane; and
  - Modify the traffic signal to accommodate the added lanes.

Under this scenario, all study segments are projected to exceed their LOS threshold. To improve the LOS of these segments, it is recommended that the following improvements be implemented.

- Shepherd Avenue between Peach Avenue and Minnewawa Avenue
  - Add a second westbound lane.
- Shepherd Avenue between Minnewawa Avenue and Clovis Avenue
  - Add a second westbound lane.
- Shepherd Avenue between Clovis Avenue and Sunnyside Avenue
  - Add a second westbound lane; and
  - Complete the missing segments of the second eastbound lane.

Table IX: Cumulative Year 2040 plus Project Intersection LOS Results

ID	Intersection	Intersection Control	AM (7-9) Peak Hour		PM (4-6) Peak Hour	
			Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS
1	Minnewawa Avenue / Behymer Avenue	All-Way Stop	**>120.0**	**F**	**>120.0**	**F**
		Signalized (Mitigated)	39.2	D	50.2	D
2	Peach Avenue / Shepherd Avenue	Two-Way Stop	**>120.0**	**F**	**>120.0**	**F**
		Signalized (Mitigated)	36.1	D	44.2	D
3	Minnewawa Avenue / Shepherd Avenue	Signalized	**71.3**	**E**	49.1	D
		Signalized (Mitigated)	51.2	D	47.2	D
4	Clovis Avenue / Shepherd Avenue	Signalized	31.8	C	29.4	C
5	Sunnyside Avenue / Shepherd Avenue	All-Way Stop	**>120.0**	**F**	**>120.0**	**F**
		Signalized (Mitigated)	34.1	C	35.0	C

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls
LOS for two-way and one-way STOP controlled intersections are based on the worst approach/movement of the minor street.

Table X: Cumulative Year 2040 plus Project Segment LOS Results

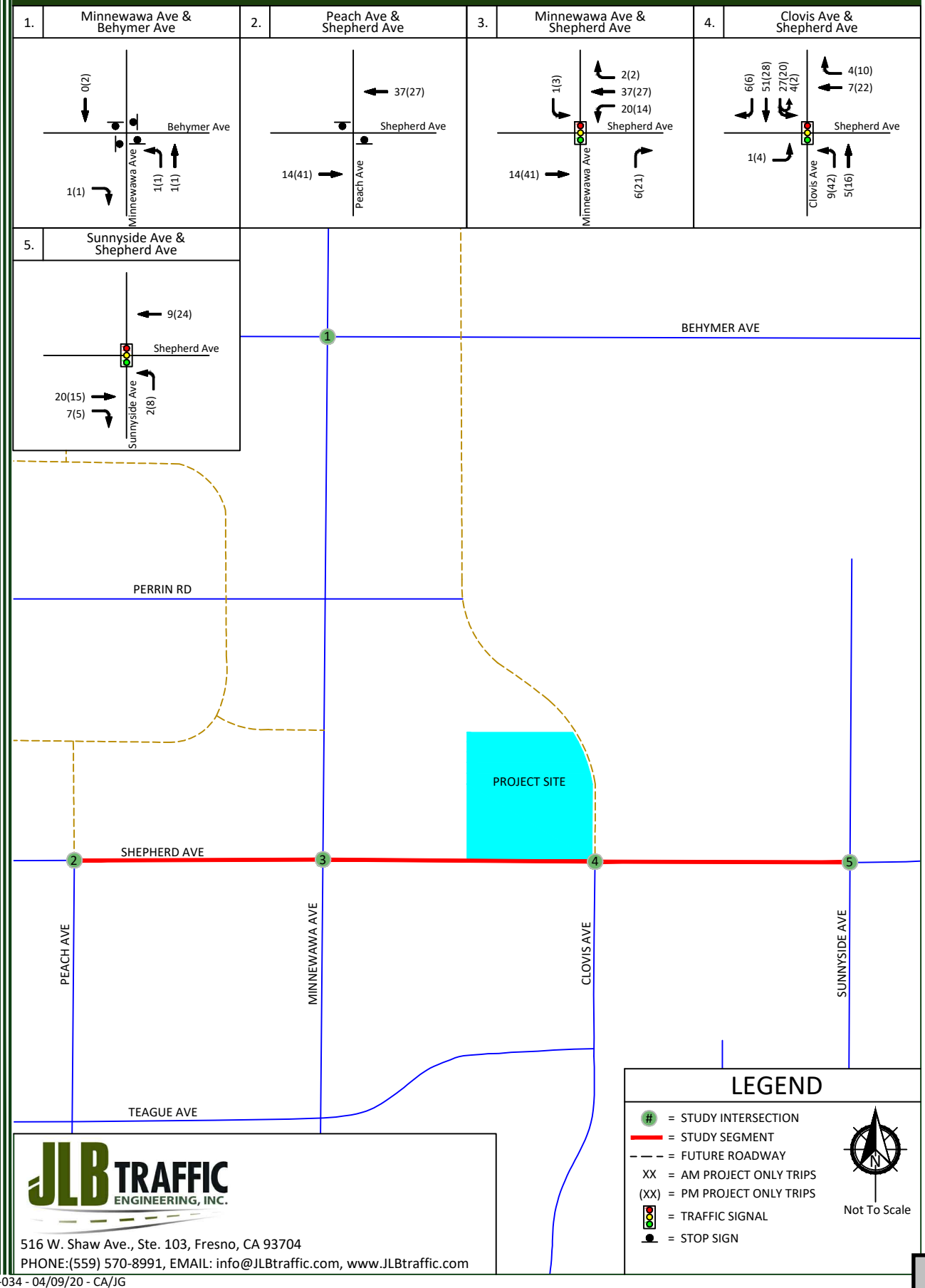
ID	Segment	Limits	Lanes	24-hour Volume	LOS
1	Shepherd Avenue	Peach Avenue and Minnewawa Avenue	3	25,398	F
			4 (Mitigated)		C
2	Shepherd Avenue	Minnewawa Avenue and Clovis Avenue	3	23,139	F
			4 (Mitigated)		C
3	Shepherd Avenue	Clovis Avenue and Sunnyside Avenue	2	27,551	F
			4 (Mitigated)		C

Note: LOS = Level of Service per the Florida Roadway Segment LOS Tables

Tract 6050 - City of Clovis
2040 Project Only Trips

Figure 8

AGENDA ITEM NO.2



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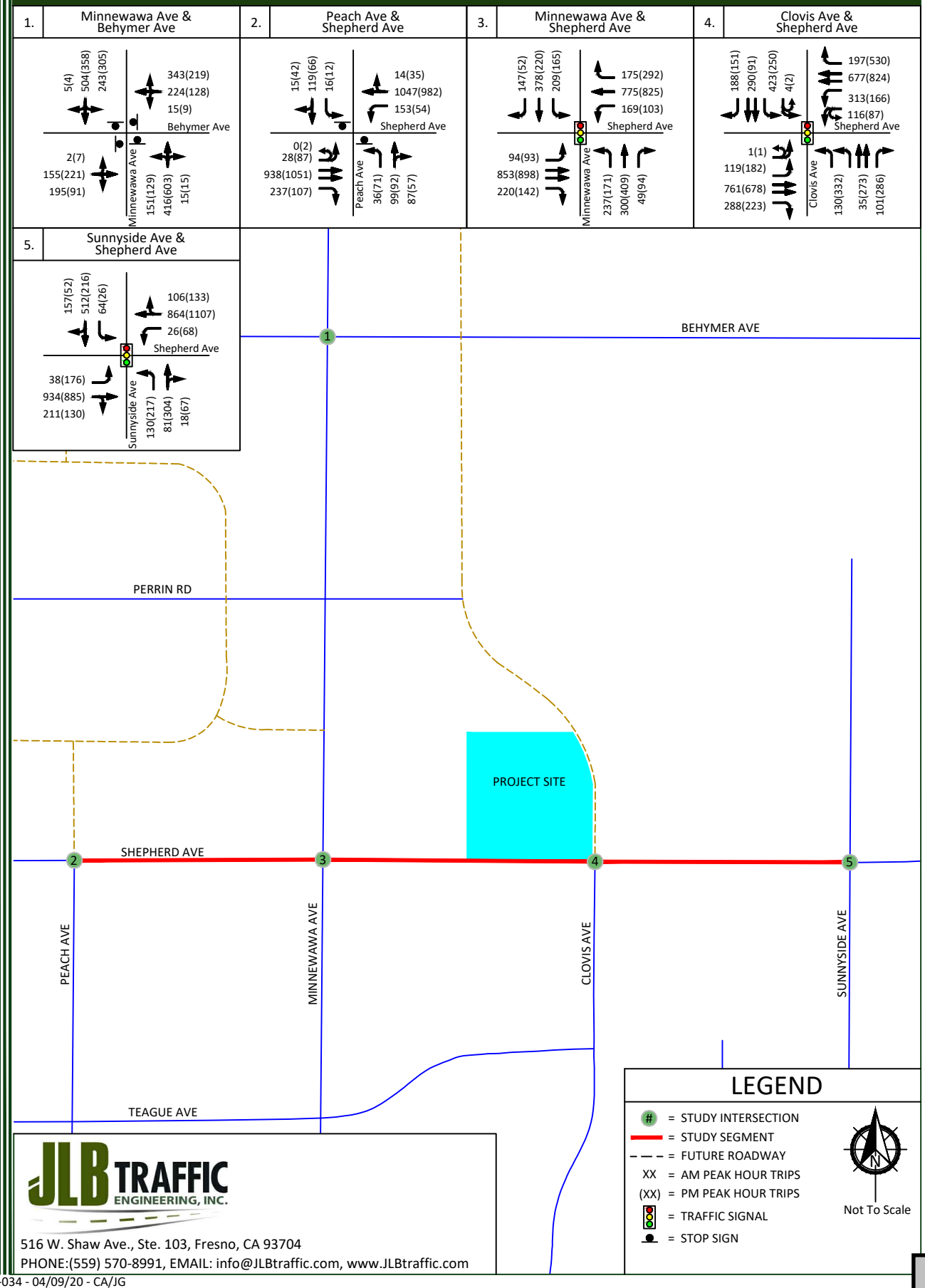
Tract 6050 TIA - City of Clovis
Cumulative Year 2040 plus Project - Traffic Volumes, Geometrics a

Figure 9



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Queuing Analysis

Table XI provides a queue length summary for left-turn and right-turn lanes at the study intersections under all study scenarios. The queuing analyses for the study intersections are contained in the LOS worksheets for the respective scenarios. Appendix D contains the methodologies used to evaluate these intersections. Queuing analyses were completed using Sim Traffic output information. Synchro provides both 50th and 95th percentile maximum queue lengths (in feet). According to the Synchro manual, "the 50th percentile maximum queue is the maximum back of queue on a typical cycle and the 95th percentile queue is the maximum back of queue with 95th percentile volumes." The queues shown on Table XI are the 95th percentile queue lengths for the respective lane movements.

The *Highway Design Manual* (HDM) provides guidance for determining deceleration lengths for the left-turn and right-turn lanes based on design speeds. Per the HDM criteria, "tapers for right-turn lanes are usually un-necessary since the main line traffic need not be shifted laterally to provide space for the right-turn lane. If, in some rare instances, a lateral shift were needed, the approach taper would use the same formula as for a left-turn lane." Therefore, a bay taper length pursuant to the Caltrans HDM would need to be added, as necessary, to the recommended storage lengths presented in Table XI.

The storage capacity for the Cumulative Year 2040 plus Project Traffic Conditions shall be based on the SimTraffic output files and engineering judgement. The values in bold presented in Table XI are the projected queue lengths that will likely need to be accommodated by the Cumulative Year 2040 plus Project Traffic Conditions scenario. At the remaining approaches of the study intersections, the existing storage capacity will be sufficient to accommodate the maximum queue.

Table XI: Queuing Analysis

ID	Intersection	Existing Queue Storage Length (ft.)		Existing		Existing plus Project		Near Term plus Project		Cumulative Year 2040 plus Project	
				AM	PM	AM	PM	AM	PM	AM	PM
1	Minnewawa Avenue / Behymer Avenue	EB LTR	>500	71	61	64	71	72	75	*	*
		EB L	*	*	*	*	*	*	*	12	32
		EB TR	*	*	*	*	*	*	*	243	277
		WB LTR	>500	169	93	122	93	*	*	*	*
		WB L	*	*	*	*	*	*	*	41	30
		WB LT	*	*	*	*	*	71	54	*	*
		WB T	*	*	*	*	*	*	*	242	155
		WB R	*	*	*	*	*	86	81	**146**	136
		NB L	*	55	57	57	56	64	55	157	**235**
		NB TR	*	89	134	106	123	119	129	342	452
		SB L	*	73	76	65	78	71	86	207	**238**
		SB TR	*	91	85	73	91	70	83	287	191

Note: * = Does not exist or is not projected to exist

Table XI: Queuing Analysis (cont.)

2	Peach Avenue / Shepherd Avenue	EB L	250	0	7	0	8	0	16	82	177
		EB T	>500	0	7	0	0	101	92	275	183
		EB T	>500	0	0	0	0	108	95	308	178
		EB R	100	16	0	0	12	38	39	**201**	102
		WB L	250	46	55	50	39	82	72	**367**	241
		WB T	>500	0	0	0	0	76	267	*	*
		WB TR	*	*	*	*	*	*	*	938	690
		NB L	220	26	50	32	44	49	57	86	119
		NB TR	*	*	*	*	*	*	*	223	158
		NB R	>300	33	33	41	27	41	41	*	*
		SB L	*	*	*	*	*	*	*	64	41
		SB TR	*	*	*	*	*	*	*	192	112
3	Minnewawa Avenue / Shepherd Avenue	EB L	250	72	87	74	69	103	140	234	180
		EB T	>500	117	146	110	134	303	211	562	379
		EB T	>500	123	174	131	160	324	242	606	375
		EB R	60	75	119	94	108	144	106	158	**164**
		WB L	250	99	86	186	86	284	311	295	**320**
		WB T	>500	180	182	253	210	468	694	433	473
		WB TR	*	*	*	*	*	*	*	387	439
		WB R	205	52	67	127	132	271	315	*	*
		NB L	250	119	100	150	120	157	126	**352**	290
		NB T	>500	132	145	131	127	194	218	410	349
		NB R	>300	32	55	39	26	37	68	35	53
		SB L	75	107	108	98	121	140	136	**271**	215
		SB T	>500	186	152	168	240	268	381	398	235
		SB R	25	57	37	51	50	52	50	**307**	47

Note: * = Does not exist or is not projected to exist

Table XI: Queuing Analysis (cont.)

4	Clovis Avenue / Shepherd Avenue	EB L	250	0	0	7	26	*	*	*	*
		EB LL	*	*	*	*	*	26	76	73	159
		EB T	>500	140	158	198	161	320	158	352	304
		EB T	>500	58	66	91	96	244	128	415	346
		EB R	50	60	57	69	30	101	57	121	**126**
		WB LL	250	44	38	59	32	188	194	230	135
		WB T	>500	138	114	*	*	304	384	236	292
		WB T	*	*	*	*	*	223	297	236	299
		WB TR	*	*	*	210	168	*	*	*	*
		WB R	*	*	*	*	*	0	20	68	**223**
		NB LL	*	*	*	*	*	87	132	96	**276**
		NB L	>300	71	120	86	129	*	*	*	*
		NB T	*	*	*	8	35	35	63	35	144
		NB T	*	*	*	*	*	9	48	24	139
		NB R	>300	30	31	31	41	60	52	64	**166**
		SB LL	*	*	*	24	27	80	54	**250**	226
		SB T	*	*	*	64	41	107	53	148	60
		SB T	*	*	*	23	10	34	30	127	53
		SB R	*	*	*	20	27	39	35	86	**99**
5	Sunnyside Avenue / Shepherd Avenue	EB LTR	>500	120	230	171	182	*	*	*	*
		EB L	*	*	*	*	*	77	151	75	184
		EB T	*	*	*	*	*	*	*	320	212
		EB T	*	*	*	*	*	*	*	353	239
		EB TR	*	*	*	*	*	395	385	*	*
		EB R	*	*	*	*	*	*	*	**255**	48
		WB LTR	>500	113	91	181	100	*	*	*	*
		WB L	*	*	*	*	*	27	45	67	143
		WB T	*	*	*	*	*	*	*	352	333
		WB T	*	*	*	*	*	*	*	345	362
		WB TR	*	*	*	*	*	379	406	*	*
		WB R	*	*	*	*	*	*	*	219	**256**
		NB LTR	>500	51	57	53	63	*	*	*	*
		NB L	*	*	*	*	*	134	229	141	**321**
		NB TR	*	*	*	*	*	35	72	108	348
		SB LTR	>500	33	24	36	23	*	*	*	*
		SB L	*	*	*	*	*	0	0	**242**	53
		SB T	*	*	*	*	*	*	*	408	209
		SB TR	*	*	*	*	*	59	89	*	*
		SB R	*	*	*	*	*	*	*	**285**	48

Note: * = Does not exist or is not projected to exist

Conclusions and Recommendations

Conclusions and recommendations regarding the proposed Project are presented below.

Existing Traffic Conditions

- At present, the intersection of Minnewawa Avenue and Behymer Avenue exceeds its LOS threshold during both peak periods. To improve the LOS at this intersection, it is recommended the following improvements be implemented.
  - Minnewawa Avenue / Behymer Avenue
    - Add a northbound left-turn lane;
    - Modify the northbound left-through-right lane to a through-right lane;
    - Add a southbound left-turn lane; and
    - Modify the southbound left-through-right lane to a through-right lane.
- At present, all study segments operate at an acceptable LOS.

Existing plus Project Traffic Conditions

- JLB qualitatively analyzed the location of the proposed access points relative to the existing local roads and driveways in the Project's vicinity. A review of the Project roadways to be constructed indicates that the new access points are located at points that minimize traffic operational impacts to the existing street network.
- At buildout, the Project is estimated to generate a maximum of 2,407 daily trips, 189 AM peak hour trips and 252 PM peak hour trips.
- It is recommended that the Project implement Class II bike lanes along its frontages to Clovis Avenue and Shepherd Avenue.
- To promote alternative modes of transportation to Granite Ridge Intermediate School and Clovis North High School, it is recommended that the Clovis Unified School District work with the City of Clovis and County of Fresno to implement a Safe Routes to School plan and to seek grant funding to help build bikeways and walkways where they are lacking within a 2.5-mile radius of the existing school site.
- Based on the Fresno COG model run, the Project is anticipated to generate an average of 6.7 VMT per trip.
- Under this scenario, the intersection of Minnewawa Avenue and Behymer Avenue is projected to exceed its LOS threshold during both peak periods. To improve the LOS at this intersection, it is recommended the following improvements be implemented.
  - Minnewawa Avenue / Behymer Avenue
    - Add a northbound left-turn lane;
    - Modify the northbound left-through-right lane to a through-right lane;
    - Add a southbound left-turn lane; and
    - Modify the southbound left-through-right lane to a through-right lane.
- Under this scenario, all study segments operate at an acceptable LOS.

Near Term plus Project Traffic Conditions

- The total trip generation for the Near Term Projects is 78,460 daily trips, 6,256 AM peak hour trips and 8,167 PM peak hour trips.
- Between the Existing Traffic Conditions scenario and the Near Term plus Project Traffic Conditions scenario, the Project accounts for 2.98 percent of the daily trips, 2.93 percent of the AM peak hour trips and 2.99 percent of the PM peak hour trips of growth in traffic, while the rest of the growth is attributable to the near term projects. Therefore, one can deduce that the mitigation measures presented under this scenario may not be necessary immediately upon completion of the proposed Project.
- Under this scenario, the intersections of Minnewawa Avenue and Behymer Avenue and Peach Avenue and Shepherd Avenue are projected to exceed their LOS threshold during one or both peak periods. To improve the LOS at these intersections, it is recommended the following improvements be implemented.
  - Minnewawa Avenue / Behymer Avenue
    - Modify the westbound left-through-right lane to a left-through lane;
    - Add a westbound right-turn lane;
    - Add a northbound left-turn lane;
    - Modify the northbound left-through-right lane to a through-right lane;
    - Add a southbound left-turn lane; and
    - Modify the southbound left-through-right lane to a through-right lane.
  - Peach Avenue / Shepherd Avenue
    - Signalize the intersection with protective left-turn phasing in all directions.
- Under this scenario, the segments of Shepherd Avenue between Minnewawa Avenue and Clovis Avenue and Clovis Avenue and Sunnyside Avenue are projected to slightly exceed their LOS threshold by approximately 430 daily trips or less (the equivalent of approximately 46 single family residential units). If approximately eleven percent or more of the Near Term Project Daily Trips are not developed by the time that the Project is built out, these segments will continue to operate at an acceptable LOS under the Near Term plus Project Scenario. However, if less than eleven percent of the Near Term Projects remain to be developed by the time the Project is built out then and under those circumstances, changes may be necessary to improve the LOS of these segments, it is recommended that the following improvements be implemented.
  - Shepherd Avenue between Minnewawa Avenue and Clovis Avenue
    - Add a second westbound lane.
  - Shepherd Avenue between Clovis Avenue and Sunnyside Avenue
    - Add a second westbound lane; and
    - Complete the missing segments of the second eastbound lane.

Cumulative Year 2040 plus Project Traffic Conditions

- Under this scenario, the intersections of Minnewawa Avenue and Behymer Avenue, Peach Avenue and Shepherd Avenue, Minnewawa Avenue and Shepherd Avenue, and Sunnyside Avenue and Shepherd Avenue are projected to exceed their LOS threshold during one or both peak periods. To improve the LOS at these intersections, it is recommended the following improvements be implemented.
  - Minnewawa Avenue / Behymer Avenue
    - Add an eastbound left-turn lane;
    - Modify the eastbound left-through-right lane to a through-right lane;
    - Add a westbound left-turn lane;
    - Modify the westbound left-through-right lane to a through lane;
    - Add a westbound right-turn lane;
    - Add a northbound left-turn lane;
    - Modify the northbound left-through-right lane to a through-right lane;
    - Add a southbound left-turn lane;
    - Modify the southbound left-through-right lane to a through-right lane; and
    - Signalize the intersection with protective left-turn phasing in all directions.
  - Peach Avenue / Shepherd Avenue
    - Signalize the intersection with protective left-turn phasing in all directions.
  - Minnewawa Avenue / Shepherd Avenue
    - Modify the westbound right lane to a through-right lane with a receiving lane west of Minnewawa Avenue;
    - Extend the storage lengths for the southbound left-turn and right-turn lanes; and
    - Modify the traffic signal to accommodate the added lanes.
  - Sunnyside Avenue / Shepherd Avenue
    - Modify the eastbound through-right lane to a through lane;
    - Add a second eastbound through lane with a receiving lane east of Sunnyside Avenue;
    - Add an eastbound right-turn lane;
    - Modify the westbound through-right lane to a through lane;
    - Add a second westbound through lane with a receiving lane west of Sunnyside Avenue;
    - Add a westbound right-turn lane;
    - Modify the southbound through-right lane to a through lane;
    - Add a southbound right-turn lane; and
    - Modify the traffic signal to accommodate the added lanes.

- Under this scenario, all study segments are projected to exceed their LOS threshold. To improve the LOS of these segments, it is recommended that the following improvements be implemented.
  - Shepherd Avenue between Peach Avenue and Minnewawa Avenue
    - Add a second westbound lane.
  - Shepherd Avenue between Minnewawa Avenue and Clovis Avenue
    - Add a second westbound lane.
  - Shepherd Avenue between Clovis Avenue and Sunnyside Avenue
    - Add a second westbound lane; and
    - Complete the missing segments of the second eastbound lane.

Queuing Analysis

- It is recommended that the City consider left-turn and right-turn lane storage lengths as indicated in the Queuing Analysis.

Study Participants

JLB Traffic Engineering, Inc. Personnel

Jose Luis Benavides, PE, TE	Project Manager
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Javier Rios	Engineer I/II
Jesus Garcia	Engineer I/II
Carlos Ayala-Magana	Engineer I/II
Dennis Wynn	Sr. Engineering Technician
Adrian Benavides	Engineering Aide
Christian Sanchez	Engineering Aide

Persons Consulted

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Harmanjit Dhaliwal	City of Fresno
Gloria Hensley	County of Fresno
David Padilla	Caltrans
Kai Han	Fresno COG
Lang Yu	Fresno COG

References

1. City of Clovis, *2035 General Plan*.
2. County of Fresno, *2000 General Plan*.
3. *Guide for the Preparation of Traffic Impact Studies*, Caltrans, dated December 2002.
4. *Trip Generation,* 10th Edition, Washington D.C., Institute of Transportation Engineers, 2017.
5. *2014 California Manual on Uniform Traffic Control Devices*, Caltrans, November 7, 2014.

Appendix A: Scope of Work

January 31, 2020

Sean Smith, RCE, QSD
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City of Clovis
1033 Fifth Street
Clovis, CA 93612

Via E-mail Only: seans@cityofclovis.com

Subject: ***Draft Scope of Work for the Preparation of a Traffic Impact Analysis for the Tentative Tract 6050 located on the Northwest Corner of Clovis Avenue and Shepherd Avenue in the City of Clovis (JLB Project 006-034)***

Dear Mr. Smith,

JLB Traffic Engineering, Inc. (JLB) hereby submits this Draft Scope of Work for the preparation of a Traffic Impact Analysis (TIA) for the Tentative Tract 6050 (Project) located at the northwest quadrant of Clovis Avenue and Shepherd Avenue in the City of Clovis. The Project proposes to develop the site with up to 255 single family residential units on 35.22 net acres for an overall density of 6.94 units per acre. Based on the information provided to JLB, the Project is consistent with the City of Clovis General Plan. An aerial of the Project vicinity and Project Site Plan are shown in Exhibits A and B, respectively.

The purpose of this TIA is to evaluate the potential traffic impacts, identify short-term roadway and circulation needs, determine potential mitigation measures and identify any critical traffic issues that should be addressed in the on-going planning process. To prepare this TIA, JLB proposes the following Draft Scope of Work.

Scope of Work

- JLB will request a Fresno Council of Governments (Fresno COG) traffic forecast model run for the Project (Select Zone Analysis) which will include the Project and the streets to be analyzed. The Fresno COG traffic forecasting model will be used to forecast traffic volumes for the Base Year 2020 and Cumulative Year 2035 scenarios. To arrive at the Cumulative Year 2040 traffic volumes, JLB will utilize the average annual growth rate in traffic between the Base Year 2020 and Cumulative Year 2035 Fresno COG models to expand the increment volumes for five (5) years.
- JLB will obtain recent (less than 12 months) or schedule and conduct new traffic counts at the study facility(ies) as necessary. These counts will include pedestrians and vehicles.
- JLB will perform a site visit to observe existing traffic conditions, especially during the AM and PM peak hours. Existing roadway conditions, including geometrics and traffic controls, will be verified.
- JLB will evaluate on-site circulation and provide recommendations as necessary to improve circulation to and within the Project site. Particular attention will be paid to conflicting traffic movements, location of local roadways to major streets, and onsite vehicular ingress and egress routes.

- JLB will prepare CA MUTCD Warrant 3 "Peak Hour" for unsignalized study intersections under all study scenarios.
- JLB will qualitatively analyze existing and planned transit routes in the vicinity of the Project.
- JLB will qualitatively analyze existing and planned bikeways in the vicinity of the Project.
- JLB will forecast trip distribution based on turn count information, input from Fresno COG staff, school boundaries, and knowledge of the existing and planned circulation network in the vicinity of the Project.
- JLB will evaluate existing and forecast levels of service (LOS) at the study intersection(s). JLB will use HCM 6 or HCM 2000 methodologies (as appropriate) within Synchro to perform this analysis for the AM and PM peak hours.
- JLB will conduct a qualitative safe routes to school evaluation from the Project site to the K-12 school(s) which would most likely serve the Project on opening day.
- JLB will prepare a qualitative discussion of the Project's Vehicles Miles Traveled (VMT) based on output from the Fresno COG Model.

Study Scenarios

1. Existing Traffic Conditions with needed improvements (if any);
2. Existing plus Project Traffic Conditions with proposed mitigation measures (if any);
3. Near Term plus Project, plus Approved and Pending Developments Traffic Conditions with proposed mitigation measures (if any); and
4. Cumulative Year 2040 plus Project Traffic Conditions with proposed mitigation measures (if any).

Weekday peak hours to be analyzed (Tuesday through Thursday only)

1. 7 - 9 AM peak period
2. 4 - 6 PM peak period

Study Intersections

1. Peach Avenue / Shepherd Avenue
2. Minnewawa Avenue / Shepherd Avenue
3. Clovis Avenue / Shepherd Avenue
4. Sunnyside Avenue / Shepherd Avenue

Queuing analysis is included in the proposed scope of work for the study intersection(s) listed above under all study scenarios. This analysis will be utilized to recommend minimum storage lengths for left- and right-turn lanes at all study intersections.

Study Segments

1. None

Project Only Trip Assignment to the State facilities

1. None

Project Trip Generation

The trip generation rates for the proposed Project were obtained from the 10th Edition of the Trip Generation Manual published by the Institute of Transportation Engineers (ITE). Table I presents the trip generation for the proposed Project with trip generation rates for Single-Family Detached Housing. At buildout, the proposed Project is estimated to generate a maximum of 2,407 daily trips, 189 AM peak hour trips and 252 PM peak hour trips.

Table I: Project Trip Generation

Land Use (ITE Code)	*Size*	*Unit*	*Daily*		*AM (7-9) Peak Hour*						*PM (4-6) Peak Hour*					
			Rate	*Total*	*Trip Rate*	*In %*	*Out %*	*In*	*Out*	*Total*	*Trip Rate*	*In %*	*Out %*	*In*	*Out*	*Total*
Single-Family Detached Housing (210)	255	d.u.	9.44	2,407	0.74	25	75	47	142	189	0.99	63	37	159	93	252
Total Driveway Trips				**2,407**				**47**	**142**	**189**				**159**	**93**	**252**

Note: d.u. = Dwelling Units

Project Access

Access to and from the Project site will be provided from three (3) access points located along Clovis Avenue and Shepherd Avenue. Two (2) access points are located along the west side of Clovis Avenue approximately 350 and 875 feet north of Shepherd Avenue, one is proposed limited to an exit only and the other is limited to right-in, right-out access only. The final access point is located along the north side of Shepherd Avenue approximately 1,275 feet west of Clovis Avenue and is proposed to be limited to left-in, right-in, right-out access only. Additional Project details can be found on Exhibit B.

Near Term Projects to be Included

JLB is working with City of Clovis Engineering and Planning staff to identify Near Term Projects in the vicinity of the proposed Project. The Near Term Projects would then be included under the Near Term plus Project analysis. At this point, the proposed Near Term Projects to be included in the Near Term plus Project analysis are the following:

Project Name	General Location
1. TT 5546	SEC Sunnyside Avenue and Nees Avenue
2. TT 5550	North of Burl Avenue and Teague Avenue
3. TT 5720/A	NWC DeWolf Avenue and Teague Avenue
4. TT 5836	NEQ Nees Avenue and Temperance Avenue
5. TT 6109	NEC Temperance Avenue and Teague Avenue
6. TT 6128	SEC Locan Avenue and Teague Avenue
7. TT 6134A	NWC Locan Avenue and Teague Avenue
8. TT 6145	NWQ DeWolf Avenue and Owens Mountain Parkway
9. TT 6154	NWC Fowler Avenue and Teague Avenue
10. TT 6180	West of Locan Avenue and Quincy Avenue
11. TT 6190	NEC Locan Avenue and Cook Avenue
12. TT 6200	NWC Clovis Avenue and Shepherd Avenue
13. TT 6263	SEQ Clovis Avenue and Shepherd Avenue
14. Larsen Tract	NWC Locan Avenue and Teague Avenue
15. Locan 35	NEQ Locan Avenue and Teague Avenue

16. Clovis Community Medical Center	NE, NW, SE Corners of Herndon Avenue and Temperance Avenue
17. 20 k.s.f. Office Bldg.	NEC of Alluvial Avenue and Temperance Avenue
18. Research and Technology Park	NE and SE corner of Alluvial Avenue and Temperance Avenue

The above scope of work is based on our understanding of this Project and our experience with similar Traffic Impact Analysis Projects. In the absence of comments by February 21, 2020 it will be assumed that the above scope of work is acceptable to the agency(ies) that have not submitted any comments to the proposed TIA Scope of Work. If you have any questions or require additional information, please contact me by phone at (559) 664-3159 or by e-mail at jgarcia@JLBtraffic.com.

Sincerely,

Jesus Garcia

Jesus Garcia
Engineer I/II
cc:

Brian Spaunhurst, County of Fresno
David Padilla, Caltrans
Harmanjit Dhaliwal, City of Fresno
Jose Benavides, JLB Traffic Engineering, Inc.

JLB TRAFFIC ENGINEERING, INC.
www.JLBtraffic.com
info@JLBtraffic.com
516 W. Shaw Ave., Ste. 103
Fresno, CA 93704
(559) 570-8991

Exhibit A – Project Vicinity

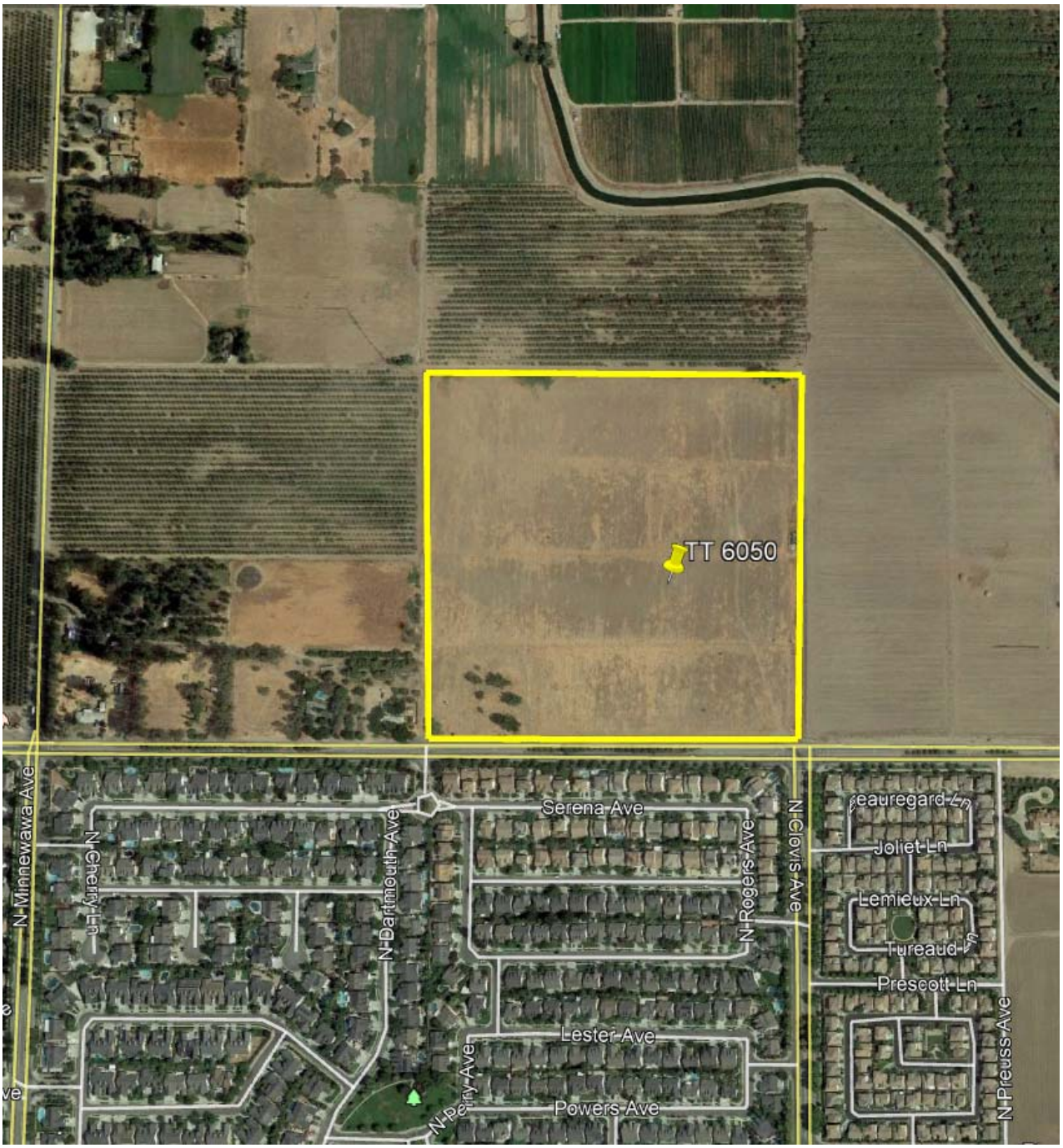
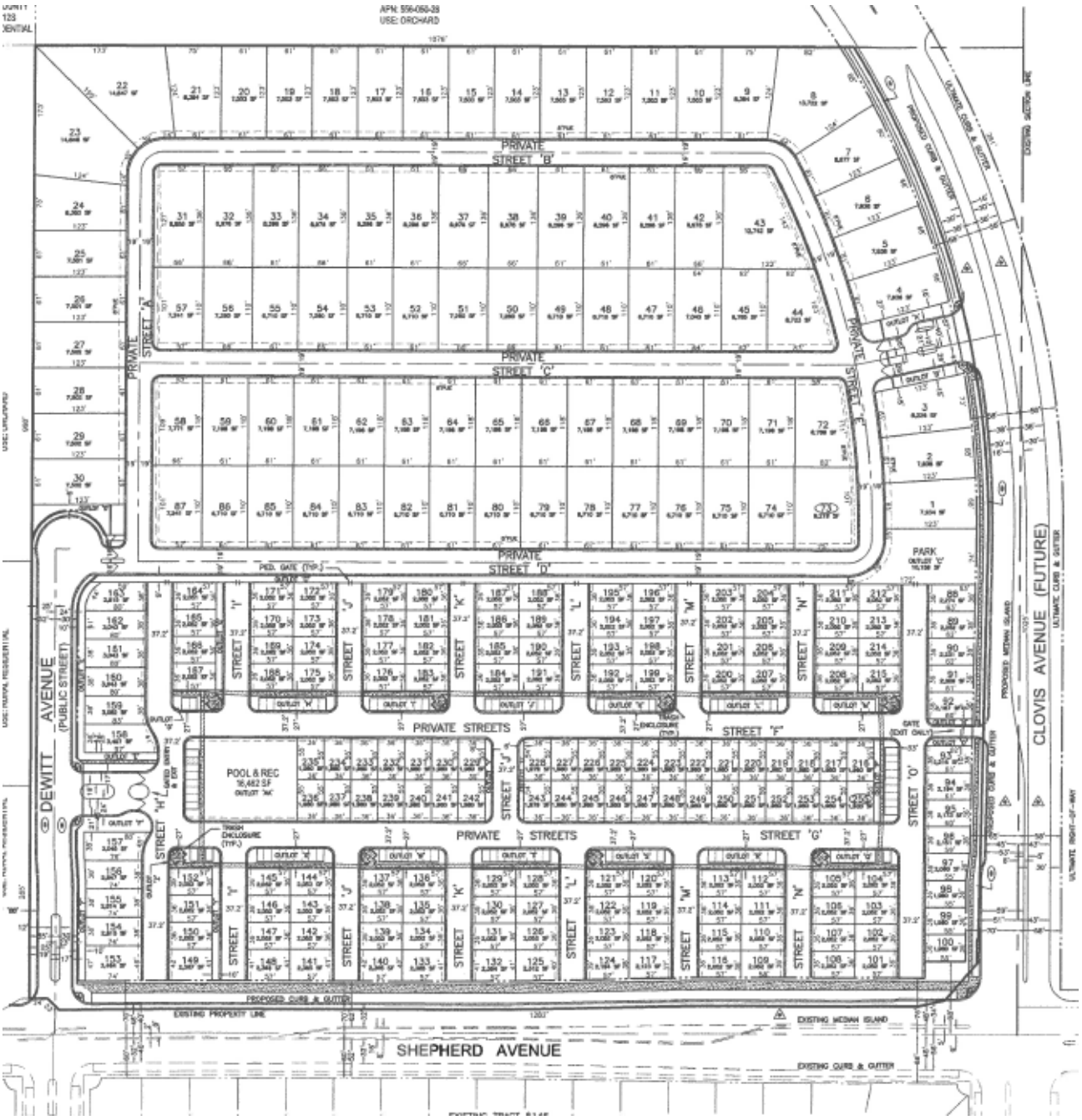


Exhibit B – Project Site Plan



Jesus Garcia

From: Sean Smith <SeanS@ci.clovis.ca.us>
Sent: Tuesday, February 18, 2020 1:49 PM
To: Jesus Garcia
Cc: Jose Benavides; 'bspaunhurst@fresnocountyca.gov'; 'david.padilla@dot.ca.gov'; 'Harmanjit Dhaliwal'; Mike Harrison; Gene Abella; Colleen Vidinoff
Subject: RE: TT 6050 TIA: Draft Scope of Work
Attachments: L01312020 Draft Scope of Work (006-034).pdf

Jesus,
Thank you for the review of the scoping for the TIA. The City's only comment is to also include a study of the Minnewawa-Behymer intersection. Please feel free to contact me or other Engineering staff with any questions.

Check https://cityofclovis.com/planning-and-development/engineering/resources-4/ for project status updates and other references. The front counter is open from 8am – 4pm; staff is available for appointments only after 4pm.

Sean K. Smith PE QSD | Supervising Civil Engineer
City of Clovis | Engineering Division
Development Review
1033 Fifth Street, Clovis, CA 93612
p. 559.324.2363 | f. 559-324-2843 | m. 559-765-7505
seans@cityofclovis.com

cc: project file

From: Sean Smith
Sent: Monday, February 3, 2020 10:09 PM
To: 'Jesus Garcia' <jgarcia@jlbtraffic.com>
Cc: Jose Benavides <jbenavides@jlbtraffic.com>; bspaunhurst@fresnocountyca.gov; david.padilla@dot.ca.gov; Harmanjit Dhaliwal <Harmanjit.Dhaliwal@fresno.gov>; Mike Harrison <mikeh@ci.clovis.ca.us>; Gene Abella <genea@ci.clovis.ca.us>; Colleen Vidinoff <colleenv@ci.clovis.ca.us>
Subject: RE: TT 6050 TIA: Draft Scope of Work

Jesus,
Thank you for the scoping, we will review and provide the City's comments. Please feel free to contact me or other Engineering staff with any questions.

Check https://cityofclovis.com/planning-and-development/engineering/resources-4/ for project status updates and other references. The front counter is open from 8am – 4pm; staff is available for appointments only after 4pm.

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City of Clovis | Engineering Division
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1033 Fifth Street, Clovis, CA 93612
p. 559.324.2363 | f. 559-324-2843 | m. 559-765-7505
seans@cityofclovis.com

cc: project file

From: Jesus Garcia [mailto:jgarcia@jlbtraffic.com]
Sent: Friday, January 31, 2020 3:37 PM
To: Sean Smith <SeanS@ci.clovis.ca.us>
Cc: Jose Benavides <jbenavides@jlbtraffic.com>; bspaunhurst@fresnocountyca.gov; david.padilla@dot.ca.gov; Harmanjit Dhaliwal <Harmanjit.Dhaliwal@fresno.gov>
Subject: TT 6050 TIA: Draft Scope of Work

Hi Sean,

Attached you will find a Draft Scope of Work for the preparation of a Traffic Impact Analysis for a Project in the City of Clovis.

We kindly ask that you take a moment to review and comment on the proposed Scope of Work. In the absence of comments by February 21, 2020, it will be assumed that the proposed Scope of Work is acceptable to the agency(ies) that have not submitted any comments.

If you have any questions or require additional information, please contact me by phone at 559.664.3159 or by e-mail at jgarcia@JLBtraffic.com. We appreciate your time and attention to this matter.

Sincerely,

Jesus Garcia
Engineer I/II

Traffic Engineering, Transportation Planning and Parking Solutions
Certified Disadvantaged Business Enterprise (DBE) and Small Business Enterprise (SBE)

516 W. Shaw Ave., Ste. 103
Fresno, CA 93704
Main: (559) 570-8991
Fax: (559) 317-6854
Cell: (559) 871-8210
www.JLBtraffic.com

Jesus Garcia

From: Padilla, Dave@DOT <dave.padilla@dot.ca.gov>
Sent: Tuesday, February 25, 2020 7:33 AM
To: Jesus Garcia
Subject: RE: Tracts 6298, 6304, and 6050

Good Morning Jesus,

We no concerns with the proposed SOW.

Thank you,

DAVID PADILLA
Associate Transportation Planner
Caltrans
Office of Planning & Local Assistance
1352 W. Olive Avenue
Fresno, CA 93778-2616
Office: (559) 444-2493, Fax: (559) 445-5875

From: Jesus Garcia <jgarcia@jlbtraffic.com>
Sent: Monday, February 24, 2020 11:13 AM
To: Padilla, Dave@DOT <dave.padilla@dot.ca.gov>
Subject: Tracts 6298, 6304, and 6050

David,

Here are the three Tract we just spoke about. I apologize for the mix up. Thank you.

Sincerely,

Jesus Garcia
Engineer I/II

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Jesus Garcia

From: Hensley, Gloria <ghensley@fresnocountyca.gov>
Sent: Tuesday, February 25, 2020 8:59 AM
To: Jesus Garcia
Cc: Spaunhurst, Brian
Subject: RE: TT 6050 TIA: Draft Scope of Work

Good Morning Jesus,

I apologize for the delayed response. Fresno County Transportation has completed our review of the Draft Scope of Work (DSOW) and provide the following comments:

- Include bicyclist counts in traffic counts. This area is popular amongst cyclists and families utilizing the nearby Dry Creek trail. Surrounding CUSD campuses may also influence bicycle counts in the area.
- Include Existing-Plus-Approved-and-Pending-Project Conditions in study scenarios
- Include Project trip generations with reference and project trip distribution assumptions. A trip distribution map will suffice.
- Include the following segments in study area:
    - Shepherd between Peach and Minnewawa; Shepherd between Minnewawa and Clovis; and Shepherd between Clovis and Sunnyside

If you have any questions, please reach out!

Thank you,

Gloria Hensley| Planner
Department of Public Works and Planning | Design Division
2220 Tulare St. 7th Floor Fresno, CA 93721
Main Office: (559) 600-4109 Direct: (559) 600-0523
Your input matters! Customer Service Survey

From: Jesus Garcia <jgarcia@jlbtraffic.com>
Sent: Tuesday, February 25, 2020 7:49 AM
To: Spaunhurst, Brian <bspaunhurst@fresnocountyca.gov>
Subject: TT 6050 TIA: Draft Scope of Work

Good morning Brian,

I am following up with you to inquire if you have any comments regarding the proposed draft scope of work that we sent out on January 31st for the preparation of the TIA for Tract 6050?

If you have any questions or require additional information, please contact me by phone at 559.664.3159 or by e-mail at jgarcia@JLBtraffic.com. Thank you.

Jesus Garcia

From: Harmanjit Dhaliwal <Harmanjit.Dhaliwal@fresno.gov>
Sent: Thursday, March 19, 2020 10:20 AM
To: Jesus Garcia; Jill Gormley
Cc: Jose Benavides; Sufia Samaan
Subject: RE: TT 6050 TIA: Draft Scope of Work

Good Morning Jesus,

Thank you for the opportunity to review the trip trace. The City of Fresno will not add any additional intersections to the Scope of Work.

Thanks,

Harmanjit Dhaliwal, PE

Public Works Department
Traffic Operations & Planning Division
2600 Fresno Street, Room 4064
Fresno, CA 93721
Ph: (559) 621-8694
Harmanjit.Dhaliwal@fresno.gov

Effective January 2, 2020, new security measures have been implemented at City Hall to include security screening for all visitors. For additional information please see the following link:

https://www.fresno.gov/news/city-announces-new-security-measures-at-city-hall/

From: Jesus Garcia [mailto:jgarcia@jlbtraffic.com]
Sent: Monday, March 16, 2020 12:16 PM
To: Jill Gormley
Cc: Harmanjit Dhaliwal; Jose Benavides
Subject: TT 6050 TIA: Draft Scope of Work

External Email: Use caution with links and attachments

Jill,

I have attached PDF copies of the trip distribution map for Tract 6050 in the City of Clovis. Should you have any questions, please contact us. Thank you.

Sincerely,

Jesus Garcia

Appendix B: Traffic Counts

JLB Traffic Engineering, Inc.

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Fresno, CA, 93704
(559)570-8991
Traffic Engineering, Transportation Planning & Parking Solutions
www.JLBtraffic.com

AGENDA ITEM NO.2

File Name : Minnewawa at Behymer
Site Code : 00000000
Start Date : 3/3/2020
Page No : 1

Groups Printed- Unshifted - Bank 1

	MINNEWAWA Southbound					BEHYMER Westbound					MINNEWAWA Northbound					BEHYMER Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	1	46	19	0	66	55	18	4	0	77	0	49	9	0	58	9	10	0	0	19	220
07:15 AM	0	49	38	0	87	106	36	3	0	145	2	63	17	0	82	12	14	0	0	26	340
07:30 AM	2	61	56	0	119	76	45	1	1	123	1	85	32	0	118	8	18	0	0	26	386
07:45 AM	0	77	50	0	127	49	52	4	0	105	3	48	24	0	75	15	19	0	0	34	341
Total	3	233	163	0	399	286	151	12	1	450	6	245	82	0	333	44	61	0	0	105	1287
08:00 AM	2	65	26	0	93	33	37	1	0	71	3	56	18	0	77	12	15	1	0	28	269
08:15 AM	0	44	24	0	68	36	25	0	0	61	0	57	5	0	62	12	12	2	0	26	217
08:30 AM	2	56	17	0	75	29	18	0	0	47	2	57	11	0	70	6	9	1	0	16	208
08:45 AM	0	44	16	0	60	33	25	0	0	58	4	54	12	0	70	7	6	0	0	13	201
Total	4	209	83	0	296	131	105	1	0	237	9	224	46	0	279	37	42	4	0	83	895
******																					
04:00 PM	2	58	38	0	98	33	12	1	0	46	0	66	6	0	72	11	13	1	0	25	241
04:15 PM	0	60	32	0	92	25	16	3	0	44	2	57	12	0	71	13	16	1	0	30	237
04:30 PM	0	70	44	0	114	39	13	0	0	52	4	78	14	0	96	12	21	0	0	33	295
04:45 PM	1	57	34	0	92	53	29	3	0	85	1	69	14	0	84	8	32	0	0	40	301
Total	3	245	148	0	396	150	70	7	0	227	7	270	46	0	323	44	82	2	0	128	1074
05:00 PM	0	70	61	0	131	40	18	3	0	61	3	90	10	0	103	8	23	1	0	32	327
05:15 PM	2	62	72	0	136	42	23	0	0	65	1	82	20	0	103	15	25	1	0	41	345
05:30 PM	0	61	46	0	107	35	30	1	0	66	3	71	22	0	96	12	25	1	1	39	308
05:45 PM	1	60	40	0	101	41	20	2	0	63	1	72	25	0	98	8	24	1	0	33	295
Total	3	253	219	0	475	158	91	6	0	255	8	315	77	0	400	43	97	4	1	145	1275
Grand Total	13	940	613	0	1566	725	417	26	1	1169	30	1054	251	0	1335	168	282	10	1	461	4531
Apprch %	0.8	60	39.1	0		62	35.7	2.2	0.1		2.2	79	18.8	0		36.4	61.2	2.2	0.2		
Total %	0.3	20.7	13.5	0	34.6	16	9.2	0.6	0	25.8	0.7	23.3	5.5	0	29.5	3.7	6.2	0.2	0	10.2	
Unshifted	13	940	613	0	1566	725	417	26	1	1169	30	1054									
% Unshifted	100	100	100	0	100	100	100	100	100	100	100	100	100	0	100	100	100	100	100	100	100
Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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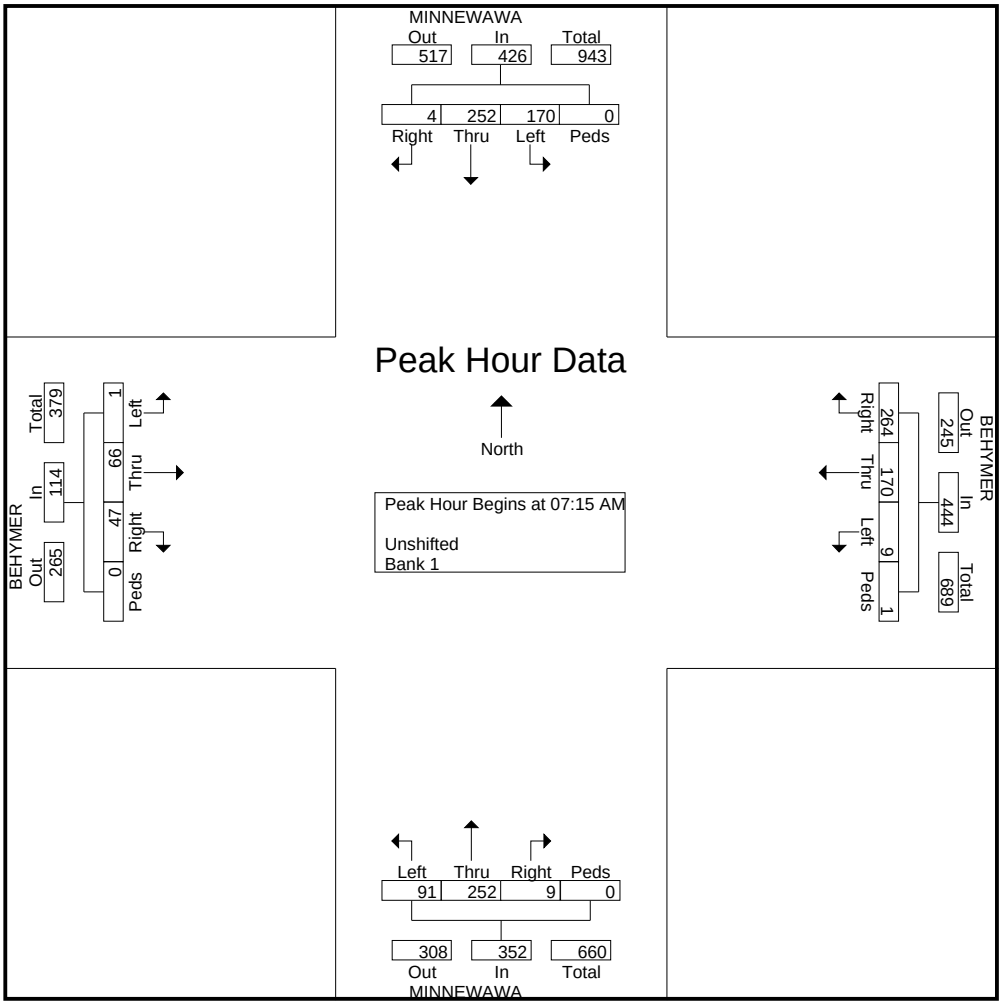
AGENDA ITEM NO.2

File Name : Minnewawa at Behymer
Site Code : 00000000
Start Date : 3/3/2020
Page No : 2

	MINNEWAWA Southbound					BEHYMER Westbound					MINNEWAWA Northbound					BEHYMER Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	49	38	0	87	**106**	36	3	0	**145**	2	63	17	0	82	12	14	0	0	26	340
07:30 AM	**2**	61	**56**	0	119	76	45	1	**1**	123	1	**85**	**32**	0	**118**	8	18	0	0	26	**386**
07:45 AM	0	**77**	50	0	**127**	49	**52**	**4**	0	105	**3**	48	24	0	75	**15**	**19**	0	0	**34**	341
08:00 AM	2	65	26	0	93	33	37	1	0	71	3	56	18	0	77	12	15	**1**	0	28	269
Total Volume	4	252	170	0	426	264	170	9	1	444	9	252	91	0	352	47	66	1	0	114	1336
% App. Total	0.9	59.2	39.9	0		59.5	38.3	2	0.2		2.6	71.6	25.9	0		41.2	57.9	0.9	0		
PHF	.500	.818	.759	.000	.839	.623	.817	.563	.250	.766	.750	.741	.711	.000	.746	.783	.868	.250	.000	.838	.865



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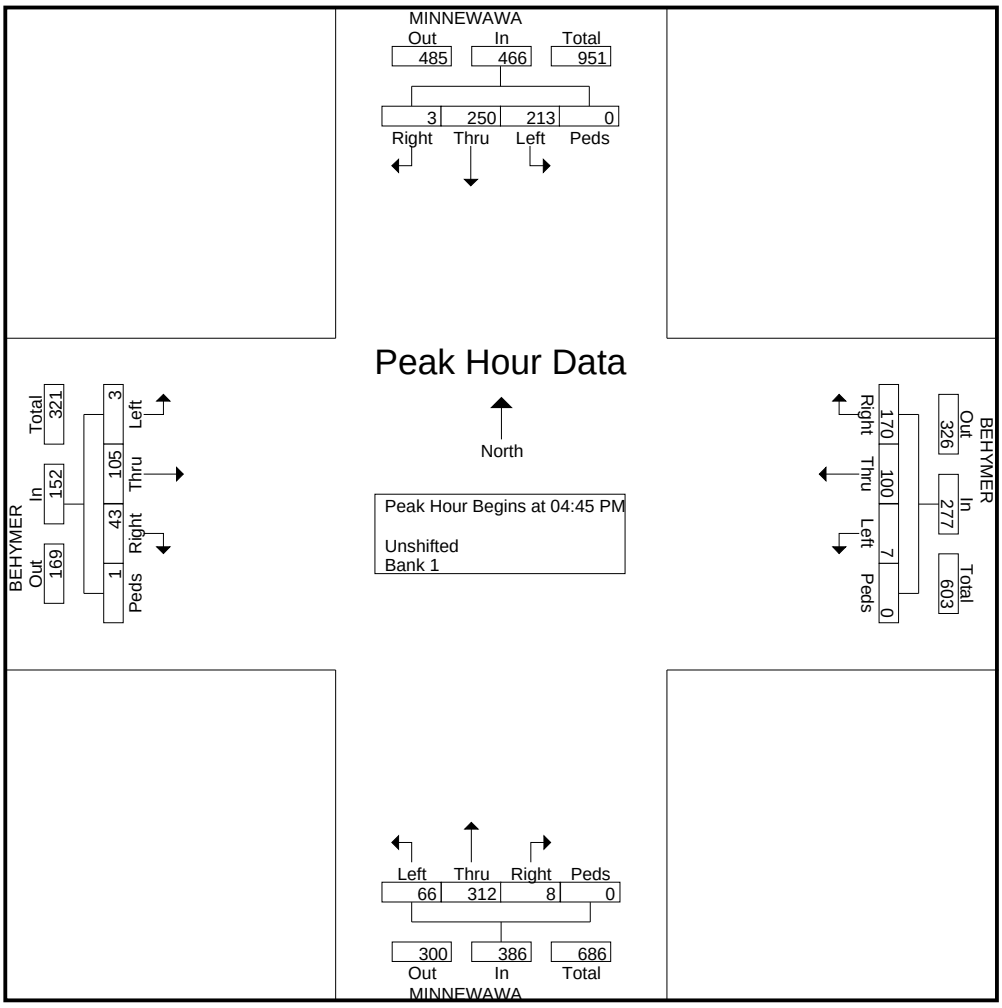
AGENDA ITEM NO.2

File Name : Minnewawa at Behymer
Site Code : 00000000
Start Date : 3/3/2020
Page No : 3

	MINNEWAWA Southbound					BEHYMER Westbound					MINNEWAWA Northbound					BEHYMER Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	1	57	34	0	92	**53**	29	**3**	0	**85**	1	69	14	0	84	8	**32**	0	0	40	301
05:00 PM	0	**70**	61	0	131	40	18	3	0	61	**3**	**90**	10	0	**103**	8	23	**1**	0	32	327
05:15 PM	**2**	62	**72**	0	**136**	42	23	0	0	65	1	82	20	0	103	**15**	25	1	0	**41**	**345**
05:30 PM	0	61	46	0	107	35	**30**	1	0	66	3	71	**22**	0	96	12	25	1	**1**	39	308
Total Volume	3	250	213	0	466	170	100	7	0	277	8	312	66	0	386	43	105	3	1	152	1281
% App. Total	0.6	53.6	45.7	0		61.4	36.1	2.5	0		2.1	80.8	17.1	0		28.3	69.1	2	0.7		
PHF	.375	.893	.740	.000	.857	.802	.833	.583	.000	.815	.667	.867	.750	.000	.937	.717	.820	.750	.250	.927	.928



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AGENDA ITEM NO.2

File Name : Minnewawa at Behymer
Site Code : 00000000
Start Date : 3/3/2020
Page No : 1

Groups Printed- Bank 2

	MINNEWAWA Southbound					BEHYMER Westbound					MINNEWAWA Northbound					BEHYMER Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
******																					
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	3
Total	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	4
******																					
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
04:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	2	0	0	2	4
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
******																					
05:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
******																					
Total	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
Grand Total	0	2	0	0	2	0	0	0	0	0	0	6	0	0	6	0	2	0	0	2	10
Apprch %	0	100	0	0		0	0	0	0		0	100	0	0		0	100	0	0		
Total %	0	20	0	0	20	0	0	0	0	0	0	60	0	0	60	0	20	0	0	20	

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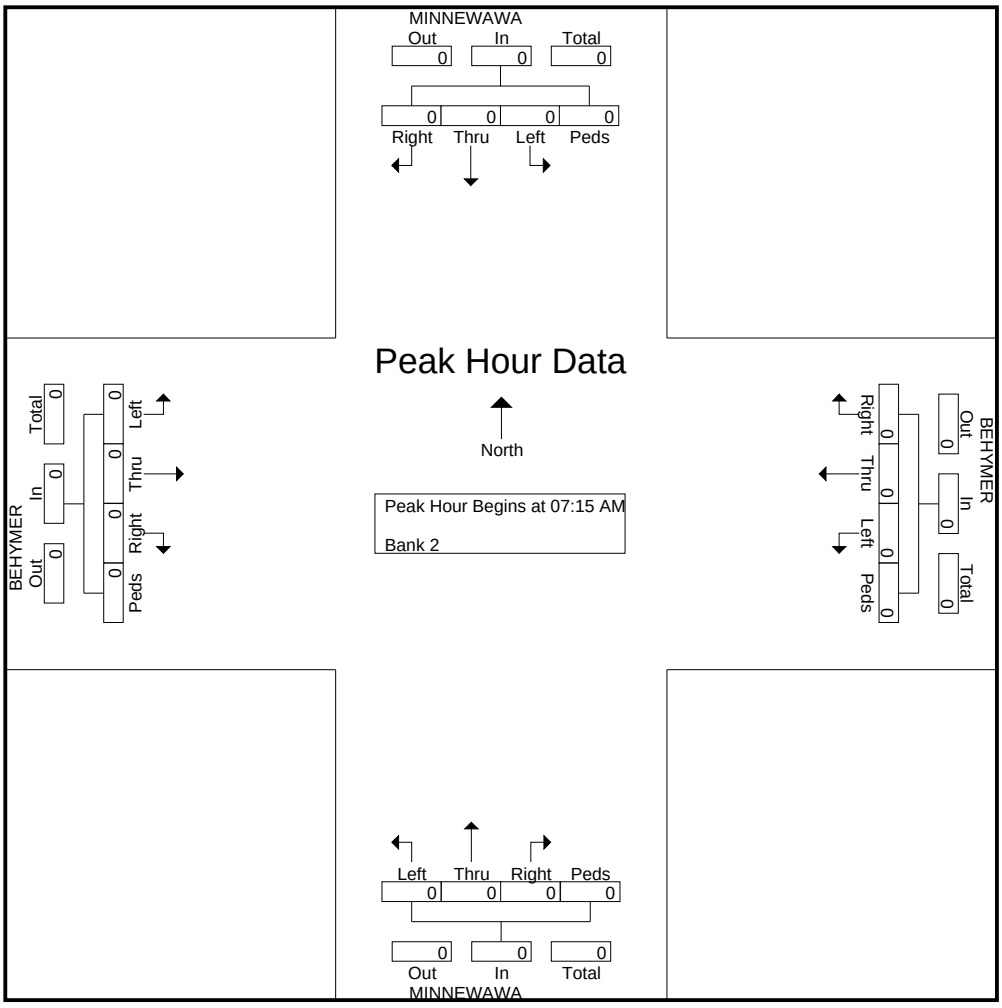
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000



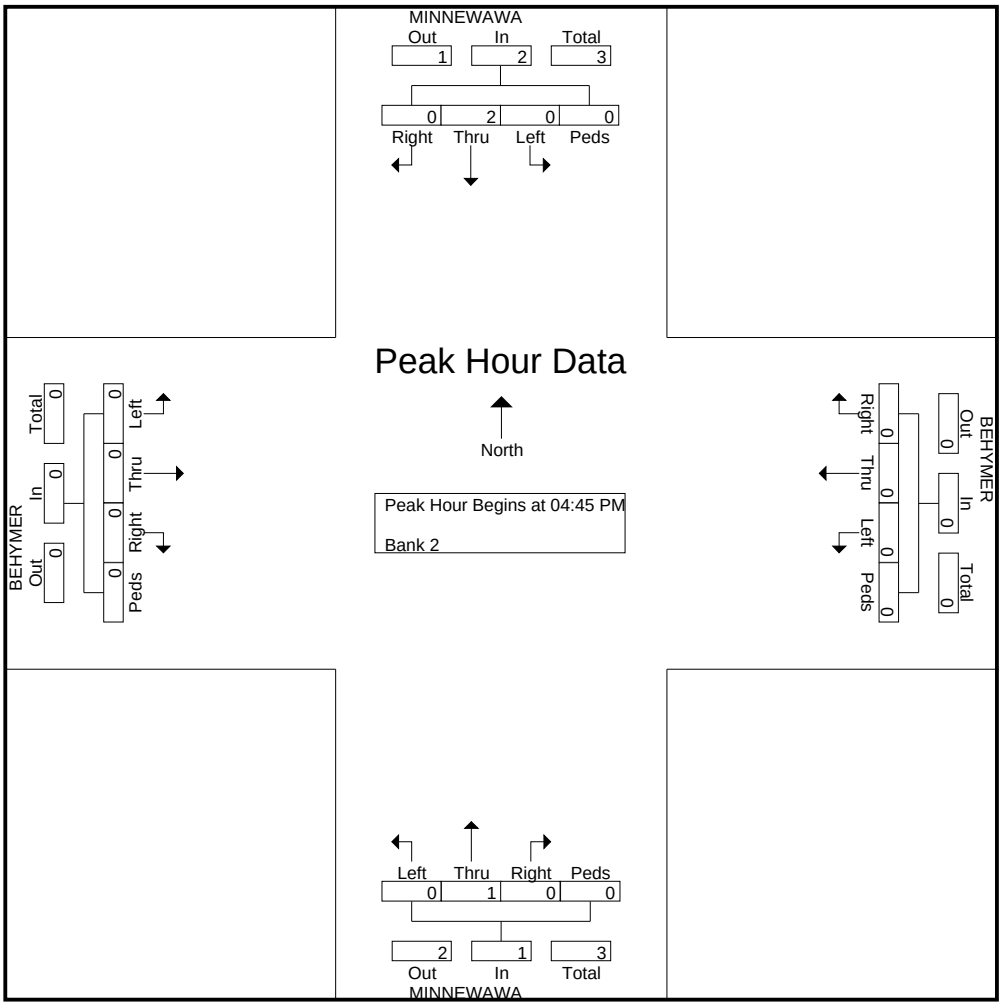
JLB Traffic Engineering, Inc.

516 W. Shaw Ave., Ste. 103
Fresno, CA, 93704
(559)570-8991
Traffic Engineering, Transportation Planning & Parking Solutions
www.JLBtraffic.com

AGENDA ITEM NO.2

File Name : Minnewawa at Behymer
Site Code : 00000000
Start Date : 3/3/2020
Page No : 3

	MINNEWAWA Southbound					BEHYMER Westbound					MINNEWAWA Northbound					BEHYMER Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	0	**1**	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	**1**	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
% App. Total	0	100	0	0		0	0	0	0		0	100	0	0		0	0	0	0		
PHF	.000	.500	.000	.000	.500	.000	.000	.000	.000	.000	.000	.250	.000	.000	.250	.000	.000	.000	.000	.000	.750



Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

Turning Move

Prepared For:

JLB Traffic Engineering, Inc.
516 W. Shaw Ave, Suite 103
Fresno, CA 93704

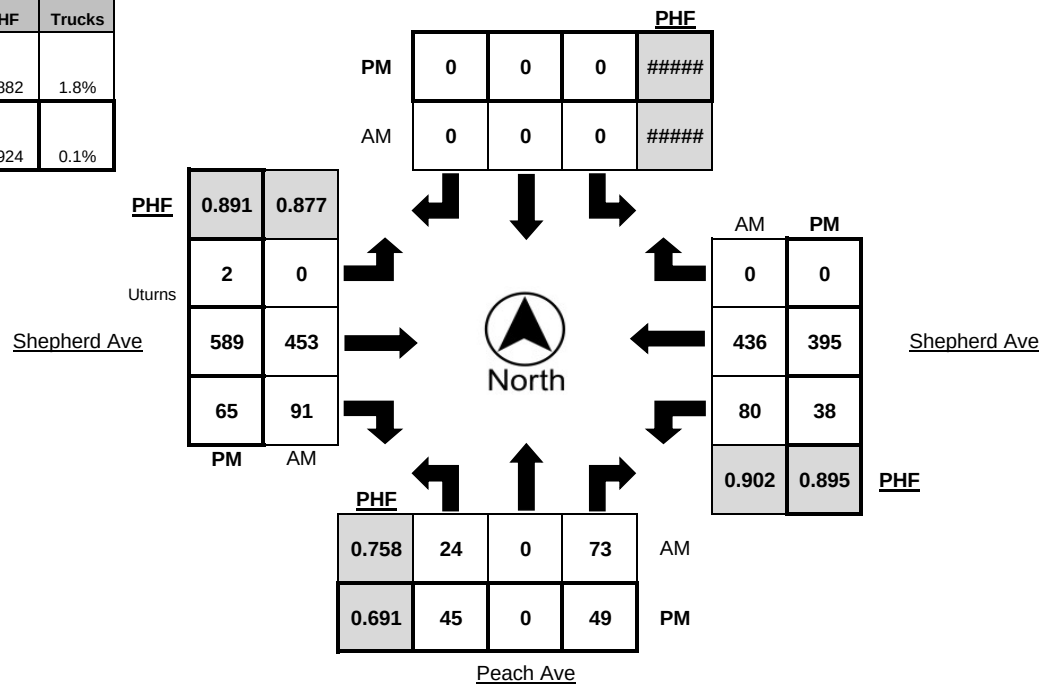
LOCATION Shepherd Ave @ Peach Ave
LATITUDE 36.8667
COUNTY Fresno
LONGITUDE -119.7201
COLLECTION DATE Tuesday, February 4, 2020
WEATHER Clear

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
7:00 AM - 7:15 AM	7	0	11	0	0	0	0	0	0	75	13	1	9	84	0	3
7:15 AM - 7:30 AM	15	0	15	2	0	0	0	0	0	92	17	3	13	97	0	4
7:30 AM - 7:45 AM	1	0	22	0	0	0	0	0	0	116	28	3	26	100	0	4
7:45 AM - 8:00 AM	5	0	25	1	0	0	0	0	0	134	21	4	34	109	0	2
8:00 AM - 8:15 AM	11	0	21	0	0	0	0	0	0	111	21	1	10	111	0	0
8:15 AM - 8:30 AM	7	0	5	0	0	0	0	0	0	92	21	6	10	116	0	0
8:30 AM - 8:45 AM	8	0	3	0	0	0	0	0	0	82	11	1	8	102	0	3
8:45 AM - 9:00 AM	6	0	7	0	0	0	0	0	0	68	14	2	4	99	0	0
TOTAL	**60**	**0**	**109**	**3**	**0**	**0**	**0**	**0**	**0**	**770**	**146**	**21**	**114**	**818**	**0**	**16**

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	7	0	10	0	0	0	0	0	0	121	11	1	8	90	0	2
4:15 PM - 4:30 PM	12	0	6	1	0	0	0	0	0	136	12	0	7	105	0	0
4:30 PM - 4:45 PM	11	0	6	1	0	0	0	0	0	123	5	0	12	104	0	0
4:45 PM - 5:00 PM	15	0	7	0	0	0	0	0	1	143	13	0	7	94	0	0
5:00 PM - 5:15 PM	9	0	25	0	0	0	0	0	0	151	19	0	14	102	0	0
5:15 PM - 5:30 PM	15	0	9	0	0	0	0	0	0	166	18	0	8	87	0	0
5:30 PM - 5:45 PM	6	0	8	0	0	0	0	0	1	129	15	0	9	112	0	1
5:45 PM - 6:00 PM	9	0	6	0	0	0	0	0	1	119	26	2	7	105	0	0
TOTAL	**84**	**0**	**77**	**2**	**0**	**0**	**0**	**0**	**3**	**1088**	**119**	**3**	**72**	**799**	**0**	**3**

	Northbound				Southbound				Eastbound				Westbound			
PEAK HOUR	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
7:30 AM - 8:30 AM	24	0	73	1	0	0	0	0	0	453	91	14	80	436	0	6
4:45 PM - 5:45 PM	45	0	49	0	0	0	0	0	2	589	65	0	38	395	0	1

	PHF	Trucks
AM	0.882	1.8%
PM	0.924	0.1%



Metro Traffic Data Inc.
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Turning Move

Prepared For:

JLB Traffic Engineering, Inc.
516 W. Shaw Ave, Suite 103
Fresno, CA 93704

LOCATION Shepherd Ave @ Peach Ave

LATITUDE 36.8667

COUNTY Fresno

LONGITUDE -119.7201

COLLECTION DATE Tuesday, February 4, 2020

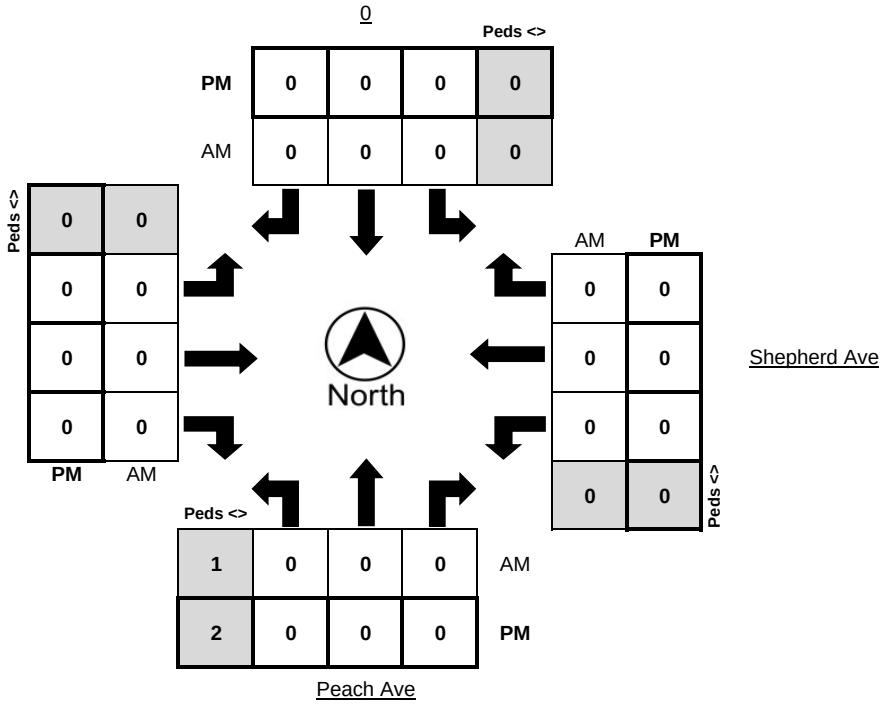
WEATHER Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**
7:00 AM - 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**
7:30 AM - 8:30 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
4:45 PM - 5:45 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0

	Bikes	Peds
AM Peak Total	0	1
PM Peak Total	**0**	**2**



Metro Traffic Data Inc.
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Turning Move

Prepared For:
JLB Traffic Engineering, Inc.
516 W. Shaw Ave, Suite 103
Fresno, CA 93704

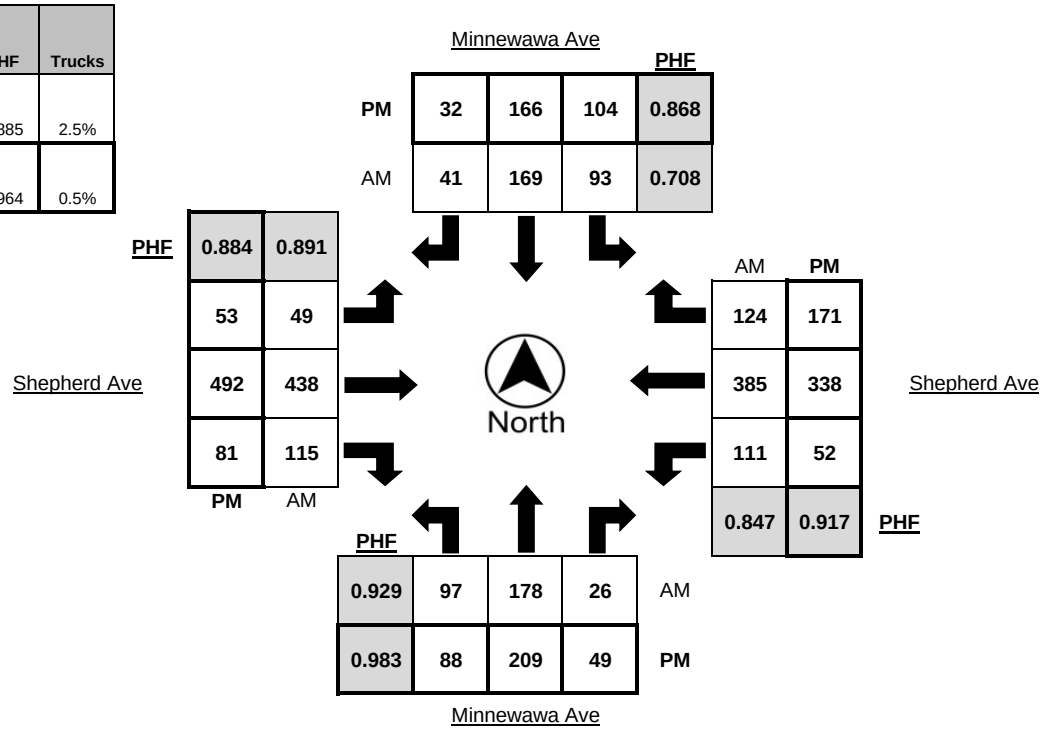
LOCATION Shepherd Ave @ Minnewawa Ave
LATITUDE 36.8666
COUNTY Fresno
LONGITUDE -119.7111
COLLECTION DATE Tuesday, February 4, 2020
WEATHER Clear

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
7:00 AM - 7:15 AM	14	27	5	0	17	23	3	1	3	77	14	1	9	73	22	4
7:15 AM - 7:30 AM	20	53	2	2	19	37	4	5	17	93	16	5	23	88	38	7
7:30 AM - 7:45 AM	20	52	4	2	24	42	8	3	12	116	25	3	30	106	47	1
7:45 AM - 8:00 AM	38	35	8	0	32	54	21	2	14	120	35	4	44	97	18	3
8:00 AM - 8:15 AM	19	38	12	3	18	36	8	2	6	109	39	1	14	94	21	2
8:15 AM - 8:30 AM	23	26	4	3	35	29	5	1	6	80	14	3	8	101	23	6
8:30 AM - 8:45 AM	14	41	3	3	20	33	5	5	6	66	14	2	4	91	37	1
8:45 AM - 9:00 AM	13	25	0	3	10	30	3	1	6	58	18	2	2	89	32	5
TOTAL	**161**	**297**	**38**	**16**	**175**	**284**	**57**	**20**	**70**	**719**	**175**	**21**	**134**	**739**	**238**	**29**

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	20	37	7	0	25	43	5	4	6	111	14	0	2	76	28	1
4:15 PM - 4:30 PM	12	42	8	1	19	49	4	1	8	114	18	0	3	105	21	0
4:30 PM - 4:45 PM	22	32	11	0	18	50	4	1	11	113	13	1	4	95	44	1
4:45 PM - 5:00 PM	22	51	12	1	15	41	8	0	10	105	26	0	19	80	54	2
5:00 PM - 5:15 PM	20	51	15	0	21	40	8	0	12	134	27	0	15	100	33	1
5:15 PM - 5:30 PM	18	52	17	1	27	49	6	1	18	145	14	0	11	65	47	0
5:30 PM - 5:45 PM	28	55	5	1	41	36	10	2	13	108	14	0	7	93	37	1
5:45 PM - 6:00 PM	19	51	4	0	20	34	6	1	6	111	13	1	7	90	32	1
TOTAL	**161**	**371**	**79**	**4**	**186**	**342**	**51**	**10**	**84**	**941**	**139**	**2**	**68**	**704**	**296**	**7**

	Northbound				Southbound				Eastbound				Westbound			
PEAK HOUR	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
7:15 AM - 8:15 AM	97	178	26	7	93	169	41	12	49	438	115	13	111	385	124	13
4:45 PM - 5:45 PM	88	209	49	3	104	166	32	3	53	492	81	0	52	338	171	4

	PHF	Trucks
AM	0.885	2.5%
PM	0.964	0.5%



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Turning Move

Prepared For:

JLB Traffic Engineering, Inc.
516 W. Shaw Ave, Suite 103
Fresno, CA 93704

LOCATION Shepherd Ave @ Minnewawa Ave

LATITUDE 36.8666

COUNTY Fresno

LONGITUDE -119.7111

COLLECTION DATE Tuesday, February 4, 2020

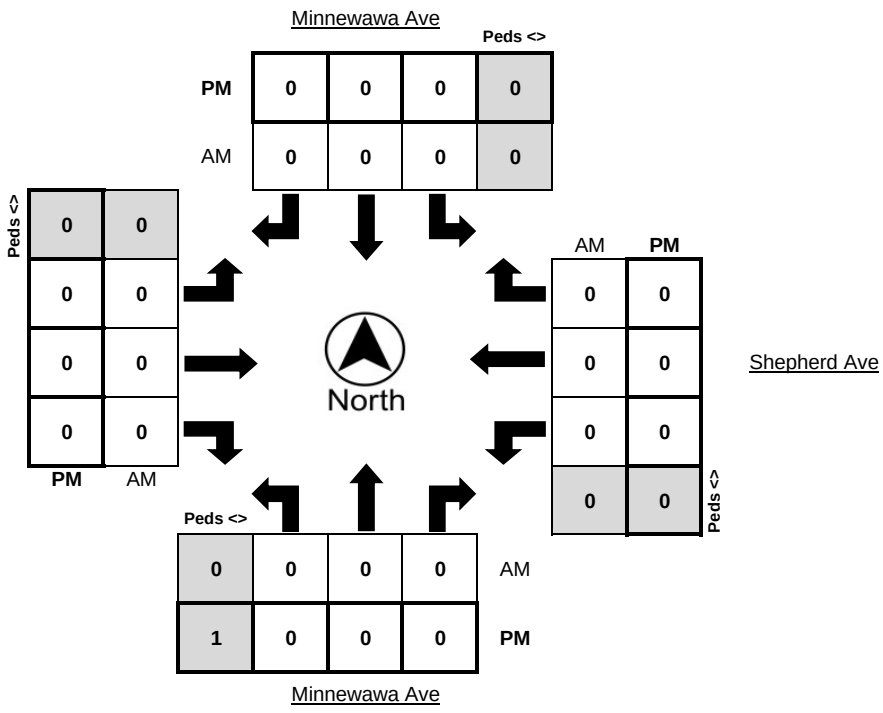
WEATHER Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**
7:00 AM - 7:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
8:45 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**
4:00 PM - 4:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**
7:15 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM - 5:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0

	Bikes	Peds
AM Peak Total	0	0
PM Peak Total	**0**	**1**



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Turning Move

Prepared For:
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Fresno, CA 93704

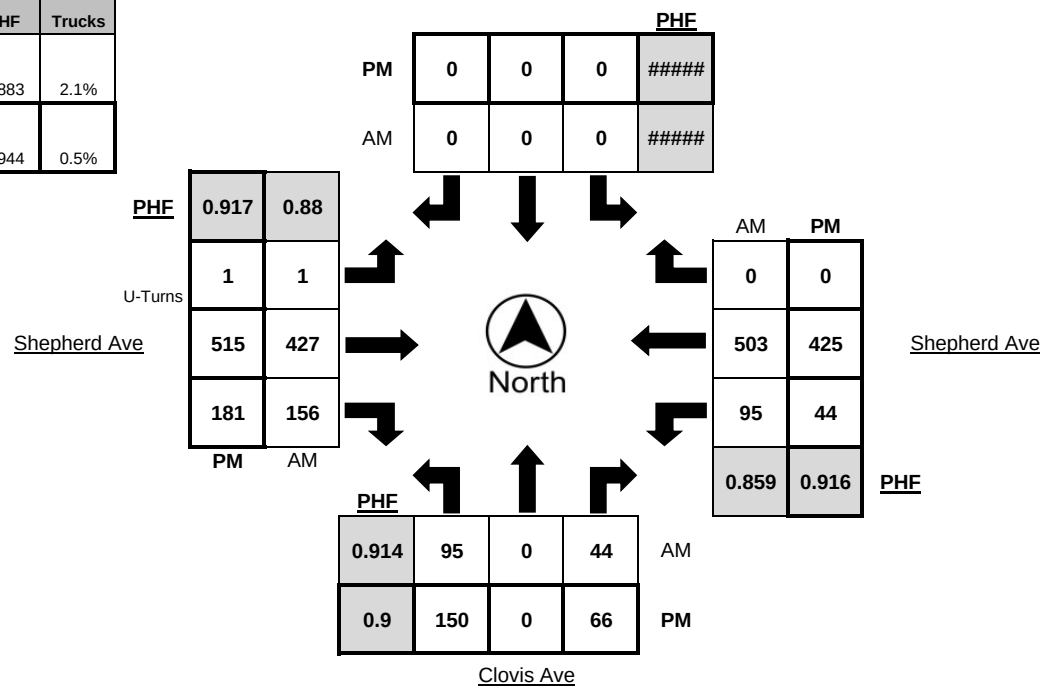
LOCATION Shepherd Ave @ Clovis Ave
LATITUDE 36.8666
COUNTY Fresno
LONGITUDE -119.7021
COLLECTION DATE Tuesday, February 4, 2020
WEATHER Clear

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
7:00 AM - 7:15 AM	19	0	4	1	0	0	0	0	0	80	30	3	5	99	0	5
7:15 AM - 7:30 AM	25	0	3	0	0	0	0	0	0	84	34	4	14	131	0	6
7:30 AM - 7:45 AM	31	0	7	0	0	0	0	0	0	106	33	4	26	145	0	1
7:45 AM - 8:00 AM	20	0	14	1	0	0	0	0	0	119	47	5	29	145	0	0
8:00 AM - 8:15 AM	18	0	15	0	0	0	0	0	0	109	33	1	19	104	0	2
8:15 AM - 8:30 AM	26	0	8	5	0	0	0	0	1	93	43	5	21	109	0	4
8:30 AM - 8:45 AM	30	0	17	0	0	0	0	0	1	70	22	3	3	107	0	1
8:45 AM - 9:00 AM	31	0	7	0	0	0	0	0	1	45	18	2	6	85	0	4
TOTAL	**200**	**0**	**75**	**7**	**0**	**0**	**0**	**0**	**3**	**706**	**260**	**27**	**123**	**925**	**0**	**23**

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	31	0	10	0	0	0	0	0	0	100	31	2	4	88	0	1
4:15 PM - 4:30 PM	28	0	23	0	0	0	0	0	0	120	36	0	9	98	0	0
4:30 PM - 4:45 PM	43	0	10	1	0	0	0	0	0	117	31	4	11	104	0	1
4:45 PM - 5:00 PM	42	0	12	0	0	0	0	0	0	113	31	0	15	113	0	3
5:00 PM - 5:15 PM	39	0	21	0	0	0	0	0	0	137	53	0	8	108	0	1
5:15 PM - 5:30 PM	29	0	16	0	0	0	0	0	1	134	47	1	16	100	0	0
5:30 PM - 5:45 PM	40	0	17	0	0	0	0	0	0	131	50	1	5	104	0	1
5:45 PM - 6:00 PM	30	0	14	0	0	0	0	0	0	94	30	0	7	99	0	1
TOTAL	**282**	**0**	**123**	**1**	**0**	**0**	**0**	**0**	**1**	**946**	**309**	**8**	**75**	**814**	**0**	**8**

	Northbound				Southbound				Eastbound				Westbound			
PEAK HOUR	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
7:30 AM - 8:30 AM	95	0	44	6	0	0	0	0	1	427	156	15	95	503	0	7
4:45 PM - 5:45 PM	150	0	66	0	0	0	0	0	1	515	181	2	44	425	0	5

	PHF	Trucks
AM	0.883	2.1%
PM	0.944	0.5%



Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

Turning Move

Prepared For:

JLB Traffic Engineering, Inc.
516 W. Shaw Ave, Suite 103
Fresno, CA 93704

LOCATION Shepherd Ave @ Clovis Ave **LATITUDE** 36.8666

COUNTY Fresno **LONGITUDE** -119.7021

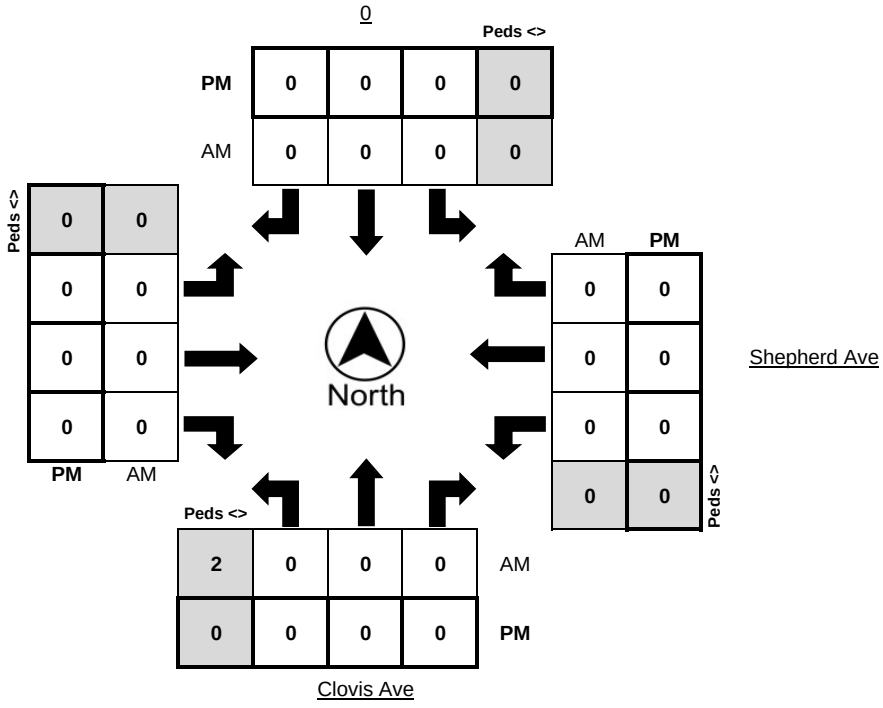
COLLECTION DATE Tuesday, February 4, 2020 **WEATHER** Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:00 AM - 7:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:30 AM - 8:30 AM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
4:45 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Bikes	Peds
AM Peak Total	0	2
PM Peak Total	0	0



Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

Turning Move

Prepared For:

JLB Traffic Engineering, Inc.
516 W. Shaw Ave, Suite 103
Fresno, CA 93704

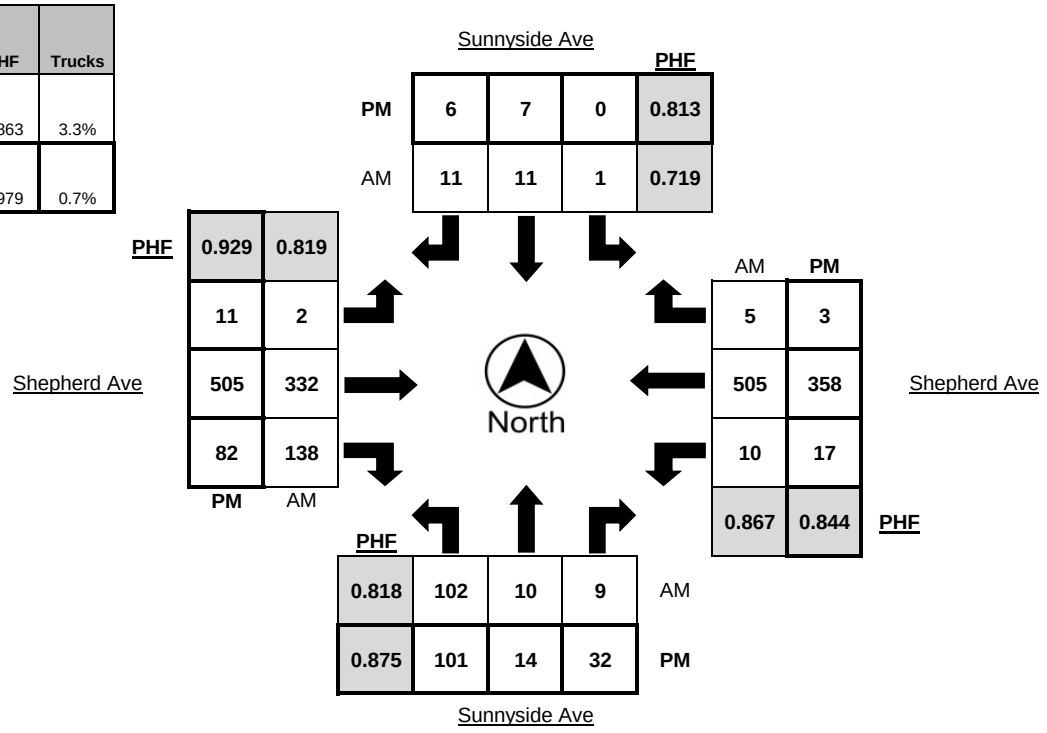
LOCATION Shepherd Ave @ Sunnyside Ave
LATITUDE 36.8666
COUNTY Fresno
LONGITUDE -119.6931
COLLECTION DATE Tuesday, February 4, 2020
WEATHER Clear

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
7:00 AM - 7:15 AM	21	0	0	2	0	3	1	0	0	58	23	5	3	76	0	3
7:15 AM - 7:30 AM	33	2	2	2	0	1	1	0	0	60	42	4	3	116	1	3
7:30 AM - 7:45 AM	30	3	1	1	1	3	2	0	2	68	32	3	2	136	4	3
7:45 AM - 8:00 AM	21	2	5	2	0	2	5	0	0	107	37	6	2	148	0	7
8:00 AM - 8:15 AM	18	3	1	1	0	5	3	0	0	97	27	1	3	105	0	4
8:15 AM - 8:30 AM	13	2	7	3	0	4	2	0	3	68	27	5	7	115	1	1
8:30 AM - 8:45 AM	15	1	3	1	1	5	2	0	3	65	21	4	2	85	1	0
8:45 AM - 9:00 AM	13	4	3	0	0	6	2	0	1	41	16	1	3	76	1	3
TOTAL	**164**	**17**	**22**	**12**	**2**	**29**	**18**	**0**	**9**	**564**	**225**	**29**	**25**	**857**	**8**	**24**

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	20	2	2	0	0	5	0	0	1	96	21	2	3	73	0	1
4:15 PM - 4:30 PM	23	3	4	0	1	2	5	0	0	113	23	0	4	78	1	0
4:30 PM - 4:45 PM	27	2	8	1	0	4	2	0	3	112	16	3	4	84	2	1
4:45 PM - 5:00 PM	27	4	9	1	0	0	3	0	3	99	23	1	7	103	2	3
5:00 PM - 5:15 PM	23	0	10	1	0	2	1	0	4	129	21	0	6	90	0	0
5:15 PM - 5:30 PM	30	6	6	0	0	2	2	0	3	147	11	1	2	81	0	0
5:30 PM - 5:45 PM	21	4	7	0	0	3	0	0	1	130	27	0	2	84	1	1
5:45 PM - 6:00 PM	21	8	3	0	0	3	2	0	1	101	12	0	7	86	1	1
TOTAL	**192**	**29**	**49**	**3**	**1**	**21**	**15**	**0**	**16**	**927**	**154**	**7**	**35**	**679**	**7**	**7**

	Northbound				Southbound				Eastbound				Westbound			
PEAK HOUR	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
7:15 AM - 8:15 AM	102	10	9	6	1	11	11	0	2	332	138	14	10	505	5	17
4:45 PM - 5:45 PM	101	14	32	2	0	7	6	0	11	505	82	2	17	358	3	4

	PHF	Trucks
AM	0.863	3.3%
PM	0.979	0.7%



Metro Traffic Data Inc.
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Turning Move

Prepared For:

JLB Traffic Engineering, Inc.
516 W. Shaw Ave, Suite 103
Fresno, CA 93704

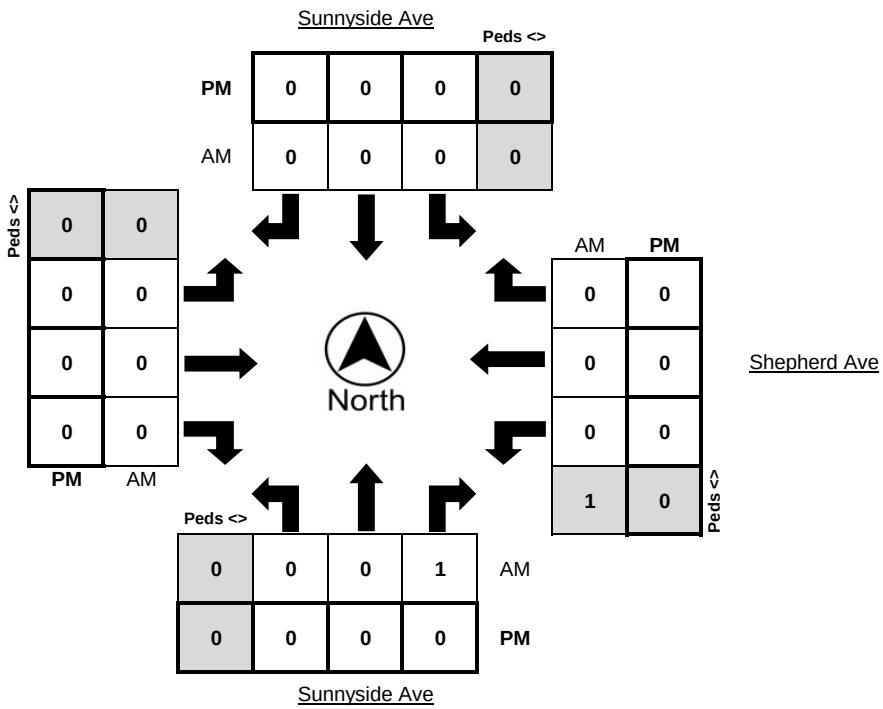
LOCATION Shepherd Ave @ Sunnyside Ave
LATITUDE 36.8666
COUNTY Fresno
LONGITUDE -119.6931
COLLECTION DATE Tuesday, February 4, 2020
WEATHER Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:00 AM - 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM - 7:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:15 AM - 8:15 AM	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0
4:45 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Bikes	Peds
AM Peak Total	1	1
PM Peak Total	0	0



Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

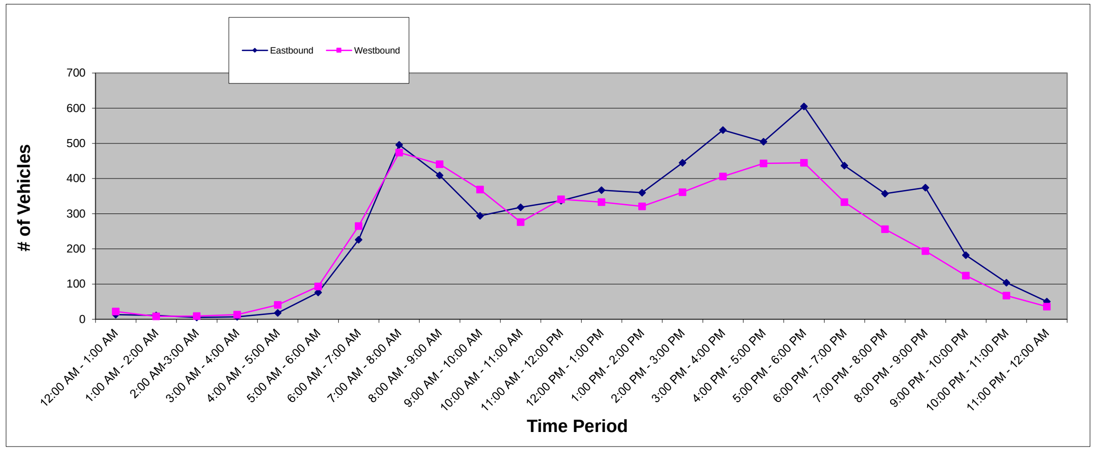
800-975-6938 Phone/Fax
www.metrotraffic data.com

Prepared For: **City of Clovis**
1033 Fifth Street
Clovis, CA 93612

Description	Shepherd – Peach to Minnewawa
Survey Date	Tuesday, November 5, 2019
Latitude	36.866687
Longitude	-119.7170991
Number of Lanes	2E / 1W
Total Volume	12205
HV Percentage	2.3%
AM Peak Period	7:30am-8:30am
AM Peak Volume	1010
AM PHF	0.91
PM Peak Period	4:45pm-5:45pm
PM Peak Volume	1075
PM PHF	0.95

Class 1 - Motorcycles, 2 axles
Class 2 - Passenger cars, 2 axles
Class 3 - Pickup trucks, vans, 2 axles
Class 4 - Busses
Class 5 - Single unit, 2 axle, 6 tires
Class 6 - Single unit truck, 3 axles
Class 7 - Single unit, 4 axles
Class 8 - Double unit, < 5 axles
Class 9 - Double unit, 5 axles
Class 10 - Double unit, > 5 axles
Class 11 - Multi unit, 5 axles
Class 12 - Multi unit, 6 axles
Class 13 - Multi unit, > 6 axles
Class 14 - Unclassifiable

1st First 15 minute interval
2nd Second 15 minute interval
3rd Third 15 minute interval
4th Fourth 15 minute interval
T Hourly Total



Eastbound

Hour	Class 1					Class 2					Class 3					Class 4				
	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T
12:00 AM - 1:00 AM	0	0	0	0	0	3	2	4	2	11	0	1	0	1	2	0	0	0	0	0
1:00 AM - 2:00 AM	0	0	0	0	0	2	4	3	2	11	0	0	0	0	0	0	0	0	0	0
2:00 AM-3:00 AM	0	0	0	0	0	1	1	0	1	3	1	0	0	1	2	0	0	0	0	0
3:00 AM - 4:00 AM	0	0	0	0	0	0	2	4	1	7	0	0	0	0	0	0	0	0	0	0
4:00 AM - 5:00 AM	0	0	0	0	0	1	1	5	6	13	0	3	0	2	5	0	0	0	0	0
5:00 AM - 6:00 AM	0	0	0	0	0	6	13	13	19	51	2	5	3	11	21	0	0	0	0	0
6:00 AM - 7:00 AM	0	0	0	0	0	20	29	54	57	160	15	11	14	25	65	0	0	0	0	0
7:00 AM - 8:00 AM	0	0	0	0	0	72	82	119	121	394	17	17	22	29	85	0	0	0	0	0
8:00 AM - 9:00 AM	0	0	0	0	0	106	85	67	57	315	23	18	23	19	83	0	0	0	0	0
9:00 AM - 10:00 AM	0	0	0	1	1	52	56	51	62	221	17	16	16	18	67	0	0	0	0	0
10:00 AM - 11:00 AM	0	0	0	0	0	51	47	65	77	240	21	9	13	21	64	0	0	0	0	0
11:00 AM - 12:00 PM	0	0	1	0	1	59	49	48	80	236	17	18	19	30	84	0	0	0	0	0
12:00 PM - 1:00 PM	1	0	1	0	2	65	75	75	64	279	14	16	14	24	68	0	0	0	0	0
1:00 PM - 2:00 PM	1	1	0	0	2	58	70	60	85	273	17	16	24	18	75	0	0	0	0	0
2:00 PM - 3:00 PM	0	0	0	0	0	74	69	80	114	337	15	16	36	32	99	0	0	0	0	0
3:00 PM - 4:00 PM	1	0	3	2	6	118	97	82	108	405	24	33	28	29	114	0	0	0	0	0
4:00 PM - 5:00 PM	2	1	0	1	4	91	81	94	104	370	31	26	24	26	107	0	0	0	0	0
5:00 PM - 6:00 PM	1	1	0	1	3	123	132	125	100	480	29	38	19	27	113	0	0	0	0	0
6:00 PM - 7:00 PM	0	1	0	1	2	99	107	84	69	359	23	16	11	19	69	0	0	0	0	0
7:00 PM - 8:00 PM	0	0	4	0	4	66	59	74	76	275	15	18	22	18	73	0	0	0	0	0
8:00 PM - 9:00 PM	3	1	1	0	5	88	53	80	70	291	25	22	13	10	70	0	0	0	0	0
9:00 PM - 10:00 PM	0	0	0	0	0	48	45	31	25	149	11	8	4	9	32	0	0	0	0	0
10:00 PM - 11:00 PM	0	0	0	0	0	24	23	17	24	88	5	4	5	2	16	0	0	0	0	0
11:00 PM - 12:00 AM	0	0	0	0	0	12	17	8	3	40	1	4	4	1	10	0	0	0	0	0
Total	30					5008					1324					0				
Percentage	0.5%					76.6%					20.3%					0.0%				

Hour	Class 5					Class 6					Class 7					Class 8					Class 9				
	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T
12:00 AM - 1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 AM - 2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 AM-3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 AM - 4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 AM - 5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 AM - 6:00 AM	0	0	1	0	1	0	0	1	1	2	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
6:00 AM - 7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
7:00 AM - 8:00 AM	0	3	3	1	7	0	0	1	0	1	0	0	1	0	1	0	1	5	1	7	0	1	0	0	1
8:00 AM - 9:00 AM	2	1	2	0	5	0	0	0	0	0	0	0	0	0	0	0	4	1	1	6	0	0	0	0	0
9:00 AM - 10:00 AM	1	0	0	0	1	0	1	1	0	2	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0
10:00 AM - 11:00 AM	0	1	2	2	5	0	0	0	0	0	0	0	0	0	0	2	2	1	3	8	0	0	0	0	0
11:00 AM - 12:00 PM	2	0	4	1	7	1	2	0	1	4	0	0	0	0	0	0	2	1	1	4	0	0	1	0	1
12:00 PM - 1:00 PM	4	1	2	2	9	0	1	0	0	1	0	0	0	0	0	2	0	1	1	4	1	1	1	0	3
1:00 PM - 2:00 PM	0	1	1	1	3	0	0	0	0	0	0	0	0	0	0	0	1	2	4	7	0	0	0	0	0
2:00 PM - 3:00 PM	1	1	1	0	3	0	0	0	0	0	0	0	0	0	0	1	1	0	1	3	0	2	0	0	2
3:00 PM - 4:00 PM	0	1	0	2	3	0	0	0	0	0	0	0	0	0	0	3	3	2	1	9	0	0	0	0	0
4:00 PM - 5:00 PM	1	0	0	0	1	0	0	1	0	1	1	0	0	0	1	5	6	4	4	19	0	0	0	0	0
5:00 PM - 6:00 PM	0	0	0	0	0	0	2	0	1	3	0	0	0	0	0	2	1	1	1	5	0	0	0	0	0
6:00 PM - 7:00 PM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	2	0	1	3	1	0	0	0	1
7:00 PM - 8:00 PM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	2	1	4	0	0	0	0	0
8:00 PM - 9:00 PM	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	3	2	1	0	6	0	0	0	0	0
9:00 PM - 10:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 PM - 11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 PM - 12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	46					18					2					89					8				
Percentage	0.7%					0.3%					0.0%					1.4%					0.1%				

Hour	Class 10					Class 11					Class 12					Class 13					Class 14					Total
	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	
12:00 AM - 1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13
1:00 AM - 2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11
2:00 AM-3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
3:00 AM - 4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
4:00 AM - 5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18
5:00 AM - 6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	76
6:00 AM - 7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	226
7:00 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	496
8:00 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	409
9:00 AM - 10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	294
10:00 AM - 11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	318
11:00 AM - 12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	337
12:00 PM - 1:00 PM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	367
1:00 PM - 2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	360
2:00 PM - 3:00 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	445
3:00 PM - 4:00 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	538
4:00 PM - 5:00 PM	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	505
5:00 PM - 6:00 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	605
6:00 PM - 7:00 PM	0	0	0	0	0	1	0	0	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	437
7:00 PM - 8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	357
8:00 PM - 9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	374
9:00 PM - 10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	182
10:00 PM - 11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	104
11:00 PM - 12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50
Total	3					4					1					1					0					6534
Percentage	0.0%					0.1%					0.0%					0.0%					0.0%					100.0%

7:30am-8:30am AM PK 542 AM PHF ### 4:45pm-5:45pm PM PK 612 PM PHF ### HV Percent 2.6%

Westbound

Hour	Class 1					Class 2					Class 3					Class 4				
	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T
12:00 AM - 1:00 AM	0	0	0	0	0	9	3	4	5	21	0	0	0	1	1	0	0	0	0	0
1:00 AM - 2:00 AM	0	0	0	0	0	4	2	1	0	7	0	0	0	1	1	0	0	0	0	0
2:00 AM-3:00 AM	0	0	0	0	0	2	1	2	1	6	2	0	0	1	3	0	0	0	0	0
3:00 AM - 4:00 AM	0	0	0	0	0	2	3	1	5	11	0	1	1	0	2	0	0	0	0	0
4:00 AM - 5:00 AM	0	0	0	0	0	4	2	9	10	25	1	4	2	9	16	0	0	0	0	0
5:00 AM - 6:00 AM	0	0	0	0	0	9	19	20	17	65	3	5	9	8	25	0	0	0	0	0
6:00 AM - 7:00 AM	0	1	0	0	1	19	33	61	76	189	9	24	22	12	67	0	0	0	0	0
7:00 AM - 8:00 AM	0	0	0	0	0	87	75	93	96	351	27	24	25	28	104	0	0	0	0	0
8:00 AM - 9:00 AM	0	0	0	0	0	80	79	87	71	317	22	25	24	33	104	0	0	0	0	0
9:00 AM - 10:00 AM	0	0	1	0	1	69	61	77	62	269	26	12	22	24	84	0	0	0	0	0
10:00 AM - 11:00 AM	0	0	0	0	0	47	45	47	61	200	14	22	17	22	75	0	0	0	0	0
11:00 AM - 12:00 PM	0	1	0	1	2	41	48	84	66	239	22	19	27	25	93	0	0	0	0	0
12:00 PM - 1:00 PM	0	0	0	0	0	74	52	66	44	236	23	29	22	19	93	0	0	0	0	0
1:00 PM - 2:00 PM	1	1	0	1	3	59	48	64	53	224	23	16	22	23	84	0	0	0	0	0
2:00 PM - 3:00 PM	0	0	0	1	1	50	62	58	77	247	23	21	26	33	103	0	0	0	0	0
3:00 PM - 4:00 PM	0	0	1	1	2	72	82	75	72	301	26	20	29	22	97	0	0	0	0	0
4:00 PM - 5:00 PM	1	1	0	0	2	87	84	83	101	355	26	18	25	16	85	0	0	0	0	0
5:00 PM - 6:00 PM	1	0	0	0	1	98	87	87	88	360	27	17	27	12	83	0	0	0	0	0
6:00 PM - 7:00 PM	0	2	0	0	2	68	79	47	58	252	12	25	22	18	77	0	0	0	0	0
7:00 PM - 8:00 PM	0	0	2	0	2	65	52	45	47	209	13	9	12	11	45	0	0	0	0	0
8:00 PM - 9:00 PM	0	0	0	0	0	41	41	40	27	149	11	11	14	9	45	0	0	0	0	0
9:00 PM - 10:00 PM	0	1	0	0	1	30	18	29	27	104	6	5	2	5	18	0	0	0	0	0
10:00 PM - 11:00 PM	0	0	0	0	0	20	18	8	10	56	3	2	4	2	11	0	0	0	0	0
11:00 PM - 12:00 AM	0	0	0	0	0	10	7	8	4	29	3	2	0	2	7	0	0	0	0	0
Total	18					4222					1323					0				
Percentage	0.3%					74.4%					23.3%					0.0%				

Hour	Class 5					Class 6					Class 7					Class 8					Class 9				
	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T
12:00 AM - 1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 AM - 2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 AM-3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 AM - 4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 AM - 5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 AM - 6:00 AM	0	0	0	0	0	1	0	1	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0
6:00 AM - 7:00 AM	0	1	1	0	2	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
7:00 AM - 8:00 AM	1	1	0	1	3	0	0	0	0	0	0	0	0	0	0	0	1	2	0	3	4	1	4	0	9
8:00 AM - 9:00 AM	1	1	0	1	3	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	4	2	2	4	12
9:00 AM - 10:00 AM	0	2	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	3	1	3	8
10:00 AM - 11:00 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM - 12:00 PM	0	1	3	0	4	0	1	0	0	1	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0
12:00 PM - 1:00 PM	0	0	1	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
1:00 PM - 2:00 PM	2	3	0	1	6	1	0	1	0	2	0	0	0	0	0	1	0	1	0	2	0	0	0	0	0
2:00 PM - 3:00 PM	2	1	1	2	6	0	0	0	1	1	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0
3:00 PM - 4:00 PM	2	0	1	1	4	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0
4:00 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
5:00 PM - 6:00 PM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM - 7:00 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
7:00 PM - 8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM - 9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 PM - 10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
10:00 PM - 11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 PM - 12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	37					7					0					19					34				
Percentage	0.7%					0.1%					0.0%					0.3%					0.6%				

Hour	Class 10					Class 11					Class 12					Class 13					Class 14					Total
	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	
12:00 AM - 1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22
1:00 AM - 2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
2:00 AM-3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
3:00 AM - 4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13
4:00 AM - 5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41
5:00 AM - 6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	93
6:00 AM - 7:00 AM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	265
7:00 AM - 8:00 AM	0	0	0	0	0	0	2	0	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	474
8:00 AM - 9:00 AM	0	0	0	0	0	1	1	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	441
9:00 AM - 10:00 AM	0	0	0	0	0	1	0	1	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	369
10:00 AM - 11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	276
11:00 AM - 12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	341
12:00 PM - 1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	333
1:00 PM - 2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	321
2:00 PM - 3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	361
3:00 PM - 4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	406
4:00 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	443
5:00 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	445
6:00 PM - 7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	333
7:00 PM - 8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	256
8:00 PM - 9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	194
9:00 PM - 10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	124
10:00 PM - 11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	67
11:00 PM - 12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36
Total	0					11					0					0					0					5671
Percentage	0.0%					0.2%					0.0%					0.0%					0.0%					100.0%

7:00am-8:00am AM PK 474 AM PHF ### 4:45pm-5:45pm PM PK 463 PM PHF ### HV Percent 1.9%

Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

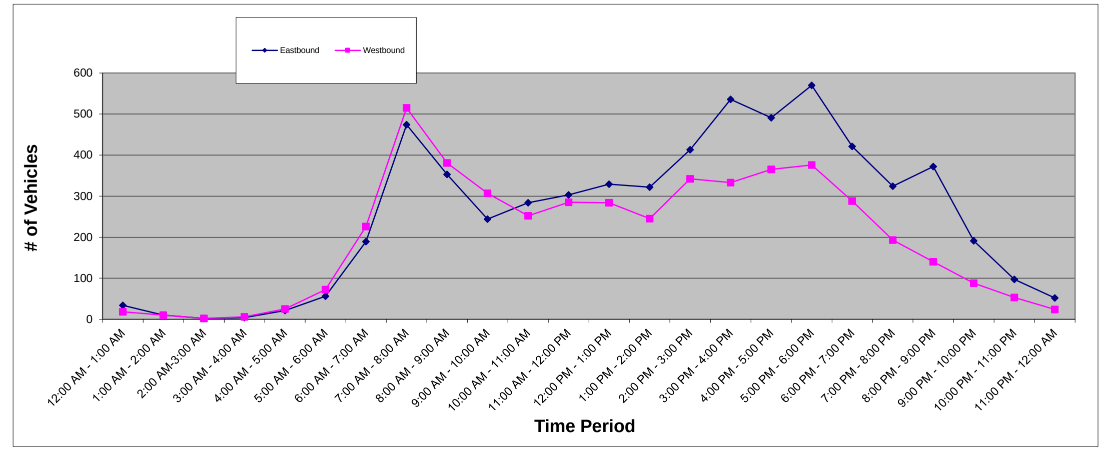
800-975-6938 Phone/Fax
www.metrotraffic data.com

Prepared For: **City of Clovis**
1033 Fifth Street
Clovis, CA 93612

Description Shepherd – Clovis to Sunnyside
Survey Date Tuesday, November 5, 2019
Latitude 36.866576
Longitude -119.6980123
Number of Lanes 2
Total Volume 10922
HV Percentage 1.7%
AM Peak Period 7:15am-8:15am
AM Peak Volume 1003
AM PHF 0.88
PM Peak Period 4:45pm-5:45pm
PM Peak Volume 983
PM PHF 0.98

Class 1 - Motorcycles, 2 axles
Class 2 - Passenger cars, 2 axles
Class 3 - Pickup trucks, vans, 2 axles
Class 4 - Busses
Class 5 - Single unit, 2 axle, 6 tires
Class 6 - Single unit truck, 3 axles
Class 7 - Single unit, 4 axles
Class 8 - Double unit, < 5 axles
Class 9 - Double unit, 5 axles
Class 10 - Double unit, > 5 axles
Class 11 - Multi unit, 5 axles
Class 12 - Multi unit, 6 axles
Class 13 - Multi unit, > 6 axles
Class 14 - Unclassifiable

1st First 15 minute interval
2nd Second 15 minute interval
3rd Third 15 minute interval
4th Fourth 15 minute interval
T Hourly Total



Eastbound

Hour	Class 1					Class 2					Class 3					Class 4					Class 5				
	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T
12:00 AM - 1:00 AM	0	0	0	0	0	9	7	10	4	30	1	1	1	1	4	0	0	0	0	0	0	0	0	0	0
1:00 AM - 2:00 AM	0	0	0	0	0	1	3	3	2	9	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
2:00 AM-3:00 AM	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
3:00 AM - 4:00 AM	0	0	0	0	0	0	1	2	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 AM - 5:00 AM	0	0	0	0	0	2	0	4	11	17	0	0	2	2	4	0	0	0	0	0	0	0	0	0	0
5:00 AM - 6:00 AM	0	0	0	0	0	3	7	13	15	38	2	6	3	7	18	0	0	0	0	0	0	0	0	0	0
6:00 AM - 7:00 AM	0	0	0	0	0	12	26	42	53	133	7	11	16	19	53	0	0	0	0	0	0	0	0	0	0
7:00 AM - 8:00 AM	0	0	0	0	0	69	89	102	116	376	21	13	27	24	85	0	1	0	1	2	0	1	1	1	3
8:00 AM - 9:00 AM	0	0	0	0	0	86	63	58	41	248	28	20	22	25	95	0	0	0	0	0	2	1	2	1	6
9:00 AM - 10:00 AM	1	0	1	1	3	46	31	48	44	169	13	13	22	12	60	0	0	0	0	0	1	3	3	1	8
10:00 AM - 11:00 AM	0	0	0	0	0	50	36	57	68	211	20	9	16	23	68	0	0	0	0	0	1	1	1	0	3
11:00 AM - 12:00 PM	0	0	0	0	0	49	47	62	62	220	23	18	15	19	75	0	0	1	0	1	0	0	1	2	3
12:00 PM - 1:00 PM	0	0	0	1	1	82	62	40	65	249	19	16	15	20	70	0	0	0	0	0	2	0	1	0	3
1:00 PM - 2:00 PM	1	0	1	0	2	47	55	58	70	230	14	16	29	17	76	0	0	0	0	0	0	2	2	1	5
2:00 PM - 3:00 PM	0	0	0	1	1	70	59	55	115	299	21	17	30	35	103	0	0	0	0	0	1	1	3	1	6
3:00 PM - 4:00 PM	1	1	0	0	2	118	90	88	97	393	23	26	40	42	131	0	0	0	1	1	2	4	0	2	8
4:00 PM - 5:00 PM	0	0	1	0	1	81	86	108	99	374	30	22	27	28	107	1	0	0	0	1	2	2	0	0	4
5:00 PM - 6:00 PM	1	0	1	0	2	114	123	109	95	441	34	32	34	22	122	0	0	0	0	0	1	1	0	0	2
6:00 PM - 7:00 PM	1	0	0	0	1	102	89	79	78	348	23	18	17	14	72	0	0	0	0	0	0	0	0	0	0
7:00 PM - 8:00 PM	0	0	0	0	0	66	60	59	64	249	22	13	21	19	75	0	0	0	0	0	0	0	0	0	0
8:00 PM - 9:00 PM	0	0	0	0	0	95	71	84	56	306	20	28	7	11	66	0	0	0	0	0	0	0	0	0	0
9:00 PM - 10:00 PM	0	0	0	0	0	61	47	35	22	165	6	12	2	6	26	0	0	0	0	0	0	0	0	0	0
10:00 PM - 11:00 PM	0	0	0	0	0	17	26	16	20	79	4	7	3	4	18	0	0	0	0	0	0	0	0	0	0
11:00 PM - 12:00 AM	1	0	0	0	1	13	16	7	3	39	1	5	5	1	12	0	0	0	0	0	0	0	0	0	0
Total	14					4628					1342					5					51				
Percentage	0.2%					76.0%					22.0%					0.1%					0.8%				

Hour	Class 6					Class 7					Class 8					Class 9					Class 10				
	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T
12:00 AM - 1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 AM - 2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 AM-3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 AM - 4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 AM - 5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 AM - 6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 AM - 7:00 AM	0	0	2	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0
7:00 AM - 8:00 AM	2	2	1	1	6	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0
8:00 AM - 9:00 AM	0	0	1	1	2	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	0	0	0	0	0
9:00 AM - 10:00 AM	1	1	1	0	3	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
10:00 AM - 11:00 AM	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM - 12:00 PM	0	2	0	0	2	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0
12:00 PM - 1:00 PM	2	0	1	1	4	0	0	0	0	0	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0
1:00 PM - 2:00 PM	3	0	3	0	6	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	0	0	0	0	0
2:00 PM - 3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3	0	1	0	0	1	0	0	0	0	0
3:00 PM - 4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
4:00 PM - 5:00 PM	0	0	0	1	1	0	0	0	0	0	2	0	0	1	3	0	0	0	0	0	0	0	0	0	0
5:00 PM - 6:00 PM	0	1	0	0	1	0	0	0	0	0	1	0	0	1	2	0	0	0	0	0	0	0	0	0	0
6:00 PM - 7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM - 8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM - 9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 PM - 10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 PM - 11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 PM - 12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	29					0					20					3					0				
Percentage	0.5%					0.0%					0.3%					0.0%					0.0%				

Hour	Class 11					Class 12					Class 13					Class 14					Total
	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	
12:00 AM - 1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34
1:00 AM - 2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
2:00 AM-3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
3:00 AM - 4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
4:00 AM - 5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21
5:00 AM - 6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	56
6:00 AM - 7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	189
7:00 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	474
8:00 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	353
9:00 AM - 10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	244
10:00 AM - 11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	284
11:00 AM - 12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	303
12:00 PM - 1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	329
1:00 PM - 2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	322
2:00 PM - 3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	413
3:00 PM - 4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	536
4:00 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	491
5:00 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	570
6:00 PM - 7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	421
7:00 PM - 8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	324
8:00 PM - 9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	372
9:00 PM - 10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	191
10:00 PM - 11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	97
11:00 PM - 12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	52
Total	0					0					0					0					6092
Percentage	0.0%					0.0%					0.0%					0.0%					100.0%

7:15am-8:15am AM PK 498 AM PHF ### 4:45pm-5:45pm PM PK 581 PM PHF ### HV Percent 1.8%

Westbound

Hour	Class 1					Class 2					Class 3					Class 4					Class 5				
	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T
12:00 AM - 1:00 AM	0	0	0	0	0	4	6	4	2	16	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0
1:00 AM - 2:00 AM	0	0	0	0	0	3	0	2	1	6	2	1	1	0	4	0	0	0	0	0	0	0	0	0	0
2:00 AM-3:00 AM	0	0	0	0	0	0	1	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 AM - 4:00 AM	0	0	0	0	0	0	2	1	2	5	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
4:00 AM - 5:00 AM	0	0	0	0	0	0	2	7	7	16	0	1	2	6	9	0	0	0	0	0	0	0	0	0	0
5:00 AM - 6:00 AM	0	0	0	0	0	7	14	16	16	53	1	1	7	9	18	0	0	0	0	0	0	0	0	0	0
6:00 AM - 7:00 AM	0	0	0	0	0	17	27	48	78	170	8	17	16	13	54	0	0	0	0	0	0	0	1	0	1
7:00 AM - 8:00 AM	0	0	0	0	0	82	105	101	107	395	25	26	23	31	105	0	0	0	0	0	4	2	3	2	11
8:00 AM - 9:00 AM	0	1	0	0	1	80	70	71	58	279	21	28	23	25	97	0	0	0	0	0	0	1	2	1	4
9:00 AM - 10:00 AM	0	0	0	0	0	49	53	64	57	223	21	15	16	24	76	0	0	0	0	0	0	1	0	3	4
10:00 AM - 11:00 AM	0	0	0	0	0	47	35	56	53	191	13	15	10	15	53	0	0	0	0	0	2	1	2	1	6
11:00 AM - 12:00 PM	0	0	0	0	0	33	41	68	64	206	15	22	16	21	74	0	0	0	0	0	2	0	1	0	3
12:00 PM - 1:00 PM	0	0	0	0	0	55	54	63	39	211	18	22	13	15	68	0	1	0	0	1	0	2	1	0	3
1:00 PM - 2:00 PM	0	0	0	0	0	43	39	46	50	178	15	14	12	18	59	0	0	0	0	0	1	0	3	2	6
2:00 PM - 3:00 PM	0	0	0	0	0	46	63	72	58	239	20	19	25	28	92	1	0	0	0	1	0	4	2	2	8
3:00 PM - 4:00 PM	0	0	0	0	0	52	68	60	53	233	25	19	29	25	98	0	0	0	0	0	0	1	0	0	1
4:00 PM - 5:00 PM	0	0	0	3	3	63	62	66	94	285	31	10	12	22	75	0	0	0	0	0	0	1	0	1	2
5:00 PM - 6:00 PM	0	1	0	0	1	72	75	73	78	298	22	18	20	15	75	0	0	0	0	0	1	0	0	1	2
6:00 PM - 7:00 PM	0	0	0	0	0	59	75	49	45	228	14	14	19	13	60	0	0	0	0	0	0	0	0	0	0
7:00 PM - 8:00 PM	0	0	0	0	0	52	38	30	36	156	7	10	9	10	36	0	0	0	0	0	0	0	0	1	1
8:00 PM - 9:00 PM	0	0	0	0	0	28	37	34	16	115	7	3	8	7	25	0	0	0	0	0	0	0	0	0	0
9:00 PM - 10:00 PM	0	0	0	0	0	21	18	19	17	75	6	3	0	3	12	0	0	0	0	0	0	0	0	0	0
10:00 PM - 11:00 PM	0	0	0	0	0	14	12	10	7	43	5	2	3	0	10	0	0	0	0	0	0	0	0	0	0
11:00 PM - 12:00 AM	0	0	0	0	0	6	5	3	5	19	2	1	1	1	5	0	0	0	0	0	0	0	0	0	0
Total	5					3642					1108					2					52				
Percentage	0.1%					75.4%					22.9%					0.0%					1.1%				

Hour	Class 6					Class 7					Class 8					Class 9					Class 10				
	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T
12:00 AM - 1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 AM - 2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 AM-3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 AM - 4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 AM - 5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 AM - 6:00 AM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 AM - 7:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0
7:00 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	2	1	4	0	0	0	0	0	0	0	0	0	0
8:00 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 AM - 10:00 AM	0	1	1	1	3	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0
10:00 AM - 11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0
11:00 AM - 12:00 PM	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
12:00 PM - 1:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
1:00 PM - 2:00 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0
2:00 PM - 3:00 PM	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM - 4:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0
4:00 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM - 7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM - 8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM - 9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 PM - 10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0
10:00 PM - 11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 PM - 12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	7					0					13					1					0				
Percentage	0.1%					0.0%					0.3%					0.0%					0.0%				

Hour	Class 11					Class 12					Class 13					Class 14					Total
	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	
12:00 AM - 1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18
1:00 AM - 2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
2:00 AM-3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
3:00 AM - 4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
4:00 AM - 5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25
5:00 AM - 6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	72
6:00 AM - 7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	226
7:00 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	515
8:00 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	381
9:00 AM - 10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	307
10:00 AM - 11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	252
11:00 AM - 12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	285
12:00 PM - 1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	284
1:00 PM - 2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	245
2:00 PM - 3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	342
3:00 PM - 4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	333
4:00 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	365
5:00 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	376
6:00 PM - 7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	288
7:00 PM - 8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	193
8:00 PM - 9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	140
9:00 PM - 10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	88
10:00 PM - 11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	53
11:00 PM - 12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
Total	0					0					0					0					4830
Percentage	0.0%					0.0%					0.0%					0.0%					100.0%

7:00am-8:00am AM PK 515 AM PHF ### 4:45pm-5:45pm PM PK 402 PM PHF ### HV Percent 1.6%

Appendix C: Traffic Modeling

March 2, 2020

Kai Han, TE
Council of Fresno County Governments
2035 Tulare Street, Suite 201
Fresno, CA 93721

Via E-mail Only: khan@fresnocog.org

Subject: ***Revised Traffic Modeling Request for the Preparation of a Traffic Impact Analysis for Tentative Tract 6050 located on the Northwest Corner of Clovis Avenue and Shepherd Avenue in the City of Clovis (JLB Project 006-034)***

Dear Mr. Han,

JLB Traffic Engineering, Inc. (JLB) hereby submits this revised traffic modeling for the Project described below. Tract 6050 (Project) is located at the northwest corner of Clovis Avenue and Shepherd Avenue in the City of Clovis. The Project proposes to develop the site with up to 255 single family residential units on 35.22 net acres for an overall density of 6.94 units per acre. This modeling request has been revised to use the new models. Based on information provided to JLB, the Project is consistent with the City of Clovis General Plan. An aerial of the Project vicinity and Project Site Plan are shown in Exhibits A and Exhibit B, respectively.

The purpose of the TIA is to evaluate the potential on-site and off-site traffic impacts, identify short-term roadway and circulation needs, determine potential mitigation measures and identify any critical traffic issues that should be addressed in the on-going planning process.

Scenarios:

The following scenarios are requested:

1. Base Year 2020 (with Link and TAZ modifications)
2. Cumulative Year 2040 plus Project Select Zone (with Link and TAZ modifications)
3. Differences between model runs 2 and 1 above

Changes and/or additions to the Model Network or TAZ's

JLB reviewed the Fresno COG model network for the Base Year 2020 and Cumulative Year 2040. Based on this review, JLB requests the following link and TAZ network modifications. Details on the requested Link and TAZ modifications for Base Year 2020 and Cumulative Year 2040 are illustrated in Exhibit C.

LINK and TAZ MODIFICATIONS (Base Year 2020 Scenarios Only):

1. Modify Willow Avenue as follows:
   a. decrease the northbound lanes between Behymer Avenue and Shepherd Avenue to one lane.
   b. decrease the northbound lanes between Shepherd Avenue and Node 39805 to two lanes.

2. Modify Shepherd Avenue to decrease the eastbound lanes between Clovis Avenue and Fowler Avenue to one lane.
3. Modify Clovis Avenue to decrease the southbound lanes between Node 60044 and Nees Avenue to one lane.

LINK and TAZ MODIFICATIONS (Base Year 2020 and Cumulative Year 2040 Scenarios):

1. Create Sunnyside Avenue between Teague Avenue and Perrin Avenue. Sunnyside Avenue is located approximately 2,640 feet west of Fowler Avenue.
   a. Classification: Collector
   b. Lanes: One lane in each direction
   c. Speed: 40 MPH
2. Modify TAZ 256 as follows:
   a. Eliminate existing TAZ connector to Teague Avenue.
   b. Split existing TAZ 256 into two TAZs- TAZ 256A and TAZ 256B.
      i. TAZ 256A shall have TAZ connectors to Shepherd Avenue and Clovis Avenue.
      ii. Create TAZ 256B generally located 1,770 feet south of Shepherd Avenue and 700 feet west of Sunnyside Avenue.TAZ 256B shall have a TAZ connector to Sunnyside Avenue.
3. Modify TAZ 260 to eliminate TAZ connector to Clovis Avenue.

LINK and TAZ MODIFICATIONS (Cumulative Year 2040):

1. Create Sunnyside Avenue between Perrin Avenue and Behymer Avenue.
   a. Classification: Collector
   b. Lanes: One lane in each direction
   c. Speed: 40 MPH
2. Create TAZ A generally located 650 feet north of Shepherd Avenue and 675 feet west of Clovis Avenue. TAZ A shall have TAZ connectors to Shepherd Avenue and Clovis Avenue.
3. Create TAZ B generally located 335 feet north of Shepherd Avenue and 315 feet west of Clovis Avenue. TAZ B shall have a TAZ connector to Shepherd Avenue.
4. Create Road A between Clovis Avenue and Behymer Avenue. Road A is located approximately 2,665 feet west of Sunnyside Avenue.
   a. Classification: Collector
   b. Lanes: One in each direction
   c. Speed: 30 MPH
5. Create Perrin Avenue between Road A and Sunnyside Avenue. Perrin is located approximately 2,670 feet north of Shepherd Ave
   a. Classification: Collector
   b. Lanes: One in each direction
   c. Speed: 30 MPH

TAZ A (Project) Trip Generation

Table I presents the trip generation for TAZ A (Project) pursuant to the 10th Edition of the Trip Generation Manual with trip generation rates for Single-Family Detached Housing. At build-out, the Project is estimated to generate a maximum of 821 daily trips, 64 AM peak hour trips and 86 PM peak hour trips.

Table I: TAZ A (Project) Trip Generation

Land Use (ITE Code)	*Size*	*Unit*	*Daily*		*AM (7-9) Peak Hour*						*PM (4-6) Peak Hour*					
			Rate	*Total*	*Trip Rate*	*In*	*Out*	*In*	*Out*	*Total*	*Trip Rate*	*In*	*Out*	*In*	*Out*	*Total*
						%						*%*				
Single-Family Detached Housing (210)	87	d.u.	9.44	821	0.74	25	75	16	48	64	0.99	63	37	54	32	86
Total Project Trips				**821**				**16**	**48**	**64**				**54**	**32**	**86**

Note: d.u. = Dwelling Units

TAZ B (Project) Trip Generation

Table II presents the trip generation for TAZ B (Project) pursuant to the 10 th Edition of the Trip Generation Manual with trip generation rates for Single-Family Detached Housing. At build-out the Project is estimated to generate a maximum of 1,586 daily trips, 124 AM peak hour trips and 166 PM peak hour trips.

Table II: TAZ B (Project) Trip Generation

Land Use (ITE Code)	*Size*	*Unit*	*Daily*		*AM (7-9) Peak Hour*						*PM (4-6) Peak Hour*					
			Rate	*Total*	*Trip Rate*	*In*	*Out*	*In*	*Out*	*Total*	*Trip Rate*	*In*	*Out*	*In*	*Out*	*Total*
						%						*%*				
Single-Family Detached Housing (210)	168	d.u.	9.44	1,586	0.74	25	75	31	93	124	0.99	63	37	105	61	166
Total Project Trips				**1,586**				**31**	**93**	**124**				**105**	**61**	**166**

Note: d.u. = Dwelling Units

Vehicle Miles Traveled

JLB would like to request to be provided with each of the Project's VMT as well as the average trip length in excel format.

Access to the Project

Access to and from the Project site will be provided from three (3) access points located along Clovis Avenue and Shepherd Avenue. Two (2) access points are located along the west side of Clovis Avenue approximately 350 and 875 feet north of Shepherd Avenue, one is proposed limited to an exit only and the other is limited to right-in, right-out access only. The final access point is located along the north side of Shepherd Avenue approximately 1,275 feet west of Clovis Avenue and is proposed to be limited to left-in, right-in, right-out access only. Additional Project details can be found on Exhibit B.

If you have any questions or require additional information, please do not hesitate to contact me by phone at (559) 664-3159 or by e-mail at jgarcia@JLBtraffic.com.

Sincerely,

Jesus Garcia

Jesus Garcia
Engineer I/II

cc: Lang Yu, Fresno Council of Governments
Jose Benavides, JLB Traffic Engineering, Inc.

JLB TRAFFIC ENGINEERING, INC.
www.JLBtraffic.com
info@JLBtraffic.com
516 E. Shaw Ave., Ste. 103
Fresno, CA 93704
(559) 570-8991

Exhibit A – Aerial

Exhibit B – Site Plan

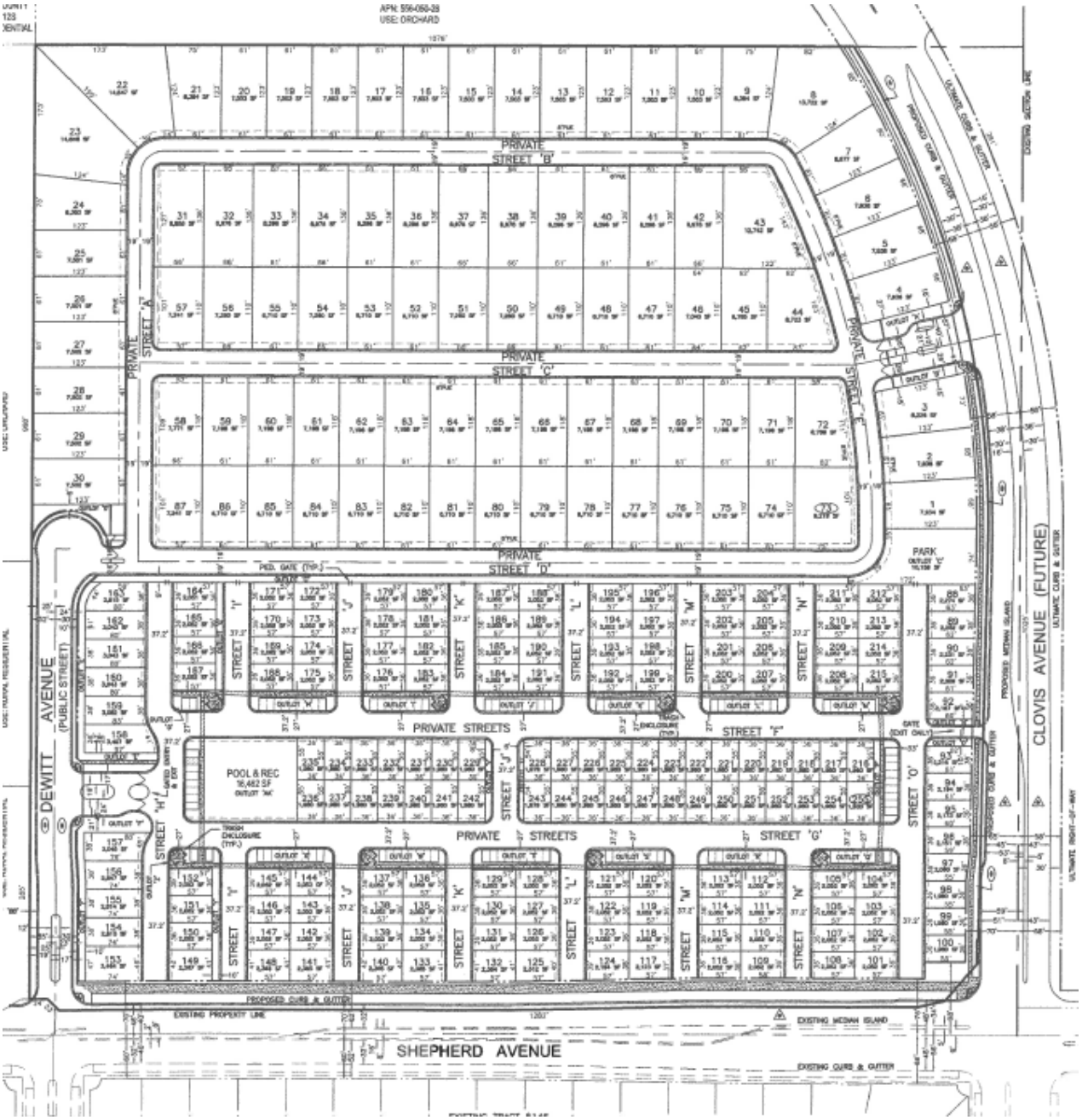
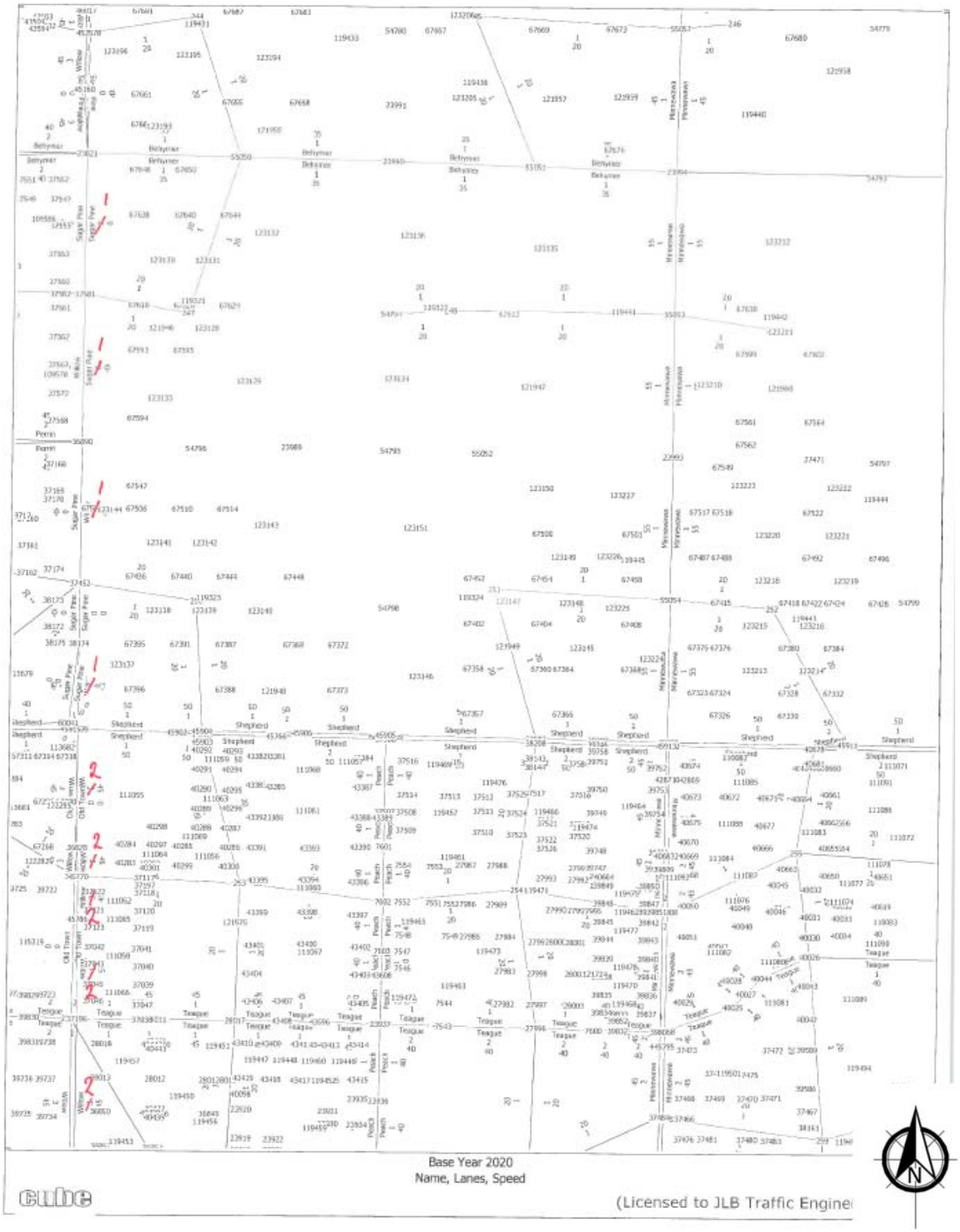
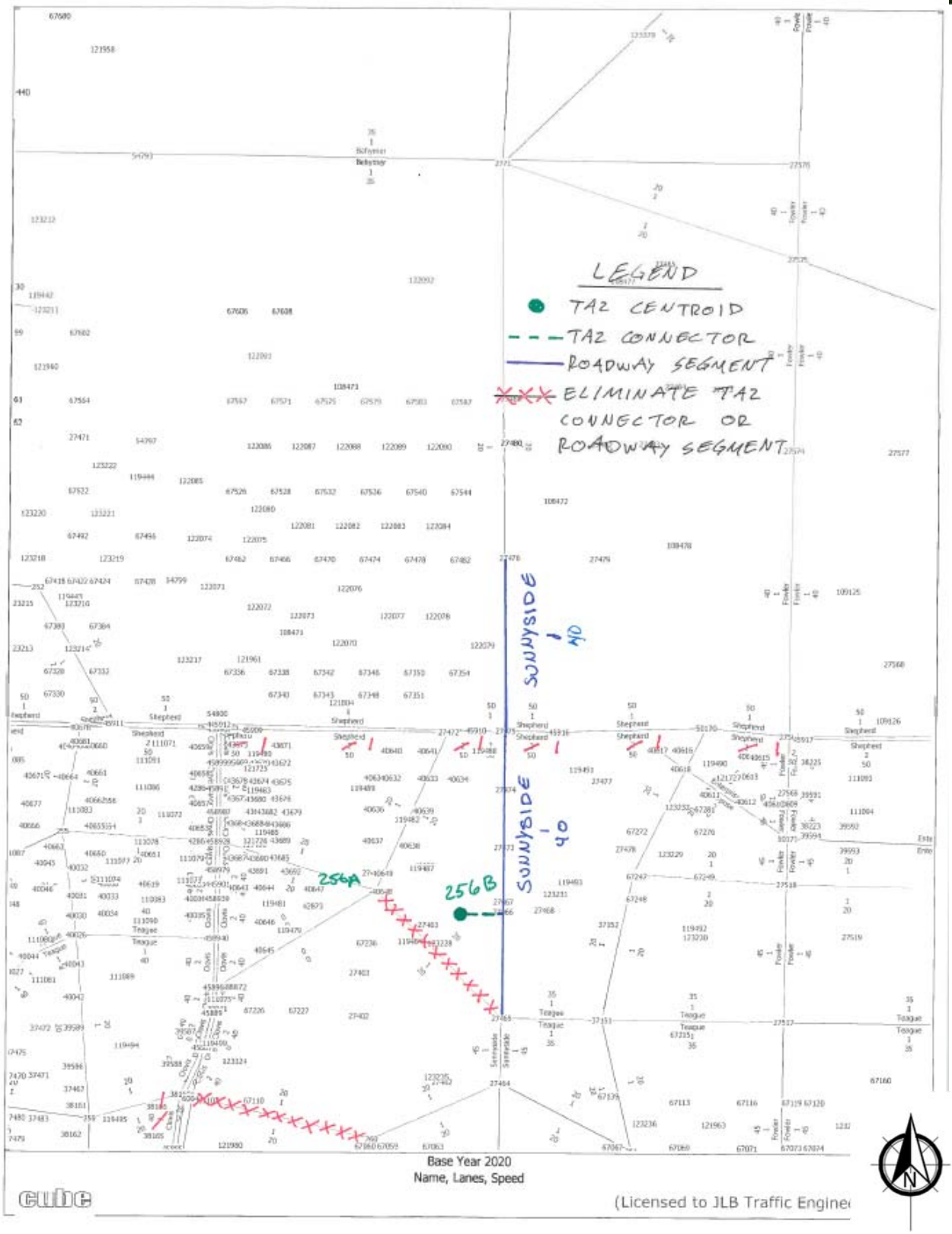
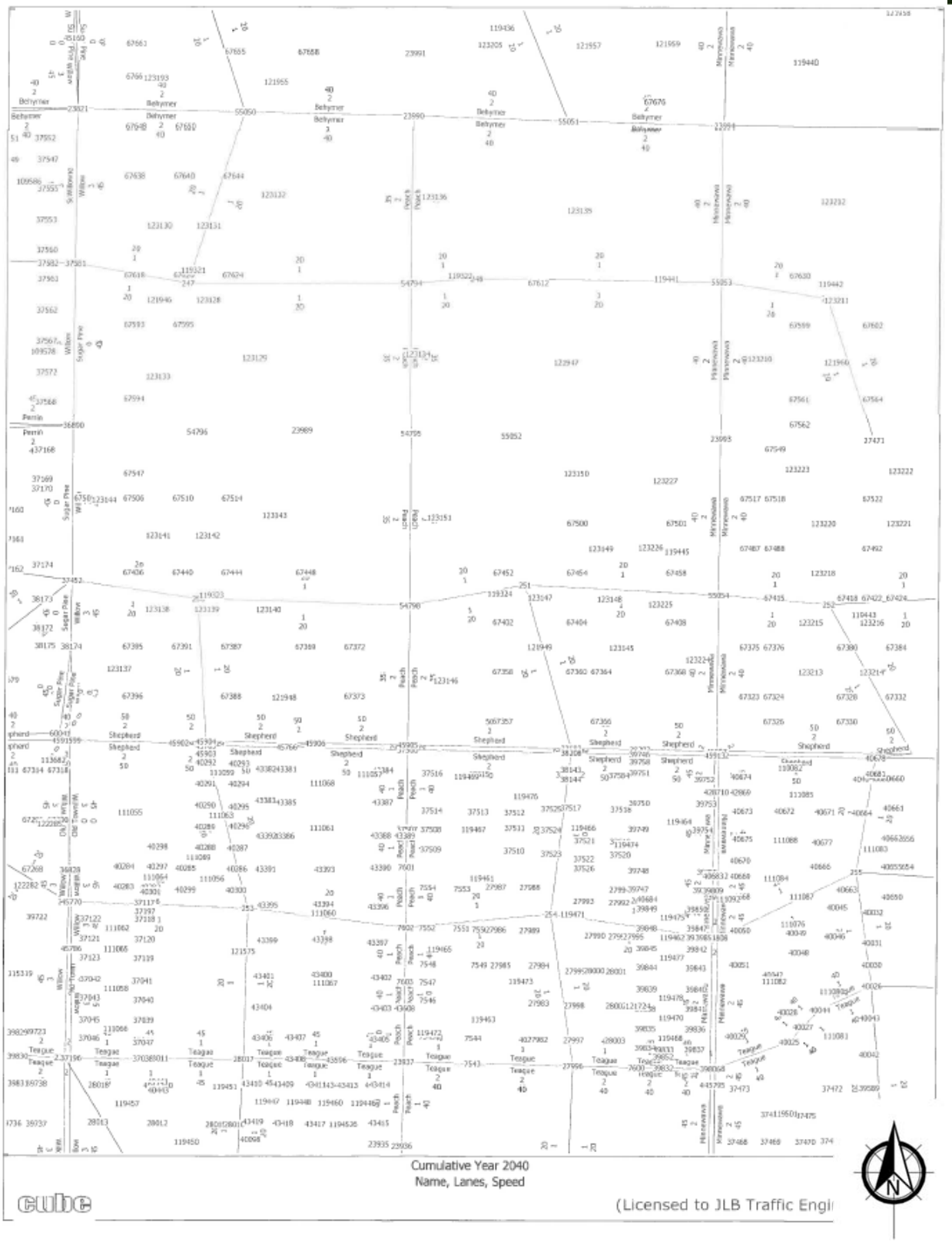
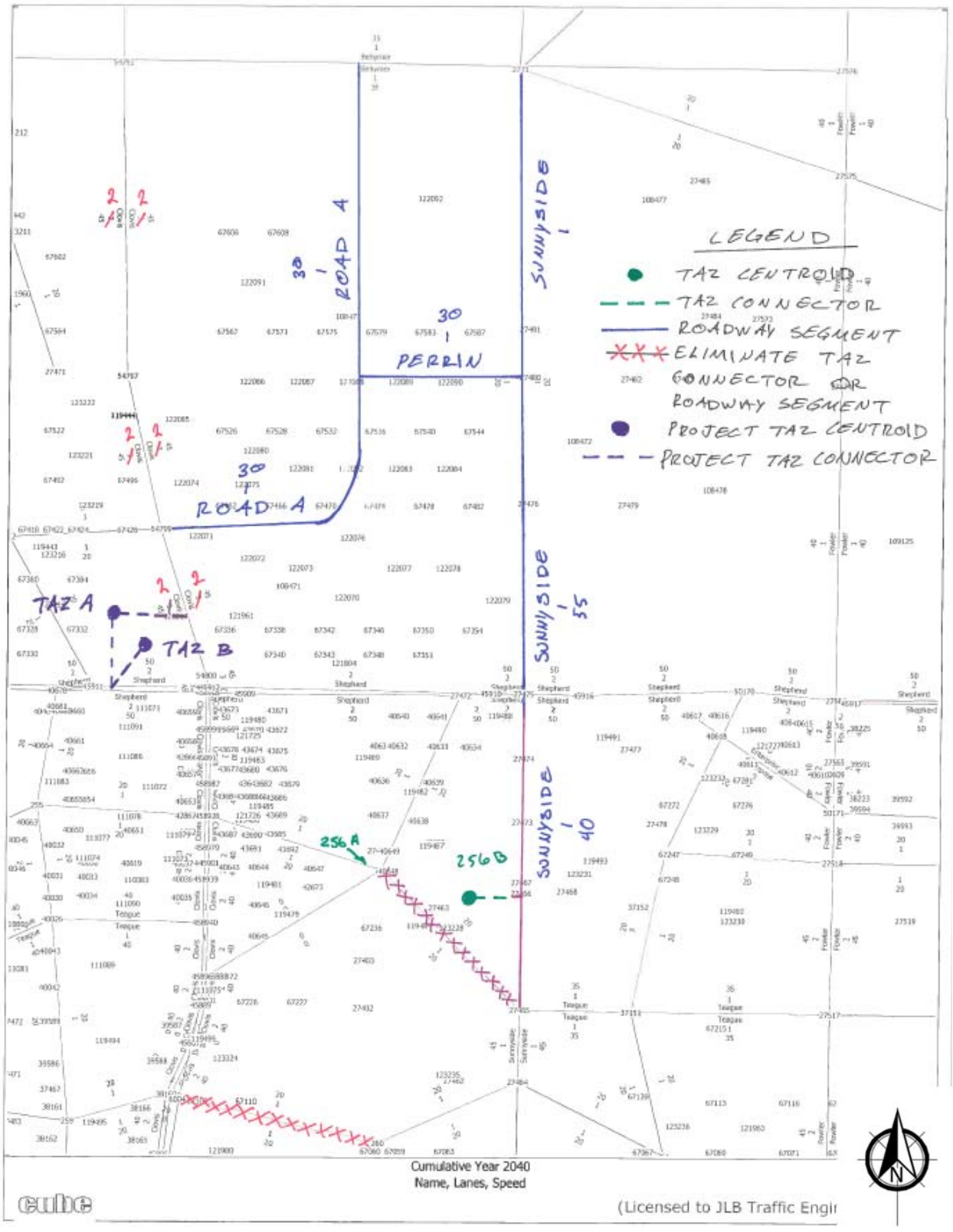


Exhibit C – Model TAZ Modifications

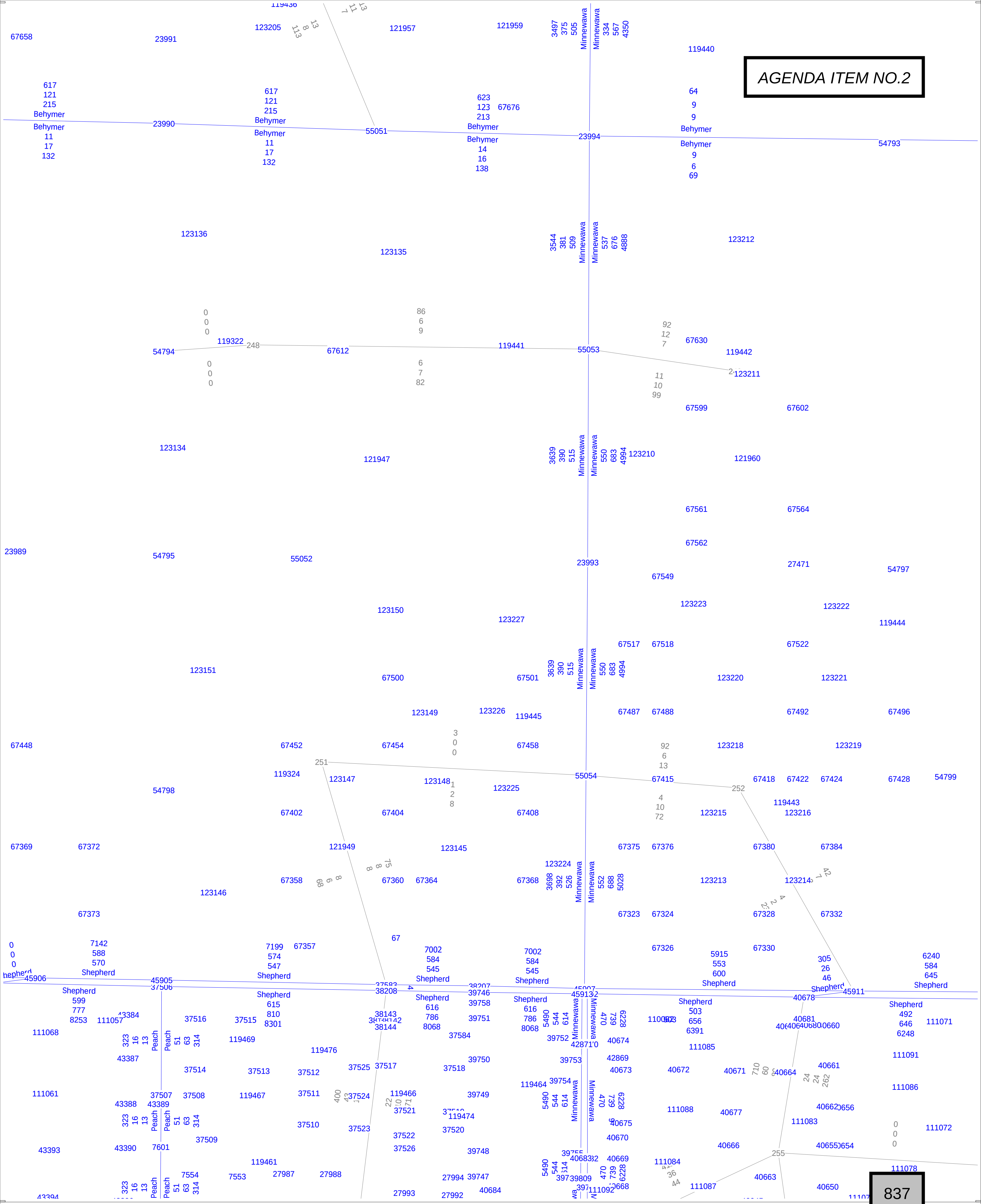



LEGEND
TAZ CENTROID
TAZ CONNECTOR
ROADWAY SEGMENT
ELIMINATE TAZ CONNECTOR OR ROADWAY SEGMENT
SUNNYSIDE
NO
SUNNYSIDE
40
256A
256B
Base Year 2020
Name, Lanes, Speed
cube
(Licensed to JLB Traffic Engine


Cumulative Year 2040
Name, Lanes, Speed
cube
(Licensed to JLB Traffic Engi

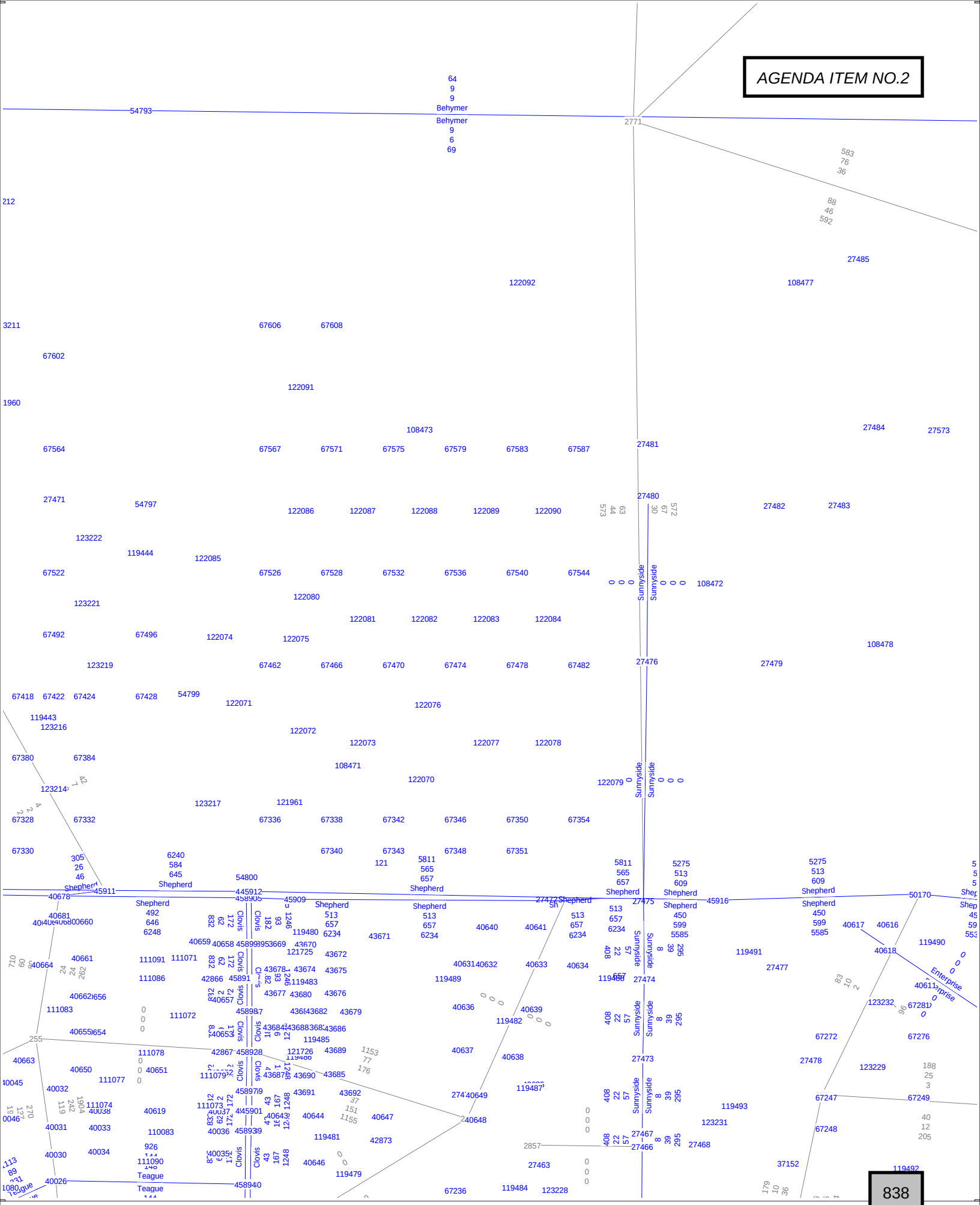

LEGEND
TAZ CENTROID
TAZ CONNECTOR
ROADWAY SEGMENT
ELIMINATE TAZ CONNECTOR OR ROADWAY SEGMENT
PROJECT TAZ CENTROID
PROJECT TAZ CONNECTOR
ROAD 4
PERRIN
SUNNYSIDE
TAZ A
TAZ B
256A
256B
Cumulative Year 2040
Name, Lanes, Speed
cube
(Licensed to JLB Traffic Engi

AGENDA ITEM NO.2



Base Year 2020
AM, PM, Daily

AGENDA ITEM NO.2



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Base Year 2020
AM, PM, Daily

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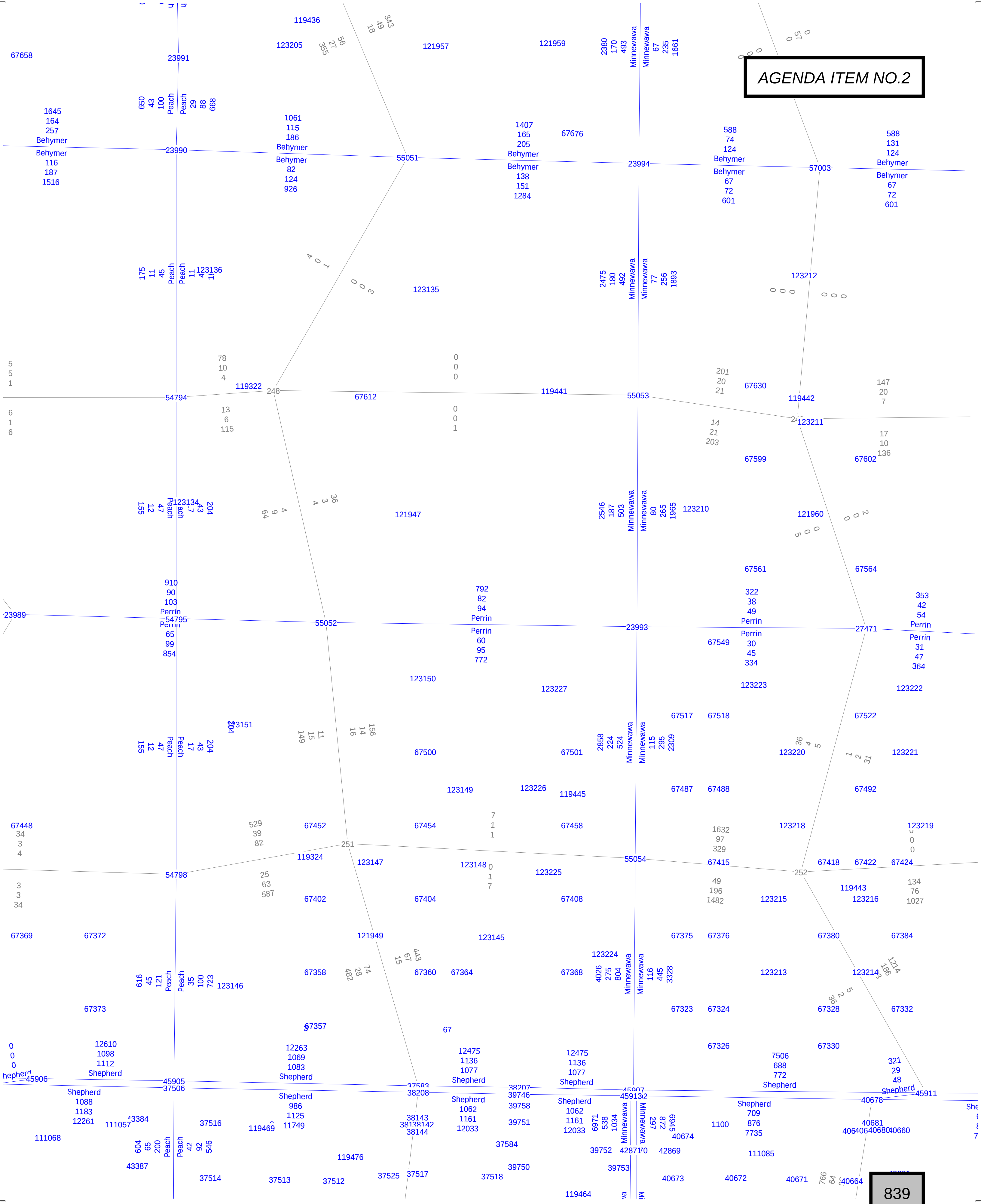
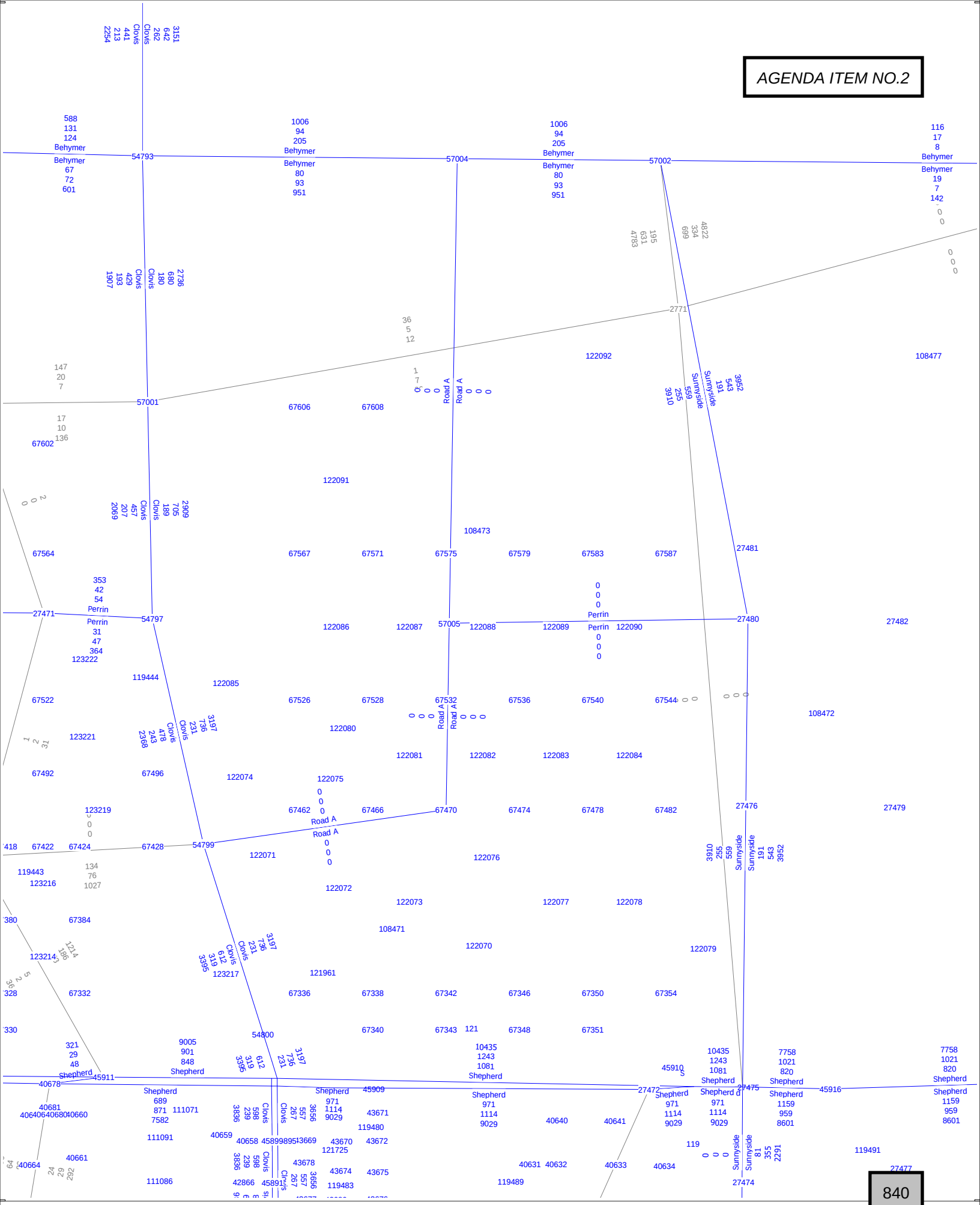


Cumulative Year 2035

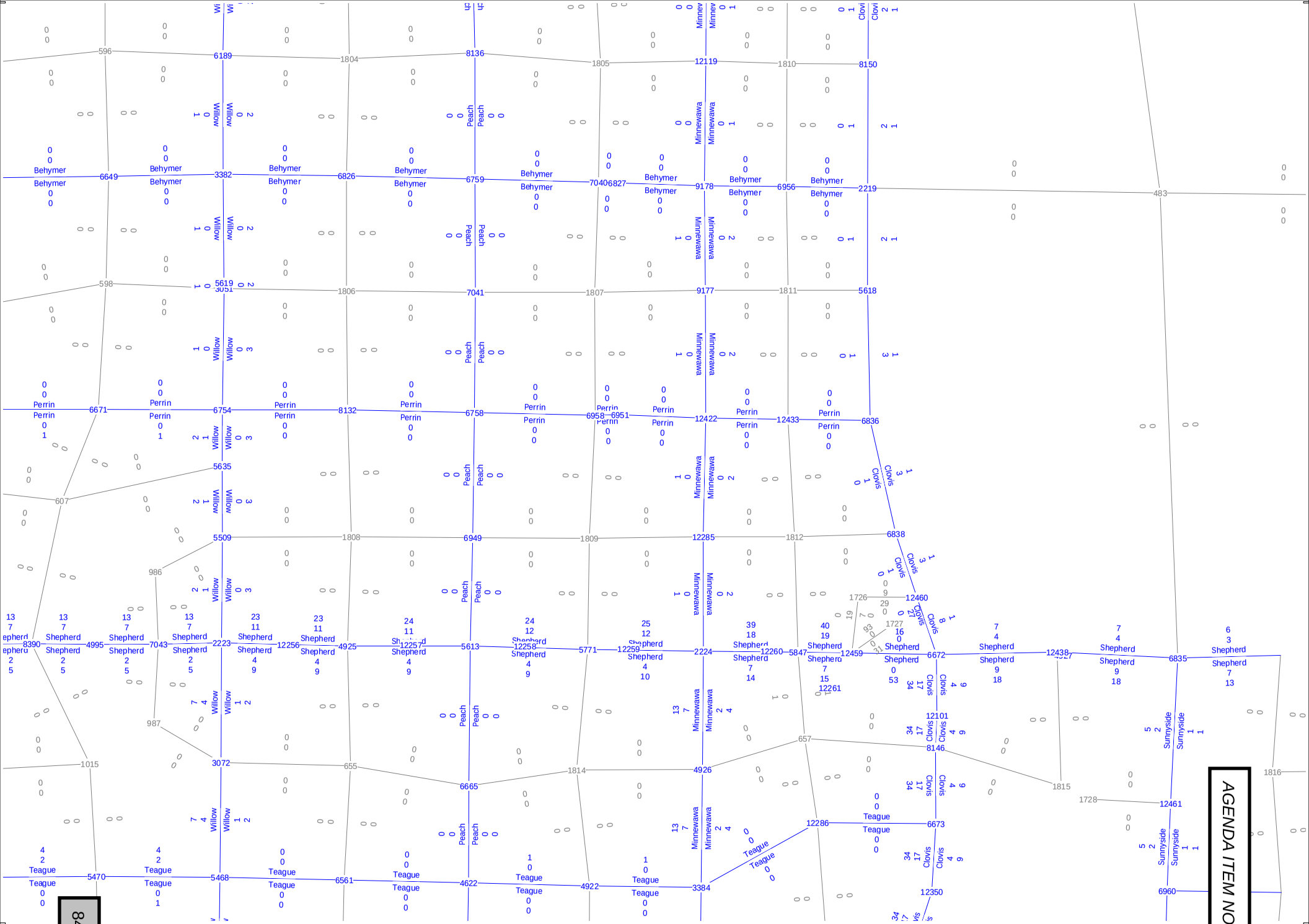
AM, PM, Daily

cube

AGENDA ITEM NO.2



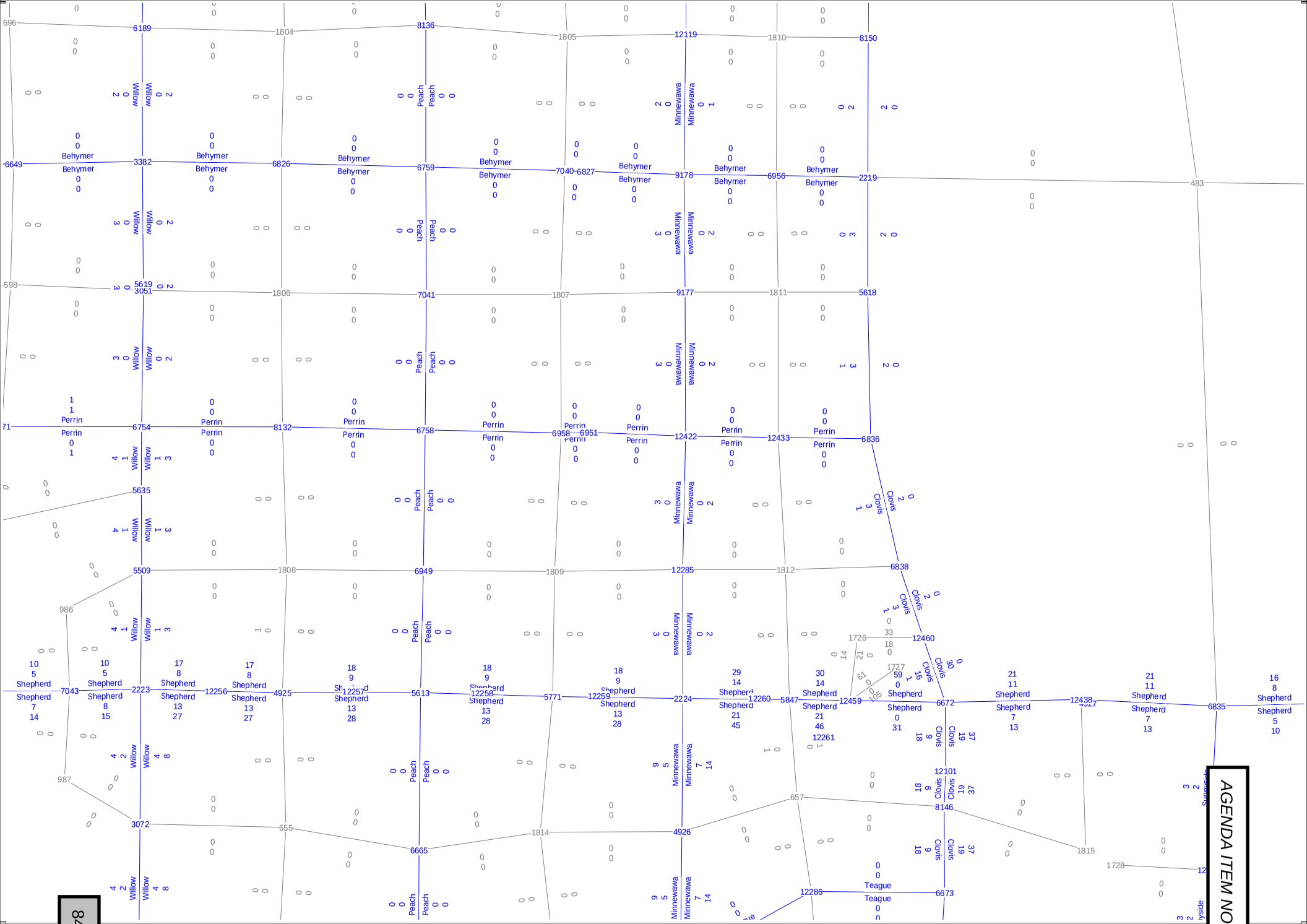
Cumulative Year 2035
AM, PM, Daily

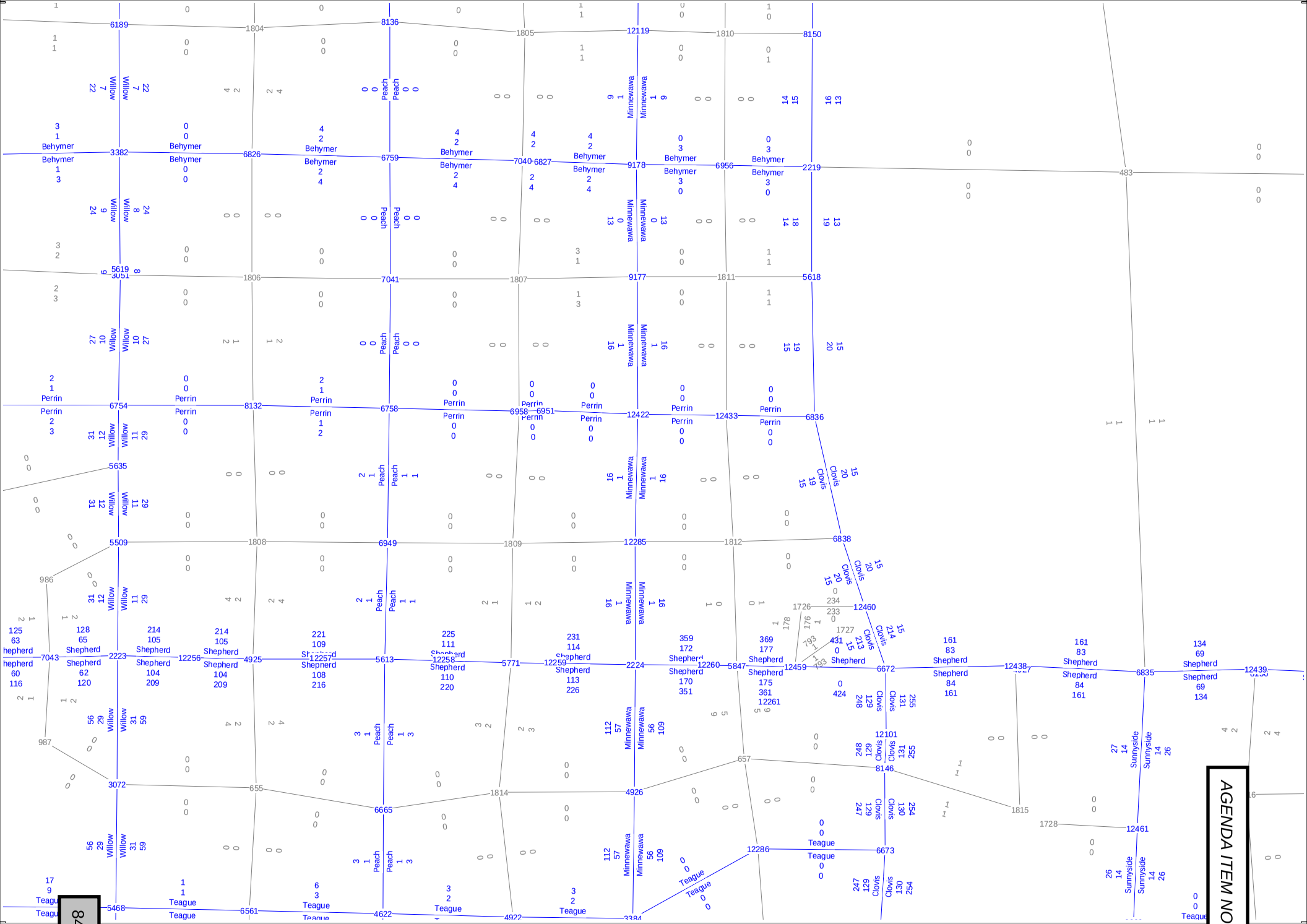


841

AGENDA ITEM NO.2

Cumulative Year 2035
Tract 6050 Select Zone
AM


AGENDA ITEM NO.2
842
Cumulative Year 2035
Tract 6050 Select Zone
PM
cube
(Licensed to JLB Traffic Engineering Inc)



AGENDA ITEM NO.2

Cumulative Year 2035
Tract 6050 Select Zone
Daily

Appendix D: Methodology

Levels of Service Methodology

The description and procedures for calculating capacity and level of service (LOS) are found in the Transportation Research Board, Highway Capacity Manual (HCM). The HCM 2010 represents the research on capacity and quality of service for transportation facilities.

Quality of service requires quantitative measures to characterize operational conditions within a traffic stream. Level of service is a quality measure describing operational conditions within a traffic stream, generally in terms of such service measures as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience.

Six levels of service are defined for each type of facility that has analysis procedures available. Letters designate each level of service (LOS), from A to F, with LOS A representing the best operating conditions and LOS F the worst. Each LOS represents a range of operating conditions and the driver's perception of these conditions. Safety is not included in the measures that establish a LOS.

Urban Streets (Automobile Mode)

The term "urban streets" refers to urban arterials and collectors, including those in downtown areas. Arterial streets are roads that primarily serve longer through trips. However, providing access to abutting commercial and residential land uses is also an important function of arterials. Collector streets provide both land access and traffic circulation within residential, commercial and industrial areas. Their access function is more important than that of arterials, and unlike arterials their operation is not always dominated by traffic signals. Downtown streets are signalized facilities that often resemble arterials. They not only move through traffic but also provide access to local businesses for passenger cars, transit buses, and trucks. Pedestrian conflicts and lane obstructions created by stopping or standing taxicabs, buses, trucks and parking vehicles that cause turbulence in the traffic flow are typical of downtown streets.

Flow Characteristics

The speed of vehicles on urban streets is influenced by three main factors, street environment, interaction among vehicles and traffic control.

The street environment includes the geometric characteristics of the facility, the character of roadside activity, and adjacent land uses. Thus, the environment reflects the number and width of lanes, type of median, driveway/access point density, spacing between signalized intersections, existence of parking, level of pedestrian and bicyclist activity and speed limit.

The interaction among vehicles is determined by traffic density, the proportion of trucks and buses, and turning movements. This interaction affects the operation of vehicles at intersections and, to a lesser extent, between signals.

Traffic controls (including signals and signs) forces a portion of all vehicles to slow or stop. The delays and speed changes caused by traffic control devices reduce vehicle speeds; however, such controls are needed to establish right-of-way.

Levels of Service (automobile Mode)

The average travel speed for through vehicles along an urban street is the determinant of the operating level of service (LOS). The travel speed along a segment, section or entire length of an urban street is dependent on the running speed between signalized intersections and the amount of control delay incurred at signalized intersections.

LOS A describes primarily free-flow operation. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Control delay at signalized intersections is minimal. Travel speeds exceed 85 of the base free flow speed (FFS).

LOS B describes reasonably unimpeded operation. The ability to maneuver within the traffic stream is only slightly restricted and control delay at the boundary intersections is not significant. The travel speed is between 67 and 85 percent of the base FFS.

LOS C describes stable operations. The ability to maneuver and change lanes in midblock location may be more restricted than at LOS B. Longer queues at the boundary intersections may contribute to lower travel speeds. The travel speed is between 50 and 67 percent of the base FFS.

LOS D indicates a less stable condition in which small increases in flow may cause substantial increases in delay and decreases in travel speed. This operation may be due to adverse signal progression, high volumes, inappropriate signal timing, at the boundary intersections. The travel speed is between 40 and 50 percent of the base FFS.

LOS E is characterized unstable operation and significant delay. Such operations may be due to some combination of adverse progression, high volume, and inappropriate signal timing at the boundary intersections. The travel speed is between 30 and 40 percent of the base FFS.

LOS F is characterized by street flow at extremely low speed. Congestion is likely occurring at the boundary intersections, as indicated by high delay and extensive queuing. The travel speed is 30 percent or less of the base FFS.

Table A-1: Urban Street Levels of Service (Automobile Mode)

Travel Speed as a Percentage of Base Free-Flow Speed (%)	LOS by Critical Volume-to-Capacity Ratio[a]	
	≤1.0	>1.0
>85	A	F
>67 to 85	B	F
>50 to 67	C	F
>40 to 50	D	F
>30 to 40	E	F
≤30	F	F

a = The Critical volume-to-capacity ratio is based on consideration of the through movement-to-capacity ratio at each boundary intersection in the subject direction of travel. The critical volume-to-capacity ratio is the largest ratio of those considered.
Source: Highway Capacity Manual 2010, Exhibit 16-4. Urban Street LOS Criteria (Automobile Mode)

Intersection Levels of Service

One of the more important elements limiting, and often interrupting the flow of traffic on a highway is the intersection. Flow on an interrupted facility is usually dominated by points of fixed operation such as traffic signals, stop and yield signs.

Signalized Intersections – Performance Measures

For signalized intersections the performance measures include automobile volume-to-capacity ratio, automobile delay, queue storage length, ratio of pedestrian delay, pedestrian circulation area, pedestrian perception score, bicycle delay, and bicycle perception score. LOS is also considered a performance measure. For the automobile mode average control delay per vehicle per approach is determined for the peak hour. A weighted average of control delay per vehicle is then determined for the intersection. A LOS designation is given to the weighted average control delay to better describe the level of operation. A description of LOS for signalized intersections is found in Table A-2.

Table A-2: Signalized Intersection Level of Service Description (Automobile Mode)

Level of Service	Description	Average Control Delay (seconds per vehicle)
A	Operations with a control delay of 10 seconds/vehicle or less and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when volume-to-capacity ratio is and either progression is exceptionally favorable or the cycle length is very short. If it's due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.	≤10
B	Operations with control delay between 10.1 to 20.0 seconds/vehicle and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.	>10.0 to 20.0
C	Operations with average control delays between 20.1 to 35.0 seconds/vehicle and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio no greater than 1.0. This level is typically assigned when progression is favorable or the cycle length is moderate. Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.	>20 to 35
D	Operations with control delay between 35.1 to 55.0 seconds/vehicle and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop, and i ndividual cycle failures are noticeable.	>35 to 55
E	Operations with control delay between 55.1 to 80.0 seconds/vehicle and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.	>55 to 80
F	Operations with unacceptable control delay exceeding 80.0 seconds/vehicle and a volume-to-capacity ratio greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.	>80

Source: Highway Capacity Manual 2010

Unsignalized Intersections

The HCM 2010 procedures use control delay as a measure of effectiveness to determine level of service. Delay is a measure of driver discomfort, frustration, fuel consumption, and increased travel time. The delay experienced by a motorist is made up of a number of factors that relate to control, traffic and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during base conditions, i. e., in the absence of traffic control, geometric delay, any incidents, and any other vehicles. Control delay is the increased time of travel for a vehicle approaching and passing through an unsignalized intersection, compared with a free-flow vehicle if it were not required to slow or stop at the intersection.

All-Way Stop Controlled Intersections

All-way stop controlled intersections is a form of traffic controls in which all approaches to an intersection are required to stop. Similar to signalized intersections, at all-way stop controlled intersections the average control delay per vehicle per approach is determined for the peak hour. A weighted average of control delay per vehicle is then determined for the intersection as a whole. In other words the delay measured for all-way stop controlled intersections is a measure of the average delay for all vehicles passing through the intersection during the peak hour. A LOS designation is given to the weighted average control delay to better describe the level of operation.

Two-Way Stop Controlled Intersections

Two-way stop controlled (TWSC) intersections in which stop signs are used to assign the right-of-way, are the most prevalent type of intersection in the United States. At TWSC intersections the stop-controlled approaches are referred as the minor street approaches and can be either public streets or private driveways. The approaches that are not controlled by stop signs are referred to as the major street approaches.

The capacity of movements subject to delay are determined using the "critical gap" method of capacity analysis. Expected average control delay based on movement volume and movement capacity is calculated. A LOS for TWSC intersection is determined by the computed or measured control delay for each minor movement. LOS is not defined for the intersection as a whole for three main reasons: (a) major-street through vehicles are assumed to experience zero delay; (b) the disproportionate number of major-street through vehicles at the typical TWSC intersection skews the weighted average of all movements, resulting in a very low overall average delay from all vehicles; and (c) the resulting low delay can mask important LOS deficiencies for minor movements. Table A-3 provides a description of LOS at unsignalized intersections.

Table A-3: Unsignalized Intersection Level of Service Description (Automobile Mode)

Control Delay (seconds per vehicle)	LOS by Volume-to-Capacity Ratio	
	v/c ≤ 1.0	**v/c > 1.0**
≤10	A	F
>10 to 15	B	F
>15 to 25	C	F
>25 to 35	D	F
>35 to 50	E	F
>50	F	F

Source: HCM 2010 Exhibit 19-1.

Appendix E: Existing Traffic Conditions

Intersection	
Intersection Delay, s/veh	68.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	66	47	9	170	264	91	252	9	170	252	4
Future Vol, veh/h	1	66	47	9	170	264	91	252	9	170	252	4
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	1	76	54	10	195	303	105	290	10	195	290	5
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	17.2	80.2	48.5	87.9
HCM LOS	C	F	E	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	26%	1%	2%	40%
Vol Thru, %	72%	58%	38%	59%
Vol Right, %	3%	41%	60%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	352	114	443	426
LT Vol	91	1	9	170
Through Vol	252	66	170	252
RT Vol	9	47	264	4
Lane Flow Rate	405	131	509	490
Geometry Grp	1	1	1	1
Degree of Util (X)	0.885	0.331	1.041	1.06
Departure Headway (Hd)	8.309	9.545	7.605	8.04
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	441	379	479	455
Service Time	6.309	7.545	5.605	6.04
HCM Lane V/C Ratio	0.918	0.346	1.063	1.077
HCM Control Delay	48.5	17.2	80.2	87.9
HCM Lane LOS	E	C	F	F
HCM 95th-tile Q	9.3	1.4	14.9	15.1

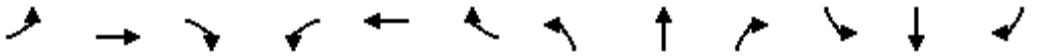
Intersection	
Int Delay, s/veh	1.9

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Vol, veh/h	0	453	91	80	436	24	73
Future Vol, veh/h	0	453	91	80	436	24	73
Conflicting Peds, #/hr	0	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	250	-	100	250	-	220	0
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88	88
Heavy Vehicles, %	3	3	3	3	3	3	3
Mvmt Flow	0	515	103	91	495	27	83

Major/Minor	Major1			Major2		Minor1	
Conflicting Flow All	-	0	0	619	0	1193	259
Stage 1	-	-	-	-	-	516	-
Stage 2	-	-	-	-	-	677	-
Critical Hdwy	-	-	-	4.145	-	6.645	6.945
Critical Hdwy Stg 1	-	-	-	-	-	5.845	-
Critical Hdwy Stg 2	-	-	-	-	-	5.445	-
Follow-up Hdwy	-	-	-	2.2285	-	3.5285	3.3285
Pot Cap-1 Maneuver	-	-	-	953	-	191	738
Stage 1	-	-	-	-	-	562	-
Stage 2	-	-	-	-	-	501	-
Platoon blocked, %		-	-		-		
Mov Cap-1 Maneuver	-	-	-	952	-	172	737
Mov Cap-2 Maneuver	-	-	-	-	-	172	-
Stage 1	-	-	-	-	-	561	-
Stage 2	-	-	-	-	-	453	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.4	15.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBU	EBT	EBR	WBL	WBT
Capacity (veh/h)	172	737	-	-	-	952	-
HCM Lane V/C Ratio	0.159	0.113	-	-	-	0.095	-
HCM Control Delay (s)	29.8	10.5	0	-	-	9.2	-
HCM Lane LOS	D	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.5	0.4	-	-	-	0.3	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	438	115	111	385	124	97	178	26	93	169	41
Future Volume (veh/h)	49	438	115	111	385	124	97	178	26	93	169	41
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	55	492	129	125	433	139	109	200	29	104	190	46
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	94	948	423	159	567	481	139	299	254	135	296	251
Arrive On Green	0.05	0.27	0.27	0.09	0.31	0.31	0.08	0.16	0.16	0.08	0.16	0.16
Sat Flow, veh/h	1767	3526	1572	1767	1856	1572	1767	1856	1572	1767	1856	1572
Grp Volume(v), veh/h	55	492	129	125	433	139	109	200	29	104	190	46
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1767	1856	1572	1767	1856	1572	1767	1856	1572
Q Serve(g_s), s	1.5	5.9	3.3	3.5	10.5	3.4	3.0	5.1	0.8	2.9	4.8	1.3
Cycle Q Clear(g_c), s	1.5	5.9	3.3	3.5	10.5	3.4	3.0	5.1	0.8	2.9	4.8	1.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	94	948	423	159	567	481	139	299	254	135	296	251
V/C Ratio(X)	0.58	0.52	0.31	0.78	0.76	0.29	0.79	0.67	0.11	0.77	0.64	0.18
Avail Cap(c_a), veh/h	181	2319	1034	206	1247	1056	177	1005	851	177	979	829
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.1	15.5	14.5	22.2	15.7	13.2	22.6	19.7	17.9	22.6	19.6	18.2
Incr Delay (d2), s/veh	5.6	0.4	0.4	13.9	2.2	0.3	16.2	2.6	0.2	13.8	2.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	1.9	0.9	1.8	3.6	0.9	1.7	2.0	0.2	1.5	1.8	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.6	15.9	14.9	36.1	17.8	13.5	38.8	22.2	18.1	36.4	22.0	18.5
LnGrp LOS	C	B	B	D	B	B	D	C	B	D	C	B
Approach Vol, veh/h		676			697			338			340	
Approach Delay, s/veh		16.8			20.3			27.2			25.9	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	14.0	8.7	19.1	8.1	13.9	6.9	20.9
Change Period (Y+Rc), s	* 4.2	* 6	* 4.2	5.7	* 4.2	6.0	* 4.2	5.7
Max Green Setting (Gmax), s	* 5	* 27	* 5.8	32.8	* 5	26.3	* 5.1	33.5
Max Q Clear Time (g_c+I1), s	4.9	7.1	5.5	7.9	5.0	6.8	3.5	12.5
Green Ext Time (p_c), s	0.0	1.0	0.0	3.3	0.0	0.9	0.0	2.7

Intersection Summary	
HCM 6th Ctrl Delay	21.2
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (vph)	1	427	156	95	503	95	44
Future Volume (vph)	1	427	156	95	503	95	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.7	5.7	4.2	5.7	4.2	5.3
Lane Util. Factor	1.00	0.95	1.00	0.97	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1752	3505	1548	3400	1845	1752	1568
Flt Permitted	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1752	3505	1548	3400	1845	1752	1568
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	1	485	177	108	572	108	50
RTOR Reduction (vph)	0	0	82	0	0	0	44
Lane Group Flow (vph)	1	485	95	108	572	108	6
Confl. Peds. (#/hr)			2				
Turn Type	Prot	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	7	4		3	8	5	
Permitted Phases			4				2
Actuated Green, G (s)	0.5	23.4	23.4	4.4	27.3	7.4	6.3
Effective Green, g (s)	0.5	23.4	23.4	4.4	27.3	7.4	6.3
Actuated g/C Ratio	0.01	0.47	0.47	0.09	0.55	0.15	0.13
Clearance Time (s)	4.2	5.7	5.7	4.2	5.7	4.2	5.3
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	17	1663	734	303	1021	262	200
v/s Ratio Prot	0.00	0.14		c0.03	c0.31	c0.06	
v/s Ratio Perm			0.06				0.00
v/c Ratio	0.06	0.29	0.13	0.36	0.56	0.41	0.03
Uniform Delay, d1	24.2	7.9	7.2	21.1	7.1	19.0	18.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	0.1	0.1	0.7	0.7	1.1	0.1
Delay (s)	25.6	8.0	7.3	21.8	7.8	20.0	18.9
Level of Service	C	A	A	C	A	C	B
Approach Delay (s)		7.8			10.0	19.7	
Approach LOS		A			B	B	

Intersection Summary			
HCM 2000 Control Delay	10.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	49.3	Sum of lost time (s)	15.2
Intersection Capacity Utilization	47.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Intersection Delay, s/veh	28.8
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	332	138	10	505	5	102	10	9	1	11	11
Future Vol, veh/h	2	332	138	10	505	5	102	10	9	1	11	11
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	2	386	160	12	587	6	119	12	10	1	13	13
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	25.6	36.3	12.6	10.5
HCM LOS	D	E	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	84%	0%	2%	4%
Vol Thru, %	8%	70%	97%	48%
Vol Right, %	7%	29%	1%	48%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	121	472	520	23
LT Vol	102	2	10	1
Through Vol	10	332	505	11
RT Vol	9	138	5	11
Lane Flow Rate	141	549	605	27
Geometry Grp	1	1	1	1
Degree of Util (X)	0.271	0.796	0.891	0.053
Departure Headway (Hd)	6.933	5.22	5.305	7.092
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	515	692	683	508
Service Time	5.016	3.28	3.361	5.092
HCM Lane V/C Ratio	0.274	0.793	0.886	0.053
HCM Control Delay	12.6	25.6	36.3	10.5
HCM Lane LOS	B	D	E	B
HCM 95th-tile Q	1.1	8	11.1	0.2

Intersection	
Intersection Delay, s/veh	37.3
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	105	43	7	100	170	66	312	8	213	250	3
Future Vol, veh/h	3	105	43	7	100	170	66	312	8	213	250	3
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	3	113	46	8	108	183	71	335	9	229	269	3
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	15.8	20.9	34.1	56.6
HCM LOS	C	C	D	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	17%	2%	3%	46%
Vol Thru, %	81%	70%	36%	54%
Vol Right, %	2%	28%	61%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	386	151	277	466
LT Vol	66	3	7	213
Through Vol	312	105	100	250
RT Vol	8	43	170	3
Lane Flow Rate	415	162	298	501
Geometry Grp	1	1	1	1
Degree of Util (X)	0.812	0.367	0.602	0.96
Departure Headway (Hd)	7.042	8.13	7.282	6.897
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	511	445	491	521
Service Time	5.13	6.13	5.375	4.981
HCM Lane V/C Ratio	0.812	0.364	0.607	0.962
HCM Control Delay	34.1	15.8	20.9	56.6
HCM Lane LOS	D	C	C	F
HCM 95th-tile Q	7.8	1.7	3.9	12.4

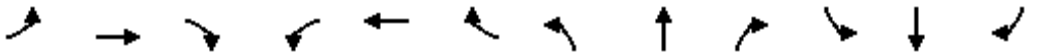
Intersection	
Int Delay, s/veh	1.9

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Vol, veh/h	2	589	65	38	395	45	49
Future Vol, veh/h	2	589	65	38	395	45	49
Conflicting Peds, #/hr	0	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	250	-	100	250	-	220	0
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3	3
Mvmt Flow	2	640	71	41	429	49	53

Major/Minor	Major1			Major2		Minor1	
Conflicting Flow All	-	0	0	713	0	1157	322
Stage 1	-	-	-	-	-	646	-
Stage 2	-	-	-	-	-	511	-
Critical Hdwy	-	-	-	4.145	-	6.645	6.945
Critical Hdwy Stg 1	-	-	-	-	-	5.845	-
Critical Hdwy Stg 2	-	-	-	-	-	5.445	-
Follow-up Hdwy	-	-	-	2.2285	-	3.5285	3.3285
Pot Cap-1 Maneuver	-	-	-	879	-	202	672
Stage 1	-	-	-	-	-	482	-
Stage 2	-	-	-	-	-	599	-
Platoon blocked, %		-	-		-		
Mov Cap-1 Maneuver	-	-	-	877	-	192	671
Mov Cap-2 Maneuver	-	-	-	-	-	192	-
Stage 1	-	-	-	-	-	481	-
Stage 2	-	-	-	-	-	571	-

Approach	EB	WB	NB
HCM Control Delay, s		0.8	20
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBU	EBT	EBR	WBL	WBT
Capacity (veh/h)	192	671	-	-	-	877	-
HCM Lane V/C Ratio	0.255	0.079	-	-	-	0.047	-
HCM Control Delay (s)	30	10.8	-	-	-	9.3	-
HCM Lane LOS	D	B	-	-	-	A	-
HCM 95th %tile Q(veh)	1	0.3	-	-	-	0.1	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	492	81	52	338	171	88	209	49	104	166	32
Future Volume (veh/h)	53	492	81	52	338	171	88	209	49	104	166	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	55	512	84	54	352	178	92	218	51	108	173	33
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	95	841	375	93	498	422	128	322	273	138	374	317
Arrive On Green	0.05	0.24	0.24	0.05	0.27	0.27	0.07	0.17	0.17	0.08	0.20	0.20
Sat Flow, veh/h	1767	3526	1571	1767	1856	1572	1767	1856	1572	1767	1856	1572
Grp Volume(v), veh/h	55	512	84	54	352	178	92	218	51	108	173	33
Grp Sat Flow(s),veh/h/ln	1767	1763	1571	1767	1856	1572	1767	1856	1572	1767	1856	1572
Q Serve(g_s), s	1.5	6.4	1.4	1.5	8.5	2.7	2.5	5.5	1.4	3.0	4.1	0.9
Cycle Q Clear(g_c), s	1.5	6.4	1.4	1.5	8.5	2.7	2.5	5.5	1.4	3.0	4.1	0.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	95	841	375	93	498	422	128	322	273	138	374	317
V/C Ratio(X)	0.58	0.61	0.22	0.58	0.71	0.42	0.72	0.68	0.19	0.78	0.46	0.10
Avail Cap(c_a), veh/h	253	2285	1018	178	1124	953	206	1009	855	228	1005	851
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.0	16.8	6.3	23.0	16.4	4.9	22.5	19.2	17.5	22.5	17.5	16.2
Incr Delay (d2), s/veh	5.5	0.7	0.3	5.5	1.9	0.7	7.4	2.5	0.3	9.3	0.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	2.1	0.6	0.7	3.0	1.2	1.2	2.2	0.4	1.4	1.4	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.5	17.6	6.6	28.5	18.3	5.6	29.9	21.7	17.9	31.7	18.4	16.3
LnGrp LOS	C	B	A	C	B	A	C	C	B	C	B	B
Approach Vol, veh/h		651			584			361			314	
Approach Delay, s/veh		17.1			15.4			23.3			22.8	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.9	13.9	8.3	17.6	7.8	16.0	6.9	19.0
Change Period (Y+Rc), s	6.0	* 5.3	5.7	* 5.7	* 4.2	6.0	* 4.2	5.7
Max Green Setting (Gmax), s	6.4	* 27	5.0	* 32	* 5.8	26.9	* 7.1	30.1
Max Q Clear Time (g_c+I1), s	5.0	7.5	3.5	8.4	4.5	6.1	3.5	10.5
Green Ext Time (p_c), s	0.0	1.2	0.0	3.3	0.0	0.8	0.0	2.3

Intersection Summary	
HCM 6th Ctrl Delay	18.7
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (vph)	1	515	181	44	425	150	66
Future Volume (vph)	1	515	181	44	425	150	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.7	5.7	4.2	5.7	4.2	5.3
Lane Util. Factor	1.00	0.95	1.00	0.97	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1752	3505	1568	3400	1845	1752	1568
Flt Permitted	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1752	3505	1568	3400	1845	1752	1568
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	1	548	193	47	452	160	70
RTOR Reduction (vph)	0	0	80	0	0	0	57
Lane Group Flow (vph)	1	548	113	47	452	160	13
Turn Type	Prot	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	7	4		3	8	5	
Permitted Phases			4				2
Actuated Green, G (s)	0.5	22.6	22.6	1.5	23.6	10.1	9.0
Effective Green, g (s)	0.5	22.6	22.6	1.5	23.6	10.1	9.0
Actuated g/C Ratio	0.01	0.47	0.47	0.03	0.49	0.21	0.19
Clearance Time (s)	4.2	5.7	5.7	4.2	5.7	4.2	5.3
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	18	1640	733	105	901	366	292
v/s Ratio Prot	0.00	0.16		c0.01	c0.25	c0.09	
v/s Ratio Perm			0.07				0.01
v/c Ratio	0.06	0.33	0.15	0.45	0.50	0.44	0.04
Uniform Delay, d1	23.7	8.1	7.4	23.0	8.4	16.6	16.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.1	0.1	3.0	0.4	0.8	0.1
Delay (s)	25.0	8.2	7.5	26.0	8.8	17.5	16.2
Level of Service	C	A	A	C	A	B	B
Approach Delay (s)		8.1			10.4	17.1	
Approach LOS		A			B	B	

Intersection Summary			
HCM 2000 Control Delay	10.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	48.3	Sum of lost time (s)	15.2
Intersection Capacity Utilization	38.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	21.5
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	11	505	82	17	358	3	101	14	32	0	7	6
Future Vol, veh/h	11	505	82	17	358	3	101	14	32	0	7	6
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	11	515	84	17	365	3	103	14	33	0	7	6
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	28.3	15.1	11.7	9.8
HCM LOS	D	C	B	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	69%	2%	4%	0%
Vol Thru, %	10%	84%	95%	54%
Vol Right, %	22%	14%	1%	46%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	147	598	378	13
LT Vol	101	11	17	0
Through Vol	14	505	358	7
RT Vol	32	82	3	6
Lane Flow Rate	150	610	386	13
Geometry Grp	1	1	1	1
Degree of Util (X)	0.266	0.839	0.567	0.024
Departure Headway (Hd)	6.382	4.95	5.292	6.529
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	563	732	683	546
Service Time	4.432	2.983	3.33	4.601
HCM Lane V/C Ratio	0.266	0.833	0.565	0.024
HCM Control Delay	11.7	28.3	15.1	9.8
HCM Lane LOS	B	D	C	A
HCM 95th-tile Q	1.1	9.5	3.6	0.1

Intersection	
Intersection Delay, s/veh	33.7
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	66	47	9	170	264	91	252	9	170	252	4
Future Vol, veh/h	1	66	47	9	170	264	91	252	9	170	252	4
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	1	76	54	10	195	303	105	290	10	195	290	5
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	15	58.2	23	22.2
HCM LOS	B	F	C	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	1%	2%	100%	0%
Vol Thru, %	0%	97%	58%	38%	0%	98%
Vol Right, %	0%	3%	41%	60%	0%	2%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	91	261	114	443	170	256
LT Vol	91	0	1	9	170	0
Through Vol	0	252	66	170	0	252
RT Vol	0	9	47	264	0	4
Lane Flow Rate	105	300	131	509	195	294
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.251	0.674	0.303	0.97	0.462	0.653
Departure Headway (Hd)	8.628	8.084	8.316	6.86	8.516	7.986
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	416	447	431	535	422	450
Service Time	6.391	5.846	6.394	4.86	6.28	5.75
HCM Lane V/C Ratio	0.252	0.671	0.304	0.951	0.462	0.653
HCM Control Delay	14.3	26.1	15	58.2	18.4	24.7
HCM Lane LOS	B	D	B	F	C	C
HCM 95th-tile Q	1	4.9	1.3	12.9	2.4	4.6

Intersection	
Intersection Delay, s/veh	18.4
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	105	43	7	100	170	66	312	8	213	250	3
Future Vol, veh/h	3	105	43	7	100	170	66	312	8	213	250	3
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	3	113	46	8	108	183	71	335	9	229	269	3
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	14	17.8	21.9	17.4
HCM LOS	B	C	C	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	2%	3%	100%	0%
Vol Thru, %	0%	97%	70%	36%	0%	99%
Vol Right, %	0%	3%	28%	61%	0%	1%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	66	320	151	277	213	253
LT Vol	66	0	3	7	213	0
Through Vol	0	312	105	100	0	250
RT Vol	0	8	43	170	0	3
Lane Flow Rate	71	344	162	298	229	272
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.151	0.683	0.331	0.554	0.481	0.532
Departure Headway (Hd)	7.673	7.141	7.34	6.698	7.568	7.046
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	466	506	487	536	474	511
Service Time	5.439	4.907	5.418	4.761	5.336	4.814
HCM Lane V/C Ratio	0.152	0.68	0.333	0.556	0.483	0.532
HCM Control Delay	11.8	24	14	17.8	17.2	17.6
HCM Lane LOS	B	C	B	C	C	C
HCM 95th-tile Q	0.5	5.1	1.4	3.3	2.6	3.1

Intersection: 1: Minnewawa Avenue & Behymer Avenue

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	97	229	55	95	96	120
Average Queue (ft)	40	97	37	59	45	58
95th Queue (ft)	71	169	55	89	73	91
Link Distance (ft)	5404	5005		4378		2548
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			250		250	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 2: Peach Avenue & Shepherd Avenue

Movement	EB	WB	NB	NB
Directions Served	R	L	L	R
Maximum Queue (ft)	40	53	26	52
Average Queue (ft)	2	21	10	16
95th Queue (ft)	16	46	26	33
Link Distance (ft)				2544
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	100	250	220	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Minnewawa Avenue & Shepherd Avenue

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	R	L	T	R	L	T
Maximum Queue (ft)	94	137	149	114	131	258	63	149	168	42	114	242
Average Queue (ft)	32	68	77	35	54	101	26	64	79	10	64	90
95th Queue (ft)	72	117	123	75	99	180	52	119	132	32	107	186
Link Distance (ft)		2555	2555			2557			2526	2526		816
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	250			60	250		205	250			75	
Storage Blk Time (%)			12	0		1					9	38
Queuing Penalty (veh)			14	0		1					19	51

Intersection: 3: Minnewawa Avenue & Shepherd Avenue

Movement	SB
Directions Served	R
Maximum Queue (ft)	67
Average Queue (ft)	23
95th Queue (ft)	57
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	25
Storage Blk Time (%)	4
Queuing Penalty (veh)	10

Intersection: 4: Clovis Avenue & Shepherd Avenue

Movement	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	T	R	L	L	T	L	R
Maximum Queue (ft)	184	103	74	31	53	202	91	26
Average Queue (ft)	79	15	28	11	37	62	37	14
95th Queue (ft)	140	58	60	34	54	138	71	30
Link Distance (ft)	2557	2557				606	2412	2412
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			50	250	250			
Storage Blk Time (%)		1	1					
Queuing Penalty (veh)		2	2					

Intersection: 5: Sunnyside Avenue & Shepherd Avenue

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	131	141	55	31
Average Queue (ft)	83	69	34	11
95th Queue (ft)	120	113	51	33
Link Distance (ft)	1487	2621	2598	2673
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 100

Intersection: 1: Minnewawa Avenue & Behymer Avenue

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	79	116	76	204	100	117
Average Queue (ft)	38	60	34	77	48	52
95th Queue (ft)	61	93	57	134	76	85
Link Distance (ft)	5404	5005		4378		2548
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			250		250	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 2: Peach Avenue & Shepherd Avenue

Movement	EB	EB	WB	NB	NB
Directions Served	U	T	L	L	R
Maximum Queue (ft)	22	22	88	87	58
Average Queue (ft)	1	1	20	20	16
95th Queue (ft)	7	7	55	50	33
Link Distance (ft)		2695			2544
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	250		250	220	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: Minnewawa Avenue & Shepherd Avenue

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	R	L	T	R	L	T
Maximum Queue (ft)	131	181	180	120	103	235	65	111	152	104	115	187
Average Queue (ft)	40	80	105	49	39	115	35	54	86	21	66	83
95th Queue (ft)	87	146	174	119	86	182	67	100	145	55	108	152
Link Distance (ft)		2555	2555			2557			2526	2526		816
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	250			60	250		205	250			75	
Storage Blk Time (%)			16	0		1					8	41
Queuing Penalty (veh)			13	1		2					16	56

Intersection: 3: Minnewawa Avenue & Shepherd Avenue

Movement	SB
Directions Served	R
Maximum Queue (ft)	40
Average Queue (ft)	12
95th Queue (ft)	37
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	25
Storage Blk Time (%)	2
Queuing Penalty (veh)	5

Intersection: 4: Clovis Avenue & Shepherd Avenue

Movement	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	T	R	L	L	T	L	R
Maximum Queue (ft)	209	135	55	53	52	160	137	26
Average Queue (ft)	76	14	29	6	24	53	63	16
95th Queue (ft)	158	66	57	28	47	114	120	31
Link Distance (ft)	2557	2557				606	2412	2412
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			50	250	250			
Storage Blk Time (%)		0	1					
Queuing Penalty (veh)		1	2					

Intersection: 5: Sunnyside Avenue & Shepherd Avenue

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	263	122	71	28
Average Queue (ft)	144	62	36	6
95th Queue (ft)	230	91	57	24
Link Distance (ft)	1487	2621	2598	2673
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 95

Appendix F: Existing plus Project Traffic Conditions

Intersection	
Intersection Delay, s/veh	71.5
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	66	48	9	170	264	92	257	9	170	253	4
Future Vol, veh/h	1	66	48	9	170	264	92	257	9	170	253	4
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	1	76	55	10	195	303	106	295	10	195	291	5
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	17.4	82.3	51.8	91.3
HCM LOS	C	F	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	26%	1%	2%	40%
Vol Thru, %	72%	57%	38%	59%
Vol Right, %	3%	42%	60%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	358	115	443	427
LT Vol	92	1	9	170
Through Vol	257	66	170	253
RT Vol	9	48	264	4
Lane Flow Rate	411	132	509	491
Geometry Grp	1	1	1	1
Degree of Util (X)	0.903	0.336	1.047	1.07
Departure Headway (Hd)	8.356	9.634	7.666	8.099
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	436	375	479	452
Service Time	6.356	7.634	5.666	6.099
HCM Lane V/C Ratio	0.943	0.352	1.063	1.086
HCM Control Delay	51.8	17.4	82.3	91.3
HCM Lane LOS	F	C	F	F
HCM 95th-tile Q	9.7	1.5	15	15.4

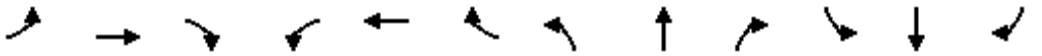
Intersection	
Int Delay, s/veh	1.9

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Vol, veh/h	0	467	91	80	473	24	73
Future Vol, veh/h	0	467	91	80	473	24	73
Conflicting Peds, #/hr	0	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	250	-	100	250	-	220	0
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88	88
Heavy Vehicles, %	3	3	3	3	3	3	3
Mvmt Flow	0	531	103	91	538	27	83

Major/Minor	Major1			Major2		Minor1	
Conflicting Flow All	-	0	0	635	0	1252	267
Stage 1	-	-	-	-	-	532	-
Stage 2	-	-	-	-	-	720	-
Critical Hdwy	-	-	-	4.145	-	6.645	6.945
Critical Hdwy Stg 1	-	-	-	-	-	5.845	-
Critical Hdwy Stg 2	-	-	-	-	-	5.445	-
Follow-up Hdwy	-	-	-	2.2285	-	3.5285	3.3285
Pot Cap-1 Maneuver	-	-	-	940	-	176	729
Stage 1	-	-	-	-	-	552	-
Stage 2	-	-	-	-	-	479	-
Platoon blocked, %		-	-		-		
Mov Cap-1 Maneuver	-	-	-	939	-	159	728
Mov Cap-2 Maneuver	-	-	-	-	-	159	-
Stage 1	-	-	-	-	-	551	-
Stage 2	-	-	-	-	-	433	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.3	16
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBU	EBT	EBR	WBL	WBT
Capacity (veh/h)	159	728	-	-	-	939	-
HCM Lane V/C Ratio	0.172	0.114	-	-	-	0.097	-
HCM Control Delay (s)	32.3	10.6	0	-	-	9.2	-
HCM Lane LOS	D	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.6	0.4	-	-	-	0.3	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	452	115	131	422	130	97	178	32	95	169	41
Future Volume (veh/h)	49	452	115	131	422	130	97	178	32	95	169	41
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	55	508	129	147	474	146	109	200	36	107	190	46
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	93	963	430	186	605	513	139	295	250	136	293	248
Arrive On Green	0.05	0.27	0.27	0.11	0.33	0.33	0.08	0.16	0.16	0.08	0.16	0.16
Sat Flow, veh/h	1767	3526	1572	1767	1856	1572	1767	1856	1572	1767	1856	1572
Grp Volume(v), veh/h	55	508	129	147	474	146	109	200	36	107	190	46
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1767	1856	1572	1767	1856	1572	1767	1856	1572
Q Serve(g_s), s	1.6	6.4	3.4	4.2	12.1	3.6	3.2	5.3	1.0	3.1	5.0	1.3
Cycle Q Clear(g_c), s	1.6	6.4	3.4	4.2	12.1	3.6	3.2	5.3	1.0	3.1	5.0	1.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	93	963	430	186	605	513	139	295	250	136	293	248
V/C Ratio(X)	0.59	0.53	0.30	0.79	0.78	0.28	0.79	0.68	0.14	0.79	0.65	0.19
Avail Cap(c_a), veh/h	173	2216	988	196	1191	1009	169	960	814	169	935	792
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.2	16.1	15.0	22.8	15.9	13.1	23.6	20.7	18.9	23.7	20.6	19.1
Incr Delay (d2), s/veh	5.9	0.4	0.4	18.4	2.3	0.3	17.7	2.7	0.3	17.4	2.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	2.1	1.0	2.4	4.2	1.0	1.8	2.2	0.3	1.7	1.9	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.0	16.6	15.4	41.2	18.2	13.4	41.3	23.4	19.1	41.0	23.0	19.4
LnGrp LOS	C	B	B	D	B	B	D	C	B	D	C	B
Approach Vol, veh/h		692			767			345			343	
Approach Delay, s/veh		17.4			21.7			28.6			28.2	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.2	14.3	9.7	20.0	8.3	14.2	6.9	22.7
Change Period (Y+Rc), s	* 4.2	* 6	* 4.2	5.7	* 4.2	6.0	* 4.2	5.7
Max Green Setting (Gmax), s	* 5	* 27	* 5.8	32.8	* 5	26.3	* 5.1	33.5
Max Q Clear Time (g_c+I1), s	5.1	7.3	6.2	8.4	5.2	7.0	3.6	14.1
Green Ext Time (p_c), s	0.0	1.0	0.0	3.4	0.0	0.9	0.0	2.9

Intersection Summary	
HCM 6th Ctrl Delay	22.5
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	1	427	156	95	510	4	104	5	44	27	51
Future Volume (vph)	1	1	427	156	95	510	4	104	5	44	27	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2	5.7	5.7	4.2	5.7		4.2	5.3	5.3	4.2	5.3
Lane Util. Factor		1.00	0.95	1.00	0.97	1.00		1.00	1.00	1.00	0.97	0.95
Frpb, ped/bikes		1.00	1.00	0.99	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	1.00
Flt Protected		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1752	3505	1547	3400	1842		1752	1845	1568	3400	3505
Flt Permitted		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)		1752	3505	1547	3400	1842		1752	1845	1568	3400	3505
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	1	1	485	177	108	580	5	118	6	50	31	58
RTOR Reduction (vph)	0	0	0	113	0	1	0	0	0	41	0	0
Lane Group Flow (vph)	0	2	485	64	108	584	0	118	6	9	31	58
Confl. Peds. (#/hr)				2								
Turn Type	Prot	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA
Protected Phases	7	7	4		3	8		5	2		1	6
Permitted Phases				4						2		
Actuated Green, G (s)		0.6	23.5	23.5	8.3	31.2		8.7	12.0	12.0	1.5	4.8
Effective Green, g (s)		0.6	23.5	23.5	8.3	31.2		8.7	12.0	12.0	1.5	4.8
Actuated g/C Ratio		0.01	0.36	0.36	0.13	0.48		0.13	0.19	0.19	0.02	0.07
Clearance Time (s)		4.2	5.7	5.7	4.2	5.7		4.2	5.3	5.3	4.2	5.3
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		16	1273	561	436	888		235	342	290	78	260
v/s Ratio Prot		0.00	0.14		c0.03	c0.32		c0.07	0.00		0.01	c0.02
v/s Ratio Perm				0.04						c0.01		
v/c Ratio		0.12	0.38	0.11	0.25	0.66		0.50	0.02	0.03	0.40	0.22
Uniform Delay, d1		31.8	15.2	13.7	25.4	12.7		26.0	21.5	21.6	31.2	28.2
Progression Factor		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		3.5	0.2	0.1	0.3	1.8		1.7	0.0	0.0	3.3	0.4
Delay (s)		35.3	15.4	13.8	25.7	14.5		27.7	21.6	21.6	34.5	28.6
Level of Service		D	B	B	C	B		C	C	C	C	C
Approach Delay (s)			15.0			16.2			25.7			30.5
Approach LOS			B			B			C			C

Intersection Summary			
HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	64.7	Sum of lost time (s)	19.4
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	5
Future Volume (vph)	5
Ideal Flow (vphpl)	1900
Total Lost time (s)	5.3
Lane Util. Factor	1.00
Frpb, ped/bikes	1.00
Flpb, ped/bikes	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1568
Flt Permitted	1.00
Satd. Flow (perm)	1568
Peak-hour factor, PHF	0.88
Adj. Flow (vph)	6
RTOR Reduction (vph)	6
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	4.8
Effective Green, g (s)	4.8
Actuated g/C Ratio	0.07
Clearance Time (s)	5.3
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	116
v/s Ratio Prot	
v/s Ratio Perm	0.00
v/c Ratio	0.00
Uniform Delay, d1	27.7
Progression Factor	1.00
Incremental Delay, d2	0.0
Delay (s)	27.7
Level of Service	C
Approach Delay (s)	
Approach LOS	

Intersection Summary

Intersection	
Intersection Delay, s/veh	33
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	352	145	10	514	5	104	10	9	1	11	11
Future Vol, veh/h	2	352	145	10	514	5	104	10	9	1	11	11
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	2	409	169	12	598	6	121	12	10	1	13	13
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	30.8	40.8	12.9	10.7
HCM LOS	D	E	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	85%	0%	2%	4%
Vol Thru, %	8%	71%	97%	48%
Vol Right, %	7%	29%	1%	48%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	123	499	529	23
LT Vol	104	2	10	1
Through Vol	10	352	514	11
RT Vol	9	145	5	11
Lane Flow Rate	143	580	615	27
Geometry Grp	1	1	1	1
Degree of Util (X)	0.28	0.849	0.918	0.054
Departure Headway (Hd)	7.045	5.267	5.375	7.248
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	506	685	670	497
Service Time	5.134	3.331	3.437	5.248
HCM Lane V/C Ratio	0.283	0.847	0.918	0.054
HCM Control Delay	12.9	30.8	40.8	10.7
HCM Lane LOS	B	D	E	B
HCM 95th-tile Q	1.1	9.6	12.1	0.2

Intersection	
Intersection Delay, s/veh	39.6
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	105	44	7	100	170	67	315	8	213	256	3
Future Vol, veh/h	3	105	44	7	100	170	67	315	8	213	256	3
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	3	113	47	8	108	183	72	339	9	229	275	3
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	16	21.3	35.9	60.9
HCM LOS	C	C	E	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	17%	2%	3%	45%
Vol Thru, %	81%	69%	36%	54%
Vol Right, %	2%	29%	61%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	390	152	277	472
LT Vol	67	3	7	213
Through Vol	315	105	100	256
RT Vol	8	44	170	3
Lane Flow Rate	419	163	298	508
Geometry Grp	1	1	1	1
Degree of Util (X)	0.826	0.373	0.608	0.978
Departure Headway (Hd)	7.092	8.21	7.349	6.94
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	507	441	488	518
Service Time	5.187	6.21	5.448	5.028
HCM Lane V/C Ratio	0.826	0.37	0.611	0.981
HCM Control Delay	35.9	16	21.3	60.9
HCM Lane LOS	E	C	C	F
HCM 95th-tile Q	8.1	1.7	4	13

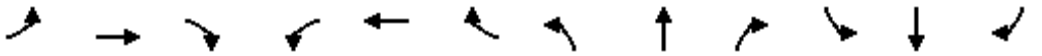
Intersection	
Int Delay, s/veh	2

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Vol, veh/h	2	630	65	38	422	45	49
Future Vol, veh/h	2	630	65	38	422	45	49
Conflicting Peds, #/hr	0	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	250	-	100	250	-	220	0
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3	3
Mvmt Flow	2	685	71	41	459	49	53

Major/Minor	Major1			Major2		Minor1	
Conflicting Flow All	-	0	0	758	0	1232	345
Stage 1	-	-	-	-	-	691	-
Stage 2	-	-	-	-	-	541	-
Critical Hdwy	-	-	-	4.145	-	6.645	6.945
Critical Hdwy Stg 1	-	-	-	-	-	5.845	-
Critical Hdwy Stg 2	-	-	-	-	-	5.445	-
Follow-up Hdwy	-	-	-	2.2285	-	3.5285	3.3285
Pot Cap-1 Maneuver	-	-	-	846	-	181	649
Stage 1	-	-	-	-	-	457	-
Stage 2	-	-	-	-	-	580	-
Platoon blocked, %		-	-		-		
Mov Cap-1 Maneuver	-	-	-	844	-	172	648
Mov Cap-2 Maneuver	-	-	-	-	-	172	-
Stage 1	-	-	-	-	-	456	-
Stage 2	-	-	-	-	-	552	-

Approach	EB	WB	NB
HCM Control Delay, s		0.8	22.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBU	EBT	EBR	WBL	WBT
Capacity (veh/h)	172	648	-	-	-	844	-
HCM Lane V/C Ratio	0.284	0.082	-	-	-	0.049	-
HCM Control Delay (s)	34	11.1	-	-	-	9.5	-
HCM Lane LOS	D	B	-	-	-	A	-
HCM 95th %tile Q(veh)	1.1	0.3	-	-	-	0.2	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	533	81	66	365	175	88	209	70	111	166	32
Future Volume (veh/h)	53	533	81	66	365	175	88	209	70	111	166	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	55	555	84	69	380	182	92	218	73	116	173	33
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	93	878	391	107	530	449	125	319	270	148	383	324
Arrive On Green	0.05	0.25	0.25	0.06	0.29	0.29	0.07	0.17	0.17	0.08	0.21	0.21
Sat Flow, veh/h	1767	3526	1571	1767	1856	1572	1767	1856	1572	1767	1856	1572
Grp Volume(v), veh/h	55	555	84	69	380	182	92	218	73	116	173	33
Grp Sat Flow(s),veh/h/ln	1767	1763	1571	1767	1856	1572	1767	1856	1572	1767	1856	1572
Q Serve(g_s), s	1.6	7.3	1.4	2.0	9.6	2.8	2.7	5.8	2.1	3.4	4.3	0.9
Cycle Q Clear(g_c), s	1.6	7.3	1.4	2.0	9.6	2.8	2.7	5.8	2.1	3.4	4.3	0.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	93	878	391	107	530	449	125	319	270	148	383	324
V/C Ratio(X)	0.59	0.63	0.21	0.64	0.72	0.40	0.74	0.68	0.27	0.78	0.45	0.10
Avail Cap(c_a), veh/h	240	2173	968	169	1069	906	196	959	813	216	955	810
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.2	17.5	6.6	24.0	16.8	4.9	23.8	20.3	18.8	23.5	18.1	16.8
Incr Delay (d2), s/veh	5.9	0.8	0.3	6.3	1.8	0.6	8.2	2.6	0.5	10.7	0.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	2.4	0.6	0.9	3.4	1.3	1.2	2.3	0.7	1.6	1.5	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.1	18.2	6.9	30.3	18.6	5.5	32.0	22.9	19.3	34.2	19.0	16.9
LnGrp LOS	C	B	A	C	B	A	C	C	B	C	B	B
Approach Vol, veh/h		694			631			383			322	
Approach Delay, s/veh		17.8			16.1			24.4			24.2	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.4	14.3	8.9	18.7	7.9	16.8	6.9	20.6
Change Period (Y+Rc), s	6.0	* 5.3	5.7	* 5.7	* 4.2	6.0	* 4.2	5.7
Max Green Setting (Gmax), s	6.4	* 27	5.0	* 32	* 5.8	26.9	* 7.1	30.1
Max Q Clear Time (g_c+I1), s	5.4	7.8	4.0	9.3	4.7	6.3	3.6	11.6
Green Ext Time (p_c), s	0.0	1.2	0.0	3.5	0.0	0.8	0.0	2.4

Intersection Summary	
HCM 6th Ctrl Delay	19.5
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	6	515	181	44	447	10	192	16	66	20	28
Future Volume (vph)	1	6	515	181	44	447	10	192	16	66	20	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2	5.7	5.7	4.2	5.7		4.2	5.3	5.3	4.2	5.3
Lane Util. Factor		1.00	0.95	1.00	0.97	1.00		1.00	1.00	1.00	0.97	0.95
Frt		1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	1.00
Flt Protected		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1752	3505	1568	3400	1838		1752	1845	1568	3400	3505
Flt Permitted		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)		1752	3505	1568	3400	1838		1752	1845	1568	3400	3505
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	1	6	548	193	47	476	11	204	17	70	21	30
RTOR Reduction (vph)	0	0	0	105	0	1	0	0	0	52	0	0
Lane Group Flow (vph)	0	7	548	88	47	486	0	204	17	18	21	30
Turn Type	Prot	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA
Protected Phases	7	7	4		3	8		5	2		1	6
Permitted Phases				4						2		
Actuated Green, G (s)		0.6	24.2	24.2	2.7	26.3		13.0	15.7	15.7	0.6	3.3
Effective Green, g (s)		0.6	24.2	24.2	2.7	26.3		13.0	15.7	15.7	0.6	3.3
Actuated g/C Ratio		0.01	0.39	0.39	0.04	0.42		0.21	0.25	0.25	0.01	0.05
Clearance Time (s)		4.2	5.7	5.7	4.2	5.7		4.2	5.3	5.3	4.2	5.3
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		16	1354	606	146	772		363	462	393	32	184
v/s Ratio Prot		0.00	0.16		c0.01	c0.26		c0.12	0.01		0.01	c0.01
v/s Ratio Perm				0.06						0.01		
v/c Ratio		0.44	0.40	0.15	0.32	0.63		0.56	0.04	0.04	0.66	0.16
Uniform Delay, d1		30.8	14.0	12.5	29.1	14.3		22.2	17.7	17.8	30.9	28.3
Progression Factor		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		18.0	0.2	0.1	1.3	1.7		2.0	0.0	0.0	39.4	0.4
Delay (s)		48.8	14.2	12.6	30.3	16.0		24.2	17.8	17.8	70.3	28.7
Level of Service		D	B	B	C	B		C	B	B	E	C
Approach Delay (s)			14.1			17.3			22.3			44.0
Approach LOS			B			B			C			D

Intersection Summary			
HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	62.6	Sum of lost time (s)	19.4
Intersection Capacity Utilization	51.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	6
Future Volume (vph)	6
Ideal Flow (vphpl)	1900
Total Lost time (s)	5.3
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1568
Flt Permitted	1.00
Satd. Flow (perm)	1568
Peak-hour factor, PHF	0.94
Adj. Flow (vph)	6
RTOR Reduction (vph)	6
Lane Group Flow (vph)	0
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	3.3
Effective Green, g (s)	3.3
Actuated g/C Ratio	0.05
Clearance Time (s)	5.3
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	82
v/s Ratio Prot	
v/s Ratio Perm	0.00
v/c Ratio	0.00
Uniform Delay, d1	28.1
Progression Factor	1.00
Incremental Delay, d2	0.0
Delay (s)	28.1
Level of Service	C
Approach Delay (s)	
Approach LOS	

Intersection Summary

Intersection	
Intersection Delay, s/veh	24.8
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	520	87	17	382	3	109	14	32	0	7	6
Future Vol, veh/h	11	520	87	17	382	3	109	14	32	0	7	6
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	11	531	89	17	390	3	111	14	33	0	7	6
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	33.7	16.6	12.2	10
HCM LOS	D	C	B	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	70%	2%	4%	0%
Vol Thru, %	9%	84%	95%	54%
Vol Right, %	21%	14%	1%	46%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	155	618	402	13
LT Vol	109	11	17	0
Through Vol	14	520	382	7
RT Vol	32	87	3	6
Lane Flow Rate	158	631	410	13
Geometry Grp	1	1	1	1
Degree of Util (X)	0.286	0.882	0.613	0.025
Departure Headway (Hd)	6.517	5.036	5.378	6.712
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	550	719	669	530
Service Time	4.577	3.072	3.421	4.797
HCM Lane V/C Ratio	0.287	0.878	0.613	0.025
HCM Control Delay	12.2	33.7	16.6	10
HCM Lane LOS	B	D	C	A
HCM 95th-tile Q	1.2	11	4.2	0.1

Intersection	
Intersection Delay, s/veh	34.5
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	66	48	9	170	264	92	257	9	170	253	4
Future Vol, veh/h	1	66	48	9	170	264	92	257	9	170	253	4
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	1	76	55	10	195	303	106	295	10	195	291	5
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	15.1	59.8	23.8	22.5
HCM LOS	C	F	C	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	1%	2%	100%	0%
Vol Thru, %	0%	97%	57%	38%	0%	98%
Vol Right, %	0%	3%	42%	60%	0%	2%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	92	266	115	443	170	257
LT Vol	92	0	1	9	170	0
Through Vol	0	257	66	170	0	253
RT Vol	0	9	48	264	0	4
Lane Flow Rate	106	306	132	509	195	295
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.254	0.689	0.307	0.976	0.464	0.659
Departure Headway (Hd)	8.656	8.112	8.366	6.897	8.557	8.027
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	415	446	428	530	420	449
Service Time	6.419	5.875	6.445	4.897	6.322	5.791
HCM Lane V/C Ratio	0.255	0.686	0.308	0.96	0.464	0.657
HCM Control Delay	14.4	27.1	15.1	59.8	18.6	25.1
HCM Lane LOS	B	D	C	F	C	D
HCM 95th-tile Q	1	5.1	1.3	13.1	2.4	4.7

Intersection	
Intersection Delay, s/veh	18.8
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	105	44	7	100	170	67	315	8	213	256	3
Future Vol, veh/h	3	105	44	7	100	170	67	315	8	213	256	3
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	3	113	47	8	108	183	72	339	9	229	275	3
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	14.2	18	22.4	17.7
HCM LOS	B	C	C	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	2%	3%	100%	0%
Vol Thru, %	0%	98%	69%	36%	0%	99%
Vol Right, %	0%	2%	29%	61%	0%	1%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	67	323	152	277	213	259
LT Vol	67	0	3	7	213	0
Through Vol	0	315	105	100	0	256
RT Vol	0	8	44	170	0	3
Lane Flow Rate	72	347	163	298	229	278
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.154	0.692	0.335	0.557	0.483	0.547
Departure Headway (Hd)	7.701	7.17	7.376	6.735	7.595	7.073
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	465	504	485	533	474	510
Service Time	5.468	4.936	5.457	4.801	5.364	4.841
HCM Lane V/C Ratio	0.155	0.688	0.336	0.559	0.483	0.545
HCM Control Delay	11.9	24.6	14.2	18	17.3	18.1
HCM Lane LOS	B	C	B	C	C	C
HCM 95th-tile Q	0.5	5.3	1.5	3.4	2.6	3.3

Intersection: 1: Minnewawa Avenue & Behymer Avenue

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	74	122	74	142	77	89
Average Queue (ft)	37	81	35	65	43	50
95th Queue (ft)	64	122	57	106	65	73
Link Distance (ft)	5404	5005		4378		2548
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			250		250	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 2: Peach Avenue & Shepherd Avenue

Movement	WB	NB	NB
Directions Served	L	L	R
Maximum Queue (ft)	52	45	45
Average Queue (ft)	23	11	21
95th Queue (ft)	50	32	41
Link Distance (ft)			2544
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	250	220	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Minnewawa Avenue & Shepherd Avenue

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	R	L	T	R	L	T
Maximum Queue (ft)	92	120	157	120	220	331	235	177	163	57	115	233
Average Queue (ft)	38	71	84	41	101	144	39	87	67	14	61	88
95th Queue (ft)	74	110	131	94	186	253	127	150	131	39	98	168
Link Distance (ft)		2555	2555			1275			2526	2526		816
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	250			60	250		205	250			75	
Storage Blk Time (%)			18	0		3					10	44
Queuing Penalty (veh)			21	0		7					22	59

Intersection: 3: Minnewawa Avenue & Shepherd Avenue

Movement	SB
Directions Served	R
Maximum Queue (ft)	40
Average Queue (ft)	23
95th Queue (ft)	51
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	25
Storage Blk Time (%)	4
Queuing Penalty (veh)	11

Intersection: 4: Clovis Avenue & Shepherd Avenue

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	UL	T	T	R	L	L	TR	L	T	R	L	L
Maximum Queue (ft)	22	275	150	94	51	89	254	115	26	26	54	23
Average Queue (ft)	1	96	26	27	20	35	95	50	1	16	17	1
95th Queue (ft)	7	198	91	69	47	70	210	86	8	31	37	10
Link Distance (ft)		1199	1199				609		2411			
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	250			50	250	250		250		75	250	250
Storage Blk Time (%)		0	0	2			0					
Queuing Penalty (veh)		0	1	3			0					

Intersection: 4: Clovis Avenue & Shepherd Avenue

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	95	30	26
Average Queue (ft)	28	5	4
95th Queue (ft)	64	23	20
Link Distance (ft)	1289	1289	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			75
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Sunnyside Avenue & Shepherd Avenue

Movement	EB	B18	WB	NB	SB
Directions Served	LTR	T	LTR	LTR	LTR
Maximum Queue (ft)	240	720	239	68	30
Average Queue (ft)	107	24	98	35	14
95th Queue (ft)	171	237	181	53	36
Link Distance (ft)	1487	609	2621	2598	2673
Upstream Blk Time (%)		0			
Queuing Penalty (veh)		0			
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Network Summary

Network wide Queuing Penalty: 124

Intersection: 1: Minnewawa Avenue & Behymer Avenue

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	76	135	74	157	94	138
Average Queue (ft)	46	54	26	72	53	55
95th Queue (ft)	71	93	56	123	78	91
Link Distance (ft)	5404	5005		4378		2548
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			250		250	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 2: Peach Avenue & Shepherd Avenue

Movement	EB	EB	WB	NB	NB
Directions Served	U	R	L	L	R
Maximum Queue (ft)	23	26	52	69	40
Average Queue (ft)	1	2	15	20	16
95th Queue (ft)	8	12	39	44	27
Link Distance (ft)					2544
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	250	100	250	220	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: Minnewawa Avenue & Shepherd Avenue

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	R	L	T	R	L	T
Maximum Queue (ft)	74	164	179	120	111	252	235	137	170	38	115	279
Average Queue (ft)	33	81	98	45	36	127	45	64	76	12	66	122
95th Queue (ft)	69	134	160	108	86	210	132	120	127	26	121	240
Link Distance (ft)		2555	2555			1282			2526	2526		816
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	250			60	250		205	250			75	
Storage Blk Time (%)			17	0		1					11	46
Queuing Penalty (veh)			14	1		2					21	66

Intersection: 3: Minnewawa Avenue & Shepherd Avenue

Movement	SB
Directions Served	R
Maximum Queue (ft)	40
Average Queue (ft)	22
95th Queue (ft)	50
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	25
Storage Blk Time (%)	5
Queuing Penalty (veh)	15

Intersection: 4: Clovis Avenue & Shepherd Avenue

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	UL	T	T	R	L	L	TR	L	T	R	L	L
Maximum Queue (ft)	45	168	152	36	28	49	194	156	49	47	45	43
Average Queue (ft)	8	87	28	14	4	20	93	79	11	20	11	3
95th Queue (ft)	26	161	96	30	19	45	168	129	35	41	33	20
Link Distance (ft)		1208	1208				594		2412			
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	250			50	250	250		250		75	250	250
Storage Blk Time (%)			1	0								
Queuing Penalty (veh)			2	0								

Intersection: 4: Clovis Avenue & Shepherd Avenue

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	68	29	27
Average Queue (ft)	13	1	8
95th Queue (ft)	41	10	27
Link Distance (ft)	1294	1294	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			75
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Sunnyside Avenue & Shepherd Avenue

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	210	144	78	28
Average Queue (ft)	119	65	40	6
95th Queue (ft)	182	100	63	23
Link Distance (ft)	1487	2621	2598	2673
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 121

Appendix G: Near Term plus Project Traffic Conditions

Intersection	
Intersection Delay, s/veh	94.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	66	78	9	170	264	119	273	9	170	262	4
Future Vol, veh/h	1	66	78	9	170	264	119	273	9	170	262	4
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	1	76	90	10	195	303	137	314	10	195	301	5
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	20.9	102.1	88.2	118.3
HCM LOS	C	F	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	30%	1%	2%	39%
Vol Thru, %	68%	46%	38%	60%
Vol Right, %	2%	54%	60%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	401	145	443	436
LT Vol	119	1	9	170
Through Vol	273	66	170	262
RT Vol	9	78	264	4
Lane Flow Rate	461	167	509	501
Geometry Grp	1	1	1	1
Degree of Util (X)	1.047	0.432	1.101	1.143
Departure Headway (Hd)	8.914	10.311	8.318	8.754
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	410	352	438	421
Service Time	6.914	8.311	6.318	6.754
HCM Lane V/C Ratio	1.124	0.474	1.162	1.19
HCM Control Delay	88.2	20.9	102.1	118.3
HCM Lane LOS	F	C	F	F
HCM 95th-tile Q	13.8	2.1	16.4	17.5

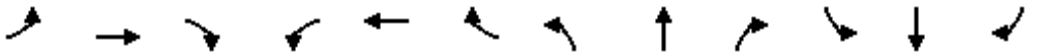
Intersection	
Int Delay, s/veh	2.5

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Vol, veh/h	0	781	91	88	631	24	75
Future Vol, veh/h	0	781	91	88	631	24	75
Conflicting Peds, #/hr	0	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	250	-	100	250	-	220	0
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88	88
Heavy Vehicles, %	3	3	3	3	3	3	3
Mvmt Flow	0	888	103	100	717	27	85

Major/Minor	Major1			Major2		Minor1	
Conflicting Flow All	-	0	0	992	0	1806	445
Stage 1	-	-	-	-	-	889	-
Stage 2	-	-	-	-	-	917	-
Critical Hdwy	-	-	-	4.145	-	6.645	6.945
Critical Hdwy Stg 1	-	-	-	-	-	5.845	-
Critical Hdwy Stg 2	-	-	-	-	-	5.445	-
Follow-up Hdwy	-	-	-	2.2285	-	3.5285	3.3285
Pot Cap-1 Maneuver	-	-	-	690	-	78	559
Stage 1	-	-	-	-	-	361	-
Stage 2	-	-	-	-	-	386	-
Platoon blocked, %		-	-		-		
Mov Cap-1 Maneuver	-	-	-	689	-	67	558
Mov Cap-2 Maneuver	-	-	-	-	-	67	-
Stage 1	-	-	-	-	-	361	-
Stage 2	-	-	-	-	-	330	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.4	31.8
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBU	EBT	EBR	WBL	WBT
Capacity (veh/h)	67	558	-	-	-	689	-
HCM Lane V/C Ratio	0.407	0.153	-	-	-	0.145	-
HCM Control Delay (s)	91.6	12.6	0	-	-	11.1	-
HCM Lane LOS	F	B	A	-	-	B	-
HCM 95th %tile Q(veh)	1.6	0.5	-	-	-	0.5	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	768	115	142	588	179	97	178	35	135	169	41
Future Volume (veh/h)	49	768	115	142	588	179	97	178	35	135	169	41
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	55	863	129	160	661	201	109	200	39	152	190	46
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	71	1013	452	498	1006	853	135	241	205	180	306	260
Arrive On Green	0.04	0.29	0.29	0.28	0.54	0.54	0.08	0.13	0.13	0.10	0.17	0.17
Sat Flow, veh/h	1767	3526	1572	1767	1856	1572	1767	1856	1572	1767	1856	1572
Grp Volume(v), veh/h	55	863	129	160	661	201	109	200	39	152	190	46
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1767	1856	1572	1767	1856	1572	1767	1856	1572
Q Serve(g_s), s	3.5	26.3	5.6	8.2	28.9	4.2	6.9	12.0	2.5	9.6	10.9	2.9
Cycle Q Clear(g_c), s	3.5	26.3	5.6	8.2	28.9	4.2	6.9	12.0	2.5	9.6	10.9	2.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	71	1013	452	498	1006	853	135	241	205	180	306	260
V/C Ratio(X)	0.78	0.85	0.29	0.32	0.66	0.24	0.81	0.83	0.19	0.84	0.62	0.18
Avail Cap(c_a), veh/h	98	1234	550	498	1006	853	212	439	372	211	426	361
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.2	38.3	18.7	32.3	18.6	4.2	51.8	48.3	44.2	50.3	44.3	40.9
Incr Delay (d2), s/veh	23.0	9.0	1.6	0.4	3.4	0.7	11.6	7.1	0.4	23.0	2.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	12.0	2.8	3.4	11.9	2.4	3.4	5.9	1.0	5.2	4.9	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.2	47.3	20.3	32.7	21.9	4.8	63.4	55.5	44.7	73.4	46.3	41.3
LnGrp LOS	E	D	C	C	C	A	E	E	D	E	D	D
Approach Vol, veh/h		1047			1022			348			388	
Approach Delay, s/veh		45.6			20.2			56.7			56.3	
Approach LOS		D			C			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.6	20.1	37.8	38.5	12.9	24.8	8.8	67.5
Change Period (Y+Rc), s	6.0	* 5.3	5.7	* 5.7	* 4.2	6.0	* 4.2	5.7
Max Green Setting (Gmax), s	13.6	* 27	14.1	* 40	* 14	26.2	* 6.3	47.7
Max Q Clear Time (g_c+I1), s	11.6	14.0	10.2	28.3	8.9	12.9	5.5	30.9
Green Ext Time (p_c), s	0.1	0.9	0.1	4.4	0.1	0.8	0.0	4.3

Intersection Summary	
HCM 6th Ctrl Delay	39.2
HCM 6th LOS	D

Notes

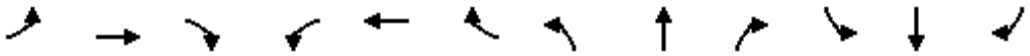
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	1	27	761	158	116	146	669	9	118	28	44	69
Future Volume (vph)	1	27	761	158	116	146	669	9	118	28	44	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2	5.7	5.7		4.2	5.7	5.7	4.2	5.3	5.3	4.2
Lane Util. Factor		0.97	0.95	1.00		0.97	0.95	1.00	0.97	0.95	1.00	0.97
Frpb, ped/bikes		1.00	1.00	0.99		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85	1.00
Flt Protected		0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95
Satd. Flow (prot)		3400	3505	1546		3400	3505	1568	3400	3505	1568	3400
Flt Permitted		0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95
Satd. Flow (perm)		3400	3505	1546		3400	3505	1568	3400	3505	1568	3400
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	1	31	865	180	132	166	760	10	134	32	50	78
RTOR Reduction (vph)	0	0	0	49	0	0	0	4	0	0	44	0
Lane Group Flow (vph)	0	32	865	131	0	298	760	6	134	32	6	78
Confl. Peds. (#/hr)				2								
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot
Protected Phases	7	7	4		3	3	8		5	2		1
Permitted Phases				4				8			2	
Actuated Green, G (s)		9.4	59.3	59.3		13.8	63.7	63.7	8.5	14.3	14.3	7.2
Effective Green, g (s)		9.4	59.3	59.3		13.8	63.7	63.7	8.5	14.3	14.3	7.2
Actuated g/C Ratio		0.08	0.52	0.52		0.12	0.56	0.56	0.07	0.13	0.13	0.06
Clearance Time (s)		4.2	5.7	5.7		4.2	5.7	5.7	4.2	5.3	5.3	4.2
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		280	1823	804		411	1958	876	253	439	196	214
v/s Ratio Prot		0.01	c0.25			c0.09	0.22		c0.04	0.01		0.02
v/s Ratio Perm				0.08				0.00			0.00	
v/c Ratio		0.11	0.47	0.16		0.73	0.39	0.01	0.53	0.07	0.03	0.36
Uniform Delay, d1		48.4	17.4	14.3		48.3	14.2	11.1	50.8	44.0	43.8	51.2
Progression Factor		0.43	0.28	0.07		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.2	0.7	0.4		6.2	0.6	0.0	2.0	0.1	0.1	1.1
Delay (s)		20.9	5.7	1.4		54.5	14.8	11.1	52.8	44.1	43.8	52.3
Level of Service		C	A	A		D	B	B	D	D	D	D
Approach Delay (s)			5.4				25.8			49.4		
Approach LOS			A				C			D		

Intersection Summary			
HCM 2000 Control Delay	21.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	114.0	Sum of lost time (s)	19.4
Intersection Capacity Utilization	61.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	71	60
Future Volume (vph)	71	60
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.3	5.3
Lane Util. Factor	0.95	1.00
Frpb, ped/bikes	1.00	1.00
Flpb, ped/bikes	1.00	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	3505	1568
Flt Permitted	1.00	1.00
Satd. Flow (perm)	3505	1568
Peak-hour factor, PHF	0.88	0.88
Adj. Flow (vph)	81	68
RTOR Reduction (vph)	0	60
Lane Group Flow (vph)	81	8
Confl. Peds. (#/hr)		
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Actuated Green, G (s)	13.0	13.0
Effective Green, g (s)	13.0	13.0
Actuated g/C Ratio	0.11	0.11
Clearance Time (s)	5.3	5.3
Vehicle Extension (s)	3.0	3.0
Lane Grp Cap (vph)	399	178
v/s Ratio Prot	c0.02	
v/s Ratio Perm		0.00
v/c Ratio	0.20	0.04
Uniform Delay, d1	45.8	45.0
Progression Factor	1.00	1.00
Incremental Delay, d2	0.3	0.1
Delay (s)	46.1	45.1
Level of Service	D	D
Approach Delay (s)	47.9	
Approach LOS	D	

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	752	209	10	653	5	130	10	9	1	11	24
Future Volume (veh/h)	38	752	209	10	653	5	130	10	9	1	11	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	44	874	243	12	759	6	151	12	10	1	13	28
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	357	892	248	25	836	7	169	146	122	2	23	50
Arrive On Green	0.20	0.64	0.64	0.01	0.45	0.45	0.10	0.16	0.16	0.00	0.05	0.05
Sat Flow, veh/h	1767	1397	388	1767	1838	15	1767	934	778	1767	520	1120
Grp Volume(v), veh/h	44	0	1117	12	0	765	151	0	22	1	0	41
Grp Sat Flow(s),veh/h/ln	1767	0	1786	1767	0	1853	1767	0	1712	1767	0	1640
Q Serve(g_s), s	2.1	0.0	61.9	0.7	0.0	39.3	8.7	0.0	1.1	0.1	0.0	2.5
Cycle Q Clear(g_c), s	2.1	0.0	61.9	0.7	0.0	39.3	8.7	0.0	1.1	0.1	0.0	2.5
Prop In Lane	1.00		0.22	1.00		0.01	1.00		0.45	1.00		0.68
Lane Grp Cap(c), veh/h	357	0	1140	25	0	842	169	0	269	2	0	74
V/C Ratio(X)	0.12	0.00	0.98	0.48	0.00	0.91	0.89	0.00	0.08	0.41	0.00	0.56
Avail Cap(c_a), veh/h	357	0	1151	86	0	1198	169	0	409	86	0	304
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.5	0.0	17.9	50.2	0.0	26.0	45.8	0.0	36.9	51.2	0.0	47.9
Incr Delay (d2), s/veh	0.2	0.0	21.6	13.6	0.0	7.7	40.5	0.0	0.1	85.5	0.0	6.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	26.3	0.4	0.0	17.4	5.6	0.0	0.5	0.1	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.6	0.0	39.5	63.8	0.0	33.7	86.4	0.0	37.1	136.7	0.0	54.3
LnGrp LOS	C	A	D	E	A	C	F	A	D	F	A	D
Approach Vol, veh/h		1161			777			173			42	
Approach Delay, s/veh		39.3			34.2			80.1			56.3	
Approach LOS		D			C			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.3	21.4	5.6	71.2	15.1	10.6	24.9	51.9
Change Period (Y+Rc), s	* 4.2	5.3	4.2	* 5.7	5.3	* 6	4.2	* 5.3
Max Green Setting (Gmax), s	* 5	24.5	5.0	* 66	9.8	* 19	5.2	* 66
Max Q Clear Time (g_c+I1), s	2.1	3.1	2.7	63.9	10.7	4.5	4.1	41.3
Green Ext Time (p_c), s	0.0	0.0	0.0	1.5	0.0	0.1	0.0	5.3

Intersection Summary	
HCM 6th Ctrl Delay	41.0
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	65.5
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	105	81	7	100	170	103	333	8	213	277	3
Future Vol, veh/h	3	105	81	7	100	170	103	333	8	213	277	3
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	3	113	87	8	108	183	111	358	9	229	298	3
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	19.7	25.4	67.7	103.6
HCM LOS	C	D	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	23%	2%	3%	43%
Vol Thru, %	75%	56%	36%	56%
Vol Right, %	2%	43%	61%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	444	189	277	493
LT Vol	103	3	7	213
Through Vol	333	105	100	277
RT Vol	8	81	170	3
Lane Flow Rate	477	203	298	530
Geometry Grp	1	1	1	1
Degree of Util (X)	0.991	0.475	0.65	1.115
Departure Headway (Hd)	7.787	8.879	8.274	7.569
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	468	408	441	477
Service Time	5.787	6.879	6.274	5.635
HCM Lane V/C Ratio	1.019	0.498	0.676	1.111
HCM Control Delay	67.7	19.7	25.4	103.6
HCM Lane LOS	F	C	D	F
HCM 95th-tile Q	12.8	2.5	4.5	17.8

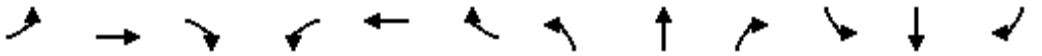
Intersection	
Int Delay, s/veh	4

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Vol, veh/h	2	818	65	44	770	45	57
Future Vol, veh/h	2	818	65	44	770	45	57
Conflicting Peds, #/hr	0	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	250	-	100	250	-	220	0
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3	3
Mvmt Flow	2	889	71	48	837	49	62

Major/Minor	Major1			Major2		Minor1	
Conflicting Flow All	-	0	0	962	0	1828	447
Stage 1	-	-	-	-	-	895	-
Stage 2	-	-	-	-	-	933	-
Critical Hdwy	-	-	-	4.145	-	6.645	6.945
Critical Hdwy Stg 1	-	-	-	-	-	5.845	-
Critical Hdwy Stg 2	-	-	-	-	-	5.445	-
Follow-up Hdwy	-	-	-	2.2285	-	3.5285	3.3285
Pot Cap-1 Maneuver	-	-	-	708	-	75	557
Stage 1	-	-	-	-	-	358	-
Stage 2	-	-	-	-	-	380	-
Platoon blocked, %		-	-		-		
Mov Cap-1 Maneuver	-	-	-	707	-	70	556
Mov Cap-2 Maneuver	-	-	-	-	-	70	-
Stage 1	-	-	-	-	-	357	-
Stage 2	-	-	-	-	-	354	-

Approach	EB	WB	NB
HCM Control Delay, s		0.6	65.5
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBU	EBT	EBR	WBL	WBT
Capacity (veh/h)	70	556	-	-	-	707	-
HCM Lane V/C Ratio	0.699	0.111	-	-	-	0.068	-
HCM Control Delay (s)	132.8	12.3	-	-	-	10.5	-
HCM Lane LOS	F	B	-	-	-	B	-
HCM 95th %tile Q(veh)	3.2	0.4	-	-	-	0.2	-



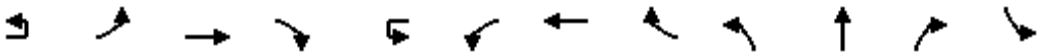
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	729	81	71	720	239	88	209	81	169	166	32
Future Volume (veh/h)	53	729	81	71	720	239	88	209	81	169	166	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	55	759	84	74	750	249	92	218	84	176	173	33
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	248	1840	820	95	782	663	212	262	222	194	213	181
Arrive On Green	0.14	0.52	0.52	0.05	0.42	0.42	0.12	0.14	0.14	0.11	0.11	0.11
Sat Flow, veh/h	1767	3526	1572	1767	1856	1572	1767	1856	1572	1767	1856	1572
Grp Volume(v), veh/h	55	759	84	74	750	249	92	218	84	176	173	33
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1767	1856	1572	1767	1856	1572	1767	1856	1572
Q Serve(g_s), s	3.1	14.7	1.6	4.6	43.9	8.0	5.4	12.8	5.4	11.0	10.2	2.1
Cycle Q Clear(g_c), s	3.1	14.7	1.6	4.6	43.9	8.0	5.4	12.8	5.4	11.0	10.2	2.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	248	1840	820	95	782	663	212	262	222	194	213	181
V/C Ratio(X)	0.22	0.41	0.10	0.78	0.96	0.38	0.43	0.83	0.38	0.91	0.81	0.18
Avail Cap(c_a), veh/h	248	1840	820	163	800	678	212	447	379	194	434	368
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.7	16.3	4.0	52.4	31.4	9.6	45.7	46.8	43.6	49.3	48.4	44.8
Incr Delay (d2), s/veh	0.4	0.7	0.3	13.0	23.6	1.6	1.4	6.7	1.1	39.6	7.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	5.5	1.0	2.3	23.0	4.2	2.4	6.2	2.1	6.8	4.9	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.1	17.0	4.2	65.3	55.0	11.2	47.1	53.4	44.7	88.9	55.6	45.3
LnGrp LOS	D	B	A	E	D	B	D	D	D	F	E	D
Approach Vol, veh/h		898			1073			394			382	
Approach Delay, s/veh		17.4			45.6			50.1			70.0	
Approach LOS		B			D			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.5	21.1	10.2	64.2	18.8	18.9	21.4	52.9
Change Period (Y+Rc), s	* 4.2	5.3	* 4.2	5.7	5.3	* 6	5.7	* 5.7
Max Green Setting (Gmax), s	* 12	27.0	* 10	43.0	12.4	* 26	5.0	* 48
Max Q Clear Time (g_c+I1), s	13.0	14.8	6.6	16.7	7.4	12.2	5.1	45.9
Green Ext Time (p_c), s	0.0	1.0	0.0	5.2	0.1	0.7	0.0	1.3

Intersection Summary	
HCM 6th Ctrl Delay	40.4
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



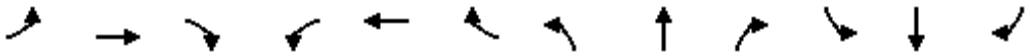
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	1	101	678	186	87	82	824	21	206	98	66	46
Future Volume (vph)	1	101	678	186	87	82	824	21	206	98	66	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2	5.7	5.7		4.2	5.7	5.7	4.2	5.3	5.3	4.2
Lane Util. Factor		0.97	0.95	1.00		0.97	0.95	1.00	0.97	0.95	1.00	0.97
Frt		1.00	1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85	1.00
Flt Protected		0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95
Satd. Flow (prot)		3400	3505	1568		3400	3505	1568	3400	3505	1568	3400
Flt Permitted		0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95
Satd. Flow (perm)		3400	3505	1568		3400	3505	1568	3400	3505	1568	3400
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	1	107	721	198	93	87	877	22	219	104	70	49
RTOR Reduction (vph)	0	0	0	66	0	0	0	10	0	0	59	0
Lane Group Flow (vph)	0	108	721	132	0	180	877	12	219	104	11	49
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot
Protected Phases	7	7	4		3	3	8		5	2		1
Permitted Phases				4				8			2	
Actuated Green, G (s)		7.3	60.9	60.9		9.5	63.1	63.1	11.1	18.2	18.2	4.0
Effective Green, g (s)		7.3	60.9	60.9		9.5	63.1	63.1	11.1	18.2	18.2	4.0
Actuated g/C Ratio		0.07	0.54	0.54		0.08	0.56	0.56	0.10	0.16	0.16	0.04
Clearance Time (s)		4.2	5.7	5.7		4.2	5.7	5.7	4.2	5.3	5.3	4.2
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		221	1905	852		288	1974	883	336	569	254	121
v/s Ratio Prot		c0.03	0.21			c0.05	c0.25		c0.06	c0.03		0.01
v/s Ratio Perm				0.08				0.01			0.01	
v/c Ratio		0.49	0.38	0.15		0.62	0.44	0.01	0.65	0.18	0.04	0.40
Uniform Delay, d1		50.5	14.7	12.7		49.5	14.2	10.8	48.6	40.5	39.6	52.8
Progression Factor		0.76	0.68	0.39		0.92	0.73	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		1.5	0.5	0.3		2.9	0.5	0.0	4.5	0.2	0.1	2.2
Delay (s)		40.0	10.5	5.3		48.4	11.0	10.8	53.1	40.6	39.6	55.0
Level of Service		D	B	A		D	B	B	D	D	D	E
Approach Delay (s)			12.6				17.2			47.4		
Approach LOS			B				B			D		

Intersection Summary			
HCM 2000 Control Delay	21.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	112.0	Sum of lost time (s)	19.4
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	41	42
Future Volume (vph)	41	42
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.3	5.3
Lane Util. Factor	0.95	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	3505	1568
Flt Permitted	1.00	1.00
Satd. Flow (perm)	3505	1568
Peak-hour factor, PHF	0.94	0.94
Adj. Flow (vph)	44	45
RTOR Reduction (vph)	0	41
Lane Group Flow (vph)	44	4
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Actuated Green, G (s)	11.1	11.1
Effective Green, g (s)	11.1	11.1
Actuated g/C Ratio	0.10	0.10
Clearance Time (s)	5.3	5.3
Vehicle Extension (s)	3.0	3.0
Lane Grp Cap (vph)	347	155
v/s Ratio Prot	0.01	
v/s Ratio Perm		0.00
v/c Ratio	0.13	0.03
Uniform Delay, d1	46.0	45.6
Progression Factor	1.00	1.00
Incremental Delay, d2	0.2	0.1
Delay (s)	46.2	45.7
Level of Service	D	D
Approach Delay (s)	49.2	
Approach LOS	D	

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	721	130	17	812	3	188	14	32	0	7	52
Future Volume (veh/h)	34	721	130	17	812	3	188	14	32	0	7	52
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	35	736	133	17	829	3	192	14	33	0	7	53
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	52	964	174	32	1144	4	208	103	242	2	10	76
Arrive On Green	0.03	0.63	0.63	0.02	0.62	0.62	0.12	0.21	0.21	0.00	0.05	0.05
Sat Flow, veh/h	1767	1529	276	1767	1848	7	1767	491	1157	1767	187	1414
Grp Volume(v), veh/h	35	0	869	17	0	832	192	0	47	0	0	60
Grp Sat Flow(s),veh/h/ln	1767	0	1806	1767	0	1854	1767	0	1647	1767	0	1601
Q Serve(g_s), s	2.2	0.0	38.4	1.1	0.0	34.7	12.0	0.0	2.6	0.0	0.0	4.1
Cycle Q Clear(g_c), s	2.2	0.0	38.4	1.1	0.0	34.7	12.0	0.0	2.6	0.0	0.0	4.1
Prop In Lane	1.00		0.15	1.00		0.00	1.00		0.70	1.00		0.88
Lane Grp Cap(c), veh/h	52	0	1138	32	0	1148	208	0	345	2	0	86
V/C Ratio(X)	0.67	0.00	0.76	0.52	0.00	0.72	0.92	0.00	0.14	0.00	0.00	0.69
Avail Cap(c_a), veh/h	79	0	1138	79	0	1148	208	0	410	79	0	272
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	53.8	0.0	14.7	54.5	0.0	14.7	48.9	0.0	36.0	0.0	0.0	52.1
Incr Delay (d2), s/veh	13.7	0.0	4.9	12.5	0.0	4.0	41.2	0.0	0.2	0.0	0.0	9.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	14.5	0.6	0.0	13.8	7.5	0.0	1.0	0.0	0.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.5	0.0	19.6	67.0	0.0	18.7	90.1	0.0	36.2	0.0	0.0	61.6
LnGrp LOS	E	A	B	E	A	B	F	A	D	A	A	E
Approach Vol, veh/h		904			849			239			60	
Approach Delay, s/veh		21.5			19.7			79.5			61.6	
Approach LOS		C			B			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	29.4	6.3	76.3	17.4	12.0	7.5	75.0
Change Period (Y+Rc), s	* 4.2	* 6	* 4.2	5.7	* 4.2	6.0	* 4.2	* 5.7
Max Green Setting (Gmax), s	* 5	* 28	* 5	54.7	* 13	19.0	* 5	* 55
Max Q Clear Time (g_c+I1), s	0.0	4.6	3.1	40.4	14.0	6.1	4.2	36.7
Green Ext Time (p_c), s	0.0	0.2	0.0	5.0	0.0	0.1	0.0	5.4

Intersection Summary	
HCM 6th Ctrl Delay	28.7
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	22.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	66	78	9	170	264	119	273	9	170	262	4
Future Vol, veh/h	1	66	78	9	170	264	119	273	9	170	262	4
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	1	76	90	10	195	303	137	314	10	195	301	5
Number of Lanes	0	1	0	0	1	1	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	1
HCM Control Delay	17.5	20.2	25.1	23.1
HCM LOS	C	C	D	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	1%	5%	0%	100%	0%
Vol Thru, %	0%	97%	46%	95%	0%	0%	98%
Vol Right, %	0%	3%	54%	0%	100%	0%	2%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	119	282	145	179	264	170	266
LT Vol	119	0	1	9	0	170	0
Through Vol	0	273	66	170	0	0	262
RT Vol	0	9	78	0	264	0	4
Lane Flow Rate	137	324	167	206	303	195	306
Geometry Grp	7	7	6	7	7	7	7
Degree of Util (X)	0.325	0.722	0.404	0.466	0.624	0.462	0.677
Departure Headway (Hd)	8.559	8.019	8.737	8.151	7.404	8.503	7.975
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	419	447	415	440	486	422	449
Service Time	6.353	5.812	6.737	5.939	5.191	6.298	5.769
HCM Lane V/C Ratio	0.327	0.725	0.402	0.468	0.623	0.462	0.682
HCM Control Delay	15.5	29.2	17.5	17.9	21.8	18.5	26.1
HCM Lane LOS	C	D	C	C	C	C	D
HCM 95th-tile Q	1.4	5.7	1.9	2.4	4.2	2.4	4.9

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (vph)	0	781	91	88	631	24	75
Future Volume (vph)	0	781	91	88	631	24	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7	5.7	4.2	5.7	4.2	4.2
Lane Util. Factor		0.95	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes		1.00	0.98	1.00	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)		3505	1534	1752	1845	1752	1568
Flt Permitted		1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)		3505	1534	1752	1845	1752	1568
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	0	888	103	100	717	27	85
RTOR Reduction (vph)	0	0	23	0	0	0	78
Lane Group Flow (vph)	0	888	80	100	717	27	7
Confl. Peds. (#/hr)			1				
Turn Type	Prot	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	7	4		3	8	2	
Permitted Phases			4				2
Actuated Green, G (s)		77.4	77.4	11.4	93.0	9.1	9.1
Effective Green, g (s)		77.4	77.4	11.4	93.0	9.1	9.1
Actuated g/C Ratio		0.69	0.69	0.10	0.83	0.08	0.08
Clearance Time (s)		5.7	5.7	4.2	5.7	4.2	4.2
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		2422	1060	178	1532	142	127
v/s Ratio Prot		0.25		c0.06	c0.39	c0.02	
v/s Ratio Perm			0.05				0.00
v/c Ratio		0.37	0.08	0.56	0.47	0.19	0.05
Uniform Delay, d1		7.2	5.6	47.9	2.6	48.0	47.5
Progression Factor		1.00	1.00	1.25	0.27	1.00	1.00
Incremental Delay, d2		0.4	0.1	3.1	0.8	0.7	0.2
Delay (s)		7.6	5.8	63.0	1.5	48.7	47.7
Level of Service		A	A	E	A	D	D
Approach Delay (s)		7.4			9.0	47.9	
Approach LOS		A			A	D	

Intersection Summary			
HCM 2000 Control Delay	10.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	112.0	Sum of lost time (s)	14.1
Intersection Capacity Utilization	53.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Intersection Delay, s/veh	21.1
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	105	81	7	100	170	103	333	8	213	277	3
Future Vol, veh/h	3	105	81	7	100	170	103	333	8	213	277	3
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	3	113	87	8	108	183	111	358	9	229	298	3
Number of Lanes	0	1	0	0	1	1	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	1
HCM Control Delay	18.1	14.5	26.9	20.6
HCM LOS	C	B	D	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	2%	7%	0%	100%	0%
Vol Thru, %	0%	98%	56%	93%	0%	0%	99%
Vol Right, %	0%	2%	43%	0%	100%	0%	1%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	103	341	189	107	170	213	280
LT Vol	103	0	3	7	0	213	0
Through Vol	0	333	105	100	0	0	277
RT Vol	0	8	81	0	170	0	3
Lane Flow Rate	111	367	203	115	183	229	301
Geometry Grp	7	7	6	7	7	7	7
Degree of Util (X)	0.248	0.765	0.46	0.264	0.38	0.509	0.625
Departure Headway (Hd)	8.046	7.514	8.154	8.247	7.491	7.993	7.471
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	445	480	441	434	479	449	482
Service Time	5.822	5.29	6.239	6.026	5.269	5.772	5.249
HCM Lane V/C Ratio	0.249	0.765	0.46	0.265	0.382	0.51	0.624
HCM Control Delay	13.5	31	18.1	14	14.8	18.8	22
HCM Lane LOS	B	D	C	B	B	C	C
HCM 95th-tile Q	1	6.6	2.4	1	1.8	2.8	4.2

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (vph)	2	818	65	44	770	45	57
Future Volume (vph)	2	818	65	44	770	45	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.7	5.7	4.2	5.7	4.2	4.2
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1752	3505	1530	1752	1845	1752	1568
Flt Permitted	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1752	3505	1530	1752	1845	1752	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	889	71	48	837	49	62
RTOR Reduction (vph)	0	0	16	0	0	0	57
Lane Group Flow (vph)	2	889	55	48	837	49	5
Confl. Peds. (#/hr)			2				
Turn Type	Prot	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	7	4		3	8	2	
Permitted Phases			4				2
Actuated Green, G (s)	1.1	82.2	82.2	5.8	86.9	9.9	9.9
Effective Green, g (s)	1.1	82.2	82.2	5.8	86.9	9.9	9.9
Actuated g/C Ratio	0.01	0.73	0.73	0.05	0.78	0.09	0.09
Clearance Time (s)	4.2	5.7	5.7	4.2	5.7	4.2	4.2
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	17	2572	1122	90	1431	154	138
v/s Ratio Prot	c0.00	0.25		0.03	c0.45	c0.03	
v/s Ratio Perm			0.04				0.00
v/c Ratio	0.12	0.35	0.05	0.53	0.58	0.32	0.04
Uniform Delay, d1	55.0	5.3	4.1	51.8	5.1	47.9	46.7
Progression Factor	1.00	1.00	1.00	0.95	0.78	1.00	1.00
Incremental Delay, d2	3.1	0.4	0.1	4.1	1.2	1.2	0.1
Delay (s)	58.1	5.7	4.2	53.1	5.2	49.1	46.8
Level of Service	E	A	A	D	A	D	D
Approach Delay (s)		5.7			7.8	47.8	
Approach LOS		A			A	D	

Intersection Summary			
HCM 2000 Control Delay	9.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	112.0	Sum of lost time (s)	14.1
Intersection Capacity Utilization	52.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Intersection: 1: Minnewawa Avenue & Behymer Avenue

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	LT	R	L	TR	L	TR
Maximum Queue (ft)	90	78	95	68	144	86	78
Average Queue (ft)	47	46	54	45	72	42	43
95th Queue (ft)	72	71	86	64	119	71	70
Link Distance (ft)	5404	5005			4378		2536
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			250	250		250	
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 2: Peach Avenue & Shepherd Avenue

Movement	EB	EB	EB	WB	WB	NB	NB
Directions Served	T	T	R	L	T	L	R
Maximum Queue (ft)	118	136	53	74	96	70	43
Average Queue (ft)	57	53	14	44	27	16	20
95th Queue (ft)	101	108	38	82	76	49	41
Link Distance (ft)	2695	2695			2555		2544
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			100	250		220	
Storage Blk Time (%)		1					
Queuing Penalty (veh)		1					

Intersection: 3: Minnewawa Avenue & Shepherd Avenue

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	R	L	T	R	L	T
Maximum Queue (ft)	117	419	393	120	379	622	235	196	229	52	114	272
Average Queue (ft)	46	164	192	58	133	270	107	79	121	14	90	156
95th Queue (ft)	103	303	324	144	284	468	271	157	194	37	140	268
Link Distance (ft)		2555	2555			1274			2526	2526		816
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	250			60	250		205	250			75	
Storage Blk Time (%)		2	32	0		14	0				22	64
Queuing Penalty (veh)		1	37	2		45	0				47	112

Intersection: 3: Minnewawa Avenue & Shepherd Avenue

Movement	SB
Directions Served	R
Maximum Queue (ft)	40
Average Queue (ft)	23
95th Queue (ft)	52
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	25
Storage Blk Time (%)	8
Queuing Penalty (veh)	23

Intersection: 4: Clovis Avenue & Shepherd Avenue

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	UL	L	T	T	R	UL	L	T	T	L	L	T
Maximum Queue (ft)	26	49	315	250	100	207	386	472	287	112	86	45
Average Queue (ft)	1	18	148	103	33	110	86	149	86	51	39	15
95th Queue (ft)	10	42	320	244	101	182	193	304	223	95	79	35
Link Distance (ft)			1200	1200				1342	1342			2405
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	250	250			50	250	250			250	250	
Storage Blk Time (%)			1	7	1			2				
Queuing Penalty (veh)			0	11	3			5				

Intersection: 4: Clovis Avenue & Shepherd Avenue

Movement	NB	NB	SB	SB	SB	SB	SB
Directions Served	T	R	L	L	T	T	R
Maximum Queue (ft)	20	112	92	110	150	43	44
Average Queue (ft)	1	19	37	30	51	11	18
95th Queue (ft)	9	60	80	79	107	34	39
Link Distance (ft)	2405				1271	1271	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		230	250	250			150
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 5: Sunnyside Avenue & Shepherd Avenue

Movement	EB	EB	WB	WB	NB	NB	SB
Directions Served	L	TR	L	TR	L	TR	TR
Maximum Queue (ft)	96	488	31	439	189	31	72
Average Queue (ft)	36	223	7	191	87	12	29
95th Queue (ft)	77	395	27	379	134	35	59
Link Distance (ft)		1161		2615		2592	2667
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	250		250		250		
Storage Blk Time (%)		4		5			
Queuing Penalty (veh)		2		0			

Network Summary

Network wide Queuing Penalty: 289

Intersection: 1: Minnewawa Avenue & Behymer Avenue

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	LT	R	L	TR	L	TR
Maximum Queue (ft)	100	71	100	71	145	98	98
Average Queue (ft)	46	36	47	36	82	50	47
95th Queue (ft)	75	54	81	55	129	86	83
Link Distance (ft)	5404	5005			4378		2536
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			250	250		250	
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 2: Peach Avenue & Shepherd Avenue

Movement	EB	EB	EB	EB	WB	WB	NB	NB
Directions Served	U	T	T	R	L	T	L	R
Maximum Queue (ft)	26	98	114	52	90	363	89	52
Average Queue (ft)	3	47	52	13	39	102	26	16
95th Queue (ft)	16	92	95	39	72	267	57	41
Link Distance (ft)		2695	2695			2555		2544
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	250			100	250		220	
Storage Blk Time (%)			1			1		
Queuing Penalty (veh)			0			1		

Intersection: 3: Minnewawa Avenue & Shepherd Avenue

Movement	EB	EB	EB	EB	WB	WB	WB	B20	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	R	T	L	T	R	L
Maximum Queue (ft)	176	269	312	120	380	747	235	967	147	256	84	115
Average Queue (ft)	64	128	146	37	100	417	155	58	69	121	30	100
95th Queue (ft)	140	211	242	106	311	694	315	420	126	218	68	136
Link Distance (ft)		2555	2555			1281		1190		2526	2526	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	250			60	250		205		250			75
Storage Blk Time (%)			28	0		22	0			0		37
Queuing Penalty (veh)			22	0		68	0			0		73

Intersection: 3: Minnewawa Avenue & Shepherd Avenue

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	477	45
Average Queue (ft)	193	19
95th Queue (ft)	381	50
Link Distance (ft)	816	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		25
Storage Blk Time (%)	61	5
Queuing Penalty (veh)	123	18

Intersection: 4: Clovis Avenue & Shepherd Avenue

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	UL	L	T	T	R	UL	L	T	T	R	L	L
Maximum Queue (ft)	70	111	211	179	100	224	390	600	414	42	172	150
Average Queue (ft)	23	45	75	45	22	87	76	196	137	4	83	64
95th Queue (ft)	62	89	158	128	57	186	201	384	297	20	138	125
Link Distance (ft)			1190	1190				1358	1358			
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	250	250			50	250	250			250	250	250
Storage Blk Time (%)				2	0		0	5	2			
Queuing Penalty (veh)				4	2		0	9	0			

Intersection: 4: Clovis Avenue & Shepherd Avenue

Movement	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	T	T	R	L	L	T	T	R
Maximum Queue (ft)	85	62	63	85	47	69	70	41
Average Queue (ft)	33	22	24	33	13	29	7	17
95th Queue (ft)	63	48	52	66	41	53	30	35
Link Distance (ft)	2406	2406				1275	1275	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			230	250	250			150
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 5: Sunnyside Avenue & Shepherd Avenue

Movement	EB	EB	WB	WB	NB	NB	SB
Directions Served	L	TR	L	TR	L	TR	TR
Maximum Queue (ft)	369	556	71	489	244	96	118
Average Queue (ft)	48	180	16	227	137	29	38
95th Queue (ft)	151	385	45	406	229	72	89
Link Distance (ft)		1149		2615		2592	2667
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	250		250		250		
Storage Blk Time (%)		5		6	0		
Queuing Penalty (veh)		2		1	0		

Network Summary

Network wide Queuing Penalty: 323

Intersection	
Intersection Delay, s/veh	390
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	155	195	15	224	343	151	416	15	243	504	5
Future Vol, veh/h	2	155	195	15	224	343	151	416	15	243	504	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	2	168	212	16	243	373	164	452	16	264	548	5
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	110.4	335.1	366.9	581.1
HCM LOS	F	F	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	26%	1%	3%	32%
Vol Thru, %	71%	44%	38%	67%
Vol Right, %	3%	55%	59%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	582	352	582	752
LT Vol	151	2	15	243
Through Vol	416	155	224	504
RT Vol	15	195	343	5
Lane Flow Rate	633	383	633	817
Geometry Grp	1	1	1	1
Degree of Util (X)	1.697	0.99	1.63	2.199
Departure Headway (Hd)	15.751	18.598	14.679	14.01
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	240	199	253	270
Service Time	13.751	16.598	12.679	12.01
HCM Lane V/C Ratio	2.638	1.925	2.502	3.026
HCM Control Delay	366.9	110.4	335.1	581.1
HCM Lane LOS	F	F	F	F
HCM 95th-tile Q	25.6	8.4	25.3	43.4

Appendix I: Signal Warrants

Warrant 3: Peak Hour (Rural)

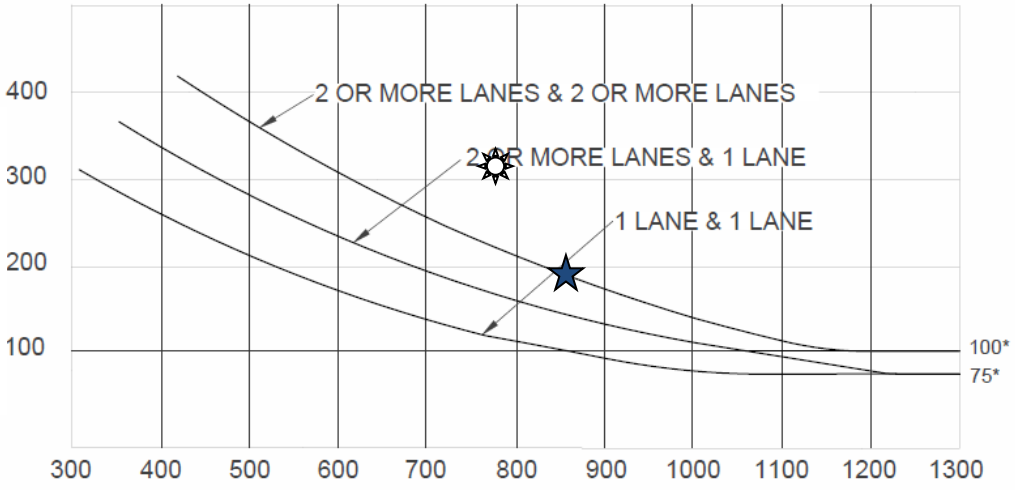
Existing Traffic Conditions

1. Minnewawa Avenue / Behymer Avenue

AM (PM) Peak Hour

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

Behymer Avenue Highest Approach Volume = 311 (192) VPH



Minnewawa Avenue Total of Both Approaches =

778 (852) VPH

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

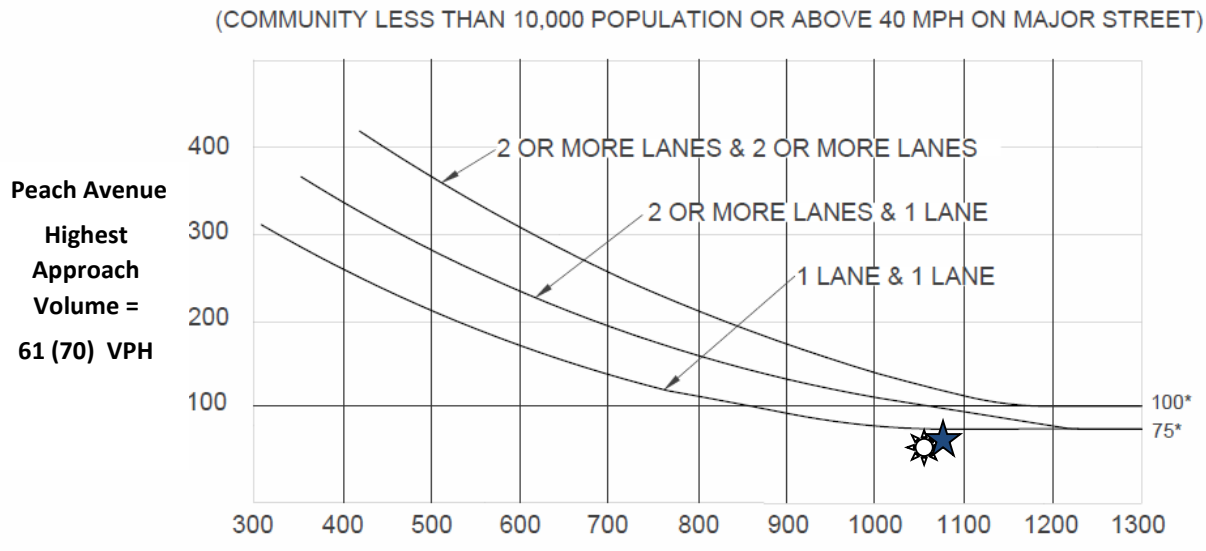
PM Peak Hour – Signal Warrant is Met

PM Peak Hour – Signal Warrant is Met

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
Chapter 4C: Traffic Control Signal Needs Studies
Part 4: Highway Traffic Signals
November 7, 2014

Warrant 3: Peak Hour (Rural)

Existing Traffic Conditions
2. Peach Avenue / Shepherd Avenue
AM (PM) Peak Hour



Shepherd Avenue Total of Both Approaches =

1060 (1089) VPH

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

PM Peak Hour – Signal Warrant is Not Met

PM Peak Hour – Signal Warrant is Not Met

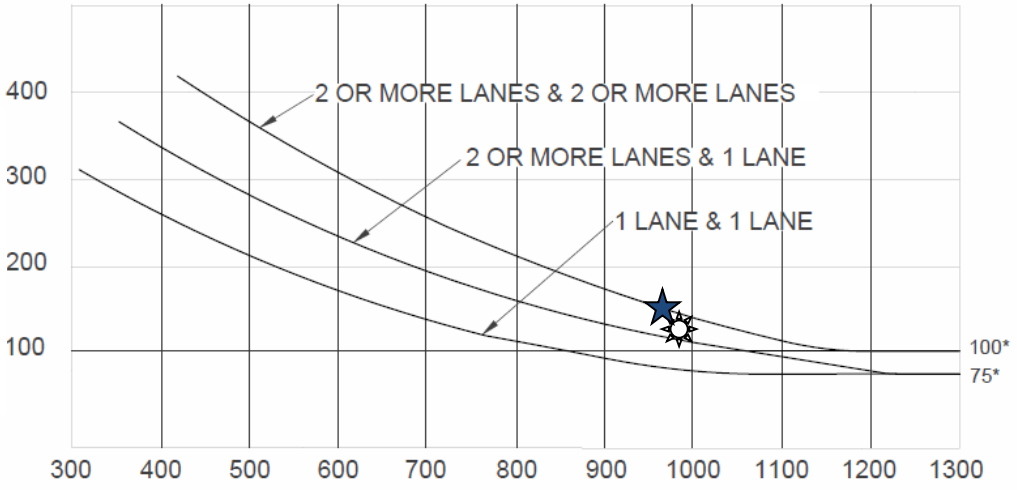
Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
Chapter 4C: Traffic Control Signal Needs Studies
Part 4: Highway Traffic Signals
November 7, 2014

Warrant 3: Peak Hour (Rural)

Existing Traffic Conditions
5. Sunnyside Avenue / Shepherd Avenue
AM (PM) Peak Hour

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

Sunnyside Avenue Highest Approach Volume = 117 (131) VPH



Shepherd Avenue Total of Both Approaches = 992 (976) VPH

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

PM Peak Hour – Signal Warrant is Met

PM Peak Hour – Signal Warrant is Met

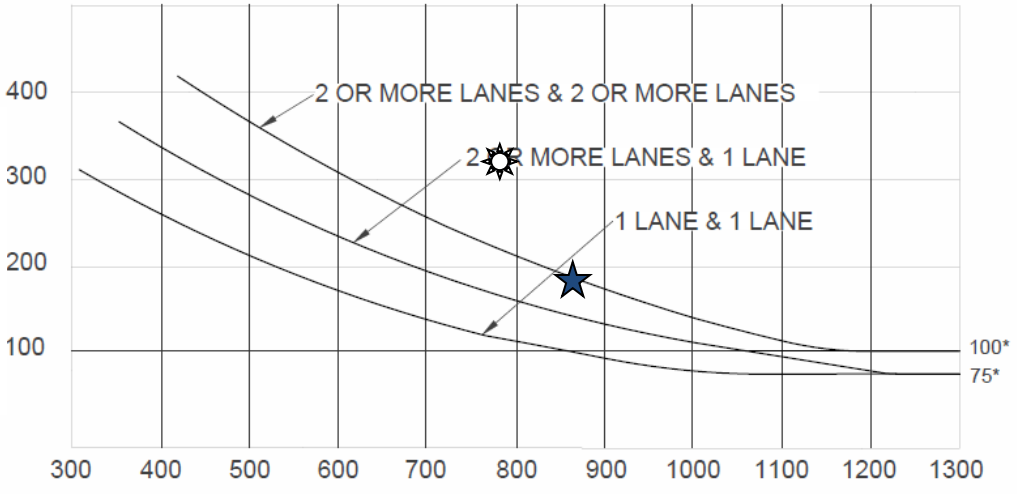
Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
Chapter 4C: Traffic Control Signal Needs Studies
Part 4: Highway Traffic Signals
November 7, 2014

Warrant 3: Peak Hour (Rural)

Existing plus Project Traffic Conditions
1. Minnewawa Avenue / Behymer Avenue
AM (PM) Peak Hour

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

Behymer Avenue Highest Approach Volume = 311 (192) VPH



Minnewawa Avenue Total of Both Approaches = 785 (862) VPH

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

PM Peak Hour – Signal Warrant is Met

PM Peak Hour – Signal Warrant is Met

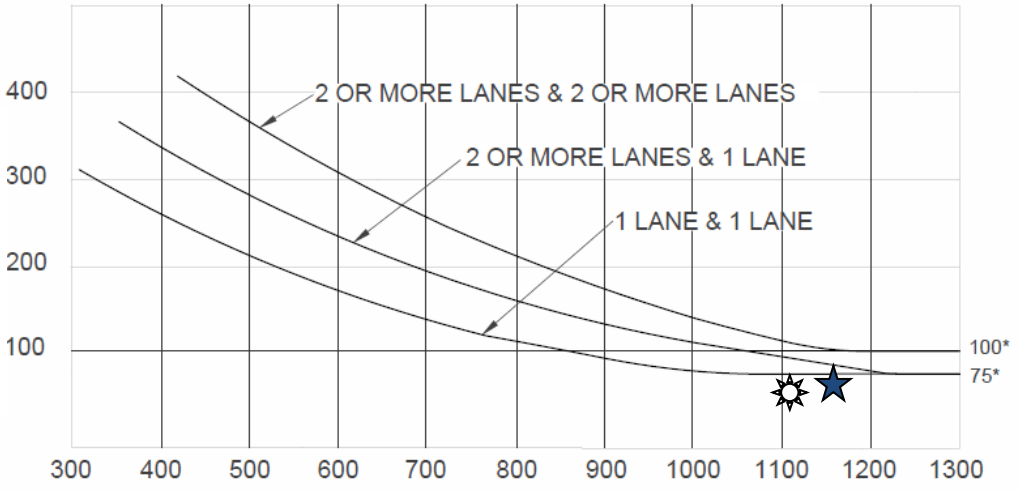
Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
Chapter 4C: Traffic Control Signal Needs Studies
Part 4: Highway Traffic Signals
November 7, 2014

Warrant 3: Peak Hour (Rural)

Existing plus Project Traffic Conditions
2. Peach Avenue / Shepherd Avenue
AM (PM) Peak Hour

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

Peach Avenue Highest Approach Volume = 61 (70) VPH



Shepherd Avenue Total of Both Approaches = 1111 (1157) VPH

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

PM Peak Hour – Signal Warrant is Not Met

PM Peak Hour – Signal Warrant is Not Met

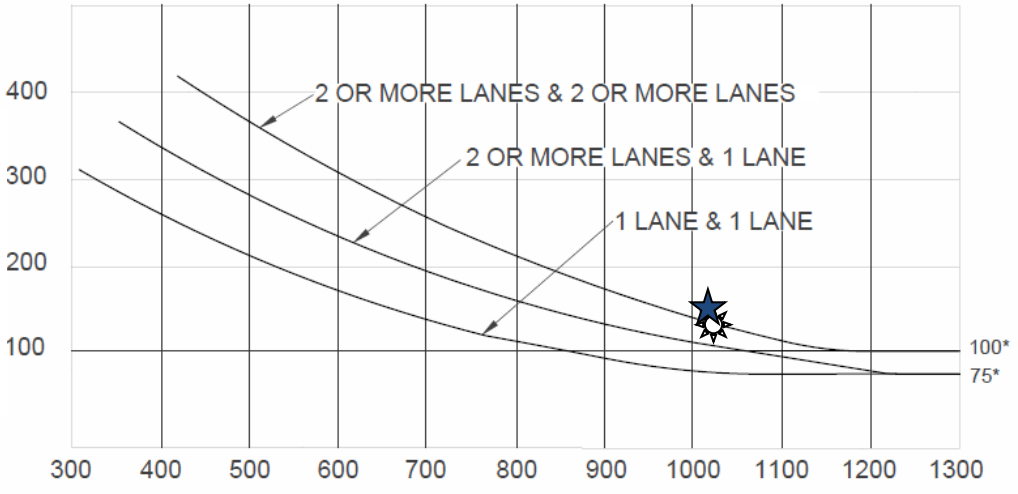
Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
Chapter 4C: Traffic Control Signal Needs Studies
Part 4: Highway Traffic Signals
November 7, 2014

Warrant 3: Peak Hour (Rural)

Existing plus Project Traffic Conditions
5. Sunnyside Avenue / Shepherd Avenue
AM (PM) Peak Hour

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

Sunnyside Avenue Highest Approach Volume = 119 (139) VPH



Shepherd Avenue Total of Both Approaches = 1028 (1020) VPH

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

PM Peak Hour – Signal Warrant is Met

PM Peak Hour – Signal Warrant is Met

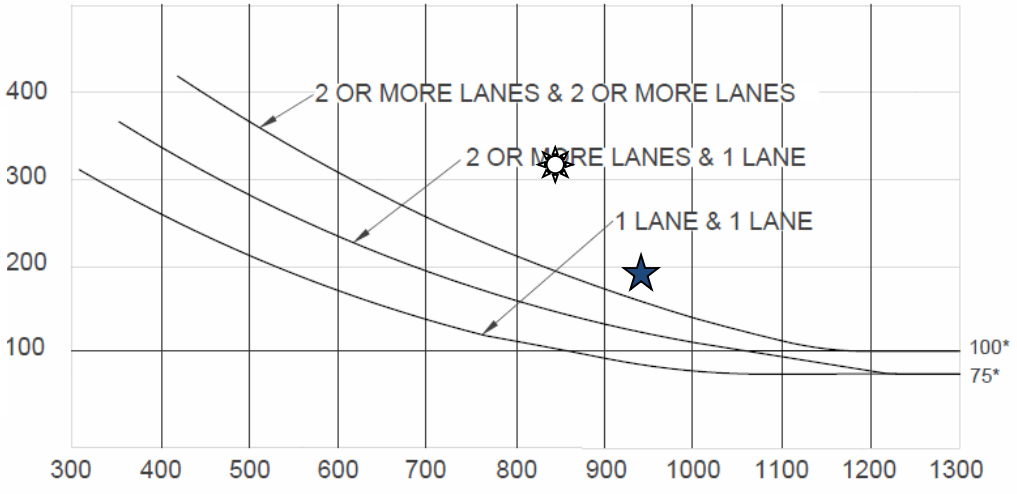
Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
Chapter 4C: Traffic Control Signal Needs Studies
Part 4: Highway Traffic Signals
November 7, 2014

Warrant 3: Peak Hour (Rural)

Near Term plus Project Traffic Conditions
1. Minnewawa Avenue / Behymer Avenue
AM (PM) Peak Hour

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

Behymer Avenue Highest Approach Volume = 311 (192) VPH



Minnewawa Avenue Total of Both Approaches = 837 (937) VPH

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

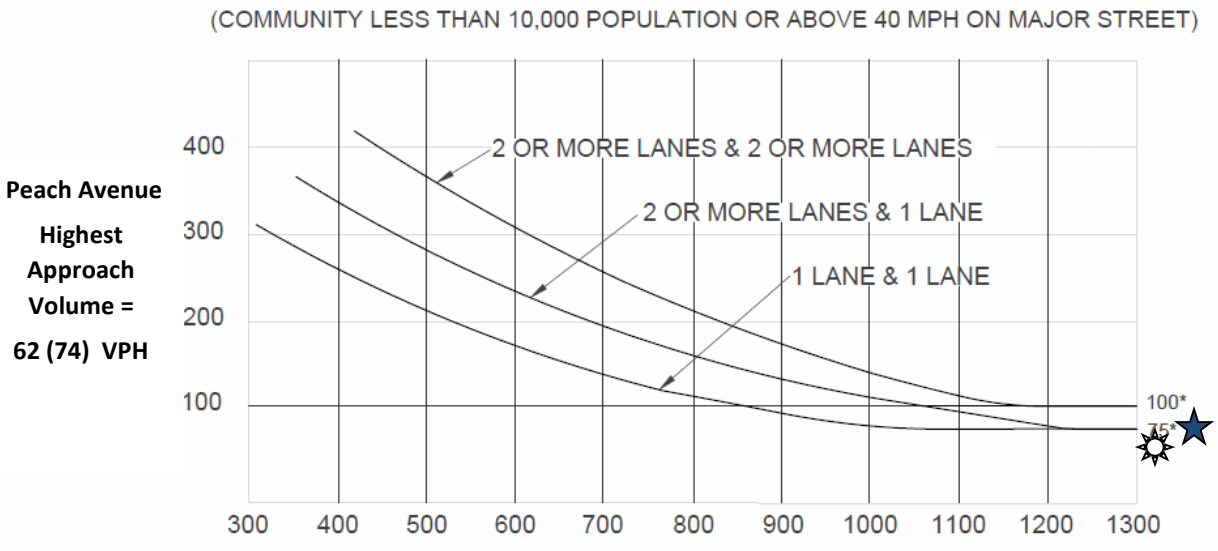
PM Peak Hour – Signal Warrant is Met

PM Peak Hour – Signal Warrant is Met

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
Chapter 4C: Traffic Control Signal Needs Studies
Part 4: Highway Traffic Signals
November 7, 2014

Warrant 3: Peak Hour (Rural)

Near Term plus Project Traffic Conditions
2. Peach Avenue / Shepherd Avenue
AM (PM) Peak Hour



Shepherd Avenue Total of Both Approaches =

1591 (1699) VPH

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

PM Peak Hour – Signal Warrant is Not Met

PM Peak Hour – Signal Warrant is Not Met

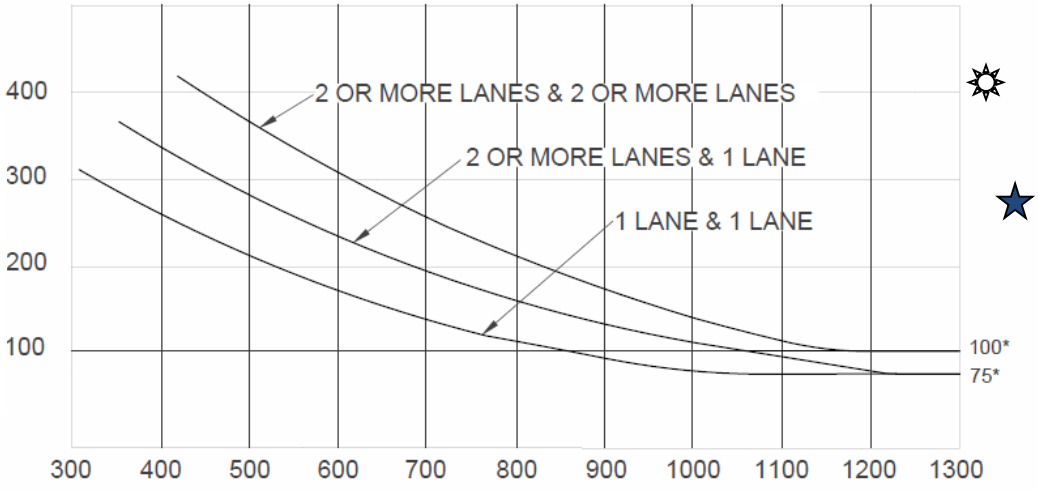
Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
Chapter 4C: Traffic Control Signal Needs Studies
Part 4: Highway Traffic Signals
November 7, 2014

Warrant 3: Peak Hour (Rural)

Cumulative Year 2040 plus Project Traffic Conditions
1. Minnewawa Avenue / Behymer Avenue
AM (PM) Peak Hour

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

Behymer Avenue Highest Approach Volume = 411 (274) VPH



Minnewawa Avenue Total of Both Approaches =

1334 (1414) VPH

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

PM Peak Hour – Signal Warrant is Met

PM Peak Hour – Signal Warrant is Met

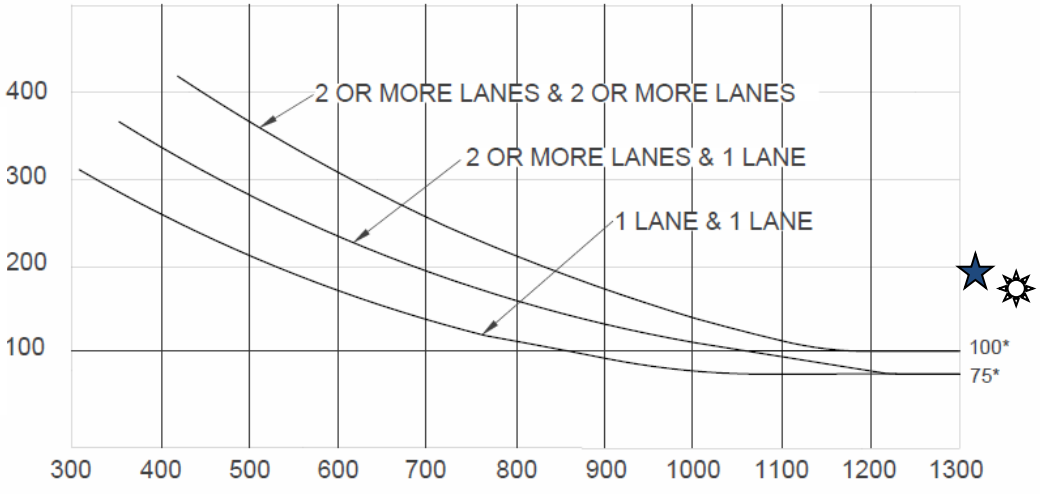
Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
Chapter 4C: Traffic Control Signal Needs Studies
Part 4: Highway Traffic Signals
November 7, 2014

Warrant 3: Peak Hour (Rural)

Cumulative Year 2040 plus Project Traffic Conditions
2. Peach Avenue / Shepherd Avenue
AM (PM) Peak Hour

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

Peach Avenue Highest Approach Volume = 179 (192) VPH



Shepherd Avenue Total of Both Approaches =

2417 (2318) VPH

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

PM Peak Hour – Signal Warrant is Met

PM Peak Hour – Signal Warrant is Met

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
Chapter 4C: Traffic Control Signal Needs Studies
Part 4: Highway Traffic Signals
November 7, 2014

DRAFT
RESOLUTION 20-___

A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF CLOVIS APPROVING AN ENVIRONMENTAL FINDING OF A MITIGATED NEGATIVE DECLARATION FOR PREZONE R2016-10 AND VESTING TENTATIVE TRACT MAP TM6050, PURSUANT TO CEQA GUIDELINES

WHEREAS, the project proponent, 6050 Enterprises, LP., 7550 North Palm Avenue, Suite 102, Fresno, CA 93711, has submitted various applications including a Prezone (R2016-10) and Vesting Tentative Tract Map (TM6050) for property located at the northwest corner of Shepherd and N. Clovis Avenues, in the County of Fresno ("Project"); and

WHEREAS, the City of Clovis ("City") caused to be prepared an initial study (hereinafter incorporated by reference) in April 2020, for the Project to evaluate potentially significant adverse environmental impacts, and on the basis of that study, it was determined that no significant environmental impacts would result from this Project if certain mitigation measures were included; and

WHEREAS, on the basis of this initial study, a mitigated negative declaration has been prepared, circulated, and made available for public comment pursuant to the California Environmental Quality Act ("CEQA"), Public Resources Code, section 21000, et seq., and Guidelines for implementation of CEQA, 14 California Code of Regulations, sections 15000, et seq.; and

WHEREAS, the Planning Commission has independently reviewed, evaluated, and considered the CEQA analysis outlined in the staff report, initial study, mitigated negative declaration and all comments, written and oral, received from persons who reviewed the mitigated negative declaration, or otherwise commented on the Project ("Administrative Record").

NOW, THEREFORE, BASED UPON THE ENTIRE RECORD OF THE PROCEEDINGS, THE PLANNING COMMISSION RESOLVES AND FINDS AS FOLLOWS:

1. The foregoing recitals as true and correct.

2. The initial study and mitigated negative declaration for the Project are adequate, reflect the City's independent judgment and analysis, and have been completed in compliance with CEQA and the CEQA Guidelines.

3. The initial study and mitigated negative declaration were presented to the Planning Commission and the Planning Commission has independently reviewed, evaluated, and considered the initial study, mitigated negative declaration and all comments, written and oral, received from persons who reviewed the initial study and mitigated negative declaration, or otherwise commented on the Project in the Administrative Record prior to approving the Project.

4. On the basis of the whole record, that is no substantial evidence that the Project will have a significant effect on the environment with the mitigation measures identified in the mitigated negative declaration.

5. The mitigated negative declaration is approved and the mitigation monitoring program set forth in **Attachment A**, including the mitigation measures identified therein and as described in the mitigated negative declaration, is adopted.

6. The record of these proceedings shall be contained in the Department of Planning and Development Services located at 1033 Fifth Street, Clovis, California 93612, and the custodian of the record shall be the City Planner or other person designated by the Planning and Development Services Director.

7. The Planning and Development Services Director, or his/her designee, is authorized to file a notice of determination for the Project in accordance with CEQA and to pay any fees required for such filing.

* * * * * *

The foregoing resolution was approved by the Clovis Planning Commission at its regular meeting on May 28, 2020, upon a motion by Commissioner _____, seconded by Commissioner _____, and passed by the following vote, to wit:

AYES:
NOES:
ABSENT:
ABSTAIN:

CLOVIS PLANNING COMMISSION RESOLUTION NO. 20-___
Date: May 28, 2020

_____
Amy Hatcher, Chair

_____
Dwight Kroll, AICP, Secretary

ATTACHMENT A

Mitigation Monitoring and Reporting Program

Proposed Mitigation	Summary of Measure	Monitoring Responsibility	Timing	Verification (Date and Initials)
G.1 Aesthetics				
G.1-d	The developer shall direct all on-site lighting downward and provide physical shields to prevent direct view of the light source from adjacent rural residential properties to the west of the proposed residential development. Street lighting shall be spaced in accordance with City Standards to reduce up-lighting. The applicant shall utilize a PG&E street light which directs light downward.	City of Clovis Planning Division	*Prior to Permit and During construction*	
G.2 Agriculture and Forestry Resources				
G.2-a	The Project shall implement the General Plan EIR Mitigation Program 5.2-3.	City of Clovis Planning Division	*Prior to Project Approval*	
G.4 Biological				
G.4-a1 **G.4-a2**	**Burrowing Owl.** A preconstruction survey for burrowing owl or signs of owl occupation within 30 days prior to ground disturbance, regardless of the time of year construction commences is recommended. If evidence of current occupation is discovered, the biologist should implement passive relocation in accordance with the California Department of Fish and Game Staff Report on Burrowing Owl Mitigation.	City of Clovis Planning Division	*Prior to Permits and During Construction*	

Proposed Mitigation	Summary of Measure	Monitoring Responsibility	Timing	Verification (Date and Initials)
	Nesting Season. If any trees or shrubs are to be removed during the nesting season (commences approximately February 1 and ends around August 31st), then a preconstruction survey should be conducted within 15-30 days of commencement of construction. This survey can be performed concurrent with the burrowing owl survey.			
G.5 Cultural Resources				
G.5-b	Although no prehistoric or historic period sites were found during the research, there is a slight possibility that a site may exist and be totally obscured by vegetation, fill, or other historic activities, leaving no surface evidence. Should artifacts or unusual amounts of stone, bone, or shell be uncovered during construction activities, an archeologist should be consulted for in field evaluation of the discovery.	City of Clovis Planning Division	*Prior to Permits and During Construction*	
G.5-c	The possibility of encountering human remains cannot be entirely discounted. If human graves are encountered, work should halt, and the Fresno County Coroner should be notified. The California Health and Safety Code Section 7050.5 states it is a misdemeanor to knowingly disturb a human grave. Upon discovery, the Project owner should contact a qualified archaeologist to evaluate the historical significance of the remains. If human remains are			

Proposed Mitigation	Summary of Measure	Monitoring Responsibility	Timing	Verification (Date and Initials)
	of Native American origin, the Coroner must notify the NAHC within 24 hours of the identification.			
G.7 Geology and Soils				
G.7-f	If prehistoric or historic-era cultural materials are encountered during construction activities, all work in the immediate vicinity of the find shall halt until a qualified professional archaeologist and/or paleontologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeologist, can evaluate the significance of the find and make recommendations. Cultural resource materials may include prehistoric resources such as flaked and ground stone tools and debris, shell, bone, ceramics, and fire-affected rock as well as historic resources such as glass, metal, wood, brick, or structural remnants. If the qualified professional determines that the discovery represents a potentially significant cultural resource, additional investigations may be required to mitigate adverse impacts from project implementation. These additional studies may include avoidance, testing, and evaluation or data recovery excavation. If a potentially-eligible resource is encountered, then the qualified professional archaeologist	City of Clovis Planning Division	*Prior to Permits and During Construction*	

Proposed Mitigation	Summary of Measure	Monitoring Responsibility	Timing	Verification (Date and Initials)
	and/or paleontologist, the Lead Agency, and the project proponent shall arrange for either 1) total avoidance of the resource or 2) test excavations to evaluate eligibility and, if eligible, total data recovery. The determination shall be formally documented in writing and submitted to the Lead Agency as verification that the provisions for managing unanticipated discoveries have been met.			
G.13 Noise				
G.13-a1	The Project contractor shall locate equipment staging in areas that would create the greatest possible distance between construction-related noise sources and noise-sensitive receptors nearest the active project site during all construction activities.	City of Clovis Planning Division	*Prior to Permits and During Construction*	
G.13-a2	The Project contractor shall ensure that all general construction related activities are restricted to between the hours of 7:00 a.m. and 7:00 p.m. Monday through Friday and between 9:00 a.m. and 5:00 p.m. on Saturday and Sunday.			
G.17 Transportation				
G.17-a1	Per the Traffic Impact Analysis (TIA), Shepherd Avenue, between Sunnyside Avenue and Peach Avenue is projected to exceed the level of service	City of Clovis Planning Division	*Prior to Permits and During Construction*	

Proposed Mitigation	Summary of Measure	Monitoring Responsibility	Timing	Verification (Date and Initials)
	(LOS) threshold. The Project proponent and/or applicant shall contribute their proportional share of traffic impacts fees (street fees) for the future improvements to Shepherd Avenue as recommended by the TIA.			
G.17-a2	The Project proponent and/or applicant shall contribute their proportional share of traffic impacts fees (street fees) for the future improvements to the intersection of Minnewawa Avenue and Behymer Avenue.			
G.17-a3	The Project proponent and/or applicant shall contribute their proportional share of traffic impacts fees (street fees) for the future improvements to the intersection of Peach Avenue and Shepherd Avenue.			
G.17-a4	The Project proponent and/or applicant shall contribute their proportional share of traffic impacts fees (street fees) for the future improvements to the intersection of Sunnyside Avenue and Shepherd Avenue.			
G.17-a5	The Project proponent and/or applicant shall improve and complete the north side of Shepherd Avenue and the west side of Clovis Avenue, along the Project's street frontages per the City standards and the Heritage Grove Design Guidelines circulation plan.			

Proposed Mitigation	Summary of Measure	Monitoring Responsibility	Timing	Verification (Date and Initials)
G.18 Tribal Cultural Resources				
G.18-b1	There is a possibility that subsurface cultural resources exist in the study area, as archaeological sites may be buried with no surface manifestation. If concentrations of prehistoric or historic-period materials are encouraged during ground disturbing activities, all work in the immediate vicinity shall halt until a qualified professional/archaeologist can evaluate the finds and make specific recommendations. Examples of prehistoric materials include obsidian and chert flake stone tools (e.g. projectile points, knives, scrapers) or toolmaking debitage, cultural darkened soil (midden) containing heat-affected rocks, artifacts, or shellfish remains, and stone milling equipment (e.g. mortars, pestles, handstones). Examples of historical materials include stone, concrete, or adobe footings and walls, filled wells or privies, and deposits of metal, grass, and/or ceramic refuse.	City of Clovis Planning Division	*Prior to Permits and During Construction*	
G.18-b2	If human remains are discovered during construction or operational activities, further excavation or disturbance shall be prohibited pursuant to Section 7050.5 of the California Health and Safety Code. The specific protocol, guidelines, and channels of communication outlined by the Native American Heritage			

Proposed Mitigation	Summary of Measure	Monitoring Responsibility	Timing	Verification (Date and Initials)
	Commission, in accordance with Section 7050.5 of the Health and Safety Code, Section 5097.98 of the Public Resources Code (Chapter 1492, Statutes of 1982, Senate Bill 297), and Senate Bill 447 (Chapter 44, Statutes of 1987), shall be followed. Section 7050.5(c) shall guide the potential Native American involvement, in the event of discovery of human remains, at the direction of the County coroner. All reports, correspondence, and determinations regarding the discovery of human remains on the project site shall be submitted to the Lead Agency.			

DRAFT
RESOLUTION 20-___

A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF CLOVIS RECOMMENDING APPROVAL TO PREZONE APPROXIMATELY 38.50 ACRES FROM THE COUNTY AE-20 (EXCLUSIVE AGRICULTURAL) ZONE DISTRICT TO THE CLOVIS R-1-PRD (PLANNED RESIDENTIAL DEVELOPMENT) ZONE DISTRICT FOR PROPERTY LOCATED AT THE NORTHWEST CORNER OF SHEPHERD AND N. CLOVIS AVENUES

LEGAL DESCRIPTION:

See the attached Attachment A.

WHEREAS, 6050 Enterprises, LP., 7550 North Palm Avenue, Suite 102, Fresno, CA 93711, has applied for a Prezone (R2016-10); and

WHEREAS, this is a request to prezone approximately 38.50 acres from the County AE-20 (Exclusive Agricultural) Zone District to the Clovis R-1-PRD (Planned Residential Development) Zone District for property located at the northwest corner of Shepherd and N. Clovis Avenues, in the County of Fresno, California ("Project"); and

WHEREAS, the proposed prezone was assessed under the provisions of the California Environmental Quality Act (CEQA) and the potential effects on the environment were considered by the Planning Commission, together with comments received and public comments, and the entire public record was reviewed; and

WHEREAS, the City published a Notice of the Planning Commission Public Hearing for May 28, 2020, to consider prezone R2016-10, in the Fresno Business Journal, mailed notices to area residents within 600 feet of said property boundaries twenty-one days prior to said hearing, and posted notice of the Public Hearing according to applicable law; and

WHEREAS, the Planning Commission held a noticed public hearing on May 28, 2020, to consider the project approval, at which time interested persons were given opportunity to comment on the project; and

WHEREAS, on May 28, 2020, the Planning Commission considered testimony and information received at the public hearing and the oral and written reports from City staff, as well as other documents contained in the record of proceedings ("Administrative Record") relating to prezone R2016-10, which are maintained at the offices of the City of Clovis Department of Planning and Development Services; and

WHEREAS, the Planning Commission considered the CEQA analysis outlined in the staff report and elsewhere in the Administrative Record which supports the approval of a mitigated negative declaration pursuant to CEQA guidelines; and

WHEREAS, the Commission has reviewed and considered the staff report and all written materials submitted in connection with the request and hearing and considered the testimony presented during the public hearing; and

WHEREAS, the prezone is in keeping with the intent and purpose of the Zoning Ordinance.

NOW, THEREFORE, BASED UPON THE ENTIRE RECORD OF THE PROCEEDINGS, THE PLANNING COMMISSION RESOLVES AND FINDS AS FOLLOWS:

1. The proposed amendment is consistent with the goals, policies, and actions of the General Plan.

2. The proposed amendment would not be detrimental to the public interest, health, safety, convenience, or general welfare of the City.

3. The parcel is physically suitable (including absence of physical constraints, access, compatibility with adjoining land uses, and provision of utilities) for the requested zoning designations and anticipated land uses/projects.

4. The Planning Commission considered the CEQA analysis outlined in the staff report and elsewhere in the Administrative Record and approved a mitigated negative declaration for the project pursuant to CEQA guidelines.

5. The Planning Commission does recommend approval of prezone R2016-10.

* * * * * *

The foregoing resolution was approved by the Clovis Planning Commission at its regular meeting on May 28, 2020, upon a motion by Commissioner _____, seconded by Commissioner _____, and passed by the following vote, to wit:

AYES:
NOES:
ABSENT:
ABSTAIN:

PLANNING COMMISSION RESOLUTION NO. 20-__
DATED: May 28, 2020

_____
Amy Hatcher, Chair

ATTEST: _____
Dwight Kroll, AICP, Secretary

DRAFT
RESOLUTION 20-___

A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF CLOVIS APPROVING A VESTING TENTATIVE TRACT MAP FOR A 255-LOT SINGLE-FAMILY PLANNED RESIDENTIAL DEVELOPMENT ON APPROXIMATELY 38.50 ACRES OF PROPERTY LOCATED AT THE NORTHWEST CORNER OF SHEPHERD AND N. CLOVIS AVENUES

WHEREAS, 6050 Enterprises, LP., 7550 North Palm Avenue, Suite 102, Fresno, CA 93711, has applied for a vesting tentative tract map (TM6050) for a 255-lot single-family planned residential development on approximately 38.50 acres of property located at the northwest corner of Shepherd and N. Clovis Avenues, in the County of Fresno ("Project"); and

WHEREAS, vesting tentative tract map TM6050, was filed on June 29, 2016, and was presented to the Clovis Planning Commission for approval in accordance with the Subdivision Map Act of the Government of the State of California and Title 9, Chapter 2, of the Municipal Code and the City of Clovis; and

WHEREAS, the City published notice of the Public Hearing in the Fresno Business Journal, mailed public notices to area residents within 600 feet of said property boundaries twenty-one days prior to said Planning Commission hearing, and otherwise posted notice of the Public Hearing according to applicable law; and

WHEREAS, a duly noticed hearing was held on May 28, 2020; and

WHEREAS, the Planning Commission has given careful consideration to this map on May 28, 2020, and considered the CEQA analysis outlined in the staff report and elsewhere in the Administrative Record which supports the approval of a Mitigated Negative Declaration for the project; and

WHEREAS, the Commission has reviewed and considered the staff report and all written materials submitted in connection with the application and hearing and considered the testimony presented during the public hearing ("Administrative Record"); and

WHEREAS, this Commission finds and determines that approval of said map should be conditioned on all conditions recommended by the City staff, as set forth in **Attachment 2** which is on file with the City Clerk's office.

NOW, THEREFORE, BASED UPON THE ENTIRE RECORD OF THE PROCEEDINGS, THE PLANNING COMMISSION RESOLVES AND FINDS AS FOLLOWS:

1. The proposed map, subdivision design, and improvements are consistent with the General Plan and any applicable specific plan.

2. The site is physically suitable for the type and proposed density of development.

3. The design of the subdivision and the proposed improvements are not likely to cause substantial environmental damage or substantially and avoidably injure fish or wildlife or their habitat.

4. The design of the subdivision or type of improvements is not likely to cause serious public health or safety problems.

5. The design of the subdivision or the type of improvements will not conflict with easements acquired by the public at large for access through or use of property within the proposed subdivision. This finding may also be made if the review authority finds that alternate easements for access or use will be provided, and that they will be substantially equivalent to ones previously acquired by the public. This finding shall apply only to easements of record, or to easements established by judgment of a court of competent jurisdiction, and no authority is hereby granted to the review authority to determine that the public at large has acquired easements of access through or use of property within the proposed subdivision.

6. The discharge of sewage from the proposed subdivision into the community sewer system will not result in violation of existing requirements prescribed by the California Regional Water Quality Control Board.

7. The design of the subdivision provides, to the extent feasible, passive or natural heating and cooling opportunities.

8. The proposed subdivision, its design, density, and type of development and improvements conform to the regulations of this Development Code and the regulations of any public agency having jurisdiction by law.

9. The proposed project has been reviewed in compliance with the provisions of the California Environmental Quality Act (CEQA) and to this end the Planning Commission approved a mitigated negative declaration for the project pursuant to CEQA guidelines.

10. Without the conditions of approval (**Attachment 2** of this resolution), the Planning Commission could not make the findings necessary for approval of vesting tentative tract map TM6050 (attached and labeled **Attachment 10).**

11. The basis for the findings is detained in the May 28, 2020, staff report, which is hereby incorporated by reference, the entire Administrative Record, as well as the evidence and comments presented during the Public Hearing.

* * * * * *

The foregoing resolution was approved by the Clovis Planning Commission at its regular meeting on May 28, 2020, upon a motion by Commissioner _____, seconded by Commissioner _____, and passed by the following vote, to wit:

AYES:
NOES:
ABSENT:
ABSTAIN:

PLANNING COMMISSION RESOLUTION NO. 20-__
DATED: May 28, 2020

_____
Amy Hatcher, Chair

ATTEST: _____
Dwight Kroll, AICP, Secretary

ATTACHMENT 6

AGENDA ITEM NO.2

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

March 16, 2020

George Gonzalez
City of Clovis
1033 Fifth Street
Clovis, CA 93612

SUBJECT: R2016-010 & TM6050

Dear George Gonzalez:

The County of Fresno appreciates the opportunity to review and comment on the subject R2016-010 & TM6050. Fresno County requests that the following additional items be addressed in the Environmental Impact Report:

Environmental Health:

Construction permits for the proposed development should be subject to assurance of sewer capacity of the Regional Waster Treatment Facility. Concurrence should be obtained from the California Regional Water Quality Control Board, Division of Drinking Water-Southern Branch. For more information contact staff at (559) 445-5116.

Construction permits for the proposed development should be subject to assurance that the City of Clovis community water system has the capacity and quality to serve this project. Concurrence should be obtained from the State Water Resources Control Board, Division of Drinking Water- Southern Branch. For more information call (559) 447-3300.

Prior to the issuance of building permits, the applicant shall submit complete pool facility plans and specifications to the Fresno County Department of Public Health, Environmental Health Division, for review and approval. The applicant shall apply for and obtain a permit to operate a public swimming pool from the Fresno County Department of Public Health, Environmental Health Division. A permit, once issued, is nontransferable. Contact the Recreational Health Program at (559) 600-3357 for more information.

If the applicant proposes to use and/or store hazardous materials and/or hazardous wastes, they shall meet the requirements set forth in the California Health and Safety Code (HSC), Division 20, Chapter 6.95, and the California Code of Regulations (CCR), Title 22, Division 4.5. Any business that handles a hazardous material or hazardous waste may be required to submit a Hazardous Materials Business Plan pursuant to the California Health and Safety Code (HSC), Division 20, Chapter 6.95, Section 25507 (http://cers.calepa.ca.gov/). Contact the Fresno County Hazmat Compliance Program at (559) 600-3271 for more information.

The proposed construction project has the potential to expose nearby residents to elevated noise levels. Consideration should be given to your City's municipal code.

As a measure to protect ground water, all water wells and/or septic systems that exist or have been abandoned within the project area should be properly destroyed by an appropriately licensed contractor.

Should any underground storage tank(s) be found during the project, the applicant shall apply for and secure an Underground Storage Tank Removal Permit from the Fresno County Department of Public Health, Environmental Health Division. Contact the Fresno County Hazmat Compliance Program at (559) 600-3271 for more information.

Transportation:

The proposed development does not directly tie in to any County maintained roads, however the traffic generated could impact nearby County road segments and intersections. Several developments are planned in the area, timing of these projects is required for proper analysis.

One concern is the Tract Map shows the future Clovis Avenue extending to the north, but does not show where it will terminate or tie in to another road. If Clovis Avenue ties in to the existing road system, this should be considered and evaluated in the Traffic Impact Study.

When the Traffic Impact Study is complete the County will provide further comments.

If you have any questions, you may e-mail me at thdavis@fresnocountyca.gov or contact me at (559) 600-9669.

Sincerely,

Ethan Davis, Planner
Development Services and Capital Projects Division

ED:
G:\4360Devs&Pln\PROJSEC\PROJDOCS\Environmental\OAR\City of Clovis\R2016-010 and TM6050\OAR R2016-010 & TM6050 Comment Ltr.docx

cc. Steven E. White, Director
John Thompson, Assistant Director
Bernard Jimenez, Assistant Director
William M. Kettler, Development Services and Capital Projects Division
Chris Motta, Development Services and Capital Projects Division

AGENDA ITEM NO.2

Fresno Metropolitan Flood Control District

Capturing Stormwater Since 1956

File 210.434 "BC","BY_2"
210.45 "6050"
310. "BC","BY_2"

March 20, 2020

Mr. George Gonzalez, Associate Planner
City of Clovis
Department of Planning & Development Services
1033 Fifth Street
Clovis, CA 93612

Dear Mr. Gonzalez,

Prezone Application No. R2016-010
Northwest Corner of Shepherd and Clovis Avenues
Drainage Areas "BC" and "BY2"

The proposed prezone lies within the District's Drainage Areas "BC" and "BY2". Based on information submitted at this time, the District's system can accommodate the proposed prezone. The existing Master Plan system has been designed for runoff from a Medium Density Residential land use at this location. Lot coverage must be provided to the District prior to submittal of improvement plans for this project. Should the density of the project be commensurate with a density higher than the system design, mitigation may be required.

Please contact us if you need further information at (559) 456-3292.

Very truly yours,

FOR

Robert Villalobos
Engineering Technician III

RV/lrl/dm/jt

k:\letters\rezone letters\clovis\2020\2016-010(bc.by2)(rv).docx

5469 E. Olive Avenue • Fresno, CA 93727 • (559) 456-3292 • FAX (559) 456-3194
www.fresnofloodcontrol.org

2907 S. MAPLE AVENUE
FRESNO, CALIFORNIA 93725-2208
TELEPHONE: (559) 233-7161
FAX: (559) 233-8227

A Century of Commitment, Conveyance & Customer Service

March 30, 2020

George Gonzalez
Planning Division
City of Clovis
1033 Fifth Street
Clovis, CA 93612

RE: Rezone Application No. R2016-010
N/W Shepherd and Clovis avenues

Dear Mr. Gonzalez:

The Fresno Irrigation District (FID) has reviewed the Rezone Application No. R2016-010 for which the applicant requests to approve a prezone of approximately 38.5 acres of land from County AE-20 to Clovis R-1-PRD, APN 556-050-24. This request is being processed concurrently with TM 6050. FID has the following comment:

1. FID previously reviewed and comments on the subject property on January 21, 2020 as Development Review Committee Application No. 0071-2020. Those comments and conditions still apply and a copy has been attached for your reference.

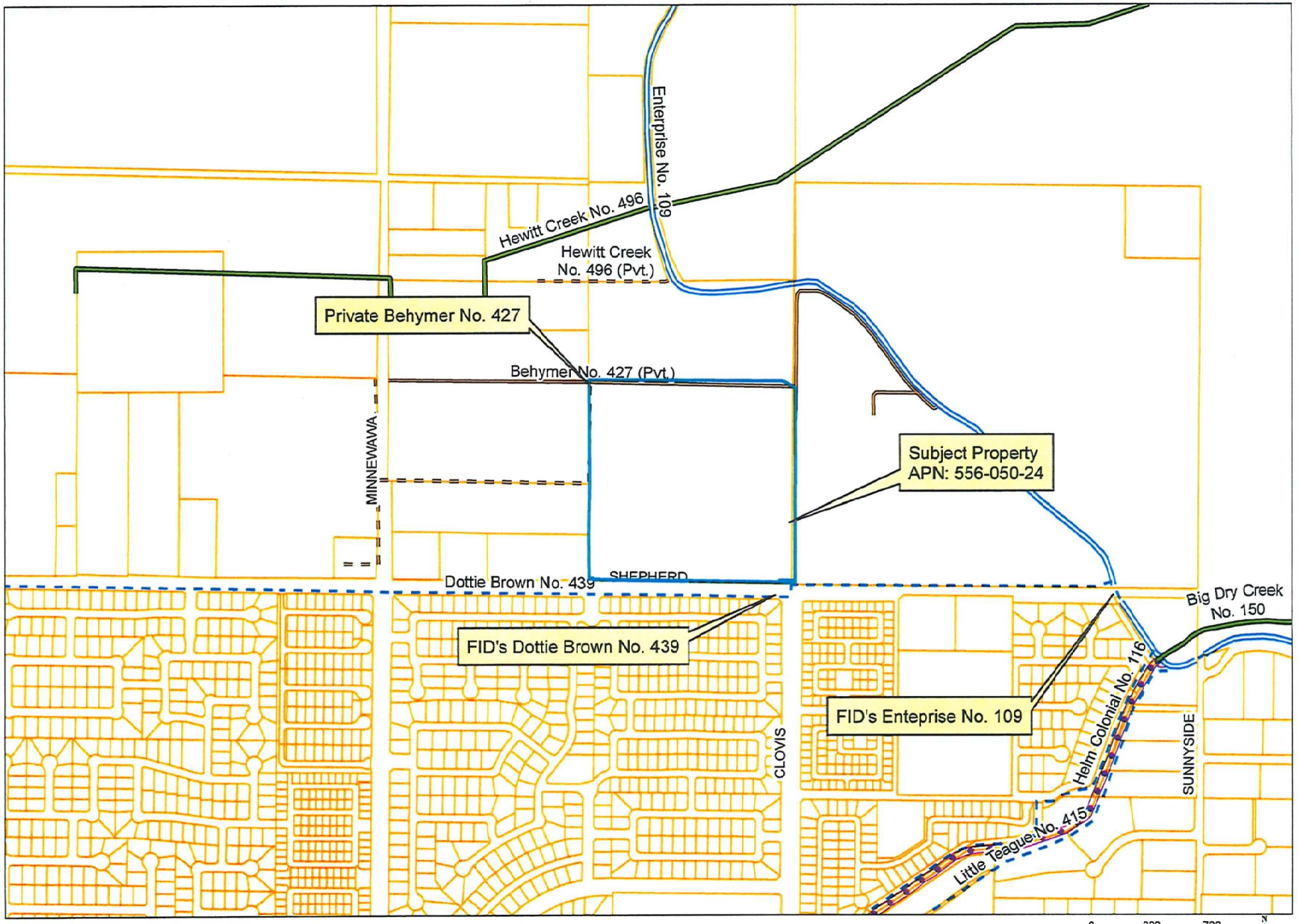
Thank you for submitting this for our review. We appreciate the opportunity to review and comment on the subject documents for the proposed project. If you have any questions, please feel free to contact Jeremy Landrith at (559) 233-7161 extension 7407 or jlandrith@fresnoirrigation.com.

Sincerely,

Laurence Kimura, P.E.
Chief Engineer

Attachment

G:\Agencies\Clovis\Rezone\R2016-010.doc



This map was produced by the Fresno Irrigation District and is provided for reference and informational purposes only and is not intended to show map scale accuracy or all inclusive map features, nor for legal purposes. FID makes no statements regarding the accuracy of this map as the features shown are in their approximate location. Please contact the FID Engineering Dept. at (559) 233-7161 for further information on FID facilities.

FRESNO IRRIGATION DISTRICT

Legend

- FID Canal
- Private Canal
- Abandoned Canal
- FID Pipeline
- Private Pipeline
- Abandoned Pipeline
- Stream Group
- Other-Creek\River
- Other-Pipeline
- FID Boundary
- Railroad
- Streets & Hwys
- Parcel
- FMFCD Acquired Basins
- Proposed Basins

0 390 780 Feet

1 inch = 816.79 feet

Date Saved: 1/17/2020 11:45:07 AM
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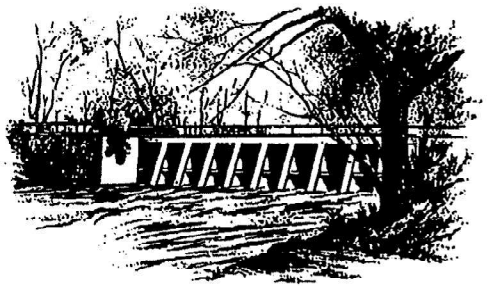
AGENDA ITEM NO.2



YOUR MOST VALUABLE RESOURCE - WATER

OFFICE OF
FRESNO IRRIGATION DISTRICT

TELEPHONE (559) 233-7161
FAX (559) 233-8227
2907 S. MAPLE AVENUE
FRESNO, CALIFORNIA 93725-2208

January 21, 2020

Courtney Thongsavath
City of Clovis
Planning Division
1033 Fifth Street
Clovis, CA 93612

RE: Development Review Committee Application No. 0071-2020
N/W Shepherd and Clovis avenues

Dear Ms. Thongsavath:

The Fresno Irrigation District (FID) has reviewed the Development Review Committee Application No. 0071-2020 for which the applicant proposes a 255-lot single family residential subdivision, APN: 556-050-24FID has the following comments:

1. FID does not own, operate, or maintain any facilities located on the subject properties, as shown on the attached FID exhibit map.

2. For informational purposes, FID's Dottie Brown No. 439 runs westerly along the north side of Shepherd Avenue, crossing Shepherd Avenue at the intersection with Clovis Avenue and continues westerly along the south side of Shepherd Avenue, as shown on the attached FID exhibit map. Should this project include any street and/or utility improvements along Shepherd Avenue, Clovis Avenue, or in the vicinity of this facility, FID requires it review and approve all plans.

3. For informational purposes, FID's active Enterprise No. 109 runs northwesterly, crossing Shepherd Avenue approximately 2,100 feet east of the subject property, as shown on the attached FID exhibit map. Should this project include any street and/or utility improvements along Shepherd Avenue or in the vicinity of this facility, FID requires it review and approve all plans.

4. For informational purposes, a private facility known as the Behymer No. 427 runs westerly along the north side of the subject property and west side of the subject property, as shown on the attached FID exhibit map. FID records indicate this facility is active and should be treated as such. FID can supply the City with a list of known users upon request.

5. The proposed development may negatively impact local groundwater supplies. The area is currently open land, with little to no water demand. Under current circumstances the project area is experiencing a modest but continuing groundwater overdraft. Should the proposed development result in an increase in the consumption of water, this deficit will increase. FID suggests the City of Clovis require the proposed development balance anticipated groundwater use with sufficient recharge of imported surface water in order to preclude increasing the area's existing groundwater overdraft.

6. California enacted landmark legislation in 2014 known as the Sustainable Groundwater Management Act (SGMA). The act requires the formation of local groundwater sustainability agencies (GSAs) that must assess conditions in their local water basins and adopt locally-based management plans. FID and the City of Clovis are members of the North Kings Groundwater Sustainability Agency which will manage the groundwater basin within the FID service area. This area is completely reliant on groundwater pumping and SGMA will impact all users of groundwater and those who rely on it. The City of Clovis should consider the impacts of the development on the City's ability to comply with requirements of SGMA.

Thank you for submitting this for our review. We appreciate the opportunity to review and comment on the subject documents for the proposed project. If you have any questions, please feel free to contact Chris Lundeen at (559) 233-7161 extension 7410 or clundeen@fresnoirrigation.com.

Sincerely,

Laurence Kimura, P.E.
Chief Engineer

Attachment

MAR 18 2020

George Gonzalez
City of Clovis
1033 Fifth Street
Clovis, CA 93612

Project: Tract Map TM6050, Rezone R2016-010

District CEQA Reference No: 20200182

Dear Mr. Gonzalez:

The San Joaquin Valley Unified Air Pollution Control District (District) has reviewed the project referenced above consisting of a 255-lot single family Planned Residential Development and a prezone of approximately 38.50 acres to Clovis R-1-PRD (Project) located at the Northeast corner of Shepherd and Clovis Avenues, in Clovis, CA. The District offers the following comments:

1. Significance Impact for Annual Criteria Pollutants Emissions – The Project specific annual emissions of criteria pollutants are not expected to exceed any of the following District significance thresholds: 100 tons per year of carbon monoxide (CO), 10 tons per year of oxides of nitrogen (NOx), 10 tons per year of reactive organic gases (ROG), 27 tons per year of oxides of sulfur (SOx), 15 tons per year of particulate matter of 10 microns or less in size (PM10), or 15 tons per year of particulate matter of 2.5 microns or less in size (PM2.5). Therefore, the District concludes that the Project would have a less than significant impact on air quality when compared to the above-listed annual criteria pollutant emissions significance thresholds.

2. District Rule 9510 (Indirect Source Review) - District Rule 9510 is intended to mitigate a project's impact on air quality through project design elements or by payment of applicable off-site fees. The Project may be subject to District Rule 9510 if it equals or exceeds 250 residential dwelling units and has or will receive a project-level approval from a public agency. For assistance with determining if the Project is subject to Rule 9510, please call the District at (559) 230-6000 or email ISR@valleyair.org.

Samir Sheikh
Executive Director/Air Pollution Control Officer

Northern Region
4800 Enterprise Way
Modesto, CA 95356-8718
Tel: (209) 557-6400 FAX: (209) 557-6475

Central Region (Main Office)
1990 E. Gettysburg Avenue
Fresno, CA 93726-0244
Tel: (559) 230-6000 FAX: (559) 230-6061

Southern Region
34946 Flyover Court
Bakersfield, CA 93308-9725
Tel: 661-392-5500 FAX: 661-392-5585

www.valleyair.org www.healthyairliving.com

In the case the Project is subject to Rule 9510 an AIA application is required and the District recommends that demonstration of compliance with District Rule 9510, before issuance of the first building permit, be made a condition of Project approval. Information about how to comply with District Rule 9510 can be found online at: http://www.valleyair.org/ISR/ISRHome.htm. The AIA application form can be found online at: http://www.valleyair.org/ISR/ISRFormsAndApplications.htm.

3. District Rule 4002 (National Emissions Standards for Hazardous Air Pollutants) - In the event an existing building will be renovated, partially demolished or removed, the Project may be subject to District Rule 4002. This rule requires a thorough inspection for asbestos to be conducted before any regulated facility is demolished or renovated. Information on how to comply with District Rule 4002 can be found online at: http://www.valleyair.org/busind/comply/asbestosbultn.htm.

4. Regulation VIII (Fugitive PM10 Prohibitions) - The Project will be subject to Regulation VIII. The project proponent is required to submit a Construction Notification Form or submit and receive approval of a Dust Control Plan prior to commencing any earthmoving activities as described in District Rule 8021 – *Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities*. Information on how to comply with Regulation VIII can be found online at: http://www.valleyair.org/busind/comply/PM10/compliance_PM10.htm

5. Other District Rules and Regulations – The above list of rules is neither exhaustive nor exclusive. For example, the Project may be subject to the following District rules, including: Rule 4102 (Nuisance), Rule 4601 (Architectural Coatings), and Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations). To identify other District rules or regulations that apply to this Project or to obtain information on the District's permit requirements, such as an Authority to Construct (ATC), the Project proponent is strongly encouraged to contact the District's Small Business Assistance Office at (559) 230-5888 or e-mail SBA@valleyair.org. Current District rules can be found online at the District's website at: www.valleyair.org/rules/1ruleslist.htm.

6. Potential Air Quality Improvement Measures - The District encourages the following air quality improvement measures to further reduce Project related emissions from construction and operation. A complete list of potential air quality improvement measures can be found online at: http://www.valleyair.org/ceqaconnected/aqimeasures.aspx.

    a. Cleaner Off-Road Construction Equipment – To reduce impacts from construction related exhaust emissions, the District recommends the cleanest

reasonably available off-road construction fleets, as set forth in §2423 of Title 13 of the California Code of Regulations, and Part 89 of Title 40 Code of Federal Regulations.

b. Improve Walkability Design – This measure is to improve design elements to enhance walkability and connectivity. Improved street network characteristics within a neighborhood include street accessibility, usually measured in terms of average block size, proportion of four-way intersections, or number of intersections per square mile. Design is also measured in terms of sidewalk coverage, building setbacks, street widths, pedestrian crossings, presence of street trees, and a host of other physical variables that differentiate pedestrian-oriented environments from auto-oriented environments.

c. Improve Destination Accessibility – This measure is to locate the project in an area with high accessibility to destinations. Destination accessibility is measured in terms of the number of jobs or other attractions reachable within a given travel time, which tends to be highest at central locations and lowest at peripheral ones. The location of the project also increases the potential for pedestrians to walk and bike to these destinations and therefore reduces the (vehicle miles traveled) VMT.

d. Increase Transit Accessibility – This measure is to locate the project with high density near transit which will facilitate the use of transit by people traveling to or from the Project site. The use of transit results in a mode shift and therefore reduced VMT. A project with a residential/commercial center designed around a rail or bus station, is called a transit-oriented development (TOD). The project description should include, at a minimum, the following design features:

    - A transit station/stop with high-quality, high-frequency bus service located within a 5-10 minute walk (or roughly ¼ mile from stop to edge of development), and/or
    - A rail station located within a 20 minute walk (or roughly ½ mile from station to edge of development)
    - Fast, frequent, and reliable transit service connecting to a high percentage of regional destinations
    - Neighborhood designed for walking and cycling

e. Voluntary Emission Reduction Agreement - Design elements, mitigation measures, and compliance with District rules and regulations may not be sufficient to reduce project-related impacts on air quality to a less than

significant level. In such situation, project proponents may enter into a Voluntary Emission Reduction Agreement (VERA) with the District to reduce the project related impact on air quality to a less than significant level. A VERA is a mitigation measure by which the project proponent provides pound-for-pound mitigation of air emissions increases through a process that funds and implements emission reduction projects, which are administered through the District's emission reduction incentive grant programs. A VERA can be implemented to address impacts from both construction and operational phases of a project.

The District recommends that a copy of the District's comment letter be provided to the Project proponent. District staff is available to meet with you and/or the applicant to further discuss the regulatory requirements that are associated with this Project. If you have any questions or require further information, please call Carol Flores at (559) 230-5935 or e-mail carol.flores@valleyair.org. When calling or emailing the District, please reference District CEQA number 20200182.

Sincerely,

Arnaud Marjollet
Director of Permit Services

Robert Gilles
Program Manager

AM: cf

AGENDA ITEM NO.2

CLOVIS UNIFIED SCHOOL DISTRICT

February 26, 2020

George Gonzalez
Planning and Development Services Dept.
1033 Fifth St.
Clovis, CA 93612

SUBJECT: TM 6050 – Northwest corner of Shepherd and Clovis Avenues
255 + 73 Single Family Homes
APN 556-050-24

Dear Mr. Gonzalez:

The purpose of this letter is to provide school district information relative to the above-referenced development and to comply with Business and Professions Code section 11010, subdivision (b)(11)(A) regarding the provision of school-related information to the developer/owner and the State Department of Real Estate.

1. Elementary School Information:

(a) The subject land is presently within the attendance area of the elementary school (grades K-6) listed below:

School Name: *Riverview Elementary*
Address: *2491 E Behymer Ave Fresno CA 93730-5419*
Telephone: (559) 327-8600
Capacity: *875*
Enrollment: 742 (CBEDS enrollment *2018-19* school year)

(b) Because of projected growth in the District and the District's plans for construction of new school facilities, it is possible that (1) adjustment of school attendance areas could occur in the future such that students residing in the project area may be required to attend an elementary school other than the school listed above, and (2) students residing in the project area may attend more than one elementary school within the District during their elementary school years.

1450 Herndon Avenue • Clovis, CA 93611-0599
559-327-9000 • www.cusd.com

2. Intermediate School Information:

School Name:	*Granite Ridge Intermediate*
Address:	*2770 E International Ave Fresno CA 93730-5400*
Telephone:	(559) 327-5000
Capacity:	*1600*
Enrollment:	1284 (CBEDS enrollment *2018-19* school year)

3. High School Information:

School Name:	*Clovis North High School*
Address:	*2770 E International Ave Fresno CA 93730-5400*
Telephone:	(559) 327-5000
Capacity:	*3100*
Enrollment:	2549 (CBEDS enrollment *2018-19* school year)

4. Bus transportation is currently provided for grades K-6 students residing further than one mile from school and for grades 7-12 students residing further than two and one-half miles from school. Transportation will be available for students attending the above-identified elementary, intermediate and high schools in accordance with District standards in effect at the time of enrollment.

5. The District currently levies a school facilities fee of $5.15 per square foot (as of July 1, 2019) for residential development. The fee is adjusted periodically in accordance with law. New development on the subject property will be subject to the fee in place at the time fee certificates are obtained.

The District hereby requests that the information in this letter be provided by the owner/subdivider to all prospective purchasers of property within the project.

Thank you for the opportunity to comment on the project. Please contact me if you have any questions regarding this letter.

Sincerely,

Denver Stairs
Assistant Superintendent
Facility Services

FRESNO METROPOLITAN FLOOD CONTROL DISTRICT
NOTICE OF REQUIREMENTS

AGENDA ITEM NO.2

PUBLIC AGENCY

GEORGE GONZALEZ
PLANNING AND DEVELOPMENT SERVICES
CITY OF CLOVIS
1033 FIFTH STREET
CLOVIS, CA 936112

DEVELOPER

JEFF HARRIS, 6050 ENTERPRISES, LP
7550 N. PALM AVE., SUITE 3102
FRESNO, CA 93711

PROJECT NO: **6050REV**
ADDRESS: **NWC CLOVIS AND SHEPHERD AVE.**
APN: **556-050-24, 10, 556-050-08**

SENT: 3/20/2020

Drainage Area(s)	Preliminary Fee(s)	Development Review Service Charge(s)	Fee(s)	
BC	$344,997.00	NOR Review *	$0.00	To be paid prior to release of District comments to Public Agency and Developer.
BY2	$28,394.00	Grading Plan Review *	$4,716.00	Amount to be submitted with first grading plan submittal.
		Storm Drain Plan Review *		For amount of fee, refer to www.fresnofloodcontrol.org for form to fill out and submit with first storm drain plan submittal (blank copy attached).
	Total Drainage Fee: $373,391.00		**Total Service Charge: $4,716.00**	

* The Development Review Service Charge shown above is associated with CL TRACT 6050 and is currently proposed to develop in conjunction with this permit. Payment for this entitlement shall satisfy the amount due on the associated permits.

The proposed development will generate storm runoff which produces potentially significant environmental impacts and which must be properly discharged and mitigated pursuant to the California Environmental Quality Act and the National Environmental Policy Act. The District in cooperation with the City and County has developed and adopted the Storm Drainage and Flood Control Master Plan. Compliance with and implementation of this Master Plan by this development project will satisfy the drainage related CEQA/NEPA impact of the project mitigation requirements.

Pursuant to the District's Development Review Fee Policy, the subject project shall pay review fees for issuance of this Notice of Requirements (NOR) and any plan submittals requiring the District's reviews. The NOR fee shall be paid to the District by Developer before the Notice of Requirement will be submitted to the City. The Grading Plan fee shall be paid upon first submittal. The Storm Drain Plan fee shall be paid prior to return/pick up of first submittal.

The proposed development shall pay drainage fees pursuant to the Drainage Fee Ordinance prior to issuance of a building permit at the rates in effect at the time of such issuance. The fee indicated above is valid through 2/29/20 based on the site plan submitted to the District on 2/24/20 Contact FMFCD for a revised fee in cases where changes are made in the proposed site plan which materially alter the proposed impervious area.

Considerations which may affect the fee obligation(s) or the timing or form of fee payment:

a.) Fees related to undeveloped or phased portions of the project may be deferrable.

b.) Fees may be calculated based on the actual percentage of runoff if different than that typical for the zone district under which the development is being undertaken and if permanent provisions are made to assure that the site remains in that configuration.

c.) Master Plan storm drainage facilities may be constructed, or required to be constructed in lieu of paying fees.

d.) The actual cost incurred in constructing Master Plan drainage system facilities is credited against the drainage fee obligation.

e.) When the actual costs incurred in constructing Master Plan facilities exceeds the drainage fee obligation, reimbursement will be made for the excess costs from future fees collected by the District from other development.

f.) Any request for a drainage fee refund requires the entitlement cancellation and a written request addressed to the General Manager of the District within 60 days from payment of the fee. A non refundable $300 Administration fee or 5% of the refund whichever is less will be retained without fee credit.

CL TRACT No. 6050REV

952

Approval of this development shall be conditioned upon compliance with these District Requirements.

1. ___ **a.** Drainage from the site shall

   _X_ **b.** Grading and drainage patterns shall be as identified on Exhibit No. 1

   ___ **c.** The grading and drainage patterns shown on the site plan conform to the adopted Storm Drainage and Flood Control Master Plan.

2. The proposed development shall construct and/or dedicate Storm Drainage and Flood Control Master Plan facilities located within the development or necessitated by any off-site improvements required by the approving agency:

   _X_ Developer shall construct facilities as shown on Exhibit No. 1 as MASTER PLAN FACILITIES TO BE CONSTRUCTED BY DEVELOPER.

   ___ None required.

3. The following final improvement plans and information shall be submitted to the District for review prior to final development approval:

   _X_ Grading Plan

   _X_ Street Plan

   _X_ Storm Drain Plan

   _X_ Water & Sewer Plan

   _X_ Final Map

   _X_ Drainage Report (to be submitted with tentative map)

   ___ Other

   ___ None Required

4. Availability of drainage facilities:

   ___ **a.** Permanent drainage service is available provided the developer can verify to the satisfaction of the City that runoff can be safely conveyed to the Master Plan inlet(s).

   ___ **b.** The construction of facilities required by Paragraph No. 2 hereof will provide permanent drainage service.

   ___ **c.** Permanent drainage service will not be available. The District recommends temporary facilities until permanent service is available.

   _X_ **d.** See Exhibit No. 2.

5. The proposed development:

   ___ Appears to be located within a 100 year flood prone area as designated on the latest Flood Insurance Rate Maps available to the District, necessitating appropriate floodplain management action. (See attached Floodplain Policy.)

   _X_ Does not appear to be located within a flood prone area.

CL TRACT No. 6050REV

5469 E. OLIVE - FRESNO, CA 93727 - (559) 456-3292 - FAX (559) 456-3194

6. ___ The subject site contains a portion of a canal or pipeline that is used to manage recharge, storm water, and/or flood flows. The existing capacity must be preserved as part of site development. Additionally, site development may not interfere with the ability to operate and maintain the canal or pipeline.

7. The Federal Clean Water Act and the State General Permits for Storm Water Discharges Associated with Construction and Industrial Activities (State General Permits) require developers of construction projects disturbing one or more acres, and discharges associated with industrial activity not otherwise exempt from National Pollutant Discharge Elimination System (NPDES) permitting, to implement controls to reduce pollutants, prohibit the discharge of waters other than storm water to the municipal storm drain system, and meet water quality standards. These requirements apply both to pollutants generated during construction, and to those which may be generated by operations at the development after construction.

a. State General Permit for Storm Water Discharges Associated with Construction Activities, effective July 1, 2010, as amended. A State General Construction Permit is required for all clearing, grading, and disturbances to the ground that result in soil disturbance of at least one acre (or less than one acre) if part of a larger common plan of development or sale). Permittees are required to: submit a Notice of Intent and Permit Registration Documents to be covered and must pay a permit fee to the State Water Resources Control Board (State Board), develop and implement a storm water pollution prevention plan, eliminate non-storm water discharges, conduct routine site inspections, train employees in permit compliance, and complete an annual certification of compliance.

b. State General Permit for Storm Water Discharges Associated with Industrial Activities, April, 2014 (available at the District Office). A State General Industrial Permit is required for specific types of industries described in the NPDES regulations or by Standard Industrial Classification (SIC) code. The following categories of industries are generally required to secure an industrial permit: manufacturing; trucking; recycling; and waste and hazardous waste management. Specific exemptions exist for manufacturing activities which occur entirely indoors. Permittees are required to: submit a Notice of Intent to be covered and must pay a permit fee to the State Water Resources Control Board, develop and implement a storm water pollution prevention plan, eliminate non-storm water discharges, conduct routine site inspections, train employees in permit compliance, sample storm water runoff and test it for pollutant indicators, and annually submit a report to the State Board.

c. The proposed development is encouraged to select and implement storm water quality controls recommended in the Fresno-Clovis Storm Water Quality Management Construction and Post-Construction Guidelines (available at the District Office) to meet the requirements of the State General Permits, eliminate the potential for non-storm water to enter the municipal storm drain system, and where possible minimize contact with materials which may contaminate storm water runoff.

8. A requirement of the District may be appealed by filing a written notice of appeal with the Secretary of the District within ten days of the date of this Notice of Requirements.

9. The District reserves the right to modify, reduce or add to these requirements, or revise fees, as necessary to accommodate changes made in the proposed development by the developer or requirements made by other agencies.

10. **X** See Exhibit No. 2 for additional comments, recommendations and requirements.

Peter Sanchez
District Engineer

Robert Villalobos
Project Engineer

CL TRACT No. 6050REV

5469 E. OLIVE - FRESNO, CA 93727 - (559) 456-3292 - FAX (559) 456-3194

FRESNO METROPOLITAN FLOOD CONTROL DISTRICT
NOTICE OF REQUIREMENTS

AGENDA ITEM NO.2

Pursuant to the District's Development Review Fee Policy, the subject project shall pay review fees in the amount identified below for Storm Drain Review. The fee shall be paid to the District by Developer with first plan submittal. Checks shall be made out to Fresno Metropolitan Flood Control District.

Application No. **CL TRACT 6050REV**

Name / Business **JEFF HARRIS, 6050 ENTERPRISES, LP**

Project Address **NWC CLOVIS AND SHEPHERD AVE.**

Project APN(s) **556-050-24, 10, 556-050-08**

Project Acres (gross) **39.30**

Please fill in the table below of proposed storm drain facilities to be constructed with this development and return completed form with first plan submittal. If you have any questions or concerns regarding the construction of facilities list, you can contact the Fresno Metropolitan Flood Control District at 559-456-3292.

Description	Qty	Unit	Price	Amount

Estimated Construction Cost _____

Fee equals lesser of

$375.00 plus 3% of the estimated construction costs _____ Total ($300.00 gross per acre) **$11,790.00**

Amount Due _____

Storm Drain Facilities Cost Sheet

15" Concrete Pipes $79.00 LF
18" Concrete Pipes $83.00 LF
24" Concrete Pipes $94.00 LF
30" Concrete Pipes $111.00 LF
36" Concrete Pipes $131.00 LF
42" Concrete Pipes $152.00 LF
48" Concrete Pipes $178.00 LF
54" Concrete Pipes $217.00 LF
60" Concrete Pipes $255.00 LF
66" Concrete Pipes $301.00 LF
72" Concrete Pipes $347.00 LF
84" Concrete Pipes $388.00 LF
96" Concrete Pipes $420.00 LF
15" Jacked Pipes $555.00 LF
18" Jacked Pipes $608.00 LF
24" Jacked Pipes $687.00 LF
30" Jacked Pipes $766.00 LF
36" Jacked Pipes $846.00 LF
42" Jacked Pipes $898.00 LF
48" Jacked Pipes $951.00 LF
54" Jacked Pipes $1,031.00 LF
60" Jacked Pipes $1,110.00 LF
66" Jacked Pipes $1,216.00 LF
72" Jacked Pipes $1,374.00 LF
84" Jacked Pipes $1,533.00 LF
Manholes $4,600.00 EA
Inlets & Laterals $4,450.00 EA
Outfalls $11,500.00 EA
Canal Outfalls $15,000.00 EA
Basin Excavation $0.75 CY

IMPROVEMENTS ADJACENT TO BASIN

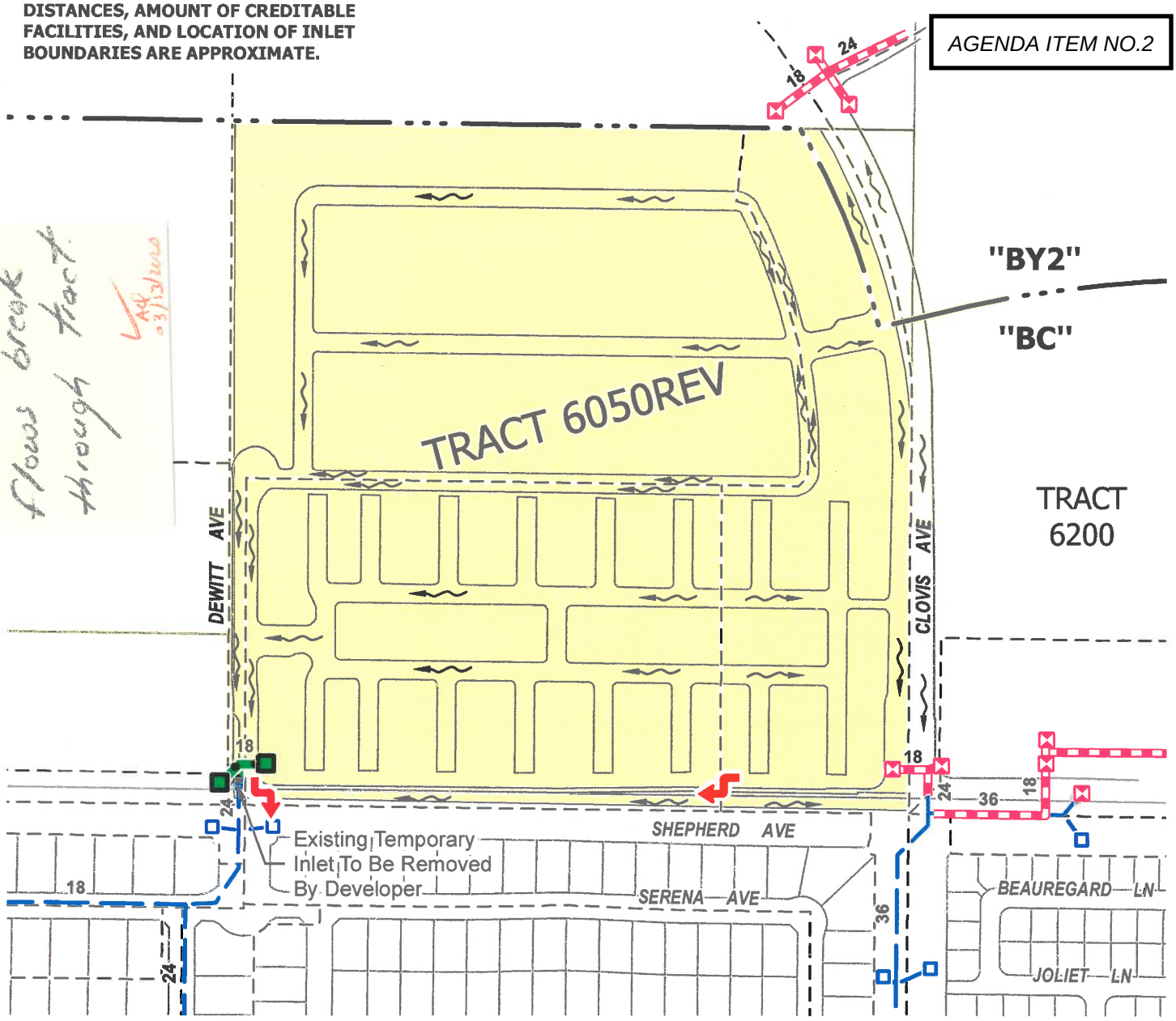
Fence, Pad, and Gate $20.00 LF
Mowstrip $20.00 LF
Arterial Paving $82.00 LF
Local Paving $53.00 LF
Curb and Gutter $30.00 LF
Sidewalk $60.00 LF
Sewer Line $30.00 LF
Water Line $31.00 LF
Street Lights $65.00 LF
Pump Station/Intake $500,000.00 EA

CL TRACT No. 6050REV

5469 E. OLIVE - FRESNO, CA 93727 - (559) 456-3292 - FAX (559) 456-3194

NOTE: THIS MAP IS SCHEMATIC. DISTANCES, AMOUNT OF CREDITABLE FACILITIES, AND LOCATION OF INLET BOUNDARIES ARE APPROXIMATE.

AGENDA ITEM NO.2



LEGEND

- Creditable Facilities (Master Plan Facilities To Be Constructed By Developer) - Pipeline (Size Shown) & Inlet
- Facilities To Be Constructed By Developer Of Tract 6200
- Existing Master Plan Facilities
- Future Master Plan Facilities
- Inlet Boundary
- Drainage Area Boundary
- Direction Of Drainage
- Major Storm Breakover

N

1 " = 300 '

TRACT 6050REV

DRAINAGE AREAS "BC" & "BY"

EXHIBIT NO. 1

FRESNO METROPOLITAN FLOOD CONTROL DISTRICT

Prepared by: keithr
Date: 3/10/2020
Path: K:\Autocad\DWGS\0EXHIBIT\TRACTS\6050REV.mxd

OTHER REQUIREMENTS
EXHIBIT NO. 2

The cost of construction of Master Plan facilities, excluding dedication of storm drainage easements, is eligible for credit against the drainage fee of the drainage area served by the facilities. A Development Agreement shall be executed with the District to effect such credit. Reimbursement provisions, in accordance with the Drainage Fee Ordinance, will be included to the extent that developer's Master Plan costs for an individual drainage area exceed the fee of said area. Should the facilities cost for such individual area total less than the fee of said area, the difference shall be paid upon demand to the City/County or District.

Construction of the Creditable Facilities as shown on Exhibit No. 1 will provide permanent drainage service to that portion of Tract 6050Rev draining to Dewitt Avenue. Construction of storm drain facilities in Clovis Avenue shown on Exhibit No. 1 is a requirement of Tract 6200, currently under construction. Upon completion of construction of these facilities, permanent drainage service will be available for the portions of Tract 6050Rev draining to Clovis and Shepherd Avenues. Should Tract 6200 not have completed construction of facilities prior to development of this project, the District recommends temporary facilities until permanent service is available. Temporary facilities are recommend for that portion of the project draining to Drainage Area "BY_2".

The Master Plan system has been designed such that during a two-year event flow will not exceed the height of the 6-inch curb. Should wedge curb (4.5 inches height) be used the same criteria shall apply whereby flow remains below the top of curb. Any extensions or pipe size increases due to meeting the requirement listed above shall be at the developer's expense.

Lot coverage must be provided to the District prior to submittal of improvement plans. The final drainage fee will be calculated commensurate with the lot coverage provided by the developer. If the lot coverage indicates a density higher than Master Planned, mitigation may be required. The lot coverage calculated by the District includes the front yard walkway, sidewalk walkway and the rear yard patio equaling an additional 6% of impervious area in addition to the City's typical lot coverage calculation.

Development No. Tract 6050Rev

January 13, 2020

LU0020471
2604

Joyce Roach, Planning Assistant
City of Clovis
Planning and Development Services Department
1033 Fifth Street
Clovis, CA 93612

Dear Ms. Roach:

PROJECT NUMBER: **DRC0071-2020**

DRC0071-2020; The applicant is proposing a 255-lot single family residential subdivision with two home product types. The north portion consists of 87 lots that are gated, with a minimum lot size of 6700 sf. The south portion consists of 168 lots that are gated separately from the north portion. These lots are 1980 sf minimum.

APN: 556-050-24 ZONING: AE-20 to R-1 ADDRESS: NWC of Clovis & Shepard Avenues

Recommended Conditions of Approval:

- Construction permits for the proposed development should be subject to assurance of sewer capacity of the Regional Wastewater Treatment Facility. Concurrence should be obtained from the California Regional Water Quality Control Board (RWQCB). For more information, contact staff at (559) 445-5116.

- Construction permits for the proposed development should be subject to assurance that the City of Clovis community water system has the capacity and quality to serve this project. Concurrence should be obtained from the State Water Resources Control Board, Division of Drinking Water-Southern Branch. For more information call (559) 447-3300.

- Prior to the issuance of building permits, the applicant shall submit complete pool facility plans and specifications to the Fresno County Department of Public Health, Environmental Health Division, for review and approval. The applicant shall apply for and obtain a permit to operate a public swimming pool from the Fresno County Department of Public Health, Environmental Health Division. A permit, once issued, is nontransferable. Contact the Recreational Health Program at (559) 600-3357 for more information.

- If the applicant proposes to use and/or store hazardous materials and/or hazardous wastes, they shall meet the requirements set forth in the California Health and Safety Code (HSC), Division 20, Chapter 6.95, and the California Code of Regulations (CCR), Title 22, Division 4.5. Any business that handles a hazardous material or hazardous waste may be required to submit a Hazardous Materials Business Plan pursuant to the California Health and Safety

AGENDA ITEM NO.2

Code (HSC), Division 20, Chapter 6.95, Section 25507 (http://cers.calepa.ca.gov/). Contact the Fresno County Hazmat Compliance Program at (559) 600-3271 for more information.

- The proposed construction project has the potential to expose nearby residents to elevated noise levels. Consideration should be given to your City's municipal code.

- As a measure to protect ground water, all water wells and/or septic systems that exist or have been abandoned within the project area should be properly destroyed by an appropriately licensed contractor.

- Should any underground storage tank(s) be found during the project, the applicant shall apply for and secure an Underground Storage Tank Removal Permit from the Fresno County Department of Public Health, Environmental Health Division. Contact the Fresno County Hazmat Compliance Program at (559) 600-3271 for more information.

REVIEWED BY:

Kevin Tsuda

Kevin Tsuda, R.E.H.S.
Environmental Health Specialist II (559) 600-33271

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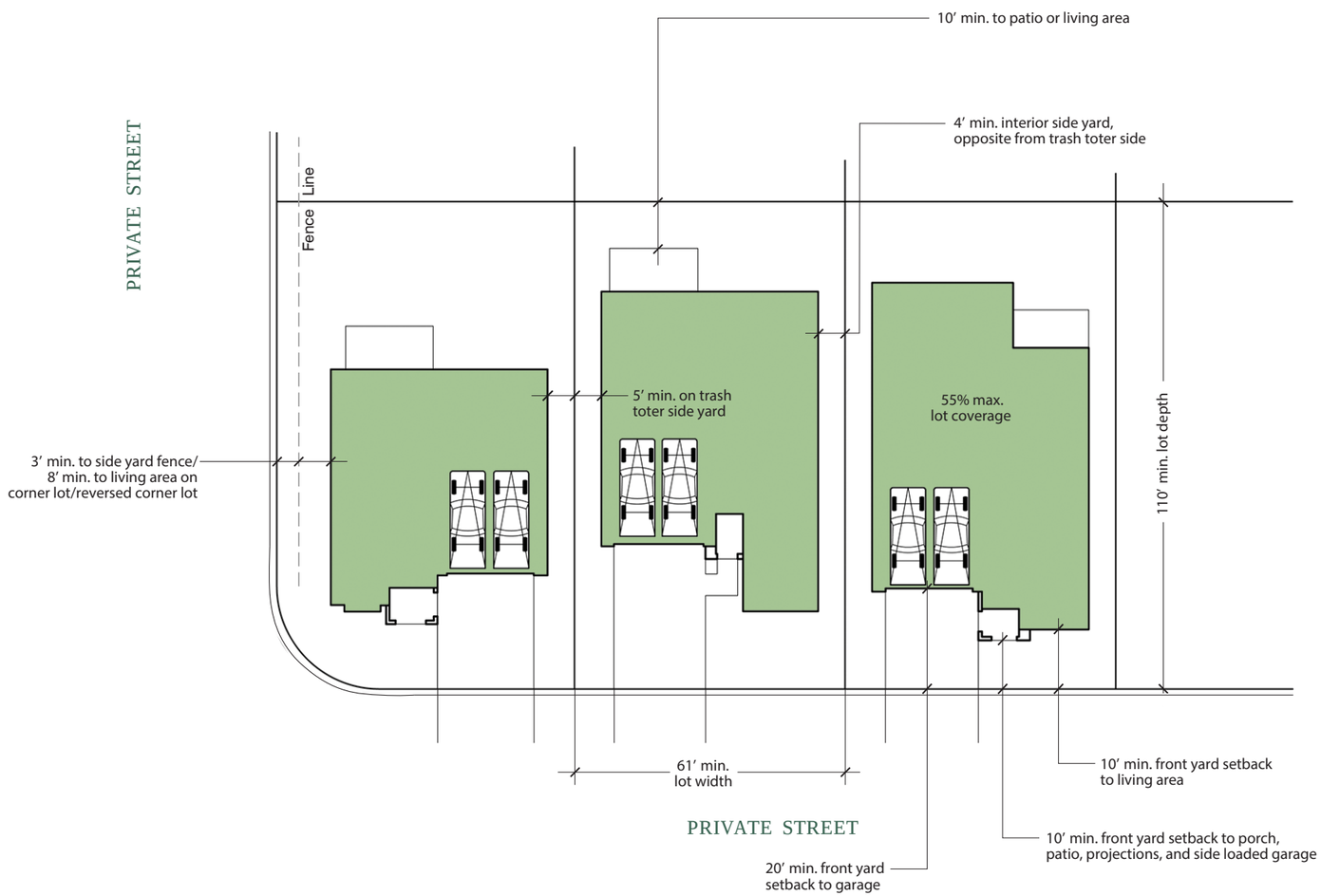
cc: Baruti, Gleghorn, Mak & Bains- Environmental Health Division (CT. 55.25)
Lorren Smith- Applicant (lorrens@harbour-engineering.com)

TRACT 6050 - Chadwick

Residential Land Use Development Standards

TRACT 6050 – NWC SHEPHERD & CLOVIS

LAND USE	DEVELOPMENT STANDARDS	
SINGLE-FAMILY RESIDENTIAL	**STANDARD**	**NOTES**
DESIGNATION		
Zone District	R-1-PRD	
GP Density Range	4.1 - 7.1 du/ac	Medium Density Residential
Dwelling Units	87	
BUILDING INTENSITY		
Minimum Lot Area	6,100 sqft	
Minimum Lot Width	61'	
Minimum Lot Depth	110'	
Maximum Height	35'	
Curved/Corner Lot	50' min/66' min	For street frontage/For lot width
Lot Coverage	55% max	
BUILDING SETBACKS		**All setbacks measured from PL.**
Front Yard (Local)	20' min/10' min	To garage/To living area, projections, porch/patio, and side loaded garage
Side Yard	5' min/4' min	5' min one side/4' min other side
Corner Street Side	3' min/8' min	To side yard fence/To living area
Reversed Corner Street Side	8' min	To living area
Rear Yard	10' min	
GARAGES/STREETS/PARKING		
Garages	2-car	20' x 20' min
	3-car	29.5' x 20' min/20' x 20' min with 10' x 15' min tandem
Streets (Private)	36' wide	Curb to curb
On-Street Parking	Yes	
ACCESSORY USES		**General list of requirements and restrictions.**
Walls/Fences	6' min - 8' high max	
Trellises	12' high max	
Pools and Spas	5' min	Water portion to rear and side PLs. Pool and spa may not be located in front yard.
Equipment	Pool, spa and fountain equipment allowed in side yard easement.	
Covered Structures	12' high max	Covered structures and building additions are allowed subject to review by the City of Clovis, provided that lot coverage standards are not exceeded and that a rear yard encroachment permit is obtained if encroachment into rear yard occurs.
Accessory Buildings		



The imagery conveys samples of the architectural character intended for these neighborhoods.

NOT TO SCALE

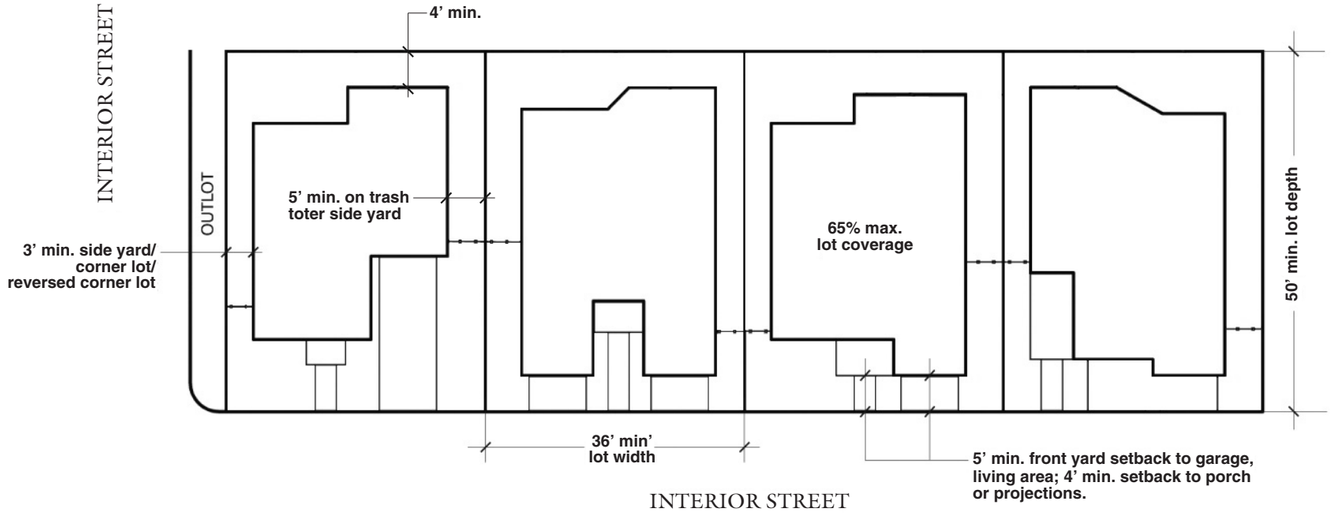
ATTACHMENT 8

TRACT 6050 - Elev8ions

Residential Land Use Development Standards

TRACT 6050 – NWC SHEPHERD & CLOVIS

LAND USE	DEVELOPMENT STANDARDS	
SINGLE-FAMILY RESIDENTIAL	**STANDARD**	**NOTES**
DESIGNATION		
Zone District	R-1-PRD	
GP Density Range	4.1 - 7.1 du/ac	Medium Density Residential
Dwelling Units	168	
BUILDING INTENSITY		
Minimum Lot Area	1,800 sq ft	
Minimum Lot Width	36'	
Minimum Lot Depth	50'	
Maximum Coverage	65%	
Maximum Height	35'	
Curved, Cul-de-sac or Corner Lot	36' min/50' min	For street frontage/For lot depth
BUILDING SETBACKS		**All setbacks measured from PL.**
Front Yard	5' min/4' min	To garage, living area/porch or projections
Side Yard	5' min/3' min	5' min garage side/3' min other side
Corner/Reversed Corner	3' min	
Rear Yard	4' min	
GARAGES/STREETS/PARKING		
Garages	1-car 2-car	10'x16' min 20'x20' min or tandem 10'x38' min
Streets (Interior)	36' wide	Curb-to-curb
Parking	1.5 spaces/unit min	1 covered space per unit min
ACCESSORY USES		**General list of requirements and restrictions.**
Walls/Fences	6' min - 8' high max	
Trellises	12' high max	
Pools and Spas	3' min	Water portion to rear and side PLs. Pool and spa may not be located in front yard.
Equipment	Pool, spa and fountain equipment allowed in side yard setback.	
Covered Structures	12' high max	Covered structures and building additions are allowed subject to review by HOA committee and permitting by the City of Clovis, provided that lot coverage standards are not exceeded and that a rear yard encroachment permit is obtained if encroachment into rear yard occurs.
Accessory Buildings		



NOTE: Construction of more than two of the same plan type in a row or more than three 2-car garage models in a row (excepting tandem garage units) shall be addressed through the Residential Site Plan Review process.

The imagery conveys samples of the architectural character intended for these neighborhoods.

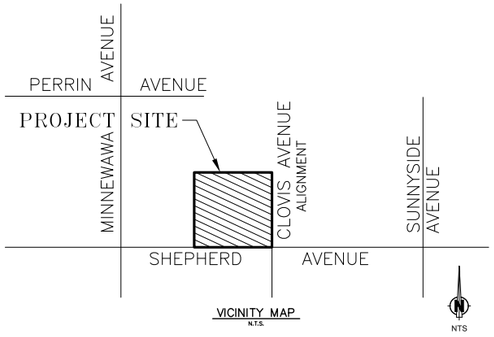
NOT TO SCALE

ATTACHMENT 9

VESTING
TENTATIVE SUBDIVISION MAP
OF

TRACT NO. 6050

A PLANNED DEVELOPMENT
IN THE CITY OF CLOVIS
FRESNO COUNTY, CALIFORNIA



EXISTING BUILDINGS
NONE

EXISTING TREES
EXISTING TREES TO BE REMOVED

EXISTING USE
AGRICULTURAL

EXISTING ZONING
AE-20

PROPOSED ZONING
R-1-PRD

PROPOSED USE
SINGLE FAMILY RESIDENTIAL SUBDIVISION

SOURCE OF WATER
CITY OF CLOVIS

SOURCE OF SEWAGE DISPOSAL
CITY OF CLOVIS

SOURCE OF WASTE DISPOSAL
CITY OF CLOVIS

SOURCE OF ELECTRICITY
PG&E

SOURCE OF GAS
PG&E

SOURCE OF CABLE T.V.
COMCAST

SOURCE OF TELEPHONE
AT&T

ASSESSOR'S PARCEL NUMBER
556-050-24

SITE AREA
36.76 AC. (GROSS)
35.22 AC. (NET)

NUMBER OF LOTS
255

DENSITY
6.94 UNITS PER ACRE

AVERAGE LOT SIZE
4,071 SF

OUTLOT SCHEDULE

- OUTLOTS B, F, & N ARE FOR PRIVATE LANDSCAPING AND PUBLIC UTILITY EASEMENTS
- OUTLOTS A, D, E, & O ARE FOR PRIVATE LANDSCAPING, PUBLIC UTILITY EASEMENTS, AND PRIVATE PEDESTRIAN
- OUTLOTS H, J, L, P, R, T, & X ARE FOR PRIVATE LANDSCAPING, PUBLIC UTILITY EASEMENTS, PRIVATE PEDESTRIAN, AND PRIVATE PARKING
- OUTLOTS G, I, K, M, Q, S, W, & Y ARE FOR PRIVATE LANDSCAPING, PUBLIC UTILITY EASEMENTS, PRIVATE PEDESTRIAN, PRIVATE PARKING, AND PRIVATE TRASH
- OUTLOT C IS FOR PRIVATE OPEN SPACE PURPOSES
- OUTLOT CC IS FOR POOL AND RECREATION AREA & PARKING
- OUTLOT Z IS FOR FUTURE STREET DEVELOPMENT
- OUTLOTS AA & BB ARE FOR PRIVATE STREET AND PUBLIC UTILITY PURPOSES

LEGAL DESCRIPTION:

PARCEL 1: (APN: 556-050-11)

THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 20, TOWNSHIP 12 SOUTH, RANGE 21 EAST, MOUNT DIABLO BASE AND MERIDIAN, IN THE COUNTY OF FRESNO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL MAP THEREOF.

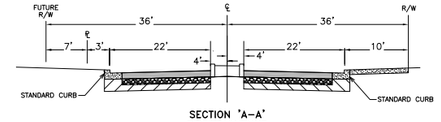
EXCEPTING THEREFROM THAT PORTION CONVEYED TO THE CITY OF CLOVIS FOR PUBLIC STREET PURPOSES AS MORE FULLY DESCRIBED IN GRANT DEEDS RECORDED MARCH 3, 2006 AS INSTRUMENT NOS. 06-45937 AND 06-45938, BOTH OF OFFICIAL RECORDS.

NOTES:

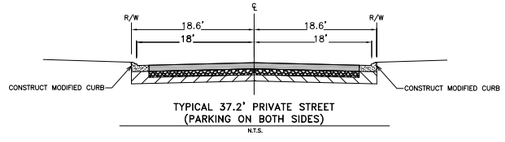
1. THIS AREA IS SUBJECT TO FLOODZONE X (UNSHADED).
2. ALL IMPROVEMENTS SHALL BE AS REQUIRED BY THE CITY OF CLOVIS TO CITY STANDARDS, AND SHALL INCLUDE SANITARY SEWER, DOMESTIC WATER, UNDERGROUND POWER, TELEPHONE, GAS, CONCRETE CURBS, GUTTERS, SIDEWALKS, PERMANENT STREET PAVEMENT STREET LIGHTS, ETC.
3. THERE SHALL BE NO GRADE DIFFERENTIALS OF GREATER THAN 6" WITHIN 200 FEET OF THE SITE UNLESS APPROVED BY THE CITY OF CLOVIS DEVELOPMENT DEPARTMENT.

LEGEND:

- INDICATES STREETS PREVIOUSLY DEDICATED FOR PUBLIC USE
- PUBLIC STREET EASEMENT NOW OFFERED FOR DEDICATION FOR PUBLIC USE
- PUE — PUBLIC UTILITY EASEMENT NOW OFFERED FOR DEDICATION FOR PUBLIC USE
- LE — LANDSCAPE EASEMENT NOW OFFERED FOR DEDICATION FOR PUBLIC USE



SECTION 'A-A'
DEWITT AVENUE
N.T.S.



TYPICAL 37.2' PRIVATE STREET
(PARKING ON BOTH SIDES)
N.T.S.

SCALE: 1" = 80'
GRAPHIC SCALE
0 40' 80' 160'

TENTATIVE SUBDIVISION MAP

OWNER & SUBDIVIDER
6050 ENTERPRISES, LP
7550 NORTH PALM AVENUE SUITE 102
FRESNO, CA. 93711
559-224-7550

Harbour & Associates
Civil Engineers
389 Clovis Avenue, Suite 300 • Clovis, California 93612
(559) 325-7676 • Fax (559) 325-7699 • e-mail:lorrens@harbour-engineering.com

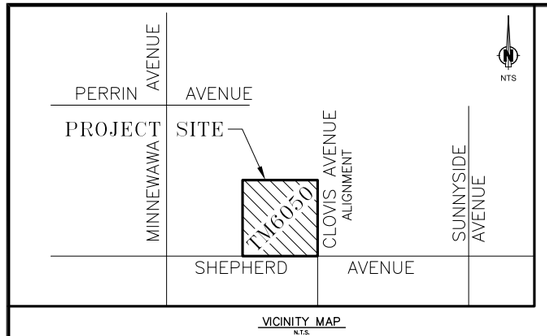
REVISIONS	SHEET NO.
	1 OF 1

DATE: 3-31-20 | SCALE: 1"= 80' | DRAWN BY: SDH

W.O. #13-032 D-876

962

ATTACHMENT 10



VICINITY MAP
N.T.S.

SCALE: 1" = 150'
GRAPHIC SCALE
0 75' 150' 300'

TENTATIVE TRACT NO. 6050

CONCEPTUAL QUARTER SECTION PLAN

OWNER & SUBDIVIDER
6050 ENTERPRISES, LP
7550 NORTH PALM AVENUE SUITE 102
FRESNO, CA. 93711
559-224-7550

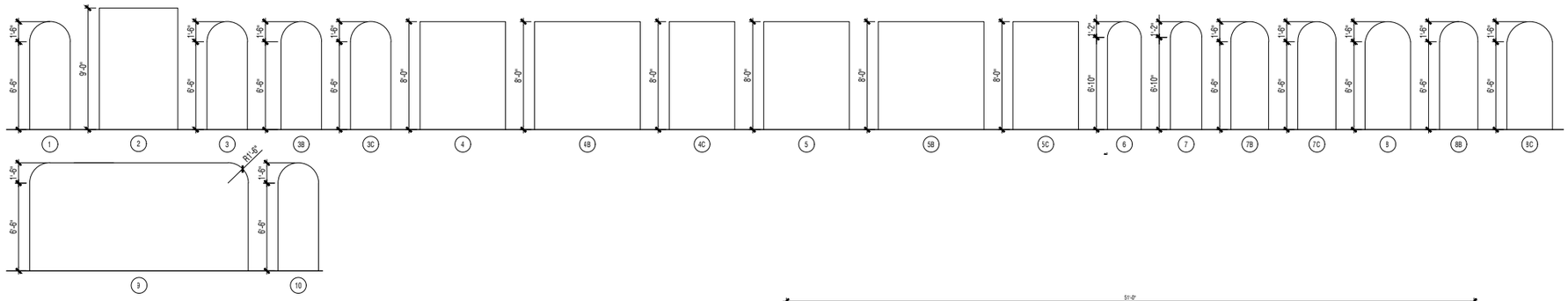
Harbour & Associates
Civil Engineers
369 Clovis Avenue, Suite 300 • Clovis, California 93612
(559) 325-7676 • Fax (559) 325-7699 • e-mail:bmms@harbour-engineering.com

REVISIONS

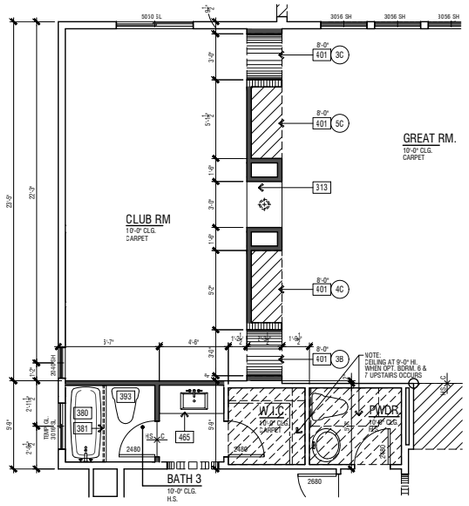
SHEET NO. 1 OF 1

DATE: 4-17-20 | SCALE: 1"= 150' | DRAWN BY: KPA

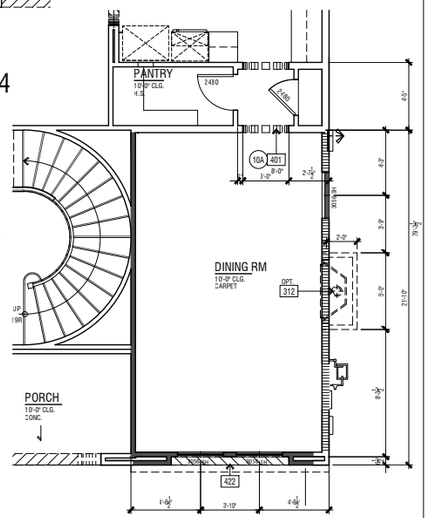
ATTACHMENT 11



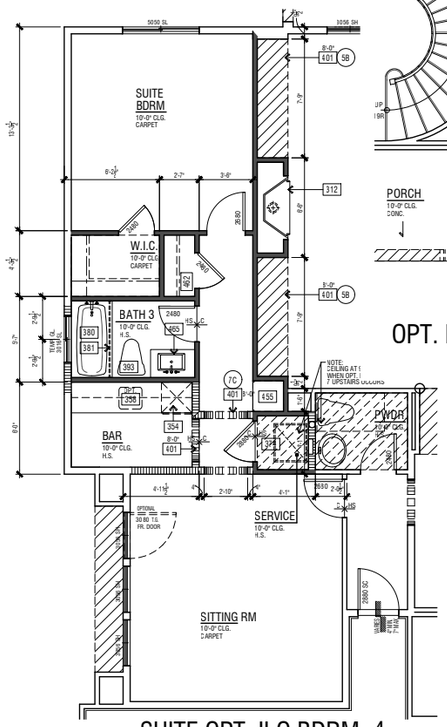
SOFFIT PROFILES



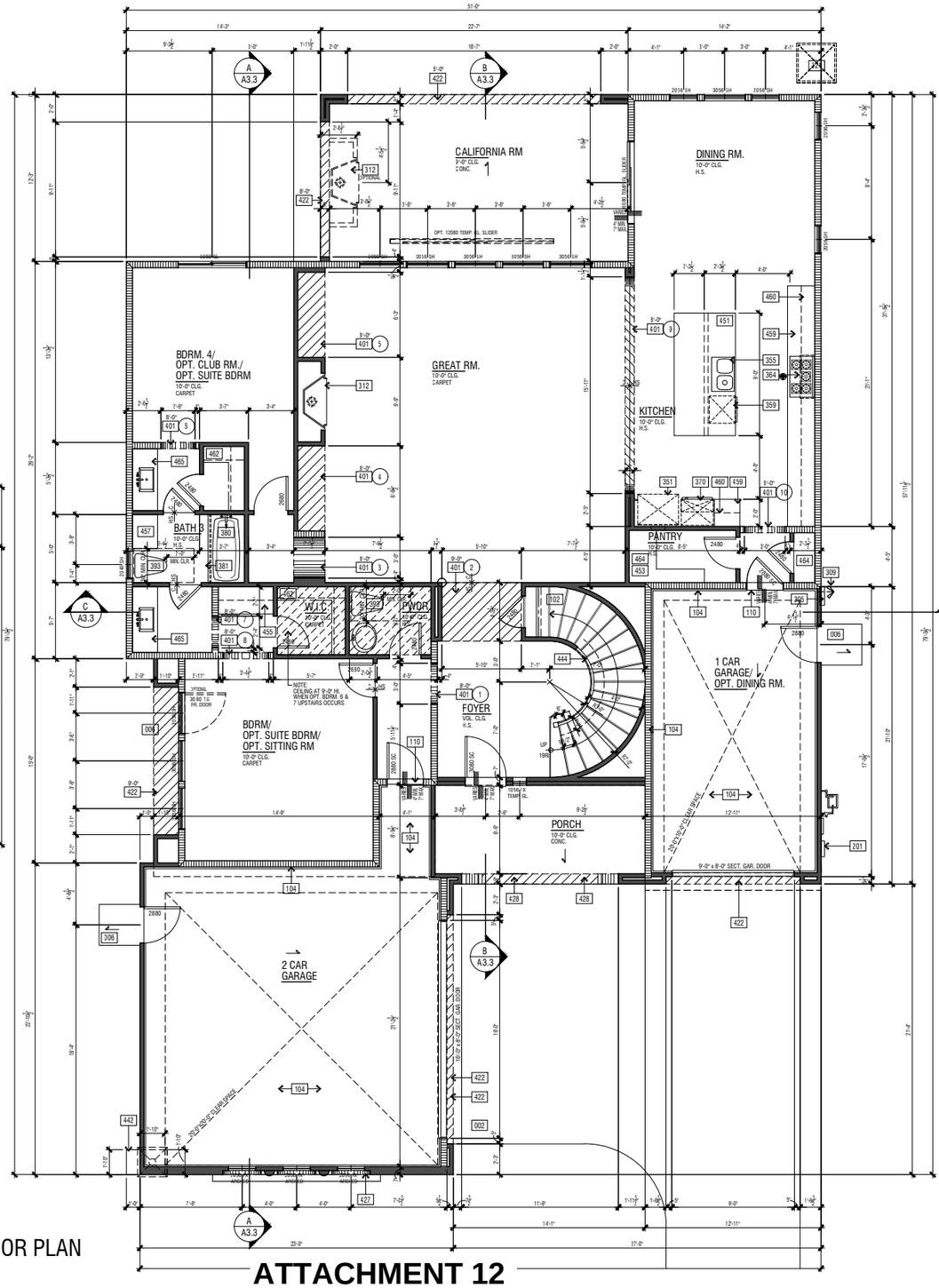
CLUB RM OPT. ILO BDRM. 4



OPT. DINING RM. ILO 1 CAR GARAGE

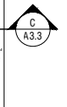


SUITE OPT. ILO BDRM. 4



LOWER FLOOR PLAN

FLOOR PLAN KEY NOTES	
Name	NOTE
002	CONCRETE DRIVE (BY OTHERS).
102	ENCLOSED ACCESSIBLE SPACE UNDER STAIRS SHALL HAVE WALLS, UNDER STAIR SURFACE AND ANY SOFFITS PROTECTED ON THE ENCLOSED SIDE WITH 1/2" GYPSUM BOARD PER CRC SECTION R302.7.
104	GARAGE AND/OR CARPORT WITH HABITABLE ROOMS ABOVE SHALL BE SEPARATED FROM THE RESIDENCE BY A MIN. 5/8" TYPE 'X' GYP. BD., OR EQ. STRUCTURE(S) SUPPORTING THE FLR./CLG. ASSEMBLY USED FOR SEPARATION SHALL BE A MIN. 1/2" GYP. BD., OR EQ. PER CRC SEC. R302.6.
110	PROVIDE SOLID WOOD DOOR, OR SOLID OR HONEYCOMB CORE STEEL DOORS, NOT LESS THAN 1-3/8" THICK, OR 20 MINUTE FIRE RATED DOOR. DOORS SHALL BE SELF CLOSING AND SELF LATCHING PER 2016 CRC R302.5.1
201	UTILITY EQUIPMENT AND SERVICE PANELS - VERIFY LOCATION
305	TANK LESS WATER HEATER. INSTALLATION PER MANUFACTURE'S INSTRUCTIONS
309	TEMPERATURE AND PRESSURE RELIEF VALVE. DISCHARGE LINE PER CPC SECTION 608.5
312	METAL FIREPLACE (GAS APPLIANCE) - HEIGHT PER PLAN - INSTALL PER MANUFACTURER'S INSTRUCTIONS. BY HEATILATOR MODEL# ND4842 ANSI Z21.88-2002. PROVIDE A 6" SQUARE FRESH AIR INTAKE FOR THE GAS APPLIANCE.
313	SEE THROUGH METAL FIREPLACE (GAS APPLIANCE) - HEIGHT PER PLAN - INSTALL PER MANUFACTURER'S INSTRUCTIONS. BY HEATILATOR MODEL# GBST43369 ANSI Z23.1/NFPA 54 NATIONAL GAS CODE
322	FORCED AIR UNIT (FAU) ATTIC INSTALLATION
336	4" G.I. DRYER VENT WITH APPROVED LINT TRAP - VENT THROUGH ROOF
344	WHOLE HOUSE EXHAUST FAN PER 2016 CEC. REFER TO ATTACHED "SUMMARY OF THE 2016 ENERGY CODE ASHRAE 62.2 REQUIREMENTS"
351	REFRIGERATOR SPACE WITH RECESSED COLD WATER BOX
354	UNDER CABINET REFRIGERATOR
355	SINK WITH GARBAGE DISPOSER
358	BAR SINK
359	DISHWASHER
364	COOKTOP & EXHAUST HOOD WITH FAN AND LIGHT (EXHAUST VENT TO OUTSIDE). THE VERTICAL CLEARANCE ABOVE THE COOKTOP TO COMBUSTIBLE IS 30" UNPROTECTED, OR 24" PROTECTED., AND THE HORIZONTAL DIMENSION IS REQUIRED TO BE PER THE MARKING LISTED ON THE UNIT. 216 CMC 921.3.2 & 921.4.3
370	OVEN/MICROWAVE COMBO
372	WASHER SPACE WITH RECESSED WATER BOX AND DRAIN PAN
373	DRYER SPACE
374	STACKED WASHER/DRYER
375	DROP-IN TUB - 42" X 60"
380	TUB/ SHOWER - 32"X60" MODEL 2603DT - GELCOAT SURFACE - BY AQUATIC
381	CURTAIN ROD
382	TEMPERED GLASS SHOWER DOOR/ ENCLOSURE
386	SHOWER - PREFABRICATED STALL - 36"X60"X76" MODEL 1603DTS - GELCOAT SURFACE - BY AQUATIC
387	SHOWER - HOT MOP - SIZE PER PLAN
388	30" CIRCLE PROVIDED AT SHOWER
393	TOILET - PROVIDE MINIMUM 24" X 30" CLEAR FLOOR AREA IN FRONT OF TOILET
401	INTERIOR SOFFIT(S)/ DROPPED CEILING(S): HEIGHT PER PLAN
411	LINE OF FLOOR BELOW
413	OPEN TO BELOW
416	30"x30" ATTIC ACCESS - DIMENSIONS ARE CLEAR
422	STUCCO SOFFIT: HEIGHT PER ELEVATION
427	STUCCO SOFFIT OVER WATERPROOFED STUCCO SHELF-SLOPE FRAMING FOR DRAINAGE (1/4" PER FOOT MINIMUM)
442	EXTERIOR 2X PONY WALL - SIZE PER PLAN
444	+34"- +38" HANDRAIL (SEE DETAIL E/D5.0)
445	+42" GUARD (SEE DETAIL F/D5.0)
451	KITCHEN ISLAND - PROVIDE APPROVED UNDERGROUND CONDUIT FOR ELECTRIC SERVICE TO ISLAND
453	PANTRY
455	LINEN
457	LINEN (LOW ONLY)
458	LINEN (UPPER ONLY)
459	BASE CABINET
460	UPPER CABINET
462	SHELF AND POLE
464	SHELF (OR SHELVES)
465	VANITY
670	METAL BALCONY - HEIGHT PER ELEVATION - +42" MINIMUM A.F.F.



INTERIOR ELEVATION KEY

FLOOR PLAN NOTES	
1.	ATTICS: ACCESS PER CRC R807, DRAFTSTOPS PER CRC R302.12 AND VENTILATION PER R806.
2.	EMERGENCY ESCAPE AND RESCUE OPENINGS PER CRC R310. MEANS OF EGRESS PER CRC R311.
3.	GLAZING PER CRC R303.1 & R308
4.	FACTORY-BUILT FIREPLACES AND CHIMNEYS PER CRC R1004, R1005, R1006 CGBSC SECTION 4.503 & CEnC SECTION 150.0(e).
5.	COMBUSTION AIR TO FORCED AIR UNIT PER CMC CHAPTER 7.
6.	COMBUSTION AIR TO WATER HEATER PER CPC SECTION 507.0.
7.	ENVIRONMENTAL AIR DUCTS PER CMC SECTION 504.
8.	MECHANICAL EQUIPMENT LOCATION AND PROTECTION AGAINST DAMAGE PER CMC 305 & 308.
9.	MANDATORY REQUIREMENTS FOR APPLIANCES PER CEnC SECTION 110.1.
10.	THE SILL HEIGHT IS NOT TO EXCEED 44" FROM THE BOTTOM OF THE CLEAR OPENING IN SLEEPING ROOMS. 2016 CRC R31.0.1
11.	IN UPPER FLOOR PLANS, ANY OPERABLE WINDOW WITH A SILL THAT IS LOCATED LESS THAN 24" ABOVE THE FINISHED FLOOR AND MORE THAN 72" ABOVE FINISHED GRADE OR OTHER SURFACE BELOW AT THE EXTERIOR, MUST BE PROTECTED BY A GUARD OR, HAVE FIXED GLASS. THE GUARD MAY NOT HAVE OPENINGS THAT A SPHERE 4" IN DIAMETER CAN PASS THROUGH. 2016 CRC R312.2
12.	A SHEETROCK NAILING INSPECTION IN REQUIRED. 2016 CRC R109.1.4.2 & 2016 CBC 110.3.5
13.	GLAZING IN A HAZARDOUS LOCATION IS REQUIRED TO BE GLAZED WITH SAFETY MATERIAL. 2016 CRC R308
14.	PROVIDE A 6" SQUARE FRESH AIR INTAKE FOR THE GAS APPLIANCE FIREPLACE 2016 T-24
15.	VERTICAL CLEARANCE ABOVE THE COOKTOP TO COMBUSTIBLES IS 30" UNPROTECTED, OR 24" PROTECTED. AND THE HORIZONTAL DIMENSIONS IS REQUIRED TO BE PER THE PERMANENT MARKING LISTED ON THE UNIT. 2016 CMC 916.1 & 916.2
16.	A SHEETROCK NAILING INSPECTION IS REQUIRED. - 2016 CRC R106.1.1
17.	THE WALL SURFACE BEHIND CERAMIC TILE OR OTHER FINISH WALL MATERIALS SUBJECT TO WATER SPLASH ARE CONSTRUCTED OF MATERIALS NOT ADVERSELY AFFECTED BY WATER. NOTE THE USE OF FIBER CEMENT, FIBER MAT, REINFORCED CEMENT OR GLASS MAT GYPSUM BACKERS ON THE FLOOR PLAN. NOTE THAT WATER-RESISTANT GYPSUM BOARD IS NO LONGER PERMITTED TO BE USED IN THESE LOCATIONS. -2016 CRC R702.4.2
18.	THE THREE CAR GARAGE IS NON-CONFORMING AND THE REQUIRED SIDEYARD SETBACKS MAY NOT BE RELAXED. 2016 CRC R106.1.1
19.	NOTE THAT ALL ATTIC ACCESS OPENINGS ARE GASKETED TO PREVENT AIR LOSS. 2016 CEC 150.0(a)
20.	A MINIMUM 30" DIA. CIRCLE IS PROVIDED AT THE SHOWER FLOOR. THE MINIMUM FLOOR AREA OF THE SHOWER COMPARTMENT IS 1024 SQUARE INCHES. 2016 CPC 408.6

FLOOR AREA TABLE	PLAN 3912A
LOWER FLOOR PLAN	2008 SQ. FT.
UPPER FLOOR PLAN	1904 SQ. FT.
TOTAL	3912 SQ. FT.
1-CAR GARAGE	266 SQ. FT.
2-CAR GARAGE	534 SQ. FT.
FLOOR PLAN W/ OPTIONAL DINING ROOM	2274 SQ. FT.
CALIFORNIA ROOM	277 SQ. FT.
COVERED ENTRY/PORCH	111 SQ. FT.

SCALE: 1/4" = 1'- 0"

ATTACHMENT 12

ARCHITECTS . PLANNERS . DESIGNERS
WHA.
ORANGE COUNTY . LOS ANGELES . BAY AREA
AGEN

WILSON HOMES

TRACT NUMBER:
PROJECT TYPE: S.F.D.

61'x123' LOTS - PLAN 3912

CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

REVISIONS

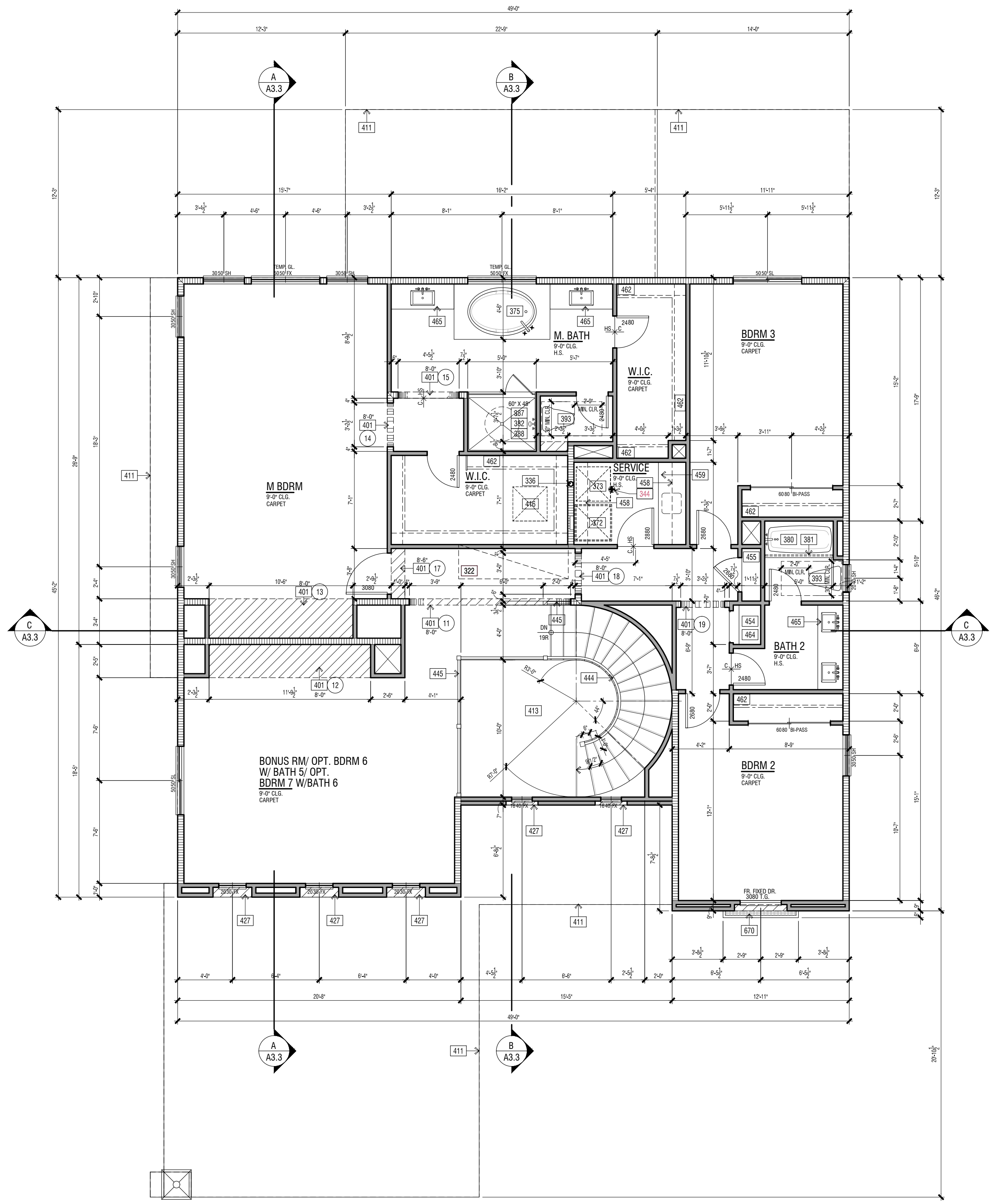
NO.	DATE	DESCRIPTION

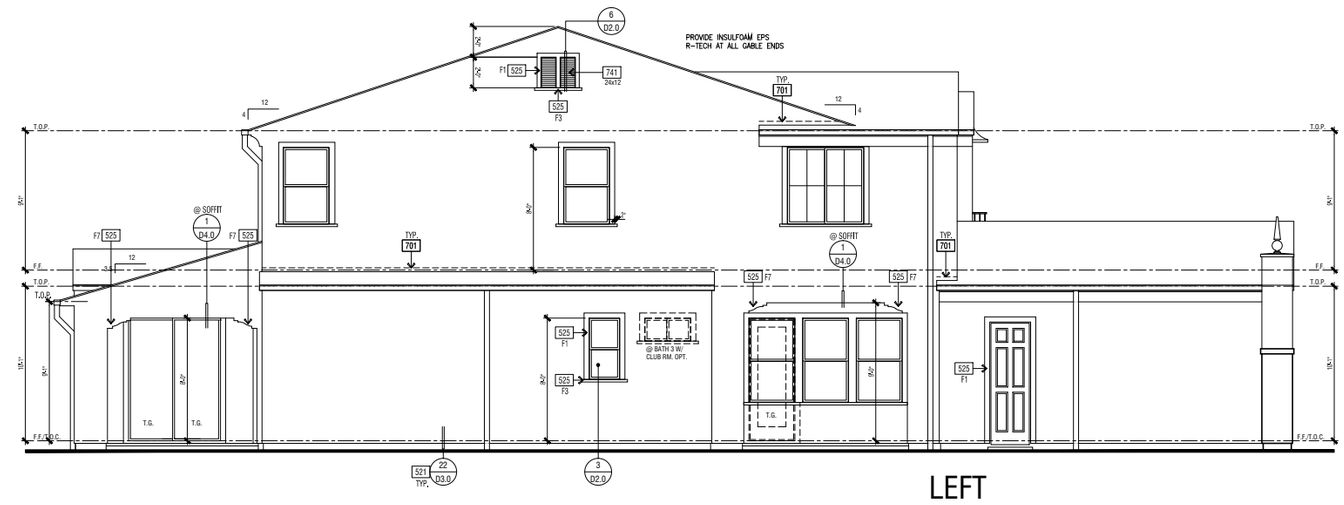
PLAN 3912A
FLOOR PLANS

PROJECT MANAGER :	MM
DESIGNER :	AM
DRAWN BY :	-
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	-
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2013352
CAD FILE NAME :	A3.1.1

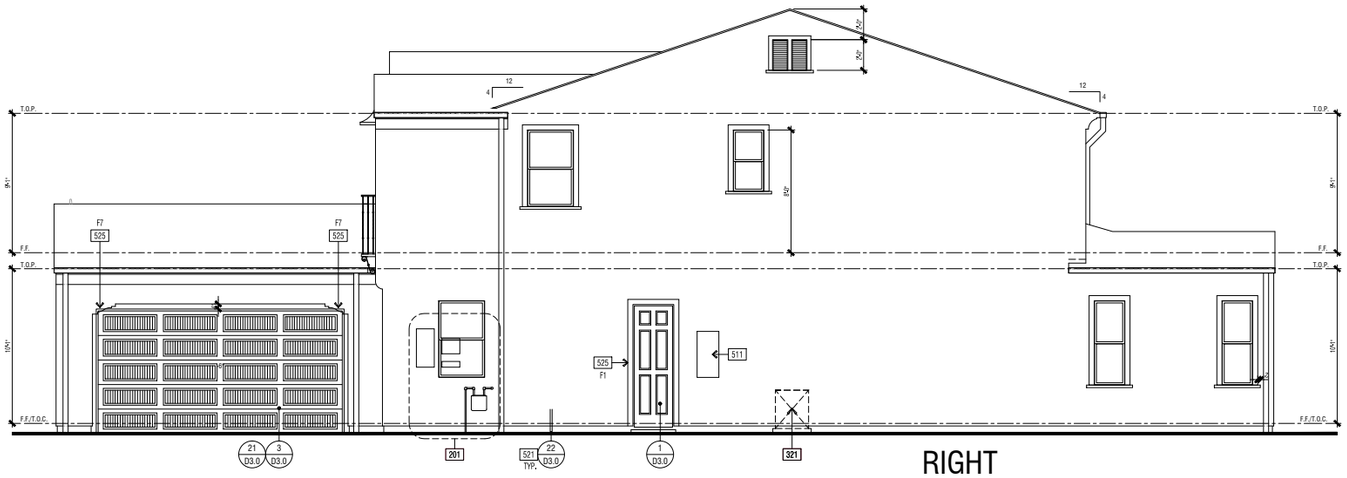
DATE: 10-28-19
SHEET: A3.1.1

2013352 - 2019 CODE CHANGE PROGRESS SET 10-28-19

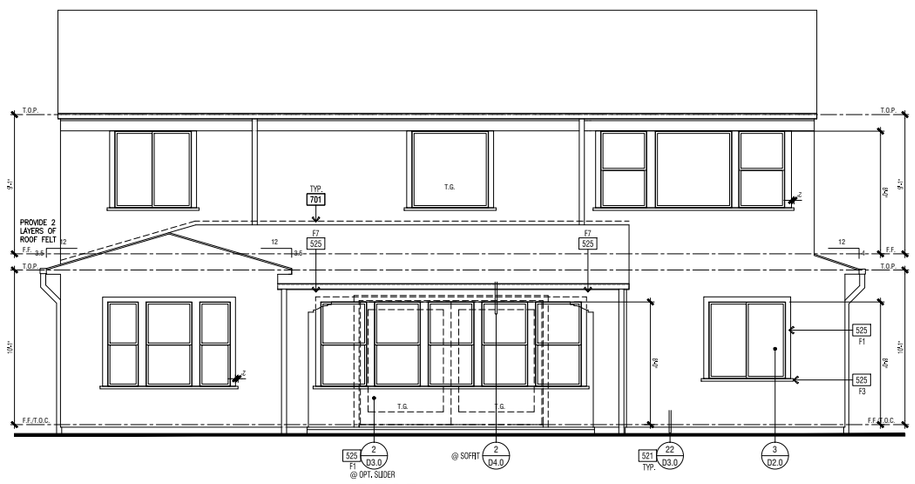

M BDRM
9'-0" CLG.
CARPET
M. BATH
W.I.C.
W.I.C.
BDRM 3
SERVICE
BATH 2
BDRM 2
BONUS RM/ OPT. BDRM 6
W/ BATH 5/ OPT.
BDRM 7 W/BATH 6



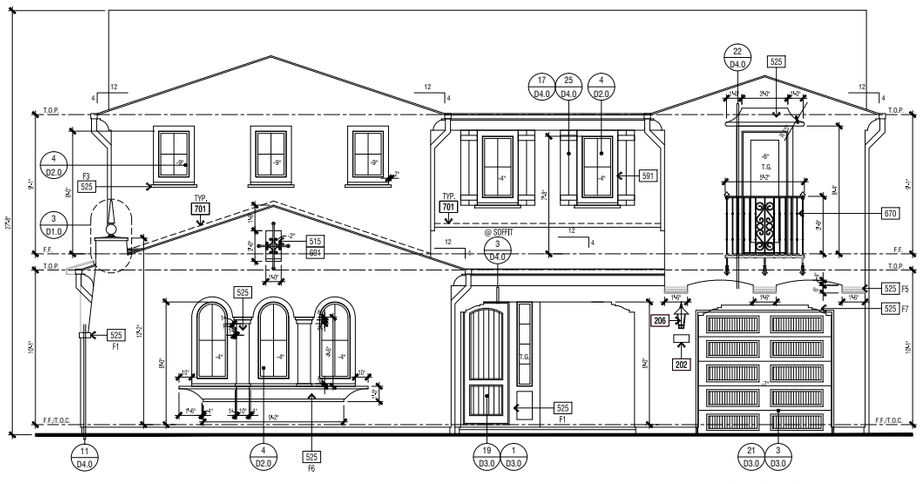
LEFT



RIGHT



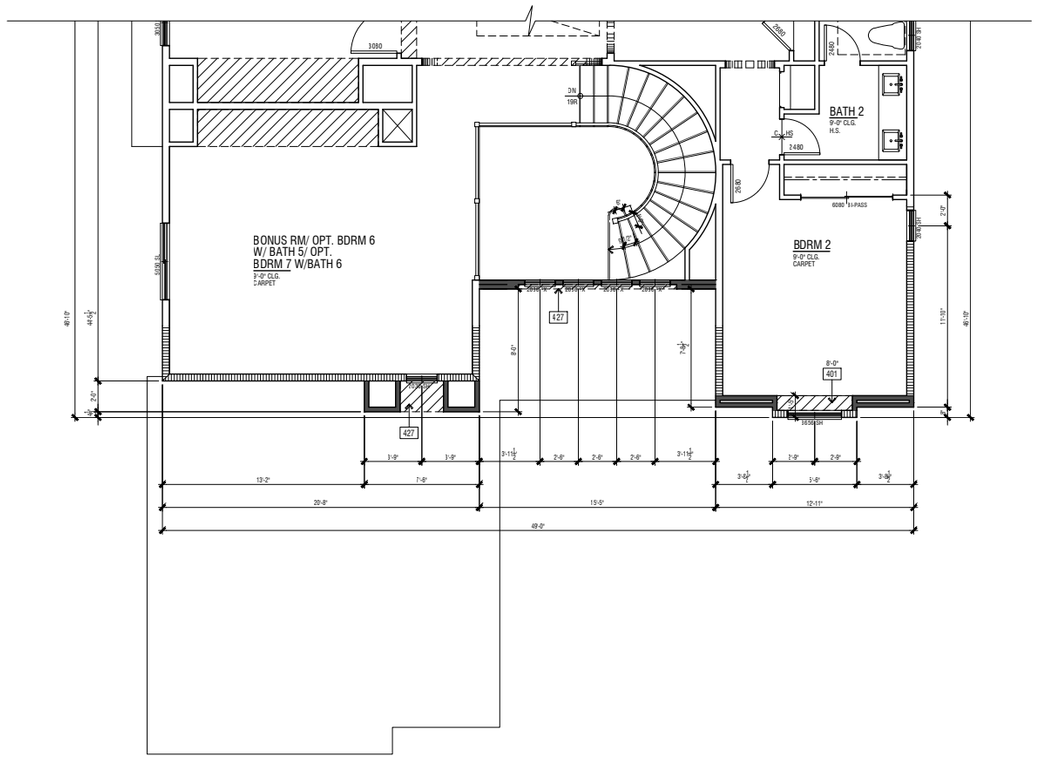
REAR



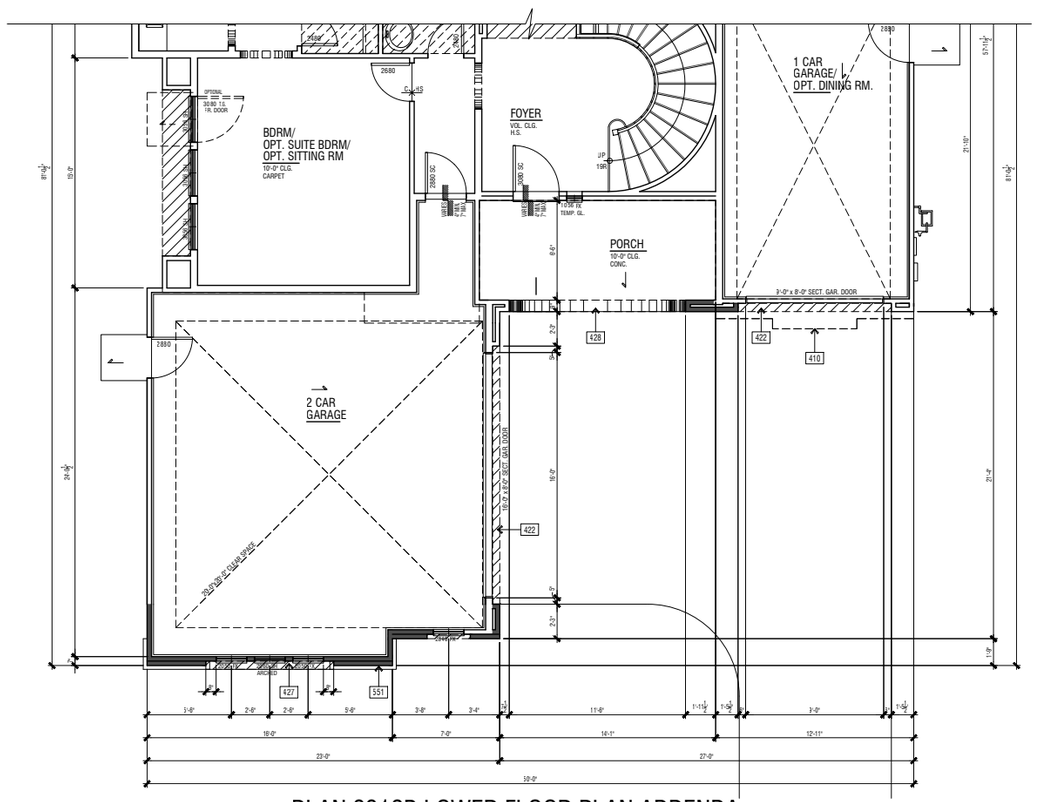
FRONT

"A" ELEVATION
Plan 3912

966



PLAN 3912B UPPER FLOOR PLAN ADDENDA



PLAN 3912B LOWER FLOOR PLAN ADDENDA

SCALE: 1/4" = 1'- 0"

FLOOR PLAN KEY NOTES

Name	NOTE
410	LINE OF FLOOR ABOVE
422	STUCCO SOFFIT: HEIGHT PER ELEVATION
423	THIN SET BRICK VENEER (FLAT) SOFFIT: HEIGHT PER ELEVATION
427	STUCCO SOFFIT OVER WATERPROOFED STUCCO SHELF-SLOPE FRAMING FOR DRAINAGE (1/4" PER FOOT MINIMUM)
428	ARCHED STUCCO SOFFIT: HEIGHT PER ELEVATION
442	EXTERIOR 2X PONY WALL - SIZE PER PLAN
551	MANUFACTURED ADHERED STUCCO STONE VENEER BY CULTURED STONE ICC-ES ESR-1364. INSTALL PER MANUFACTURER'S INSTRUCTIONS

ADDENDA FLOOR PLAN NOTES

NOTE: SHADED WALLS INDICATE AREAS THAT ARE DIFFERENT THAN THE BASE FLOOR PLAN

NOTE: REFER TO CIVIL AND LANDSCAPE DRAWINGS BY OTHERS FOR ALL DRIVEWAYS AND SIDEWALK LOCATIONS.

REFER TO BASE PLAN SHEET A3.1
FOR ADDITIONAL NOTES AND DIMENSIONS.

FLOOR PLAN NOTES

1. ATTICS: ACCESS PER CRC R807, DRAFTSTOPS PER CRC R302.12 AND VENTILATION PER R806.
2. EMERGENCY ESCAPE AND RESCUE OPENINGS PER CRC R310. MEANS OF EGRESS PER CRC R311.
3. GLAZING PER CRC R303.1 & R308
4. FACTORY-BUILT FIREPLACES AND CHIMNEYS PER CRC R1004, R1005, R1006 CGBSC SECTION 4.503 & CEnC SECTION 150.0(e).
5. COMBUSTION AIR TO FORCED AIR UNIT PER CMC CHAPTER 7.
6. COMBUSTION AIR TO WATER HEATER PER CPC SECTION 507.0.
7. ENVIRONMENTAL AIR DUCTS PER CMC SECTION 504.
8. MECHANICAL EQUIPMENT LOCATION AND PROTECTION AGAINST DAMAGE PER CMC 305 & 308.
9. MANDATORY REQUIREMENTS FOR APPLIANCES PER CEnC SECTION 110.1.
10. THE SILL HEIGHT IS NOT TO EXCEED 44" FROM THE BOTTOM OF THE CLEAR OPENING IN SLEEPING ROOMS. 2016 CRC R31.0.1
11. IN UPPER FLOOR PLANS, ANY OPERABLE WINDOW WITH A SILL THAT IS LOCATED LESS THAN 24" ABOVE THE FINISHED FLOOR AND MORE THAN 72" ABOVE FINISHED GRADE OR OTHER SURFACE BELOW AT THE EXTERIOR, MUST BE PROTECTED BY A GUARD OR, HAVE FIXED GLASS. THE GUARD MAY NOT HAVE OPENINGS THAT A SPHERE 4" IN DIAMETER CAN PASS THROUGH. 2016 CRC R312.2
12. A SHEETROCK NAILING INSPECTION IN REQUIRED. 2016 CRC R109.1.4.2 & 2016 CBC 110.3.5
13. GLAZING IN A HAZARDOUS LOCATION IS REQUIRED TO BE GLAZED WITH SAFETY MATERIAL. 2016 CRC R308
14. PROVIDE A 6" SQUARE FRESH AIR INTAKE FOR THE GAS APPLIANCE FIREPLACE 2016 T-24
15. VERTICAL CLEARANCE ABOVE THE COOKTOP TO COMBUSTIBLES IS 30" UNPROTECTED, OR 24" PROTECTED, AND THE HORIZONTAL DIMENSION IS REQUIRED TO BE PER THE PERMANENT MARKING LISTED ON THE UNIT. 2016 CMC 916.1 & 916.2
16. A SHEETROCK NAILING INSPECTION IS REQUIRED. - 2016 CRC R106.1.1
17. THE WALL SURFACE BEHIND CERAMIC TILE OR OTHER FINISH WALL MATERIALS SUBJECT TO WATER SPLASH ARE CONSTRUCTED OF MATERIALS NOT ADVERSELY AFFECTED BY WATER. NOTE THE USE OF FIBER CEMENT, FIBER MAT, REINFORCED CEMENT OR GLASS MAT GYPSUM BACKERS ON THE FLOOR PLAN. NOTE THAT WATER-RESISTANT GYPSUM BOARD IS NO LONGER PERMITTED TO BE USED IN THESE LOCATIONS. -2016 CRC R702.4.2
18. THE THREE CAR GARAGE IS NON-CONFORMING AND THE REQUIRED SIDEYARD SETBACKS MAY NOT BE RELAXED. 2016 CRC R106.1.1
19. NOTE THAT ALL ATTIC ACCESS OPENINGS ARE GASKETED TO PREVENT AIR LOSS. 2016 CEC 150.0(s)
20. A MINIMUM 30" DIA. CIRCLE IS PROVIDED AT THE SHOWER FLOOR. THE MINIMUM FLOOR AREA OF THE SHOWER COMPARTMENT IS 1024 SQUARE INCHES. 2016 CPC 408.6

FLOOR AREA TABLE	PLAN 3912B
LOWER FLOOR PLAN	2008 SQ. FT.
UPPER FLOOR PLAN	1904 SQ. FT.
TOTAL	3912 SQ. FT.
1-CAR GARAGE	266 SQ. FT.
2-CAR GARAGE	562 SQ. FT.
FLOOR PLAN W/ OPTIONAL DINING ROOM	2274 SQ. FT.
CALIFORNIA ROOM	277 SQ. FT.
COVERED ENTRY/PORCH	111 SQ. FT.

ARCHITECTS . PLANNERS . DESIGNERS
WHA.
ORANGE COUNTY . LOS ANGELES . BAY AREA

WILSON HOMES

TRACT NUMBER:
PROJECT TYPE: S.F.D.

61'x123' LOTS - PLAN 3912

CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

REVISIONS

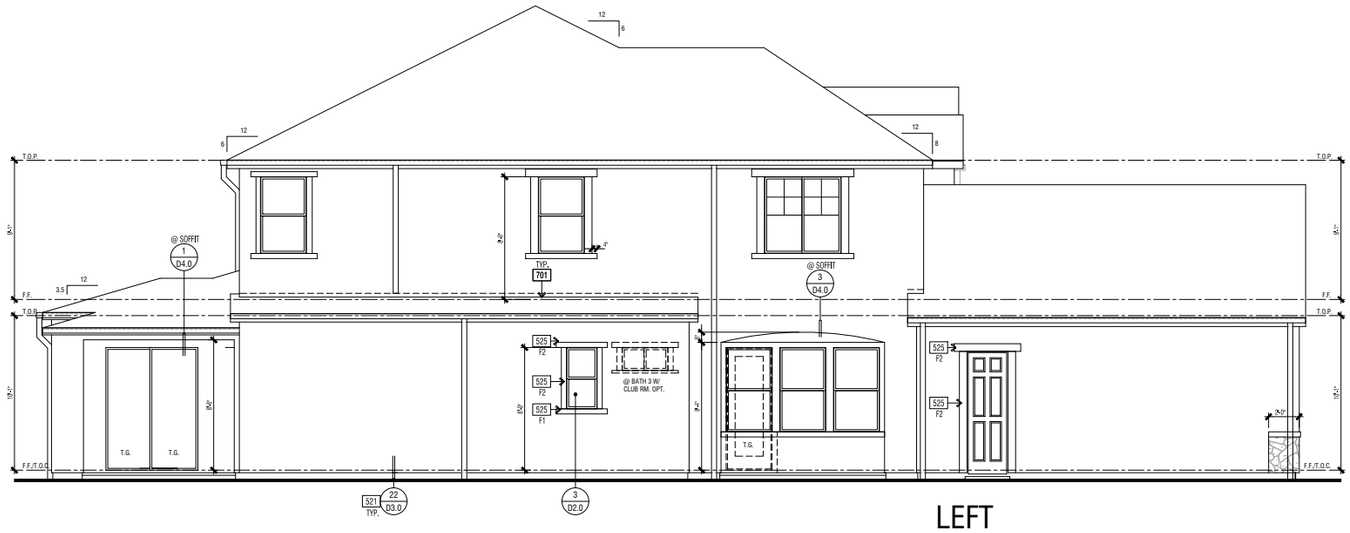
NO.	DATE	DESCRIPTION

PROJECT MANAGER :	MM
DESIGNER :	AM
DRAWN BY :	-
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	-
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2013352
CAD FILE NAME :	A305

DATE: 10-28-19
SHEET: A3.5

PLAN 3912B FLOOR PLAN ADDENDA

2013352 - 2019 CODE CHANGE PROGRESS SET 10-28-19



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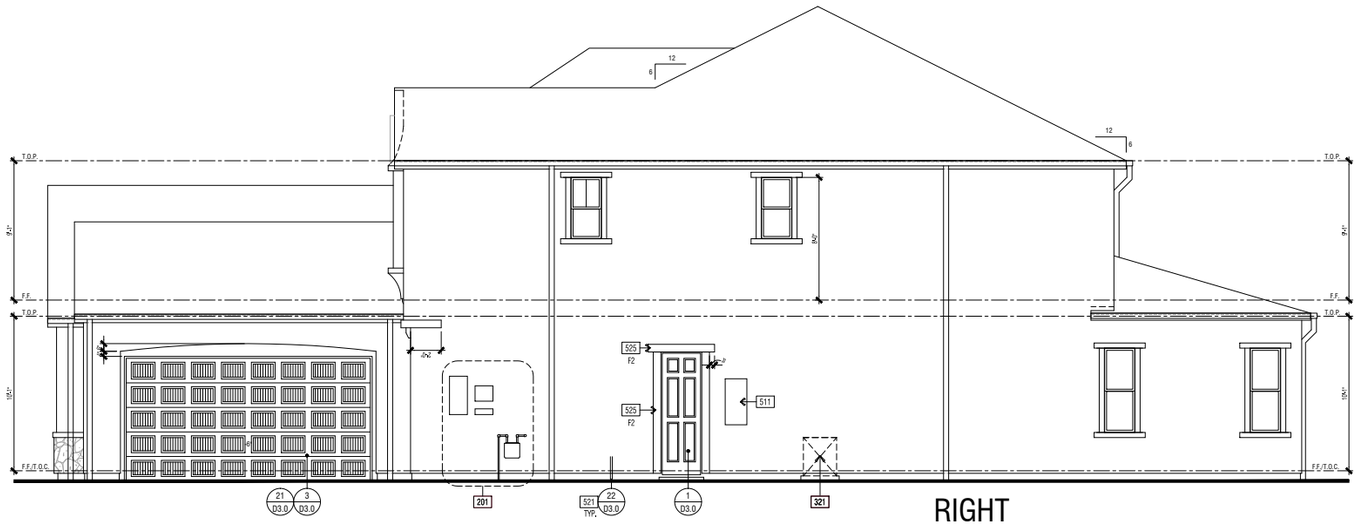

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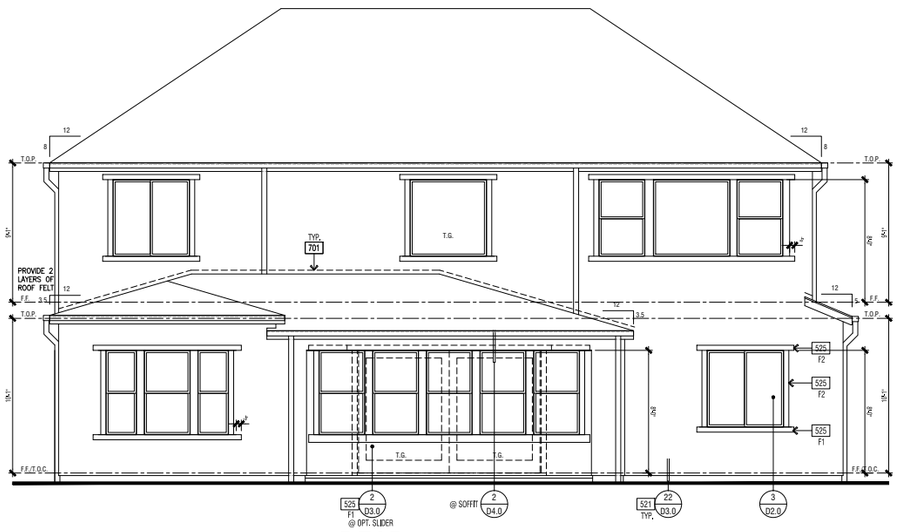

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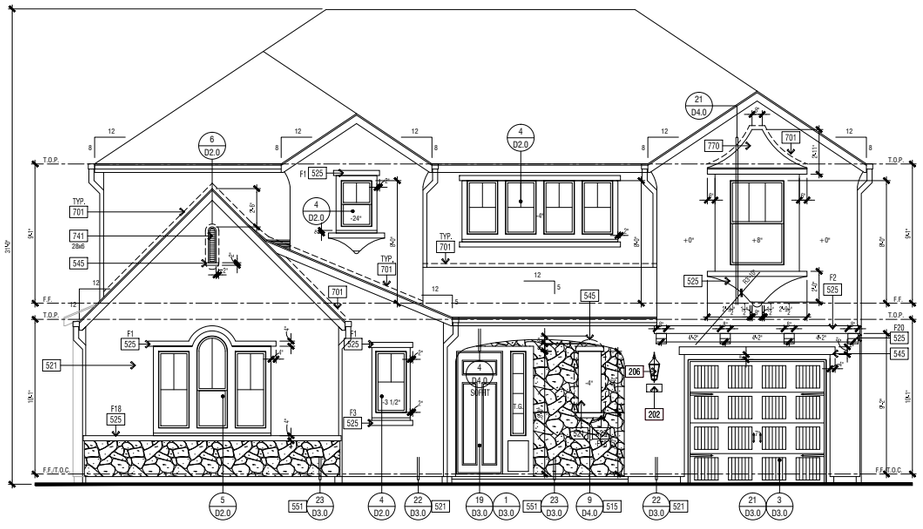
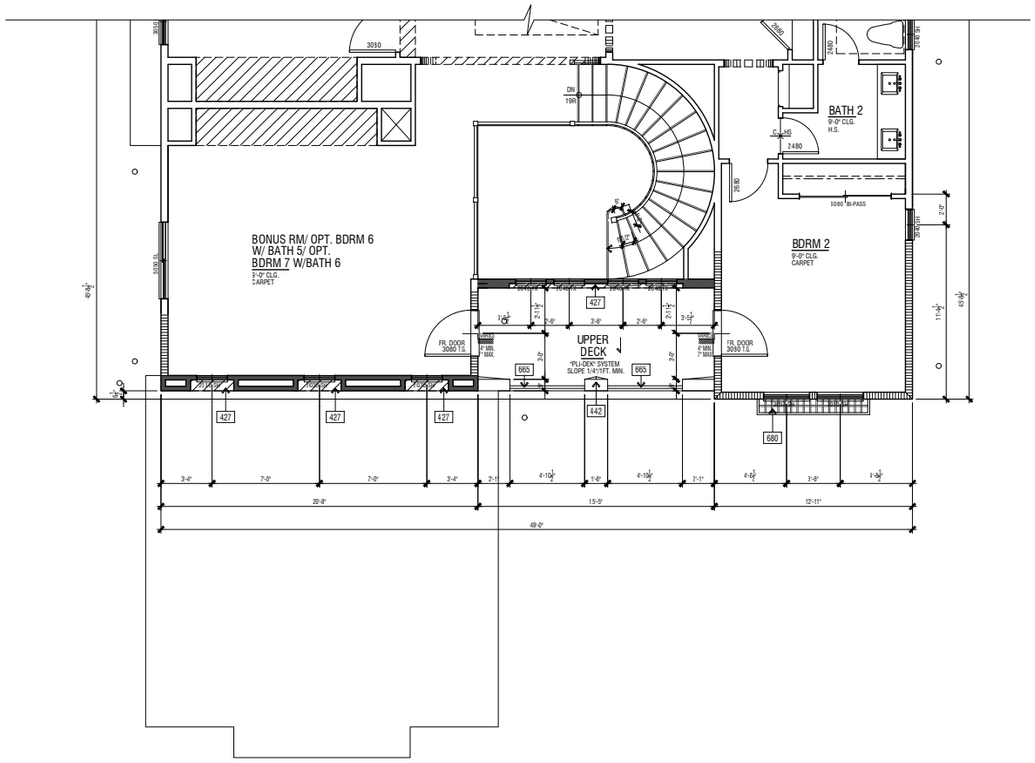


FRONT

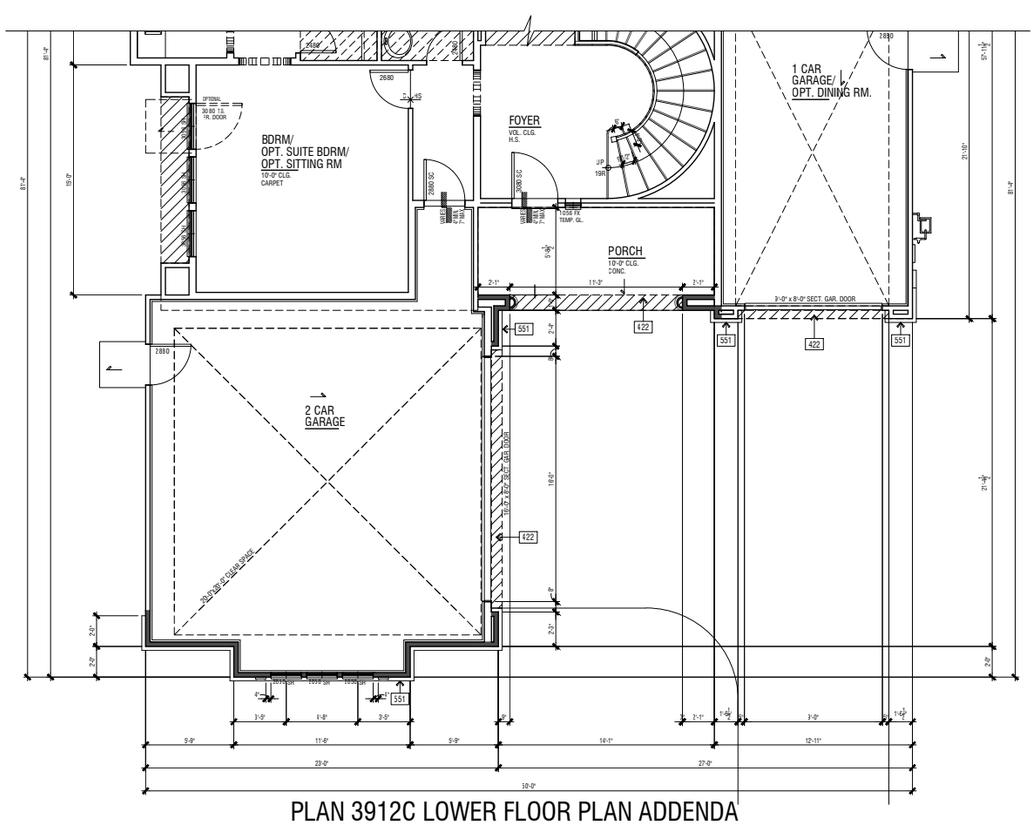
"B" ELEVATION

968

Plan 3912



PLAN 3912C UPPER FLOOR PLAN ADDENDA



PLAN 3912C LOWER FLOOR PLAN ADDENDA

SCALE: 1/4" = 1'- 0"

FLOOR PLAN KEY NOTES

Name	NOTE
422	SMOOTH STUCCO SOFFIT: HEIGHT PER ELEVATION
427	STUCCO SOFFIT OVER WATERPROOFED STUCCO SHELF-SLOPE FRAMING FOR DRAINAGE (1/4" PER FOOT MINIMUM)
442	EXTERIOR 2X PONY WALL - SIZE PER PLAN
551	MANUFACTURED ADHERED STUCCO STONE VENEER BY CULTURED STONE ICC-ES ESR-1364. INSTALL PER MANUFACTURER'S INSTRUCTIONS
665	METAL GUARD (SEE EXTERIOR ELEVATION). HEIGHT PER ELEVATION: +42" MINIMUM A.F.F.
680	DECORATIVE METAL SHELF - PROVIDE SOLID BACKING AND MINIMUM 12"X12" ELASTOMERIC SHEET WATERPROOFING AT ALL MOUNTING POINTS/ PENETRATIONS.

ADDENDA FLOOR PLAN NOTES

NOTE: SHADED WALLS INDICATE AREAS THAT ARE DIFFERENT THAN THE BASE FLOOR PLAN

NOTE: REFER TO CIVIL AND LANDSCAPE DRAWINGS BY OTHERS FOR ALL DRIVEWAYS AND SIDEWALK LOCATIONS.

REFER TO BASE PLAN SHEET A3.1 FOR ADDITIONAL NOTES AND DIMENSIONS.

FLOOR PLAN NOTES

1. ATTICS: ACCESS PER CRC R807, DRAFTSTOPS PER CRC R302.12 AND VENTILATION PER R806.
2. EMERGENCY ESCAPE AND RESCUE OPENINGS PER CRC R310. MEANS OF EGRESS PER CRC R311.
3. GLAZING PER CRC R303.1 & R308
4. FACTORY-BUILT FIREPLACES AND CHIMNEYS PER CRC R1004, R1005, R1006 CGBSC SECTION 4.503 & CEnC SECTION 150.0(e).
5. COMBUSTION AIR TO FORCED AIR UNIT PER CMC CHAPTER 7.
6. COMBUSTION AIR TO WATER HEATER PER CPC SECTION 507.0.
7. ENVIRONMENTAL AIR DUCTS PER CMC SECTION 504.
8. MECHANICAL EQUIPMENT LOCATION AND PROTECTION AGAINST DAMAGE PER CMC 305 & 308.
9. MANDATORY REQUIREMENTS FOR APPLIANCES PER CEnC SECTION 110.1.
10. THE SILL HEIGHT IS NOT TO EXCEED 44" FROM THE BOTTOM OF THE CLEAR OPENING IN SLEEPING ROOMS. 2016 CRC R31.0.1
11. IN UPPER FLOOR PLANS, ANY OPERABLE WINDOW WITH A SILL THAT IS LOCATED LESS THAN 24" ABOVE THE FINISHED FLOOR AND MORE THAN 72" ABOVE FINISHED GRADE OR OTHER SURFACE BELOW AT THE EXTERIOR, MUST BE PROTECTED BY A GUARD OR, HAVE FIXED GLASS. THE GUARD MAY NOT HAVE OPENINGS THAT A SPHERE 4" IN DIAMETER CAN PASS THROUGH. 2016 CRC R312.2
12. A SHEETROCK NAILING INSPECTION IN REQUIRED. 2016 CRC R109.1.4.2 & 2016 CBC 110.3.5
13. GLAZING IN A HAZARDOUS LOCATION IS REQUIRED TO BE GLAZED WITH SAFETY MATERIAL. 2016 CRC R308
14. PROVIDE A 6" SQUARE FRESH AIR INTAKE FOR THE GAS APPLIANCE FIREPLACE 2016 T-24
15. VERTICAL CLEARANCE ABOVE THE COOKTOP TO COMBUSTIBLES IS 30" UNPROTECTED, OR 24" PROTECTED. AND THE HORIZONTAL DIMENSIONS IS REQUIRED TO BE PER THE PERMANENT MARKING LISTED ON THE UNIT. 2016 CMC 916.1 & 916.2
16. A SHEETROCK NAILING INSPECTION IS REQUIRED. - 2016 CRC R106.1.1
17. THE WALL SURFACE BEHIND CERAMIC TILE OR OTHER FINISH WALL MATERIALS SUBJECT TO WATER SPLASH ARE CONSTRUCTED OF MATERIALS NOT ADVERSELY AFFECTED BY WATER. NOTE THE USE OF FIBER CEMENT, FIBER MAT, REINFORCED CEMENT OR GLASS MAT GYPSUM BACKERS ON THE FLOOR PLAN. NOTE THAT WATER-RESISTANT GYPSUM BOARD IS NO LONGER PERMITTED TO BE USED IN THESE LOCATIONS. -2016 CRC R702.4.2
18. THE THREE CAR GARAGE IS NON-CONFORMING AND THE REQUIRED SIDEYARD SETBACKS MAY NOT BE RELAXED. 2016 CRC R106.1.1
19. NOTE THAT ALL ATTIC ACCESS OPENINGS ARE GASKETED TO PREVENT AIR LOSS. 2016 CEC 150.0(d)
20. A MINIMUM 30" DIA. CIRCLE IS PROVIDED AT THE SHOWER FLOOR. THE MINIMUM FLOOR AREA OF THE SHOWER COMPARTMENT IS 1024 SQUARE INCHES. 2016 CPC 408.6

FLOOR AREA TABLE	PLAN 3912C
LOWER FLOOR PLAN	2008 SQ. FT.
UPPER FLOOR PLAN	1904 SQ. FT.
TOTAL	3912 SQ. FT.
1-CAR GARAGE	266 SQ. FT.
2-CAR GARAGE	538 SQ. FT.
FLOOR PLAN W/ OPTIONAL DINING ROOM	2274 SQ. FT.
CALIFORNIA ROOM	277 SQ. FT.
COVERED ENTRY/PORCH	103 SQ. FT.
UPPER DECK	103 SQ. FT.

ARCHITECTS . PLANNERS . DESIGNERS
WHA.
ORANGE COUNTY . LOS ANGELES . BAY AREA

AGEN

WILSON HOMES

TRACT NUMBER:
PROJECT TYPE: S.F.D.

61'x123' LOT
CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

REVISIONS

NO.	DATE	DESCRIPTION

PROJECT MANAGER :	MM
DESIGNER :	AM
DRAWN BY :	
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	-
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2013352 A3of7
CAD FILE NAME :	

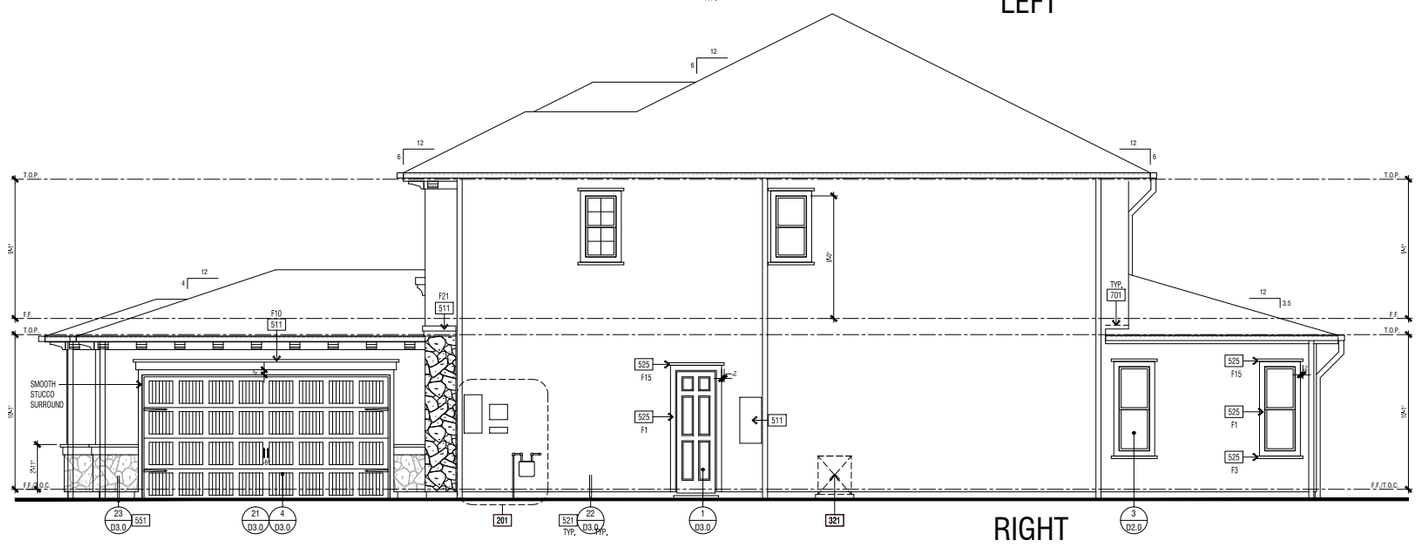
DATE: 10-28-19
SHEET: A3.7

PLAN 3912C FLOOR PLAN ADDENDAS

2013352 - 2019 CODE CHANGE PROGRESS SET 10-28-19

S - PLAN 3912

LEFT



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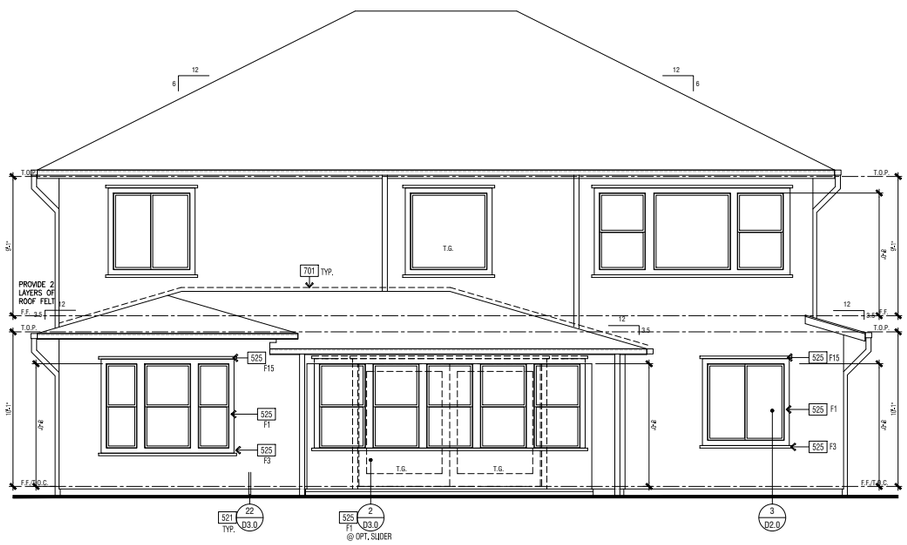
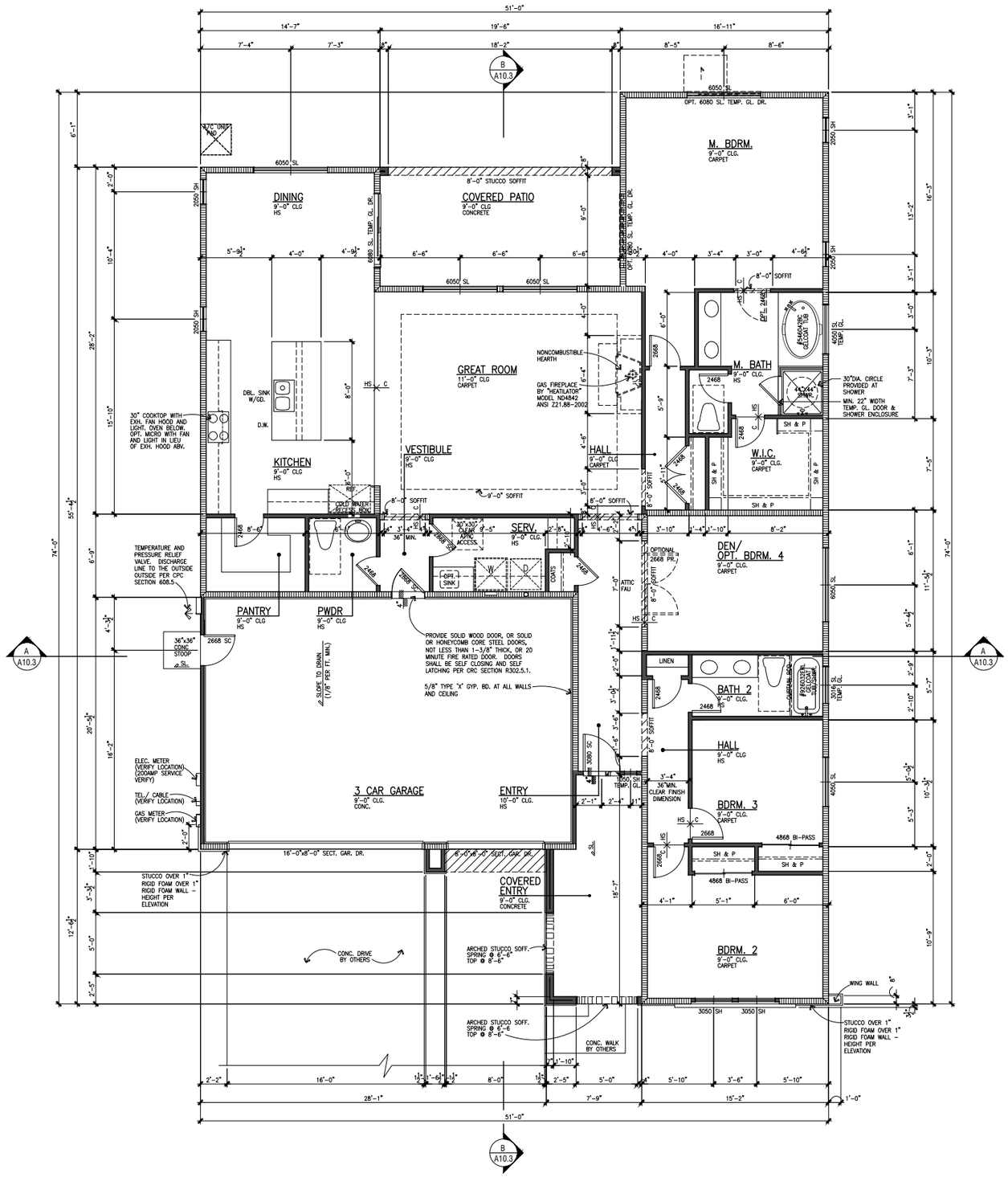


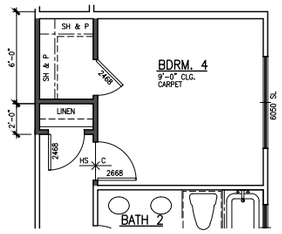
REAR

FRONT

"C" ELEVATION
Plan 3912

970





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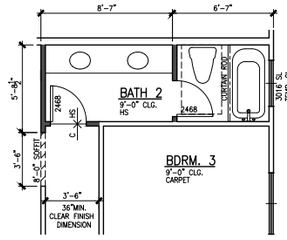
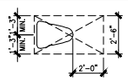


OPT. BATH 2

INTERIOR ELEVATION KEY

REQUIRED FLOOR CLEARANCES AT WATER CLOSETS - TYPICAL



EARLY CALIFORNIA / SANTA BARBARA

FLOOR AREA TABLE	PLAN 2277A
FLOOR PLAN	2277 SQ. FT.
GARAGE	620 SQ. FT.
EXTERIOR ENTRY	130 SQ. FT.
REAR PATIO	189 SQ. FT.

SCALE: 1/4" = 1'-0"

FLOOR PLAN

FLOOR PLAN NOTES

1. ATTICS: ACCESS PER CRC R807, DRAFTSTOPS PER CRC R302.12 AND VENTILATION PER R806.
2. EMERGENCY ESCAPE AND RESCUE OPENINGS PER CRC R310. MEANS OF EGRESS PER CRC R311.
3. GLAZING PER CRC R303.1 & R308
4. FACTORY-BUILT FIREPLACES AND CHIMNEYS PER CRC R1004, R1005, R1006 CGBSC SECTION 4.503 & CEnC SECTION 150.0(e).
5. COMBUSTION AIR TO FORCED AIR UNIT PER CMC CHAPTER 7.
6. COMBUSTION AIR TO WATER HEATER PER CPC SECTION 507.0.
7. ENVIRONMENTAL AIR DUCTS PER CMC SECTION 504.
8. MECHANICAL EQUIPMENT LOCATION AND PROTECTION AGAINST DAMAGE PER CMC 305 & 308.
9. MANDATORY REQUIREMENTS FOR APPLIANCES PER CEnC SECTION 110.1.
10. THE SILL HEIGHT IS NOT TO EXCEED 44" FROM THE BOTTOM OF THE CLEAR OPENING IN SLEEPING ROOMS. 2016 CRC R31.0.1
11. IN UPPER FLOOR PLANS, ANY OPERABLE WINDOW WITH A SILL THAT IS LOCATED LESS THAN 24" ABOVE THE FINISHED FLOOR AND MORE THAN 72" ABOVE FINISHED GRADE OR OTHER SURFACE BELOW AT THE EXTERIOR, MUST BE PROTECTED BY A GUARD OR, HAVE FIXED GLASS. THE GUARD MAY NOT HAVE OPENINGS THAT A SPHERE 4" IN DIAMETER CAN PASS THROUGH. 2016 CRC R312.2
12. A SHEETROCK NAILING INSPECTION IN REQUIRED. 2016 CRC R109.1.4.2 & 2016 CBC 110.3.5
13. GLAZING IN A HAZARDOUS LOCATION IS REQUIRED TO BE GLAZED WITH SAFETY MATERIAL. 2016 CRC R308
14. PROVIDE A 9" SQUARE FRESH AIR INTAKE FOR THE GAS APPLIANCE FIREPLACE 2016 T-24
15. VERTICAL CLEARANCE ABOVE THE COOKTOP TO COMBUSTIBLES IS 30" UNPROTECTED, OR 24" PROTECTED, AND THE HORIZONTAL DIMENSIONS IS REQUIRED TO BE PER THE PERMANENT MARKING LISTED ON THE UNIT. 2016 CMC 916.1 & 916.2
16. A SHEETROCK NAILING INSPECTION IS REQUIRED. - 2016 CRC R106.1.1
17. THE WALL SURFACE BEHIND CERAMIC TILE OR OTHER FINISH WALL MATERIALS SUBJECT TO WATER SPLASH ARE CONSTRUCTED OF MATERIALS NOT ADVERSELY AFFECTED BY WATER. NOTE THE USE OF FIBER CEMENT, FIBER MAT, REINFORCED CEMENT OR GLASS MAT GYPSUM BACKERS ON THE FLOOR PLAN. NOTE THAT WATER RESISTANT GYPSUM BOARD IS NO LONGER PERMITTED TO BE USED IN THESE LOCATIONS. -2016 CRC R702.4.2
18. THE THREE CAR GARAGE IS NON-CONFORMING AND THE REQUIRED SIDEYARD SETBACKS MAY NOT BE RELAXED. 2016 CRC R106.1.1
19. NOTE THAT ALL ATTIC ACCESS OPENINGS ARE GASKETED TO PREVENT AIR LOSS. 2016 CEC 150.0(a)
20. A MINIMUM 30" DIA. CIRCLE IS PROVIDED AT THE SHOWER FLOOR. THE MINIMUM FLOOR AREA OF THE SHOWER COMPARTMENT IS 1024 SQUARE INCHES. 2016 CPC 408.6
21. AFTER INSTALLING WALL, CEILING, OR FLOOR INSULATION, THE INSTALLER SHALL POST IN A CONSPICUOUS LOCATION IN THE BUILDING A CERTIFICATE SIGNED BY THE INSTALLER STATING THAT THE INSTALLATION WAS PERFORMED IN ACCORDANCE WITH TITLE 24 REQUIREMENTS.
22. THE BUILDER SHALL PROVIDE THE ORIGINAL OCCUPANT WITH THE LIST OF THE HEATING, COOLING, WATER HEATING AND LIGHTING SYSTEMS AND CONSERVATION OR SOLAR DEVICES INSTALLED IN THE BUILDING AND INSTRUCTIONS ON HOW TO USE THEM EFFICIENTLY. CCR TITLE 20

ARCHITECTS . PLANNERS . DESIGNERS
WHA.
ORANGE COUNTY . LOS ANGELES . BAY AREA

AGEN

WILSON HOMES

TRACT NUMBER:
PROJECT TYPE: S.F.D.

PLAN 22277
CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

EARLY CALIFORNIA / SANTA BARBARA

REVISIONS

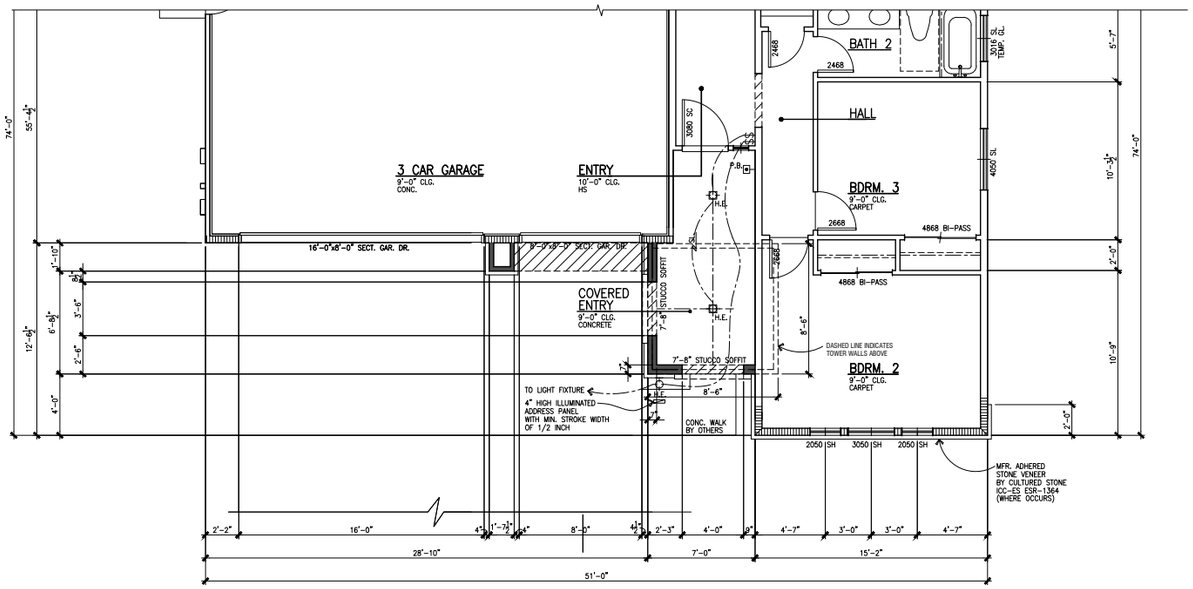
NO.	DATE	DESCRIPTION

PLAN 2277A
FLOOR PLAN AND OPTIONS

PROJECT MANAGER :	MM
DESIGNER :	AM
DRAWN BY :	MH
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	-
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2015253
CAD FILE NAME :	A10.1

DATE: 11-18-19
SHEET: A10.1.0

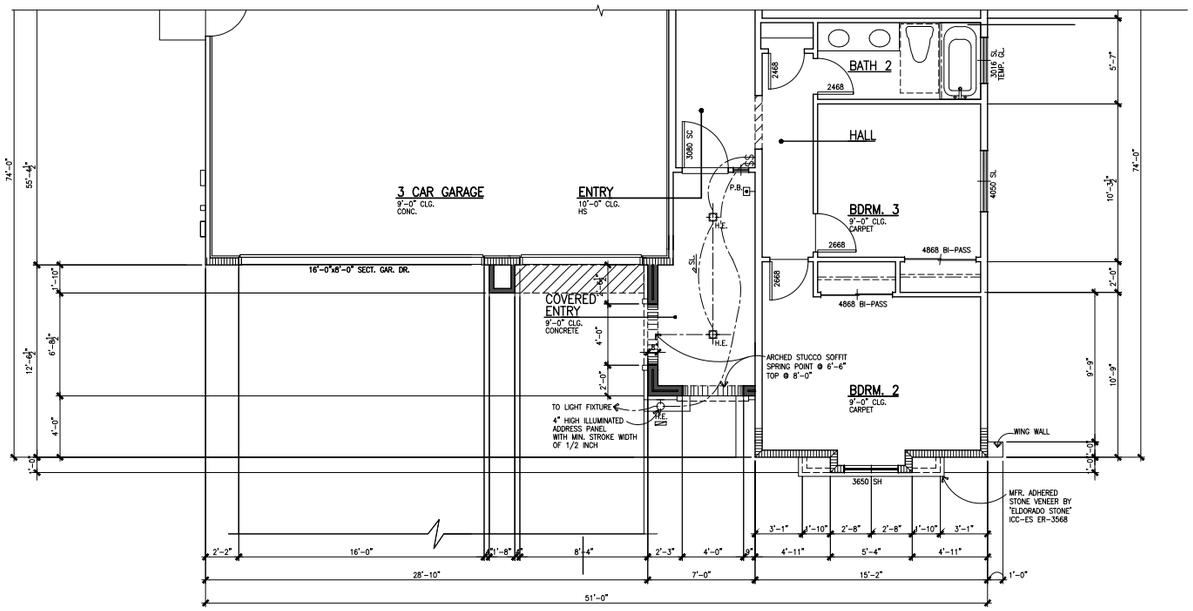
2015253.05 - 2019 CODE CHANGE PROGRESS SET 11-18-19



PARTIAL FLOOR PLAN 2277B - TUSCANY

TUSCANY

FLOOR AREA TABLE	PLAN 2277B
FLOOR PLAN	2277 SQ. FT.
GARAGE	620 SQ. FT.
EXTERIOR ENTRY	93 SQ. FT.
REAR PATIO	189 SQ. FT.



PARTIAL FLOOR PLAN 2277C - CRAFTSMAN

CRAFTSMAN

FLOOR AREA TABLE	PLAN 2277C
FLOOR PLAN	2282 SQ. FT.
GARAGE	620 SQ. FT.
EXTERIOR ENTRY	92 SQ. FT.
REAR PATIO	189 SQ. FT.

FLOOR PLAN NOTES

1. ATTICS: ACCESS PER CRC R807, DRAFTSTOPS PER CRC R302.12 AND VENTILATION PER R806.
2. EMERGENCY ESCAPE AND RESCUE OPENINGS PER CRC R310. MEANS OF EGRESS PER CRC R311.
3. GLAZING PER CRC R303.1 & R308
4. FACTORY-BUILT FIREPLACES AND CHIMNEYS PER CRC R1004, R1005, R1006 CGBSC SECTION 4.503 & CEnC SECTION 150.0(e).
5. COMBUSTION AIR TO FORCED AIR UNIT PER CMC CHAPTER 7.
6. COMBUSTION AIR TO WATER HEATER PER CPC SECTION 507.0.
7. ENVIRONMENTAL AIR DUCTS PER CMC SECTION 504.
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12. A SHEETROCK NAILING INSPECTION IN REQUIRED. 2016 CRC R109.1.4.2 & 2016 CBC 110.3.5
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15. VERTICAL CLEARANCE ABOVE THE COOKTOP TO COMBUSTIBLES IS 30" UNPROTECTED, OR 24" PROTECTED, AND THE HORIZONTAL DIMENSIONS IS REQUIRED TO BE PER THE PERMANENT MARKING LISTED ON THE UNIT. 2016 CMC 916.1 & 916.2
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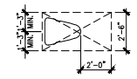
19. NOTE THAT ALL ATTIC ACCESS OPENINGS ARE GASKETED TO PREVENT AIR LOSS. 2016 CEC 150.0(a)
20. A MINIMUM 30" DIA. CIRCLE IS PROVIDED AT THE SHOWER FLOOR. THE MINIMUM FLOOR AREA OF THE SHOWER COMPARTMENT IS 1024 SQUARE INCHES. 2016 CPC 408.6
21. AFTER INSTALLING WALL, CEILING, OR FLOOR INSULATION, THE INSTALLER SHALL POST IN A CONSPICUOUS LOCATION IN THE BUILDING A CERTIFICATE SIGNED BY THE INSTALLER STATING THAT THE INSTALLATION WAS PERFORMED IN ACCORDANCE WITH TITLE 24 REQUIREMENTS.
22. THE BUILDER SHALL PROVIDE THE ORIGINAL OCCUPANT WITH THE LIST OF THE HEATING, COOLING, WATER HEATING AND LIGHTING SYSTEMS AND CONSERVATION OR SOLAR DEVICES INSTALLED IN THE BUILDING AND INSTRUCTIONS ON HOW TO USE THEM EFFICIENTLY. CCR TITLE 20

REQUIRED FLOOR CLEARANCES AT WATER CLOSETS - TYPICAL



FLOOR PLAN

SCALE: 1/4" = 1'-0"

ARCHITECTS . PLANNERS . DESIGNERS
WHA.
ORANGE COUNTY . LOS ANGELES . BAY AREA

AGEN

WILSON HOMES

TRACT NUMBER:
PROJECT TYPE: S.F.D.

PLAN 22277
CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

REVISIONS

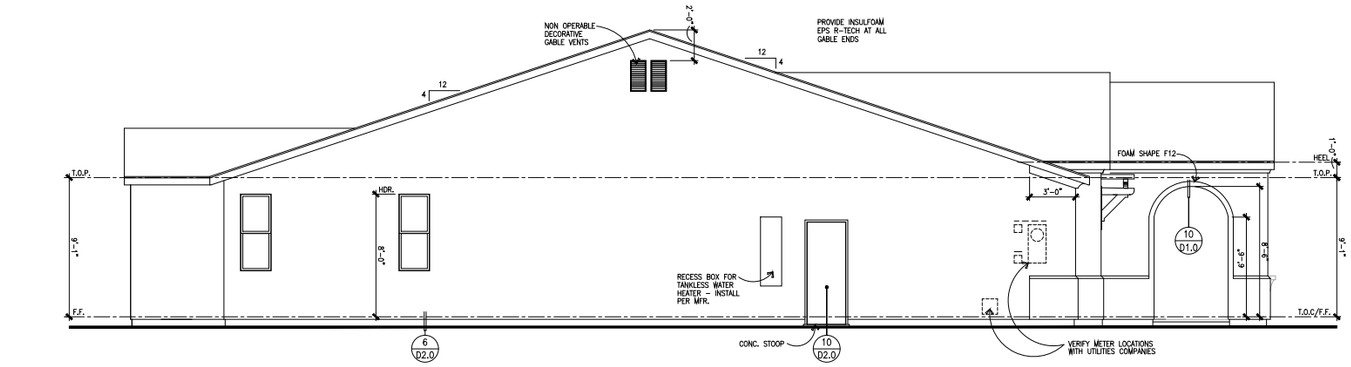
NO.	DATE	DESCRIPTION

PLAN 2277B & C
ADDENDA FLOOR PLANS

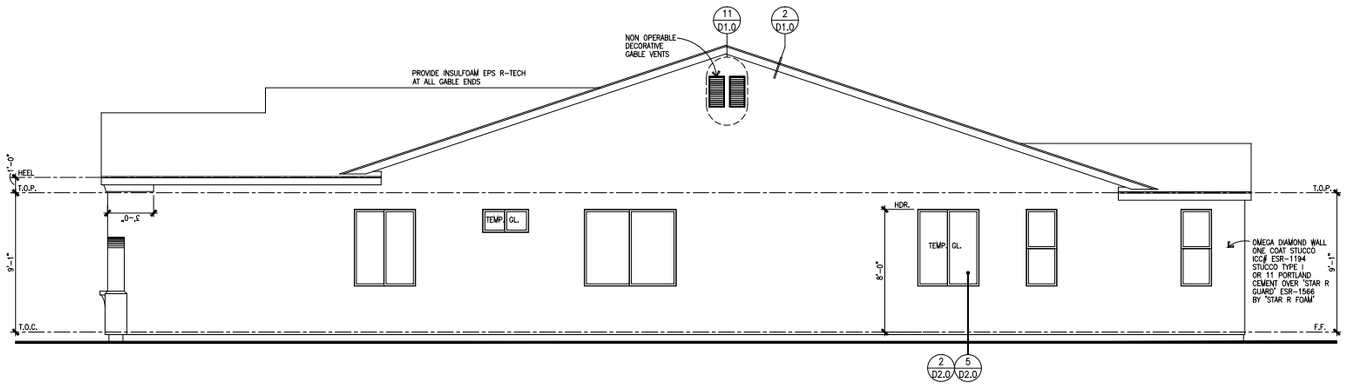
PROJECT MANAGER :	MM
DESIGNER :	AM
DRAWN BY :	MH
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	-
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2015253
CAD FILE NAME :	13219A10.1.1

DATE: 11-18-19
SHEET: A10.1.1

B TUSCANY & C CRAFTSMAN
2015253.05 - 2019 CODE CHANGE PROGRESS SET 11-18-19



LEFT SIDE ELEVATION



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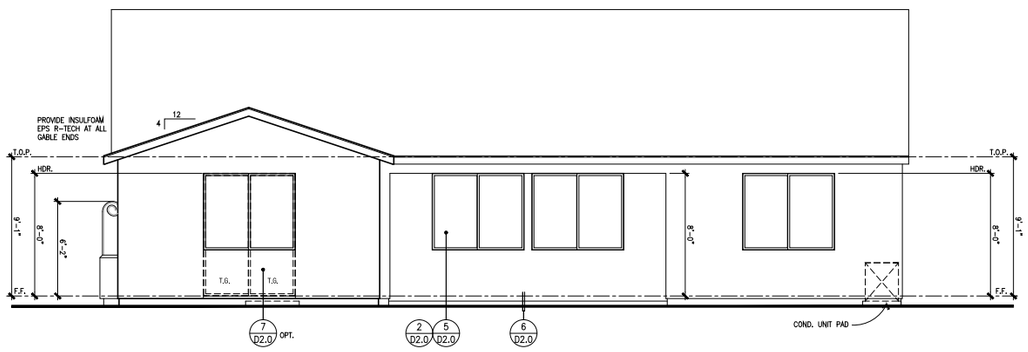

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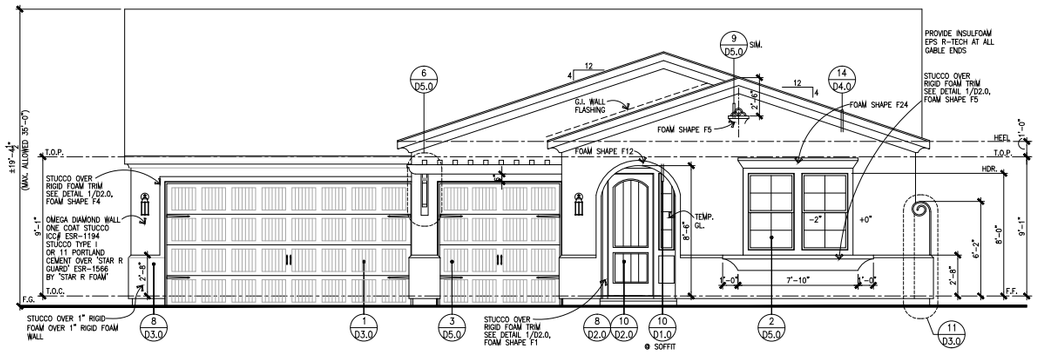

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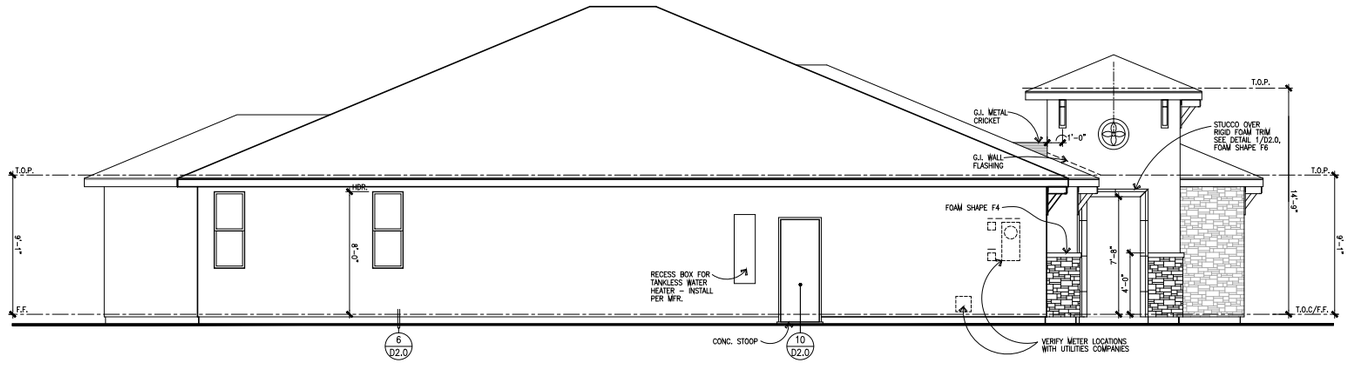

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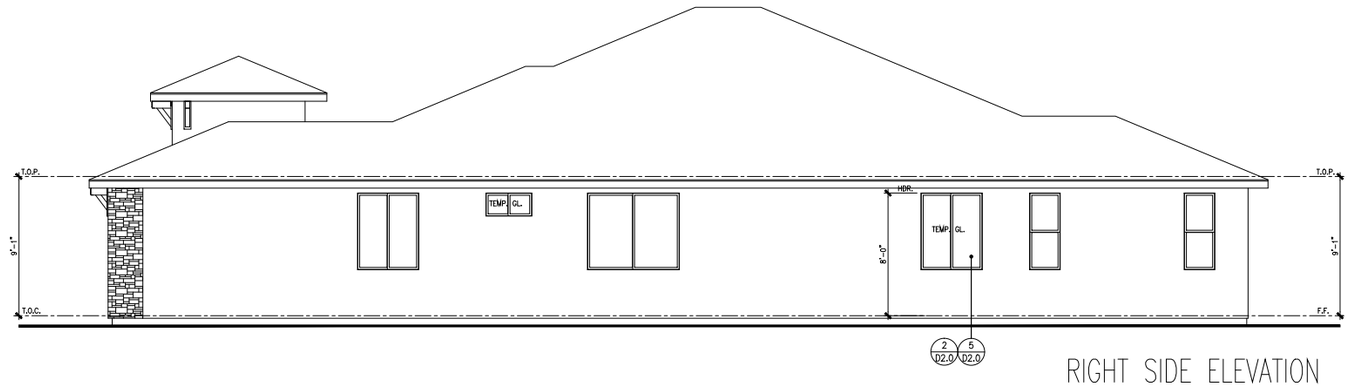

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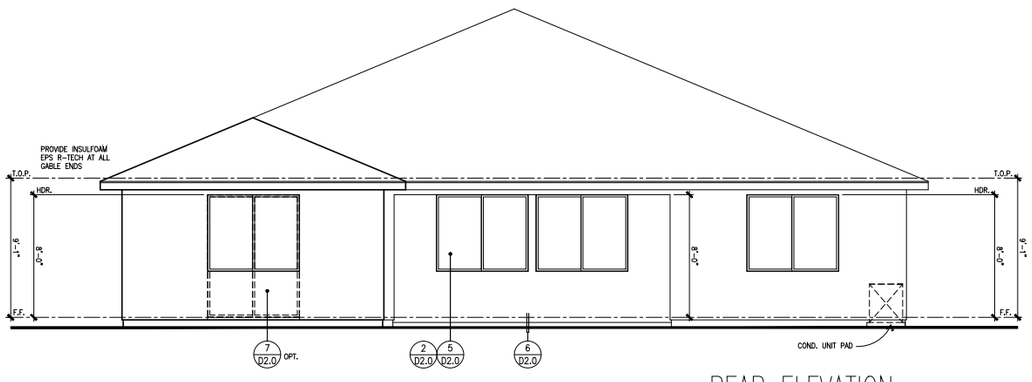

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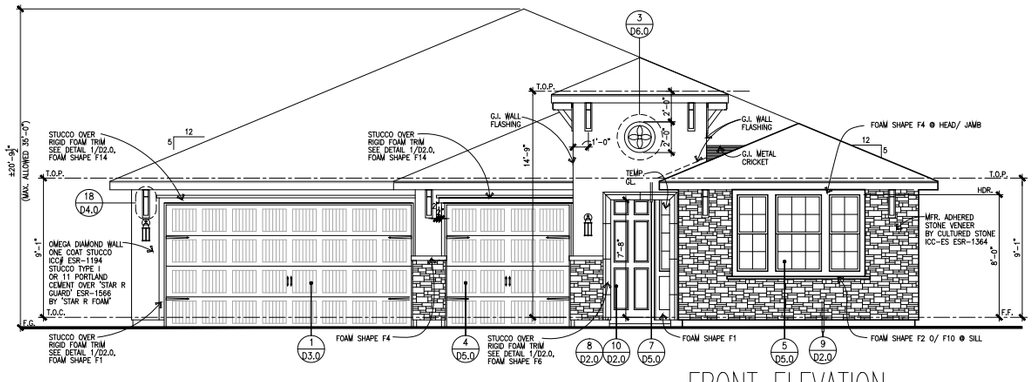

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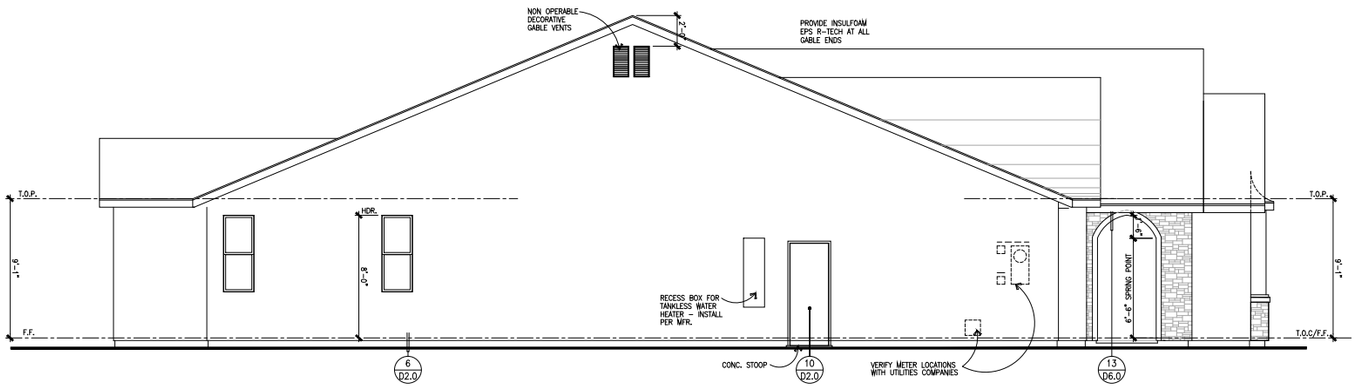
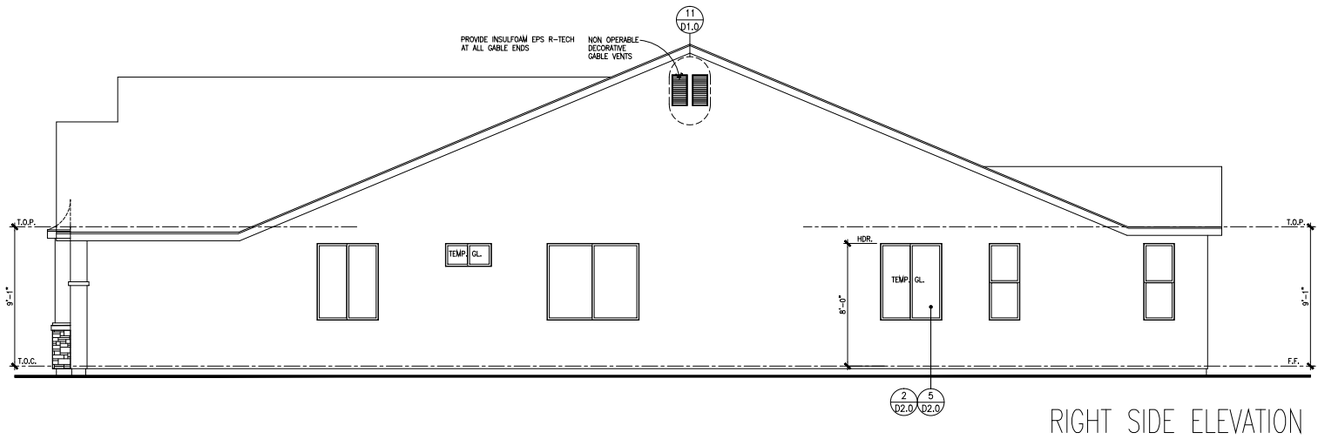


LEFT SIDE ELEVATION



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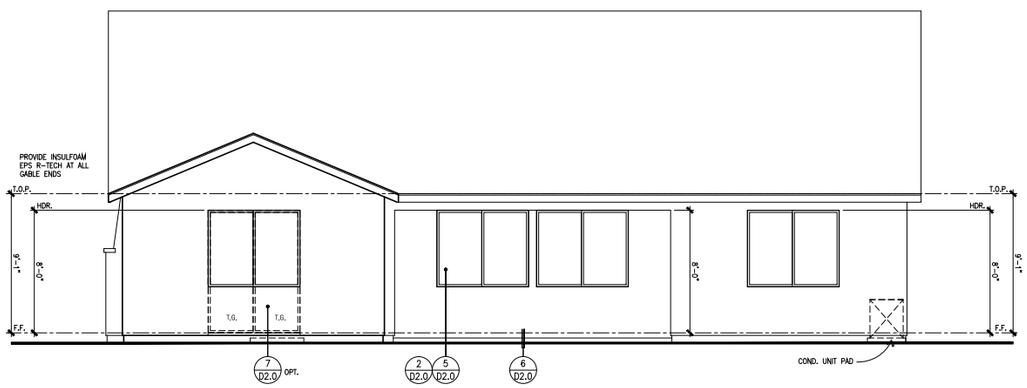

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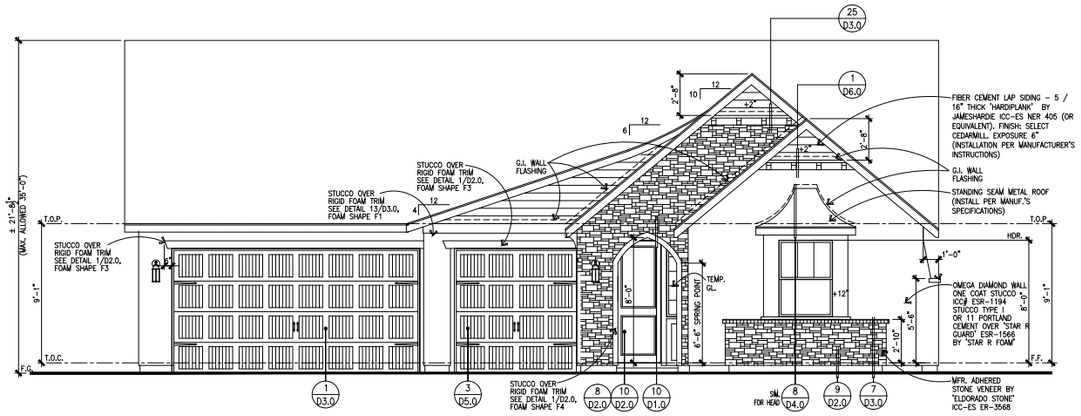

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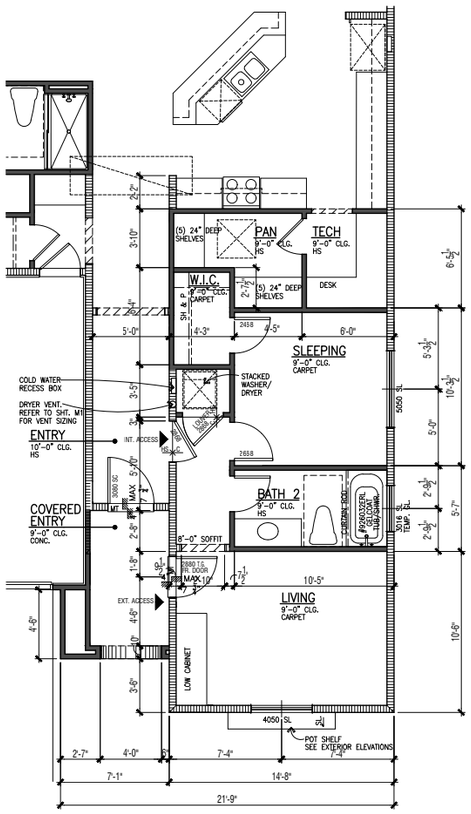
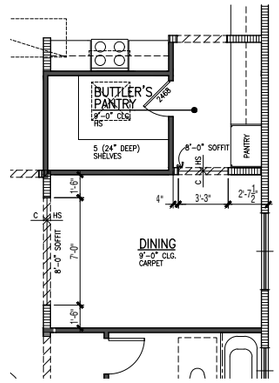
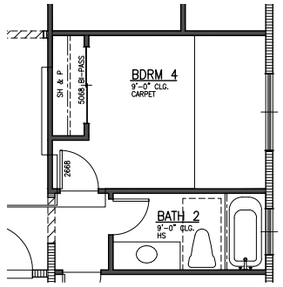


MULTI GENERAL SUITE OPT. ILO BDRM 2 AND DEN



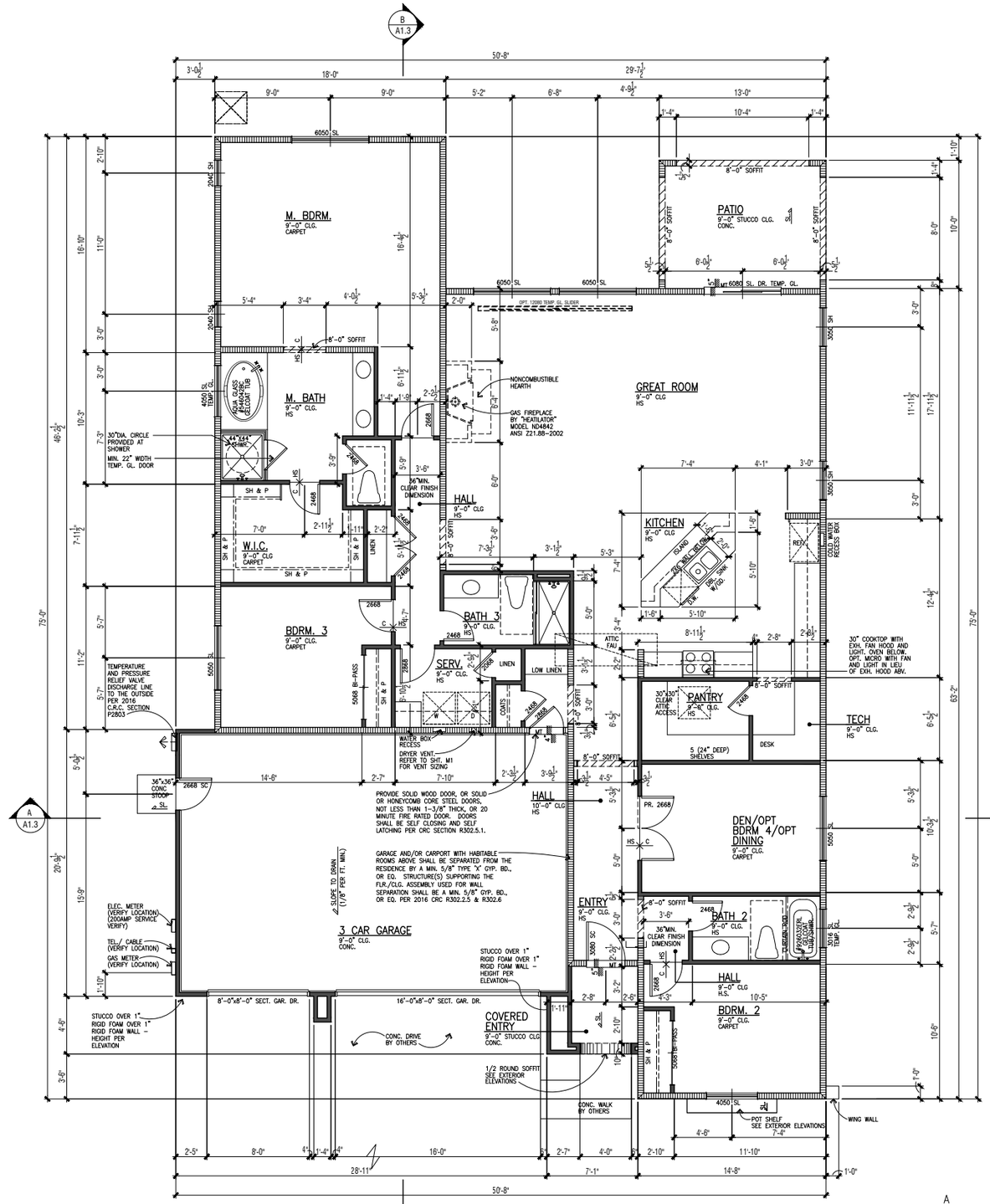
OPT. DINING ILO DEN



OPT. BDRM. 4 ILO DEN

FLOOR PLAN NOTES

1. ATTICS: ACCESS PER CRC R807, DRAFTSTOPS PER CRC R302.12 AND VENTILATION PER R806.
2. EMERGENCY ESCAPE AND RESCUE OPENINGS PER CRC R310. MEANS OF EGRESS PER CRC R311.
3. GLAZING PER CRC R303.1 & R308
4. FACTORY-BUILT FIREPLACES AND CHIMNEYS PER CRC R1004, R1005, R1006 CGBSC SECTION 4.503 & CEnC SECTION 150.0(e).
5. COMBUSTION AIR TO FORCED AIR UNIT PER CMC CHAPTER 7.
6. COMBUSTION AIR TO WATER HEATER PER CPC SECTION 507.0.
7. ENVIRONMENTAL AIR DUCTS PER CMC SECTION 504.
8. MECHANICAL EQUIPMENT LOCATION AND PROTECTION AGAINST DAMAGE PER CMC 305 & 308.
9. MANDATORY REQUIREMENTS FOR APPLIANCES PER CEnC SECTION 110.1.
10. THE SILL HEIGHT IS NOT TO EXCEED 44" FROM THE BOTTOM OF THE CLEAR OPENING IN SLEEPING ROOMS. 2016 CRC R31.0.1
11. IN UPPER FLOOR PLANS, ANY OPERABLE WINDOW WITH A SILL THAT IS LOCATED LESS THAN 24" ABOVE THE FINISHED FLOOR AND MORE THAN 72" ABOVE FINISHED GRADE OR OTHER SURFACE BELOW AT THE EXTERIOR, MUST BE PROTECTED BY A GUARD OR, HAVE FIXED GLASS. THE GUARD MAY NOT HAVE OPENINGS THAT A SPHERE 4" IN DIAMETER CAN PASS THROUGH. 2016 CRC R312.2
12. A SHEETROCK NAILING INSPECTION IN REQUIRED. 2016 CRC R109.1.4.2 & 2016 CBC 110.3.5
13. GLAZING IN A HAZARDOUS LOCATION IS REQUIRED TO BE GLAZED WITH SAFETY MATERIAL 2016 CRC R308
14. PROVIDE A 6" SQUARE FRESH AIR INTAKE FOR THE GAS APPLIANCE FIREPLACE 2016 T-24
15. VERTICAL CLEARANCE ABOVE THE COOKTOP TO COMBUSTIBLES IS 30" UNPROTECTED, OR 24" PROTECTED, AND THE HORIZONTAL DIMENSIONS IS REQUIRED TO BE PER THE PERMANENT MARKING LISTED ON THE UNIT. 2016 CMC 916.1 & 916.2
16. A SHEETROCK NAILING INSPECTION IS REQUIRED. - 2016 CRC R106.1.1
17. THE WALL SURFACE BEHIND CERAMIC TILE OR OTHER FINISH WALL MATERIALS SUBJECT TO WATER SPLASH ARE CONSTRUCTED OF MATERIALS NOT ADVERSELY AFFECTED BY WATER. NOTE THE USE OF FIBER CEMENT, FIBER MAT, REINFORCED CEMENT OR GLASS MAT GYPSUM BACKERS ON THE FLOOR PLAN. NOTE THAT WATER RESISTANT GYPSUM BOARD IS NO LONGER PERMITTED TO BE USED IN THESE LOCATIONS. -2016 CRC R702.4.2
18. THE THREE CAR GARAGE IS NON-CONFORMING AND THE REQUIRED SIDEYARD SETBACKS MAY NOT BE RELAXED. 2016 CRC R106.1.1
19. NOTE THAT ALL ATTIC ACCESS OPENINGS ARE GASKETED TO PREVENT AIR LOSS. 2016 CEC 150.0(a)
20. A MINIMUM 30" DIA. CIRCLE IS PROVIDED AT THE SHOWER FLOOR. THE MINIMUM FLOOR AREA OF THE SHOWER COMPARTMENT IS 1024 SQUARE INCHES. 2016 CPC 408.6



FLOOR PLAN

NOTE:
NAILING SCHEDULE IS LOCATED ON SHEET SD.2

INTERIOR ELEVATION KEY

EARLY CALIFORNIA/SANTA BARBARA

SPN #	.
FLOOR AREA TABLE	PLAN 2378A
FLOOR PLAN	2381 SQ. FT.
TOTAL	2381 SQ. FT.
3-CAR GARAGE	628 SQ. FT.
COVERED ENTRY/PORCH	37 SQ. FT.
COVERED PATIO	130 SQ. FT.

SCALE: 1/4" = 1'-0"

ARCHITECTS . PLANNERS . DESIGNERS
WHA.
ORANGE COUNTY . LOS ANGELES . BAY AREA

AGEN

WILSON HOMES

TRACT NUMBER:
PROJECT TYPE: S.F.D.

PLAN 2378
CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

REVISIONS

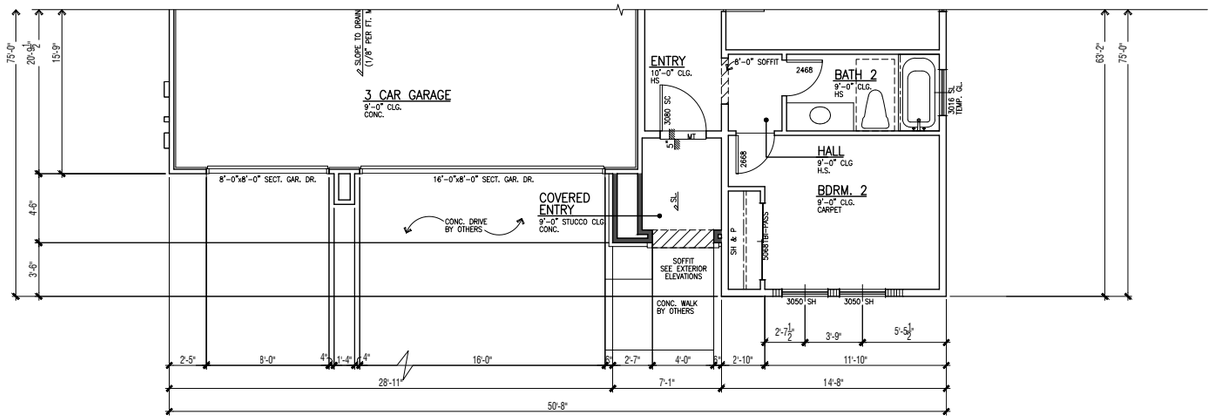
NO.	DATE	DESCRIPTION

PLAN 2378A
FLOOR PLANS &
OPTIONS

PROJECT MANAGER :	MM
DESIGNER :	AM
DRAWN BY :	MH
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	-
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2015253
CAD FILE NAME :	13219A1.1

DATE: 10-28-19
SHEET: A1.1

2015253.05 - 2019 CODE CHANGE PROGRESS SET 10-28-19



PARTIAL FLOOR PLAN 2378B - TUSCAN

FLOOR AREA TABLE	PLAN 2378B
FLOOR PLAN	2381 SQ. FT.
TOTAL	2381 SQ. FT.
3-CAR GARAGE	628 SQ. FT.
COVERED ENTRY/PORCH	37 SQ. FT.
COVERED PATIO	130 SQ. FT.

FLOOR PLAN NOTES

1. ATTICS: ACCESS PER CRC R807, DRAFTSTOPS PER CRC R302.12 AND VENTILATION PER R806.
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7. ENVIRONMENTAL AIR DUCTS PER CMC SECTION 504.
8. MECHANICAL EQUIPMENT LOCATION AND PROTECTION AGAINST DAMAGE PER CMC 305 & 308.
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12. A SHEETROCK NAILING INSPECTION IN REQUIRED. 2016 CRC R109.1.4.2 & 2016 CBC 110.3.5
13. GLAZING IN A HAZARDOUS LOCATION IS REQUIRED TO BE GLAZED WITH SAFETY MATERIAL 2016 CRC R308
14. PROVIDE A 6" SQUARE FRESH AIR INTAKE FOR THE GAS APPLIANCE FIREPLACE 2016 T-24
15. VERTICAL CLEARANCE ABOVE THE COOKTOP TO COMBUSTIBLES IS 30" UNPROTECTED, OR 24" PROTECTED, AND THE HORIZONTAL DIMENSIONS IS REQUIRED TO BE PER THE PERMANENT MARKING LISTED ON THE UNIT. 2016 CMC 916.1 & 916.2
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21. AFTER INSTALLING WALL, CEILING, OR FLOOR INSULATION, THE INSTALLER SHALL POST IN A CONSPICUOUS LOCATION IN THE BUILDING A CERTIFICATE SIGNED BY THE INSTALLER STATING THAT THE INSTALLATION WAS PERFORMED IN ACCORDANCE WITH TITLE 24 REQUIREMENTS.
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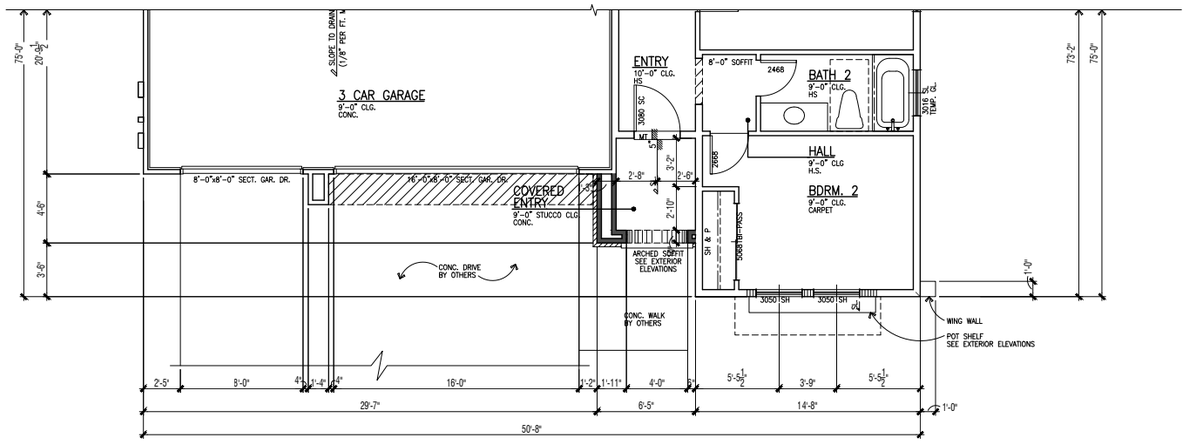


PARTIAL FLOOR PLAN 2378C - CRAFTSMAN

FLOOR AREA TABLE	PLAN 2378C
FLOOR PLAN	2381 SQ. FT.
TOTAL	2381 SQ. FT.
3-CAR GARAGE	628 SQ. FT.
COVERED ENTRY/PORCH	37 SQ. FT.
COVERED PATIO	130 SQ. FT.

ADDENDA FLOOR PLAN NOTES

NOTE: SHADED WALLS INDICATE AREAS THAT ARE DIFFERENT THAN THE BASE FLOOR PLAN

NOTE: REFER TO CIVIL AND LANDSCAPE DRAWINGS BY OTHERS FOR ALL DRIVEWAYS AND SIDEWALK LOCATIONS.

REFER TO BASE PLAN SHEET A1.1 FOR ADDITIONAL NOTES AND DIMENSIONS.

FLOOR PLAN

SCALE: 1/4" = 1'-0"

ARCHITECTS . PLANNERS . DESIGNERS
WHA.
ORANGE COUNTY . LOS ANGELES . BAY AREA

WILSON HOMES

TRACT NUMBER:
PROJECT TYPE: S.F.D.

PLAN 2378- ADDENDA FLOOR PLANS B TUSCAN & C CRAFTSMAN

PLAN 2378
CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

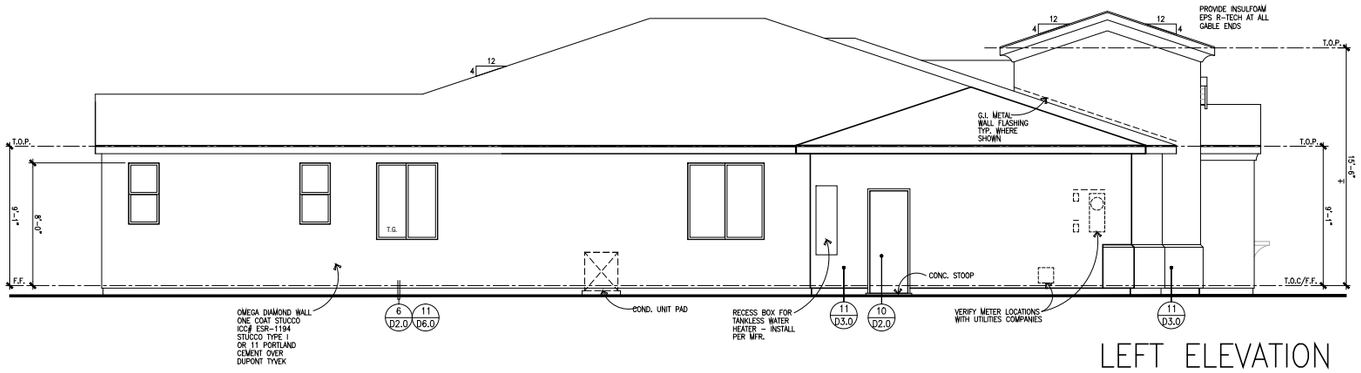
REVISIONS

NO.	DATE	DESCRIPTION

PROJECT MANAGER :	MM
DESIGNER :	AM
DRAWN BY :	MH
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	-
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2013352
CAD FILE NAME :	15253 A1.5

DATE: 10-28-19
SHEET: A1.5

2015253.05 - 2019 CODE CHANGE PROGRESS SET 10-28-19



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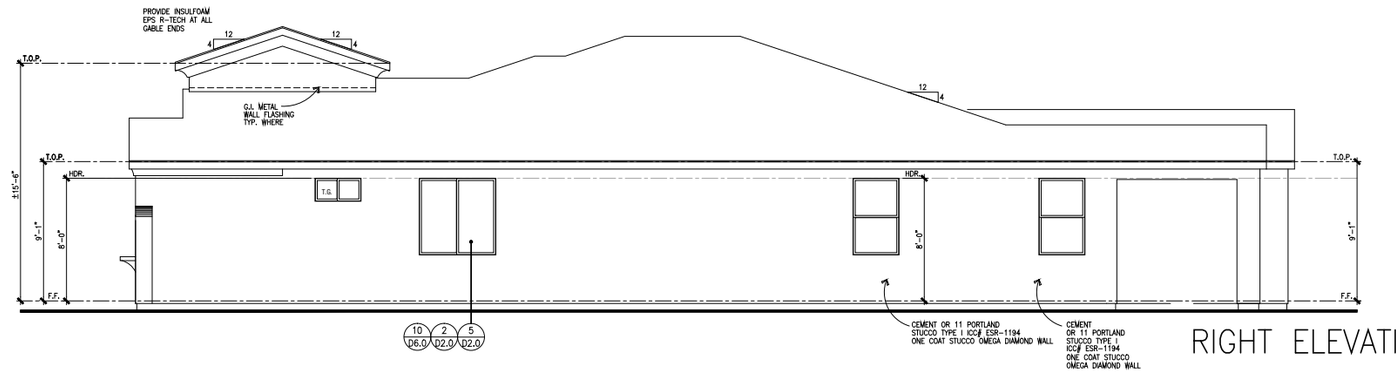

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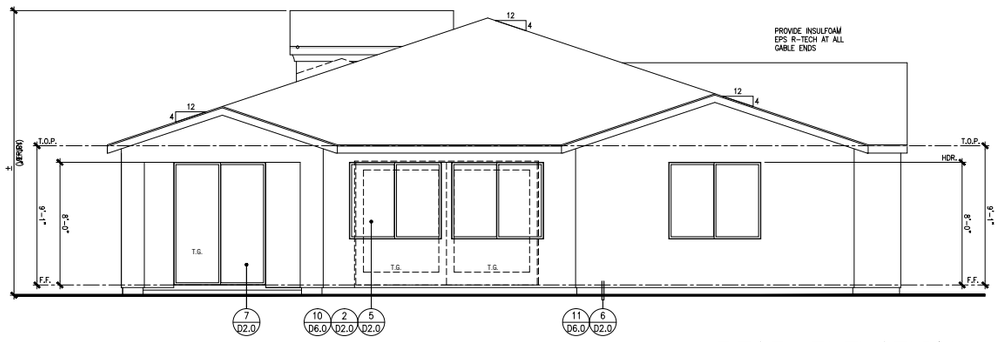

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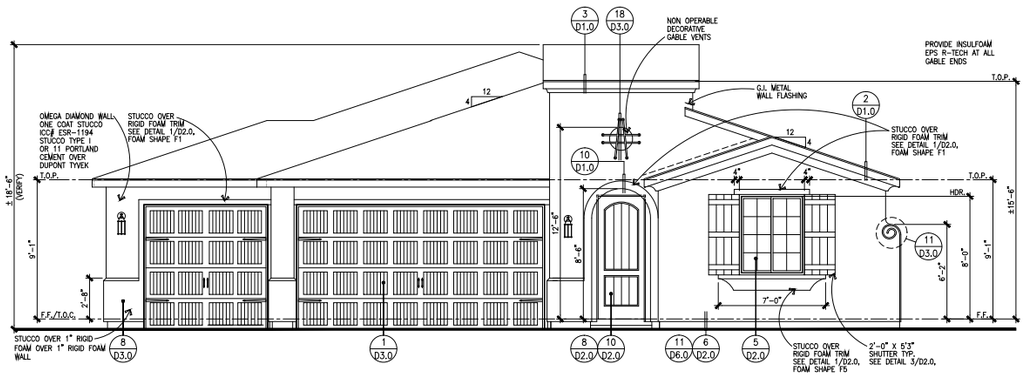

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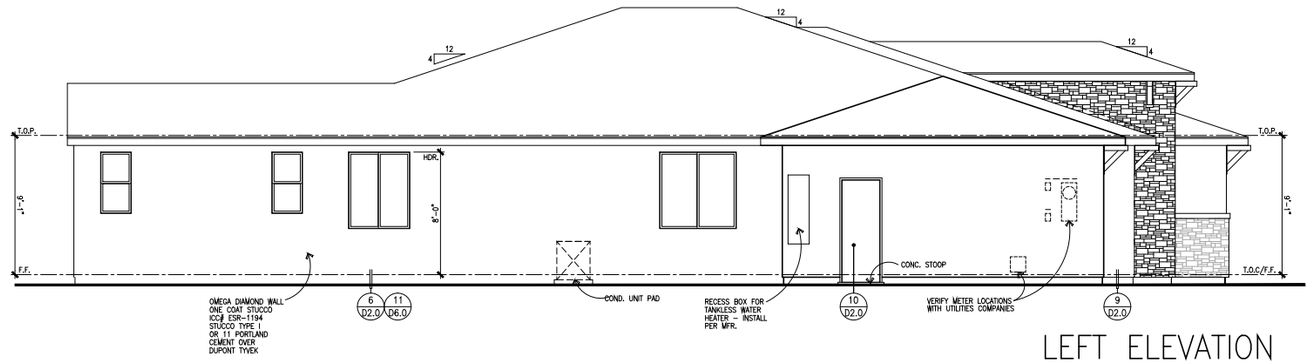

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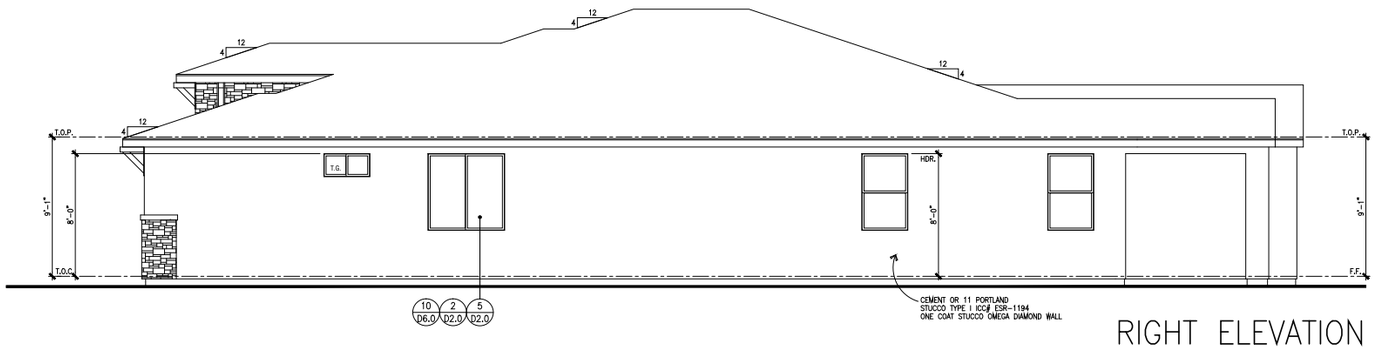

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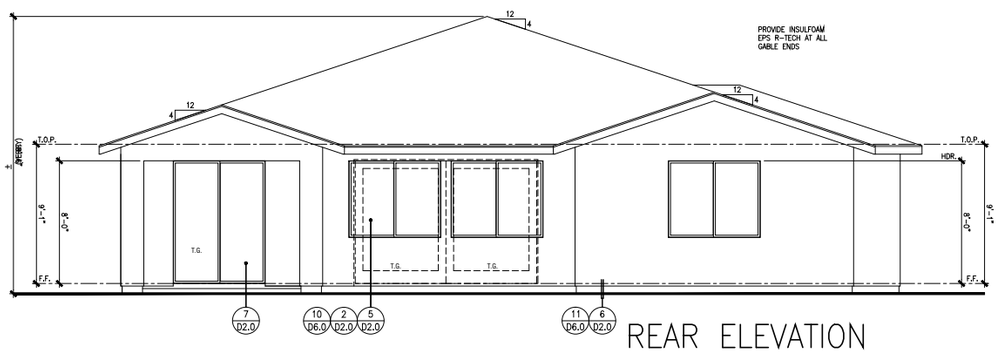

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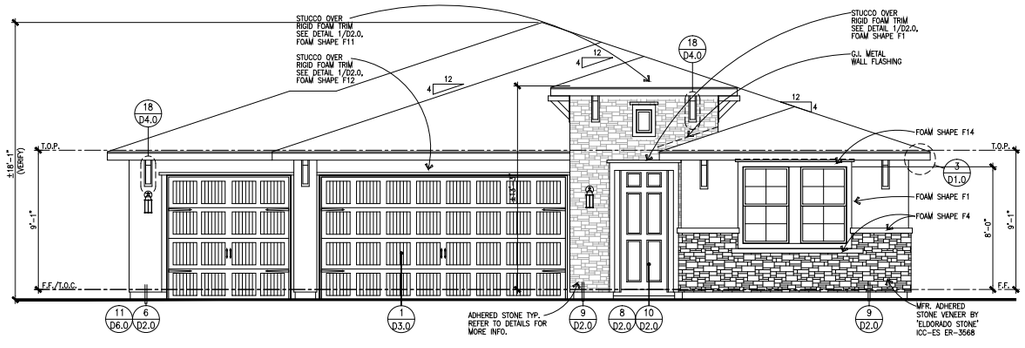

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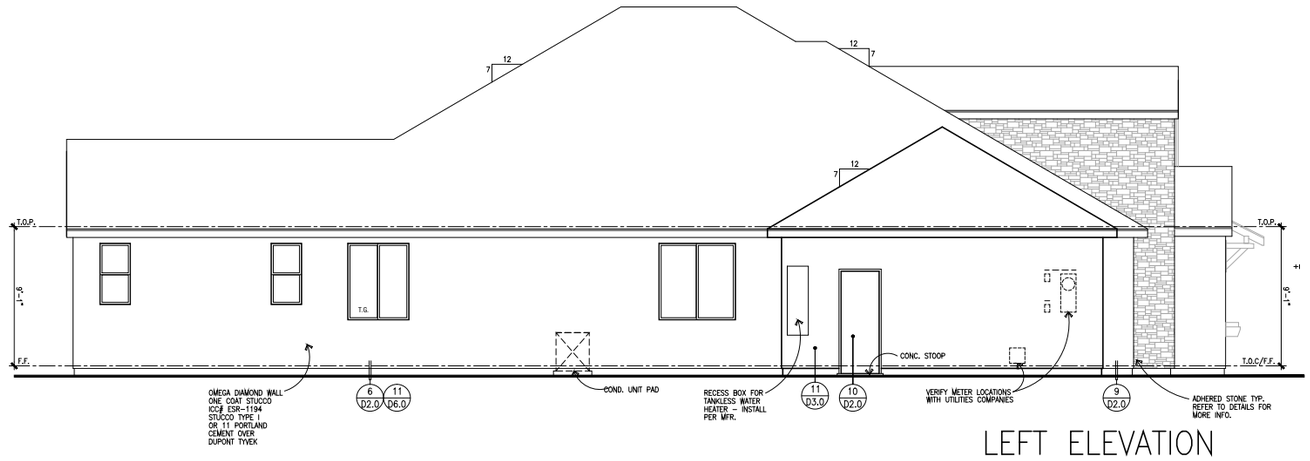
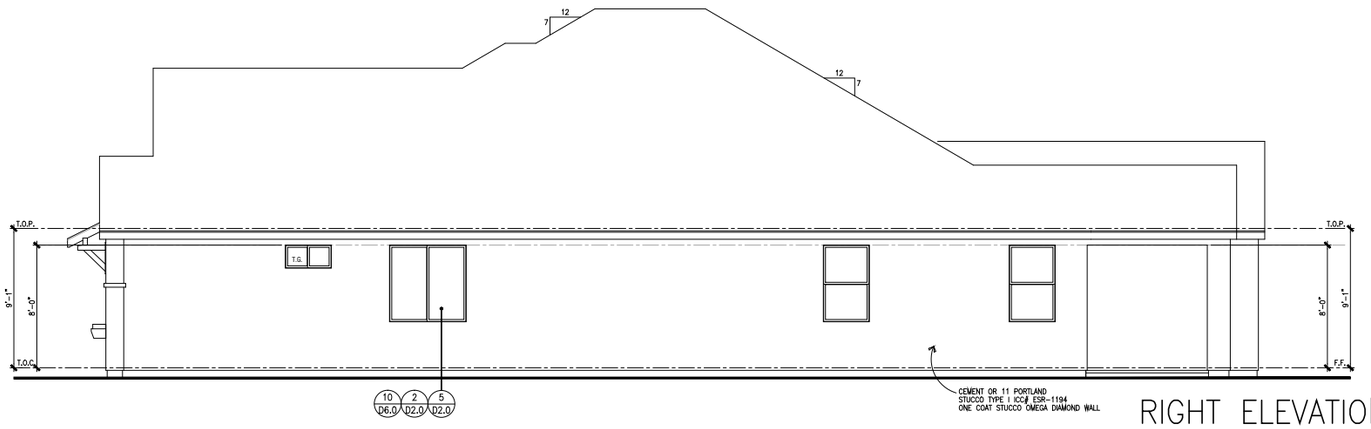


LEFT ELEVATION



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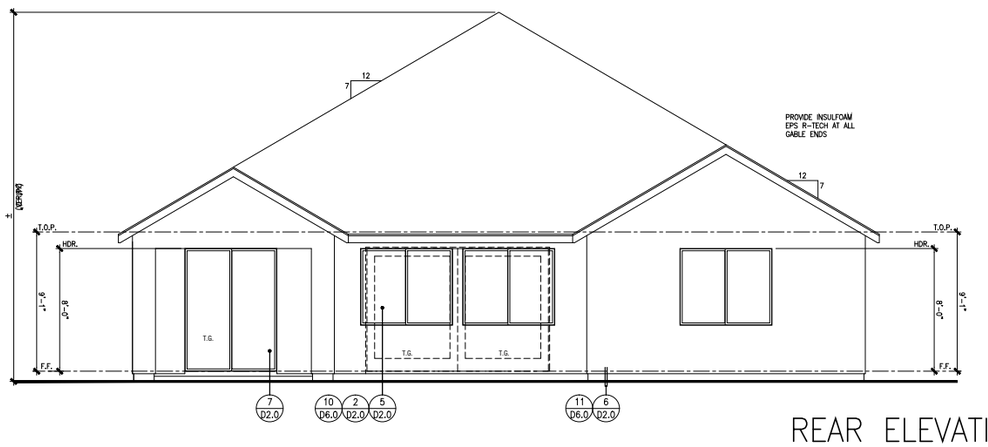

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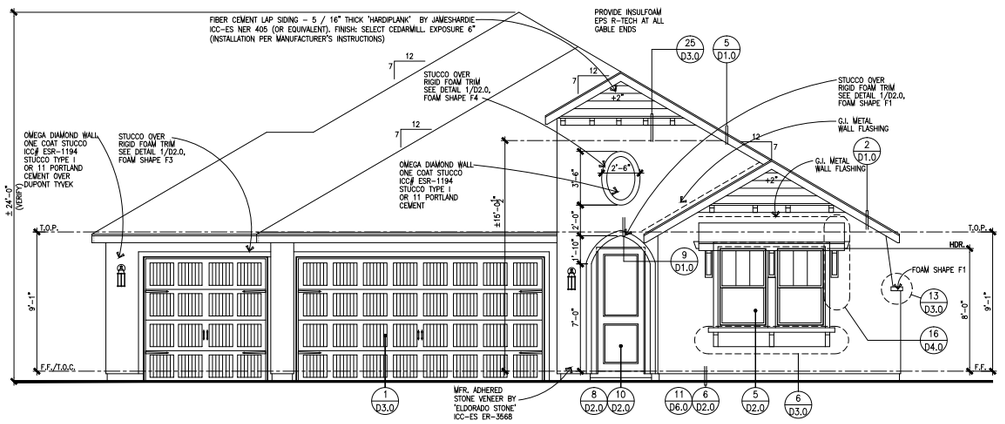
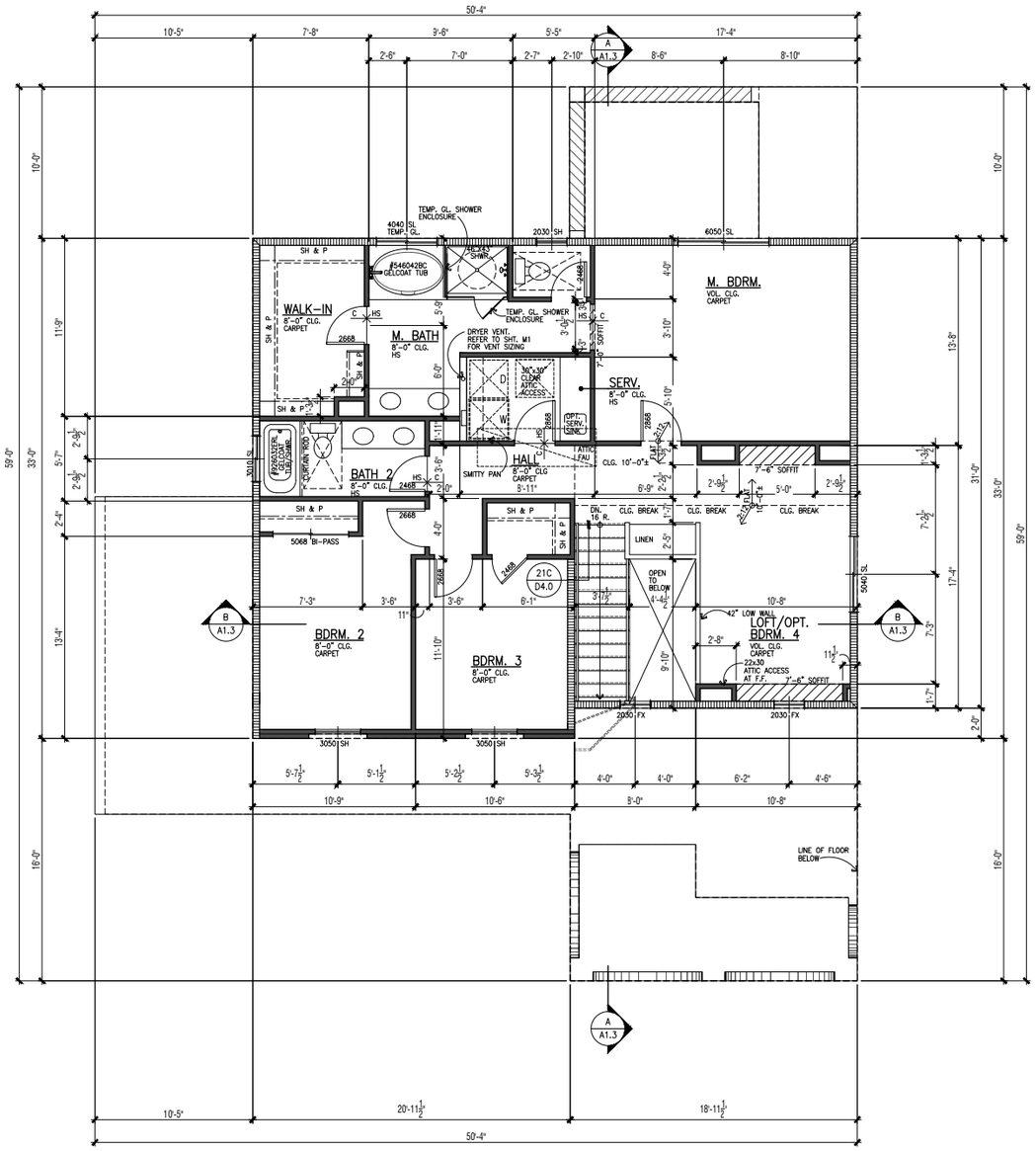
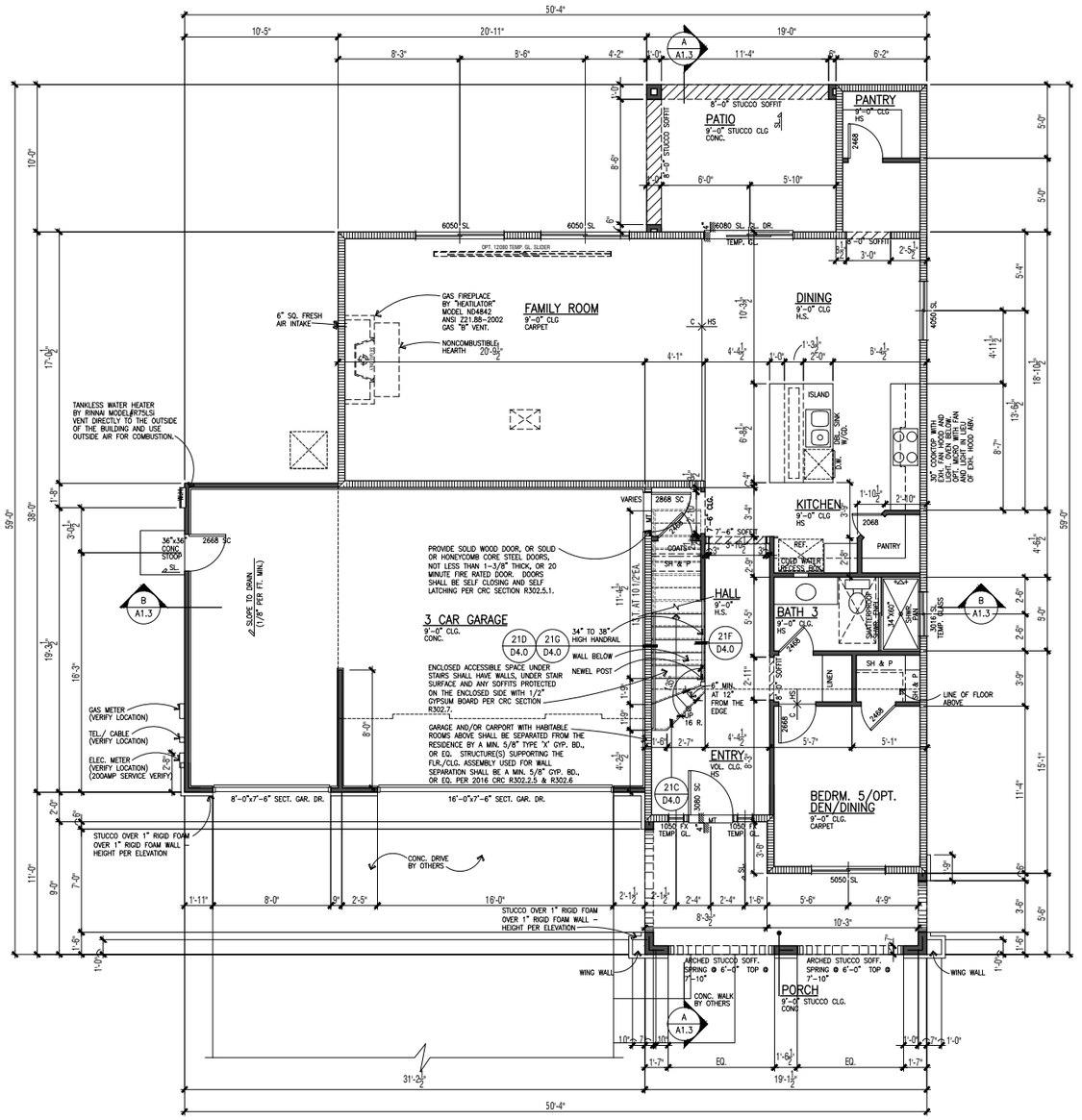


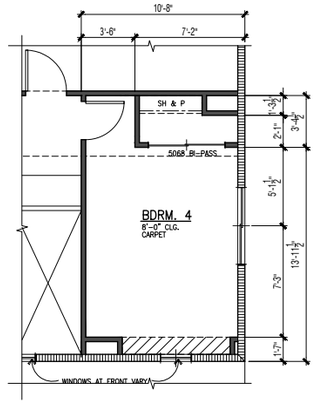
FRONT ELEVATION



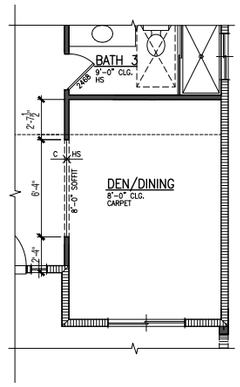
UPPER FLOOR PLAN



LOWER FLOOR PLAN



OPTIONAL BEDRM. 4
IN LIEU OF LOFT



OPTIONAL DEN / DINING
IN LIEU OF BDRM. 5

FLOOR PLAN NOTES

1. ATTICS: ACCESS PER CRC R807. DRAFTSTOPS PER CRC R302.12 AND VENTILATION PER R806.
2. EMERGENCY ESCAPE AND RESCUE OPENINGS PER CRC R310. MEANS OF EGRESS PER CRC R311.
3. GLAZING PER CRC R303.1 & R308
4. FACTORY-BUILT FIREPLACES AND CHIMNEYS PER CRC R1004, R1005, R1006 CGBSC SECTION 4.503 & CEnC SECTION 150.0(e).
5. COMBUSTION AIR TO FORCED AIR UNIT PER CMC CHAPTER 7.
6. COMBUSTION AIR TO WATER HEATER PER CPC SECTION 507.0.
7. ENVIRONMENTAL AIR DUCTS PER CMC SECTION 504.
8. MECHANICAL EQUIPMENT LOCATION AND PROTECTION AGAINST DAMAGE PER CMC 305 & 308.
9. MANDATORY REQUIREMENTS FOR APPLIANCES PER CEnC SECTION 110.1.
10. THE SILL HEIGHT IS NOT TO EXCEED 44" FROM THE BOTTOM OF THE CLEAR OPENING IN SLEEPING ROOMS. 2016 CRC R31.0.1
11. IN UPPER FLOOR PLANS, ANY OPERABLE WINDOW WITH A SILL THAT IS LOCATED LESS THAN 24" ABOVE THE FINISHED FLOOR AND MORE THAN 72" ABOVE FINISHED GRADE OR OTHER SURFACE BELOW AT THE EXTERIOR, MUST BE PROTECTED BY A GUARD OR, HAVE FIXED GLASS. THE GUARD MAY NOT HAVE OPENINGS THAT A SPHERE 4" IN DIAMETER CAN PASS THROUGH. 2016 CRC R312.2
12. A SHEETROCK NAILING INSPECTION IN REQUIRED. 2016 CRC R109.1.4.2 & 2016 CBC 110.3.5
13. GLAZING IN A HAZARDOUS LOCATION IS REQUIRED TO BE GLAZED WITH SAFETY MATERIAL 2016 CRC R308
14. PROVIDE A 6" SQUARE FRESH AIR INTAKE FOR THE GAS APPLIANCE FIREPLACE 2016 T-24
15. VERTICAL CLEARANCE ABOVE THE COOKTOP TO COMBUSTIBLES IS 30" UNPROTECTED, OR 24" PROTECTED, AND THE HORIZONTAL DIMENSIONS IS REQUIRED TO BE PER THE PERMANENT MARKING LISTED ON THE UNIT. 2016 CMC 916.1 & 916.2
16. A SHEETROCK NAILING INSPECTION IS REQUIRED. - 2016 CRC R106.1.1
17. THE WALL SURFACE BEHIND CERAMIC TILE OR OTHER FINISH WALL MATERIALS SUBJECT TO WATER SPLASH ARE CONSTRUCTED OF MATERIALS NOT ADVERSELY AFFECTED BY WATER. NOTE THE USE OF FIBER CEMENT, FIBER MAT, REINFORCED CEMENT OR GLASS MAT GYPSUM BACKERS ON THE FLOOR PLAN. NOTE THAT WATER RESISTANT GYPSUM BOARD IS NO LONGER PERMITTED TO BE USED IN THESE LOCATIONS. -2016 CRC R702.4.2
18. THE THREE CAR GARAGE IS NON-CONFORMING AND THE REQUIRED SIDEYARD SETBACKS MAY NOT BE RELAXED. 2016 CRC R106.1.1
19. NOTE THAT ALL ATTIC ACCESS OPENINGS ARE GASKETED TO PREVENT AIR LOSS. 2016 CEC 150.0(o)
20. A MINIMUM 30" DIA. CIRCLE IS PROVIDED AT THE SHOWER FLOOR. THE MINIMUM FLOOR AREA OF THE SHOWER COMPARTMENT IS 1024 SQUARE INCHES. 2016 CPC 408.6

FLOOR PLAN & OPTIONS - EARLY CALIFORNIA / SANTA BARBARA

EARLY CALIFORNIA/SANTA BARBARA

SPN #	.
FLOOR AREA TABLE	PLAN 2399A
LOWER FLOOR PLAN	1225 SQ. FT.
UPPER FLOOR PLAN	1193 SQ. FT.
TOTAL	2418 SQ. FT.
3-CAR GARAGE	648 SQ. FT.
COVERED ENTRY/PORCH	134 SQ. FT.
COVERED PATIO	128 SQ. FT.

A
D A1.7 B
C
INTERIOR ELEVATION KEY

SCALE: 1/4" = 1'-0"

ARCHITECTS . PLANNERS . DESIGNERS
WHA AGEN
ORANGE COUNTY . LOS ANGELES . BAY AREA

WILSON HOMES

TRACT NUMBER:
PROJECT TYPE: S.F.D.

PLAN 2399
CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

REVISIONS

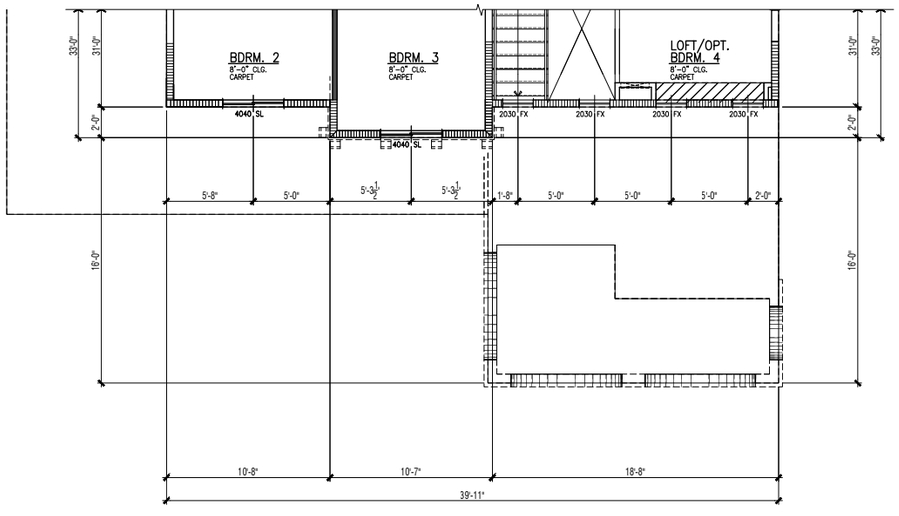
NO.	DATE	DESCRIPTION

PLAN 2399A
FLOOR PLANS & OPTIONS

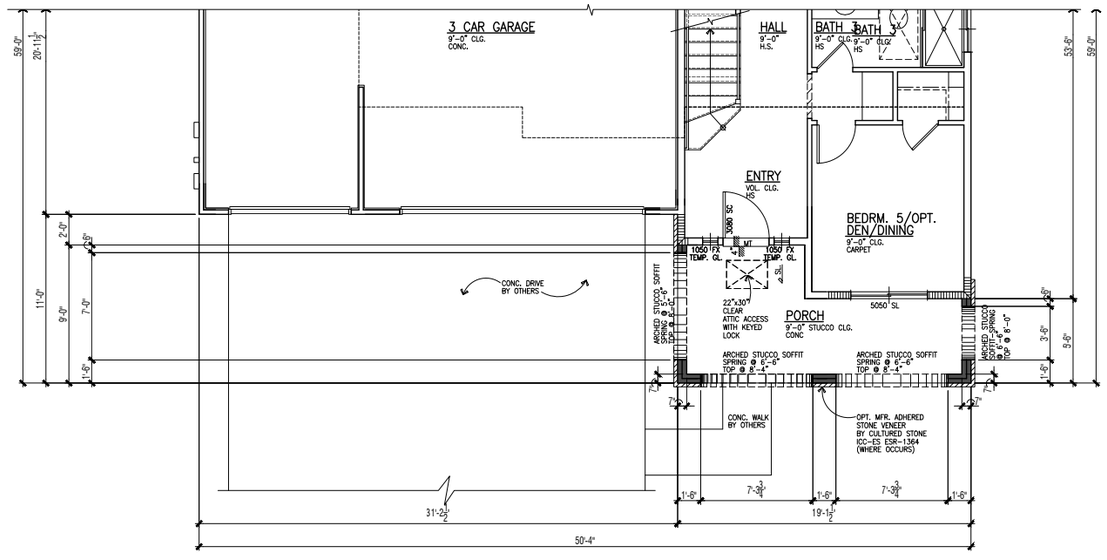
PROJECT MANAGER :	MM
DESIGNER :	AM
DRAWN BY :	MH
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	-
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2018077
CAD FILE NAME :	15211A11

DATE: 11-06-19
SHEET: A1.1

EARLY CALIFORNIA/SANTA BARBARA FLOOR PLAN AND OPTIONS
2015253.05 - 2019 CODE CHANGE PROGRESS SET 11-06-19



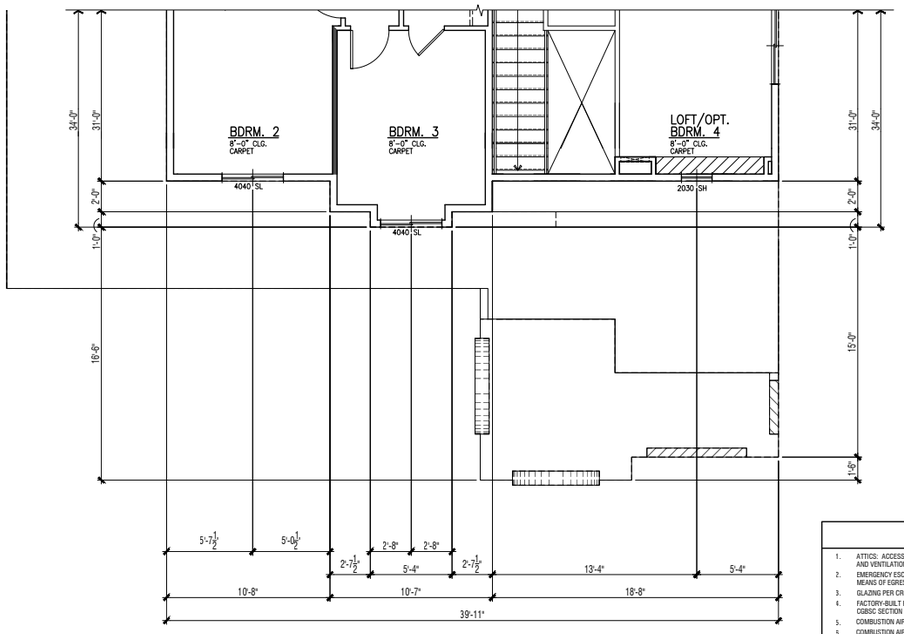
PARTIAL UPPER FLOOR PLAN 2399B - ITALIAN



PARTIAL LOWER FLOOR PLAN 2399B - ITALIAN

ITALIAN

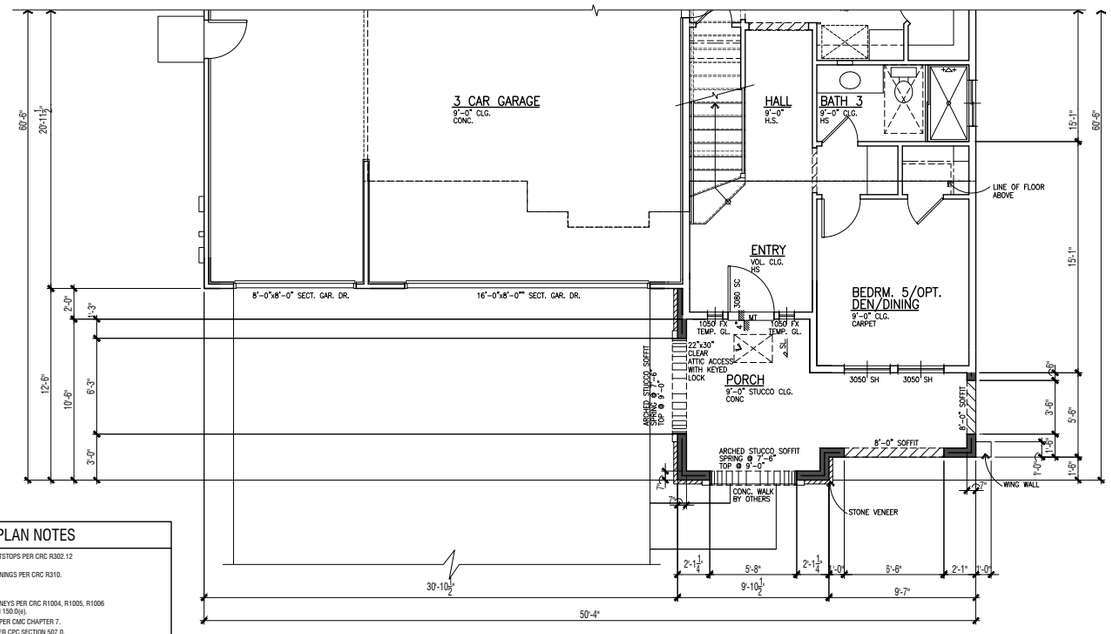
SPN #	-
FLOOR AREA TABLE	PLAN 2399B
LOWER FLOOR PLAN	1225 SQ. FT.
UPPER FLOOR PLAN	1172 SQ. FT.
TOTAL	2397 SQ. FT.
3-CAR GARAGE	648 SQ. FT.
COVERED ENTRY/PORCH	134 SQ. FT.
COVERED PATIO	128 SQ. FT.



PARTIAL UPPER FLOOR PLAN 2399C - CRAFTSMAN

FLOOR PLAN NOTES

1. ATTICS: ACCESS PER CRC R807, DRAFTSTOPS PER CRC R302.12 AND VENTILATION PER R806.
2. EMERGENCY ESCAPE AND RESCUE OPENINGS PER CRC R310. MEANS OF EGRESS PER CRC R311.
3. GLAZING PER CRC R303.1 & R308
4. FACTORY-BUILT FIREPLACES AND CHIMNEYS PER CRC R1004, R1005, R1006 CGBSC SECTION 4.503 & CEnC SECTION 150.0(e).
5. COMBUSTION AIR TO FORCED AIR UNIT PER CMC CHAPTER 7.
6. COMBUSTION AIR TO WATER HEATER PER CPC SECTION 507.0.
7. ENVIRONMENTAL AIR DUCTS PER CMC SECTION 504.
8. MECHANICAL EQUIPMENT LOCATION AND PROTECTION AGAINST DAMAGE PER CMC 305 & 308.
9. MANDATORY REQUIREMENTS FOR APPLIANCES PER CEnC SECTION 110.1.
10. THE SILL HEIGHT IS NOT TO EXCEED 44" FROM THE BOTTOM OF THE CLEAR OPENING IN SLEEPING ROOMS. 2016 CRC R31.0.1
11. IN UPPER FLOOR PLANS, ANY OPERABLE WINDOW WITH A SILL THAT IS LOCATED LESS THAN 24" ABOVE THE FINISHED FLOOR AND MORE THAN 72" ABOVE FINISHED GRADE OR OTHER SURFACE BELOW AT THE EXTERIOR, MUST BE PROTECTED BY A GUARD OR, HAVE FIXED GLASS. THE GUARD MAY NOT HAVE OPENINGS THAT A SPHERE 4" IN DIAMETER CAN PASS THROUGH. 2016 CRC R312.2
12. 4. SHEETROCK NAILING INSPECTION IN REQUIRED. 2016 CRC R109.1.4.2 & 2016 CBC 110.3.5
13. GLAZING IN A HAZARDOUS LOCATION IS REQUIRED TO BE GLAZED WITH SAFETY MATERIAL. 2016 CRC R308
14. PROVIDE A 6" SQUARE FRESH AIR INTAKE FOR THE GAS APPLIANCE FIREPLACE 2016 T-24
15. VERTICAL CLEARANCE ABOVE THE COOKTOP TO COMBUSTIBLES IS 30" UNPROTECTED, OR 24" PROTECTED, AND THE HORIZONTAL DIMENSIONS IS REQUIRED TO BE PER THE PERMANENT MARKING LISTED ON THE UNIT. 2016 CMC 916.1 & 916.2
16. 4. SHEETROCK NAILING INSPECTION IS REQUIRED. - 2016 CRC R106.1.1
17. THE WALL SURFACE BEHIND CERAMIC TILE OR OTHER FINISH WALL MATERIALS SUBJECT TO WATER SPLASH ARE CONSTRUCTED OF MATERIALS NOT ADVERSELY AFFECTED BY WATER. NOTE THE USE OF FIBER CEMENT, FIBER MAT, REINFORCED CEMENT OR GLASS MAT GYPSUM BACKERS ON THE FLOOR PLAN. NOTE THAT WATER RESISTANT GYPSUM BOARD IS NO LONGER PERMITTED TO BE USED IN THESE LOCATIONS. -2016 CRC R702.4.2
18. THE THREE CAR GARAGE IS NON-CONFORMING AND THE REQUIRED SIDEYARD SETBACKS MAY NOT BE RELAXED. 2016 CRC R106.1.1
19. NOTE THAT ALL ATTIC ACCESS OPENINGS ARE GASKETED TO PREVENT AIR LOSS. 2016 CEC 150.0(a)
20. 4. MINIMUM 30" DIA. CIRCLE IS PROVIDED AT THE SHOWER FLOOR. THE MINIMUM FLOOR AREA OF THE SHOWER COMPARTMENT IS 1024 SQUARE INCHES. 2016 CPC 408.6



PARTIAL LOWER FLOOR PLAN 2399C - CRAFTSMAN

CRAFTSMAN

SPN #	-
FLOOR AREA TABLE	PLAN 2399C
LOWER FLOOR PLAN	1225 SQ. FT.
UPPER FLOOR PLAN	1178 SQ. FT.
TOTAL	2403 SQ. FT.
3-CAR GARAGE	648 SQ. FT.
COVERED ENTRY/PORCH	152 SQ. FT.
COVERED PATIO	128 SQ. FT.

INTERIOR ELEVATION KEY

SCALE: 1/4" = 1'-0"

ARCHITECTS . PLANNERS . DESIGNERS
WHA AGEN
ORANGE COUNTY . LOS ANGELES . BAY AREA

WILSON HOMES

TRACT NUMBER:
PROJECT TYPE: S.F.D.

PLAN 2399
CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

REVISIONS

NO.	DATE	DESCRIPTION

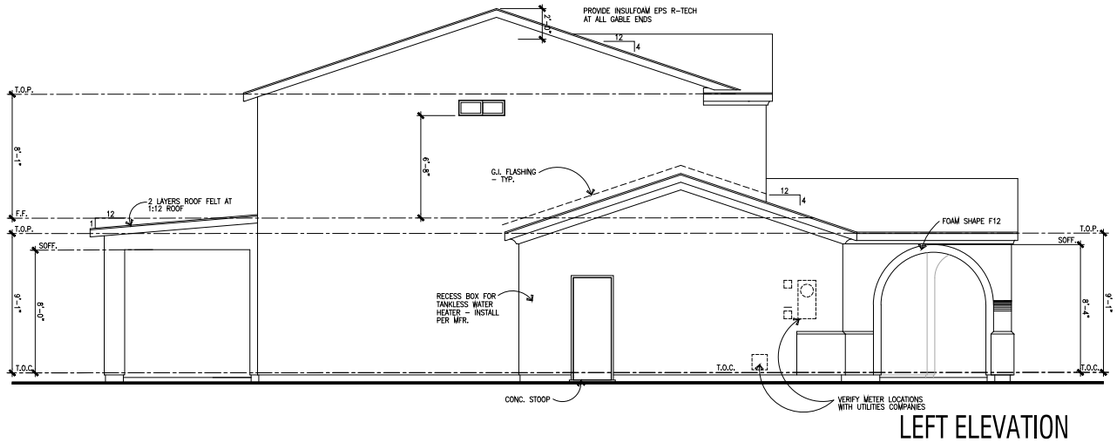
PLAN 2399B & C ADDENDA FLOOR PLANS

PROJECT MANAGER :	MM
DESIGNER :	AM
DRAWN BY :	MH
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	-
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2018077
CAD FILE NAME :	13219A1.5

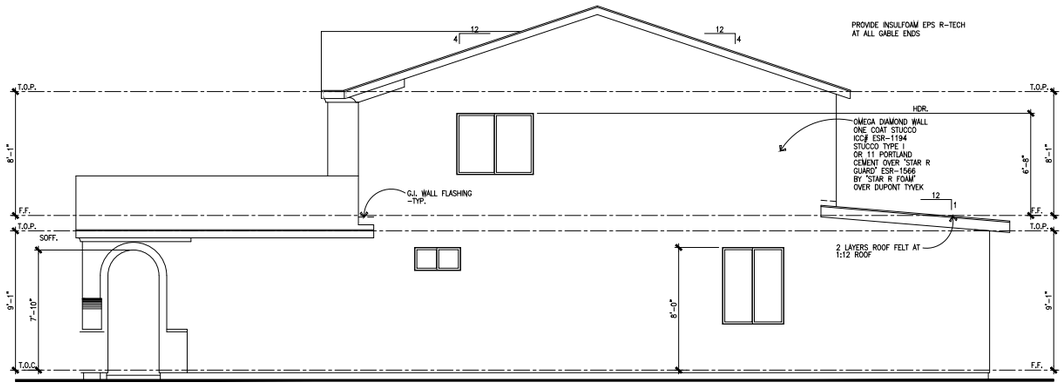
DATE: 11-06-19

SHEET: A1.5

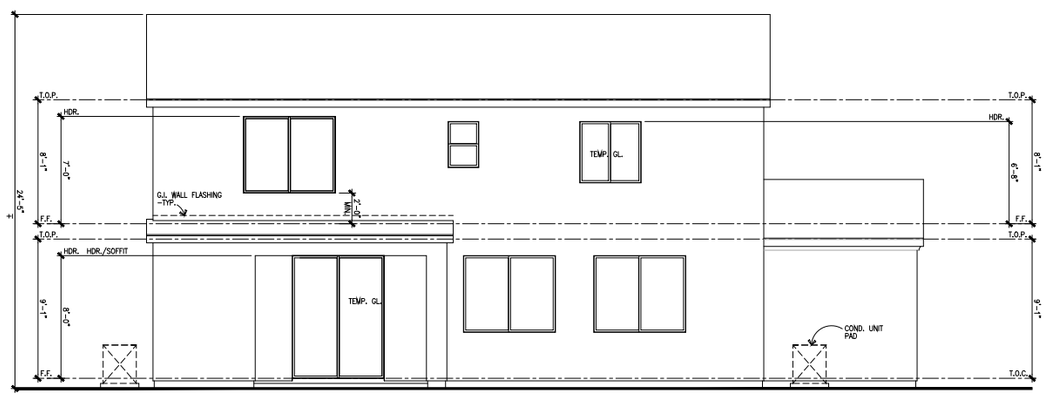
2015253.05 - 2019 CODE CHANGE PROGRESS SET 11-06-19



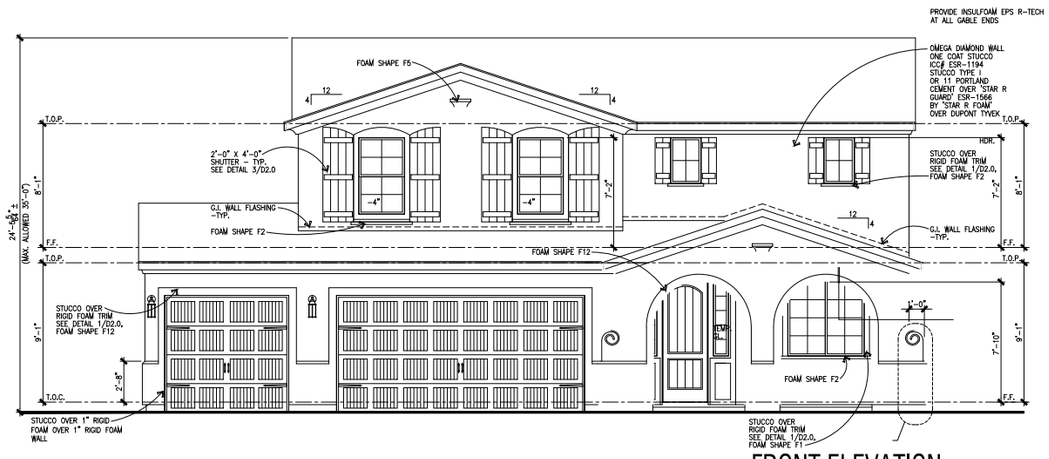
LEFT ELEVATION



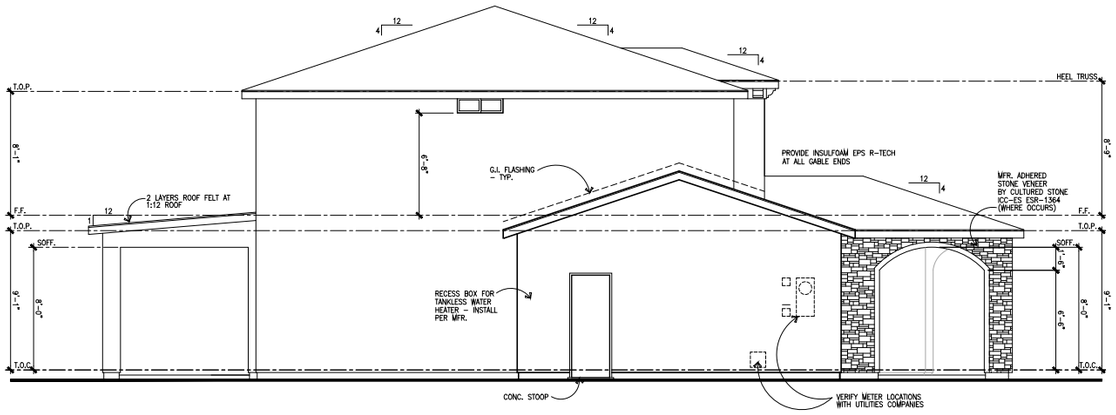
RIGHT ELEVATION



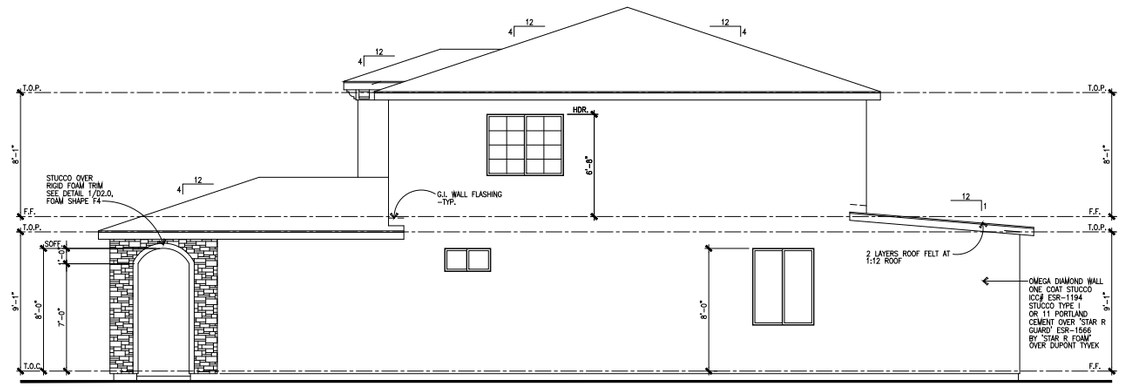
REAR ELEVATION



FRONT ELEVATION



LEFT ELEVATION



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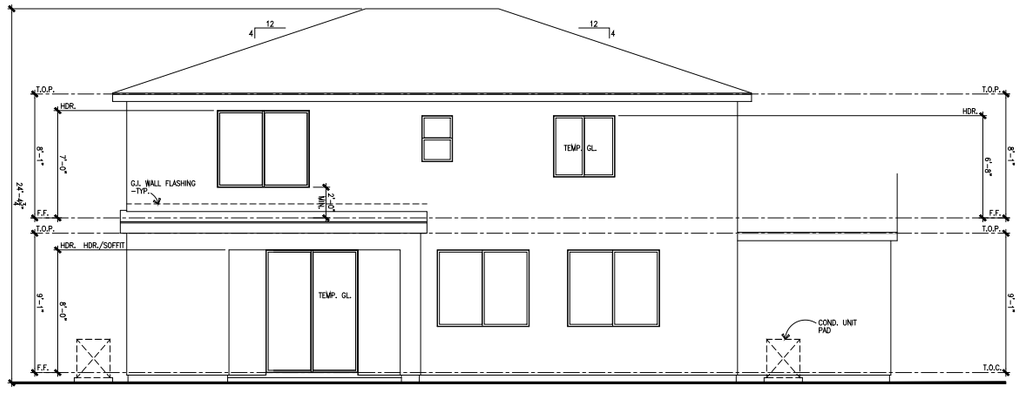
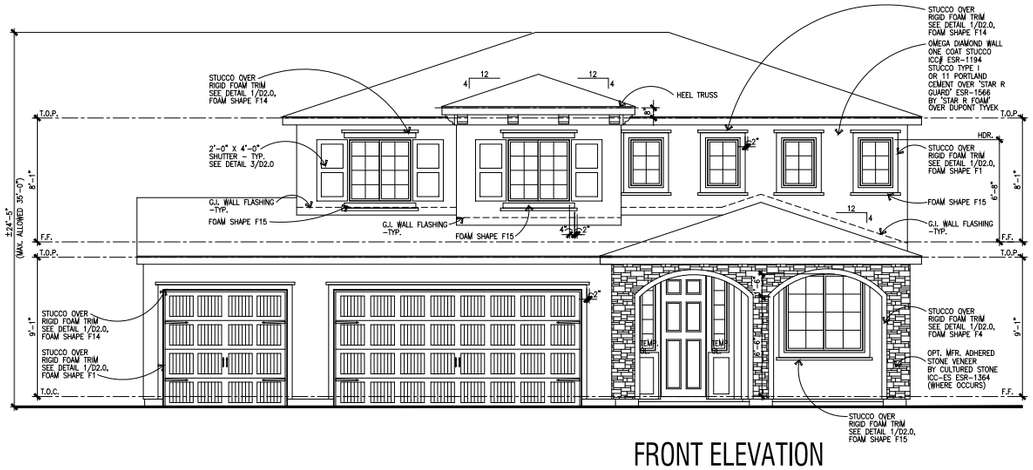
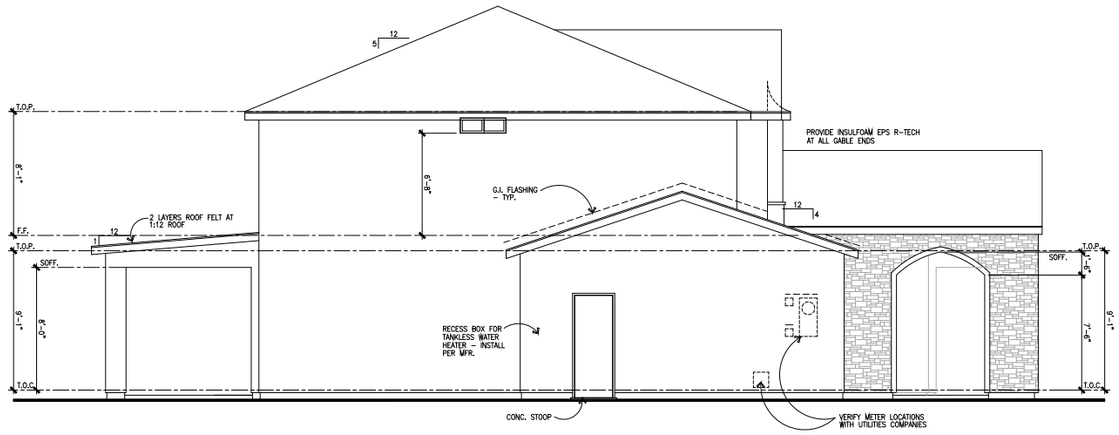


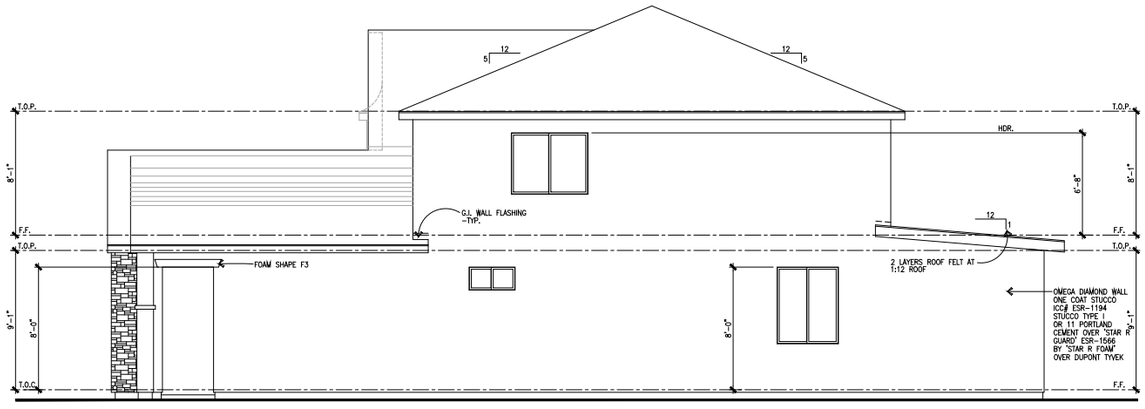
REAR ELEVATION



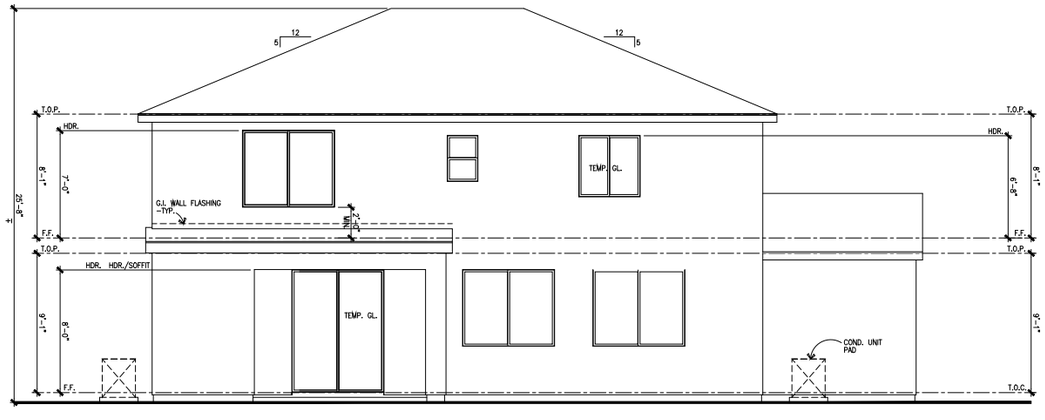
FRONT ELEVATION



LEFT ELEVATION



RIGHT ELEVATION



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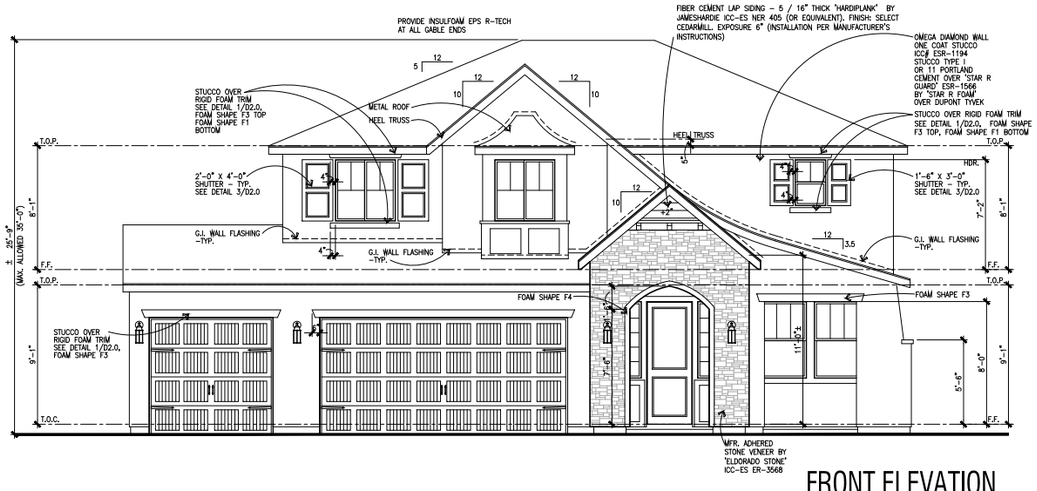
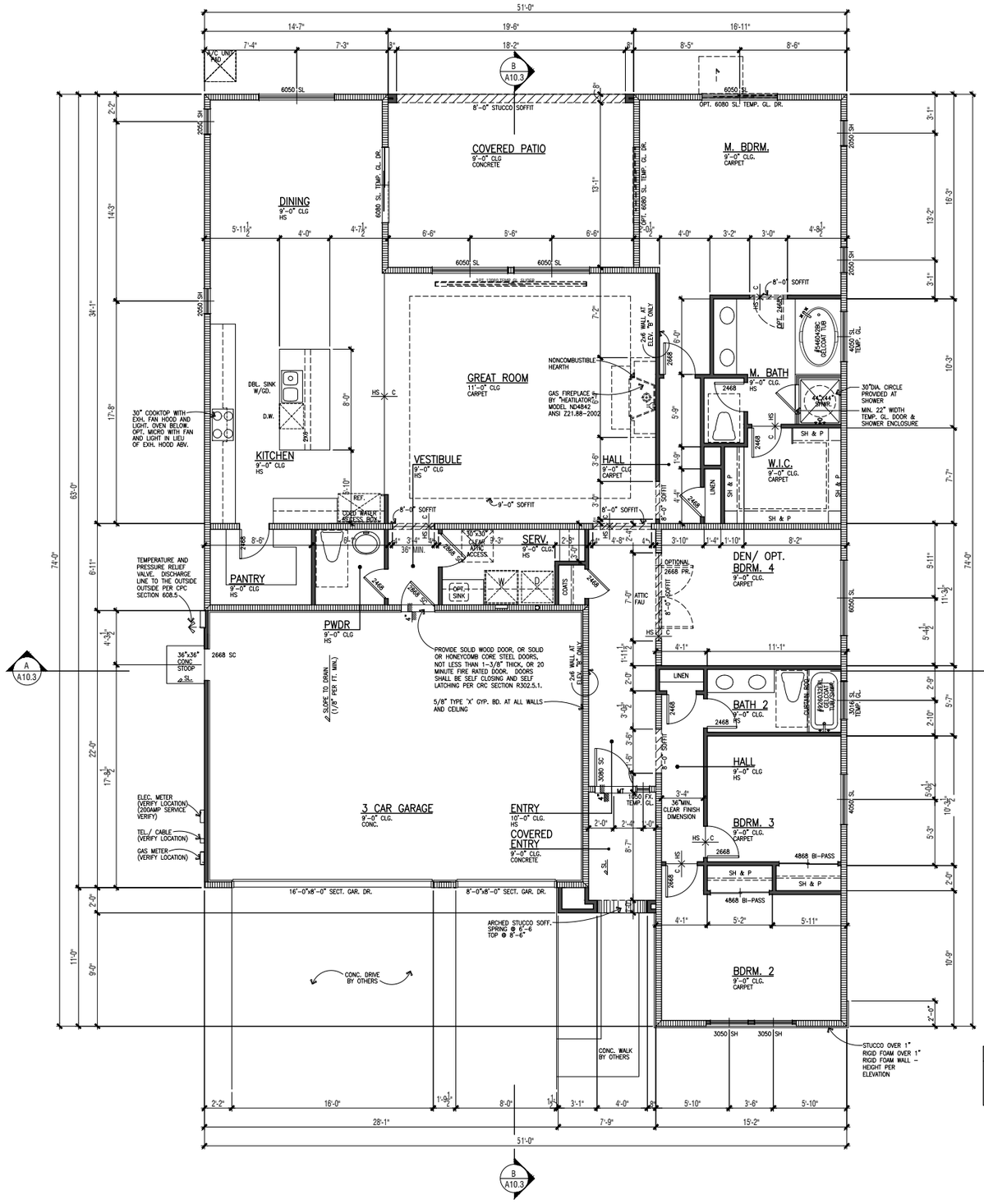
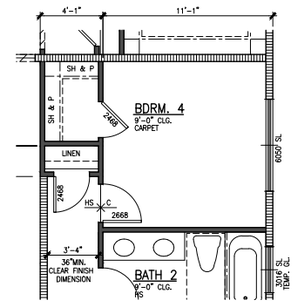


FRONT ELEVATION

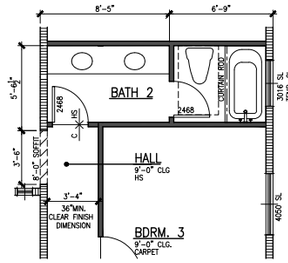


FLOOR PLAN NOTES

1. ATTICS: ACCESS PER CRC R807, DRAFTSTOPS PER CRC R302.12 AND VENTILATION PER R806.
2. EMERGENCY ESCAPE AND RESCUE OPENINGS PER CRC R310. MEANS OF EGRESS PER CRC R311.
3. GLAZING PER CRC R303.1 & R308
4. FACTORY-BUILT FIREPLACES AND CHIMNEYS PER CRC R1004, R1005, R1006 CGBSC SECTION 4.503 & CEnC SECTION 150.0(e).
5. COMBUSTION AIR TO FORCED AIR UNIT PER CMC CHAPTER 7.
6. COMBUSTION AIR TO WATER HEATER PER CPC SECTION 507.0.
7. ENVIRONMENTAL AIR DUCTS PER CMC SECTION 504.
8. MECHANICAL EQUIPMENT LOCATION AND PROTECTION AGAINST DAMAGE PER CMC 305 & 308.
9. MANDATORY REQUIREMENTS FOR APPLIANCES PER CEnC SECTION 110.1.
10. THE SILL HEIGHT IS NOT TO EXCEED 44" FROM THE BOTTOM OF THE CLEAR OPENING IN SLEEPING ROOMS. 2016 CRC R31.0.1
11. IN UPPER FLOOR PLANS, ANY OPERABLE WINDOW WITH A SILL THAT IS LOCATED LESS THAN 24" ABOVE THE FINISHED FLOOR AND MORE THAN 72" ABOVE FINISHED GRADE OR OTHER SURFACE BELOW AT THE EXTERIOR, MUST BE PROTECTED BY A GUARD OR, HAVE FIXED GLASS. THE GUARD MAY NOT HAVE OPENINGS THAT A SPHERE 4" IN DIAMETER CAN PASS THROUGH. 2016 CRC R312.2
12. A SHEETROCK NAILING INSPECTION IN REQUIRED. 2016 CRC R109.1.4.2 & 2016 CBC 110.3.5
13. GLAZING IN A HAZARDOUS LOCATION IS REQUIRED TO BE GLAZED WITH SAFETY MATERIAL. 2016 CRC R308
14. PROVIDE A 9" SQUARE FRESH AIR INTAKE FOR THE GAS APPLIANCE FIREPLACE 2016 T-24
15. VERTICAL CLEARANCE ABOVE THE COOKTOP TO COMBUSTIBLES IS 30" UNPROTECTED, OR 24" PROTECTED, AND THE HORIZONTAL DIMENSIONS IS REQUIRED TO BE PER THE PERMANENT MARKING LISTED ON THE UNIT. 2016 CMC 916.1 & 916.2
16. A SHEETROCK NAILING INSPECTION IS REQUIRED. - 2016 CRC R106.1.1
17. THE WALL SURFACE BEHIND CERAMIC TILE OR OTHER FINISH WALL MATERIALS SUBJECT TO WATER SPLASH ARE CONSTRUCTED OF MATERIALS NOT ADVERSELY AFFECTED BY WATER. NOTE THE USE OF FIBER CEMENT, FIBER MAT, REINFORCED CEMENT OR GLASS MAT GYPSUM BACKERS ON THE FLOOR PLAN. NOTE THAT WATER RESISTANT GYPSUM BOARD IS NO LONGER PERMITTED TO BE USED IN THESE LOCATIONS. -2016 CRC R702.4.2
18. THE THREE CAR GARAGE IS NON-CONFORMING AND THE REQUIRED SIDEYARD SETBACKS MAY NOT BE RELAXED. 2016 CRC R106.1.1
19. NOTE THAT ALL ATTIC ACCESS OPENINGS ARE GASKETED TO PREVENT AIR LOSS. 2016 CEC 150.0(a)
20. A MINIMUM 30" DIA. CIRCLE IS PROVIDED AT THE SHOWER FLOOR. THE MINIMUM FLOOR AREA OF THE SHOWER COMPARTMENT IS 1024 SQUARE INCHES. 2019 CPC 408.6
21. AFTER INSTALLING WALL, CEILING, OR FLOOR INSULATION, THE INSTALLER SHALL POST IN A CONSPICUOUS LOCATION IN THE BUILDING A CERTIFICATE SIGNED BY THE INSTALLER STATING THAT THE INSTALLATION WAS PERFORMED IN ACCORDANCE WITH TITLE 24 REQUIREMENTS.
22. THE BUILDER SHALL PROVIDE THE ORIGINAL OCCUPANT WITH THE LIST OF THE HEATING, COOLING, WATER-HEATING AND LIGHTING SYSTEMS AND CONSERVATION OR SOLAR DEVICES INSTALLED IN THE BUILDING AND INSTRUCTIONS ON HOW TO USE THEM EFFICIENTLY. CCR TITLE 20



OPT. BDRM. 4
ILO DEN



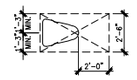
OPT. BATH 2
ILO HALL LINEN

ARCHITECTURAL SYMBOL LEGEND

- LOW WALL
- 2 x 4 STUD WALL
- 2 x 6 STUD WALL

INTERIOR ELEVATION KEY

REQUIRED FLOOR CLEARANCES AT WATER CLOSETS - TYPICAL



EARLY CALIFORNIA/SANTA BARBARA

FLOOR AREA TABLE	PLAN 2404A
FLOOR PLAN	2407 SQ. FT.
TOTAL	2407 SQ. FT.
3-CAR GARAGE	664 SQ. FT.
COVERED ENTRY/PORCH	52 SQ. FT.
COVERED PATIO	268 SQ. FT.

FLOOR PLAN

SCALE: 1/4" = 1'-0"

ARCHITECTS . PLANNERS . DESIGNERS

WHA AGEN

ORANGE COUNTY . LOS ANGELES . BAY AREA

WILSON HOMES

TRACT NUMBER:
PROJECT TYPE: S.F.D.

PLAN 2404

CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

EARLY CALIFORNIA / SANTA BARBARA FLOOR PLAN

REVISIONS

NO.	DATE	DESCRIPTION

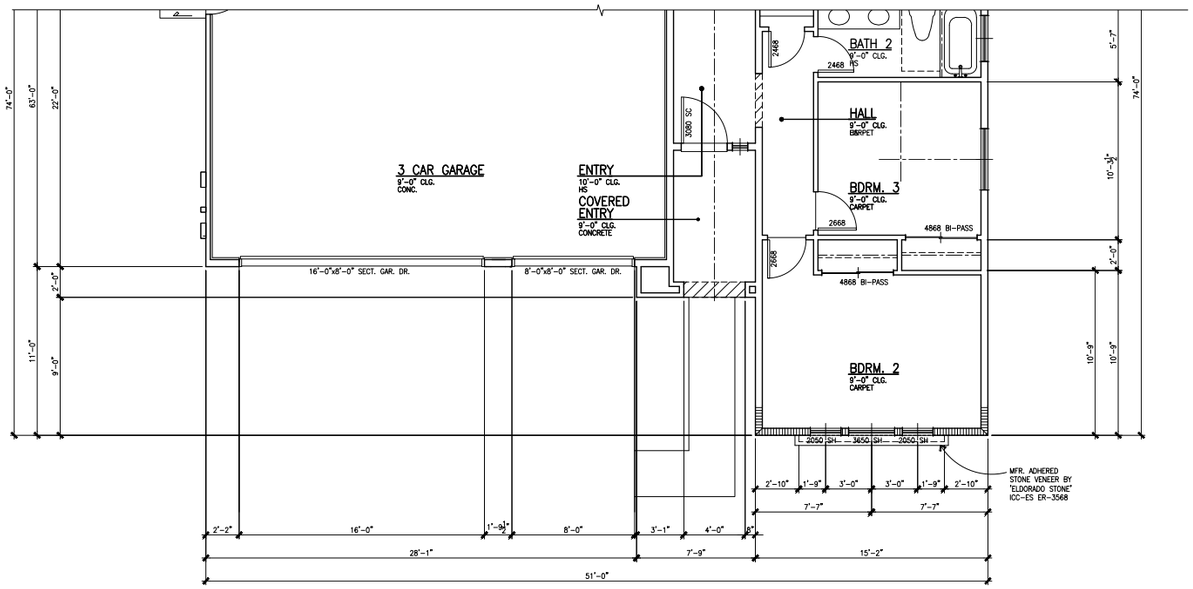
PLAN 2404A
FLOOR PLAN AND OPTIONS

PROJECT MANAGER :	MM
DESIGNER :	AM
DRAWN BY :	MH
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	-
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2015253
CAD FILE NAME :	13219A101

DATE: 11-05-19

SHEET: A10.1

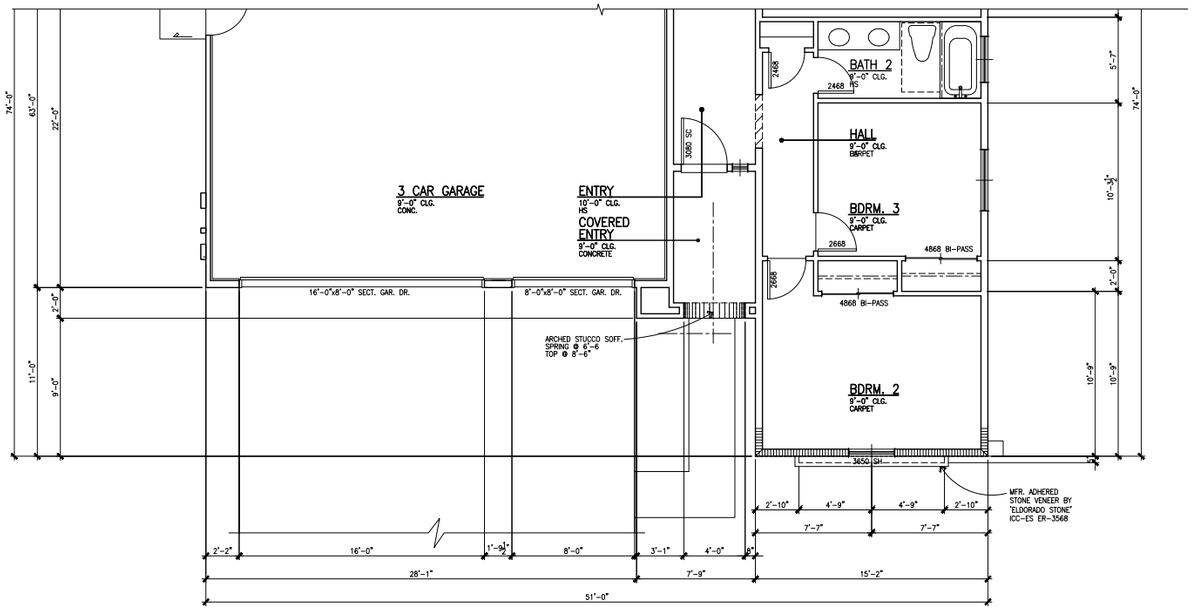
2015253.05 - 2019 CODE CHANGE PROGRESS SET 11-05-19



PARTIAL FLOOR PLAN 2404B - TUSCAN

TUSCAN

SPN #	-
FLOOR AREA TABLE	PLAN 2404B
FLOOR PLAN	2407 SQ. FT.
TOTAL	2407 SQ. FT.
3-CAR GARAGE	664 SQ. FT.
COVERED ENTRY/PORCH	52 SQ. FT.
COVERED PATIO	268 SQ. FT.



PARTIAL FLOOR PLAN 2404C - CRAFTSMAN

CRAFTSMAN

SPN #	2022-2017
FLOOR AREA TABLE	PLAN 2404C
FLOOR PLAN	2407 SQ. FT.
TOTAL	2407 SQ. FT.
3-CAR GARAGE	664 SQ. FT.
COVERED ENTRY/PORCH	52 SQ. FT.
COVERED PATIO	268 SQ. FT.

A
D A10.7 B
C

INTERIOR ELEVATION KEY

SCALE: 1/4" = 1'-0"

ARCHITECTS . PLANNERS . DESIGNERS
WHA AGEN
ORANGE COUNTY . LOS ANGELES . BAY AREA

WILSON HOMES

TRACT NUMBER:
PROJECT TYPE: S.F.D.

PLAN 2404
CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

REVISIONS

NO.	DATE	DESCRIPTION

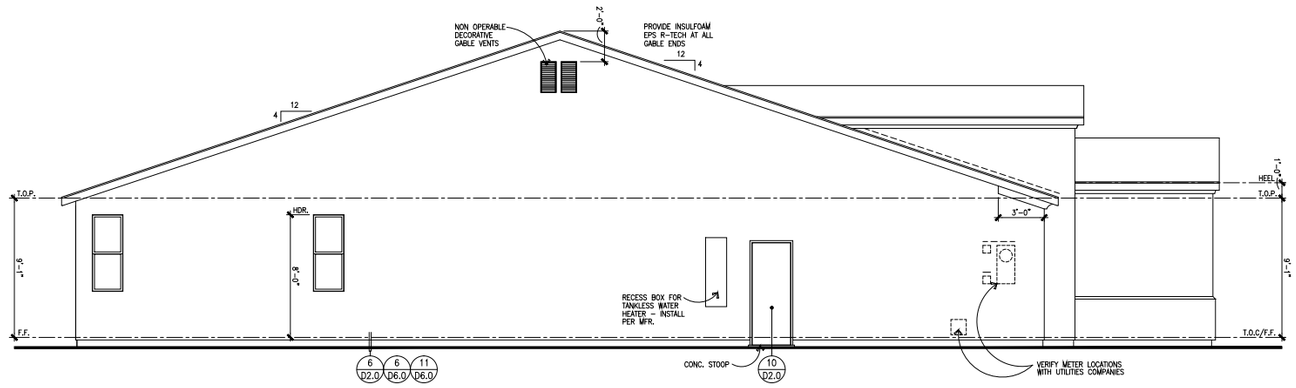
PLAN 2404B & C
ADDENDA FLOOR
PLANS

PROJECT MANAGER :	MM
DESIGNER :	AM
DRAWN BY :	MH
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	-
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2015253
CAD FILE NAME :	13219A10.5

DATE: 11-05-19
SHEET: A10.5

ADDENDA FLOOR PLANS B TUSCAN & C CRAFTSMAN

2015253.05 - 2019 CODE CHANGE PROGRESS SET 11-05-19



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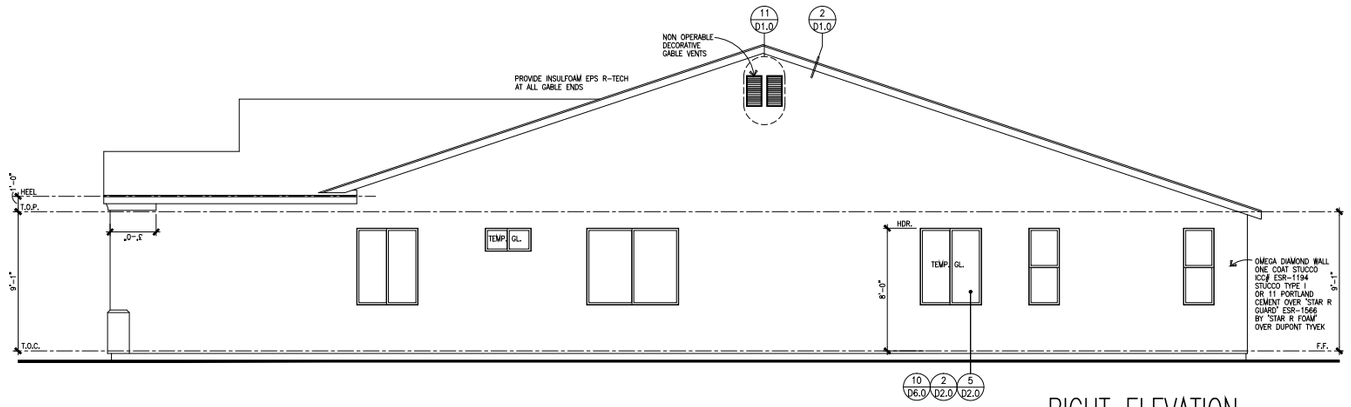

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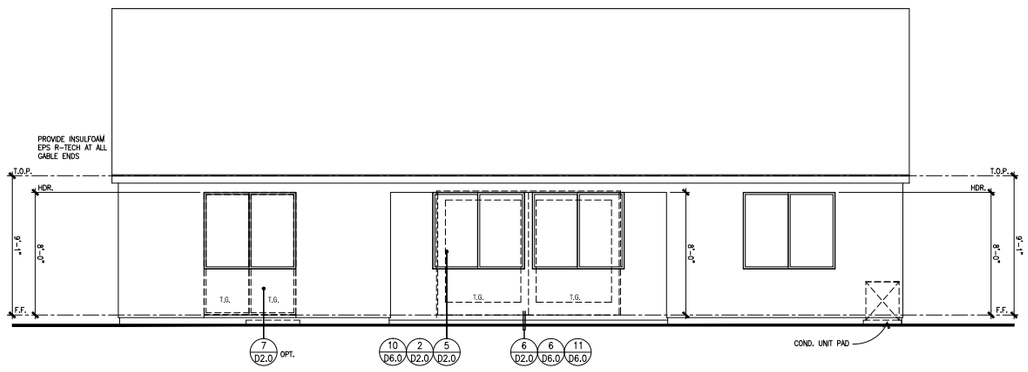

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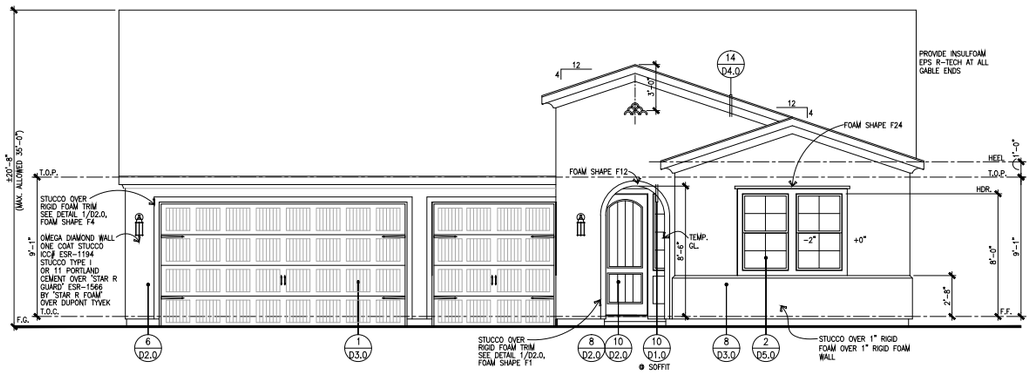

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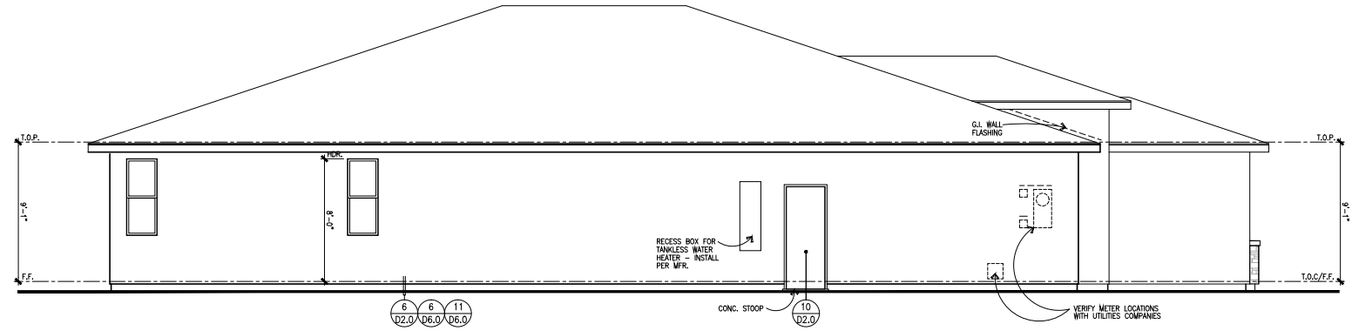

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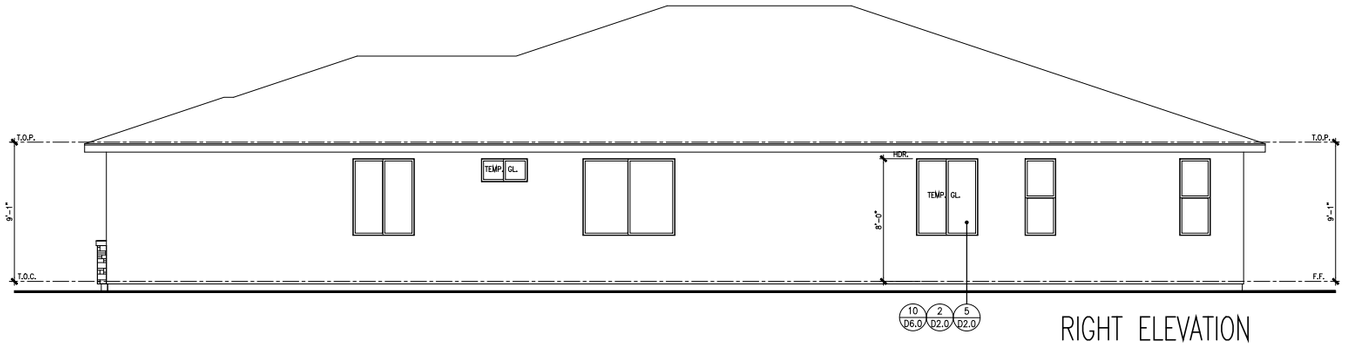

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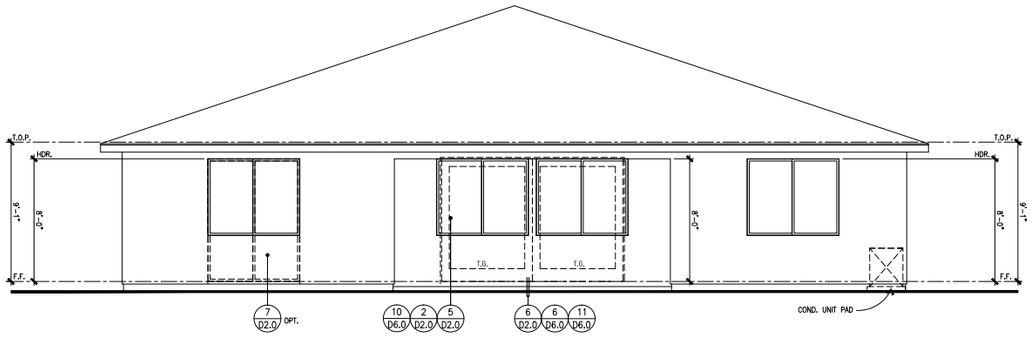

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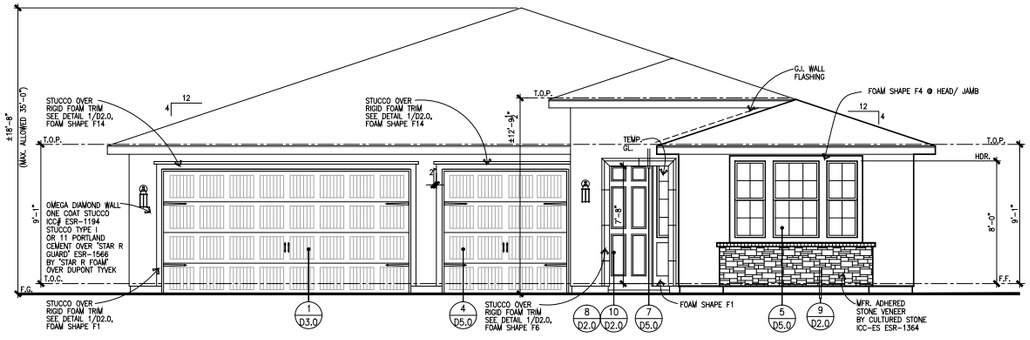

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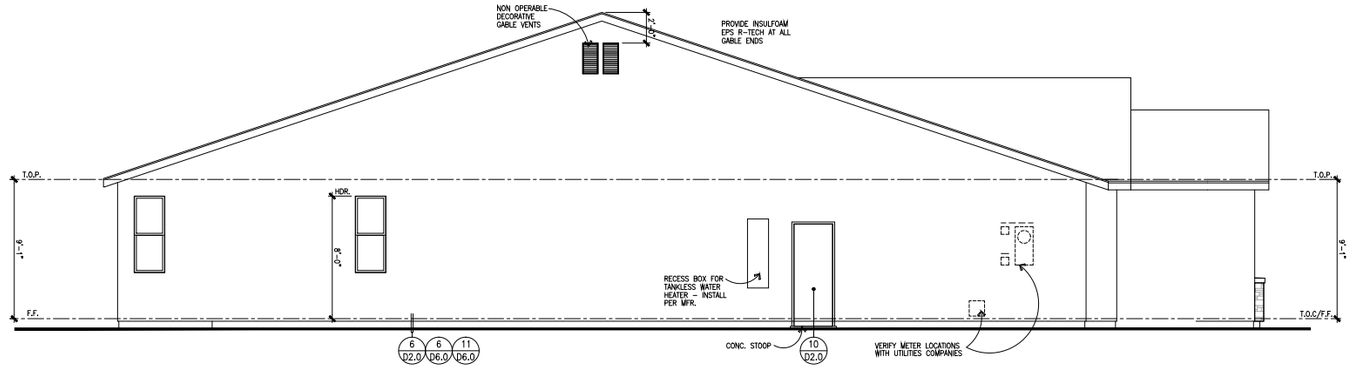

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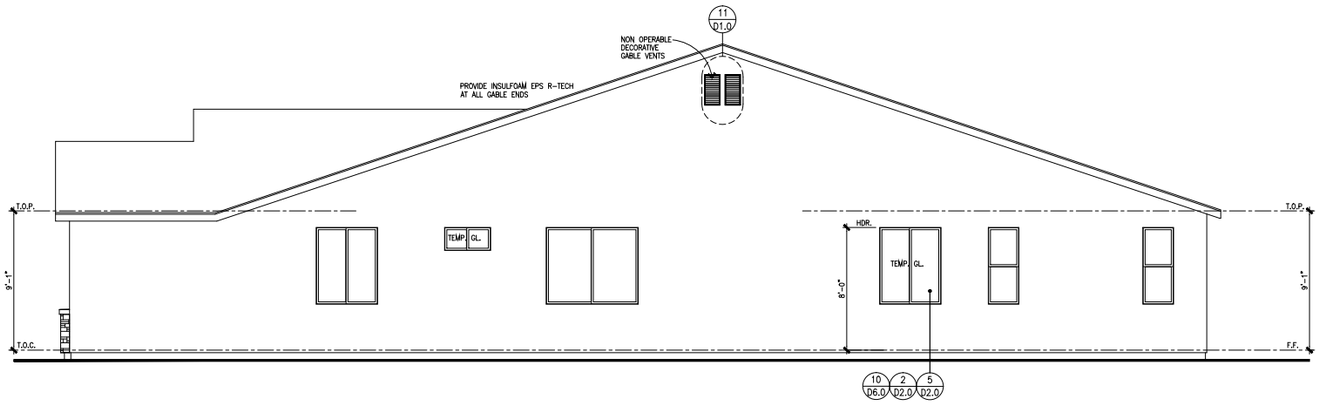

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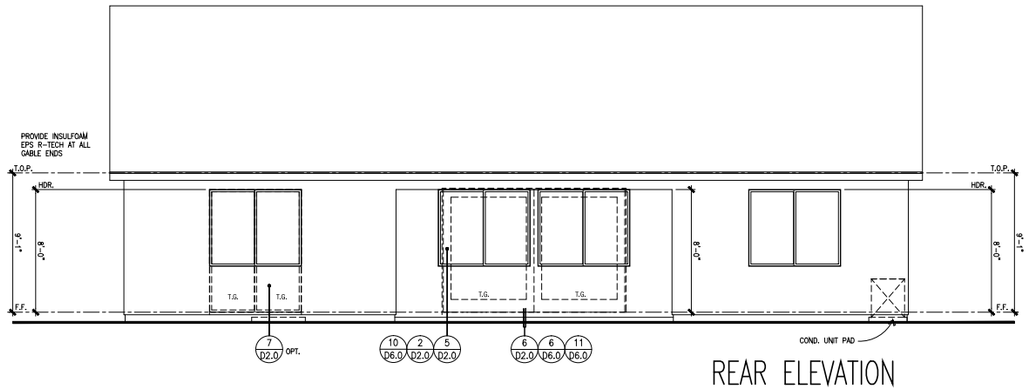

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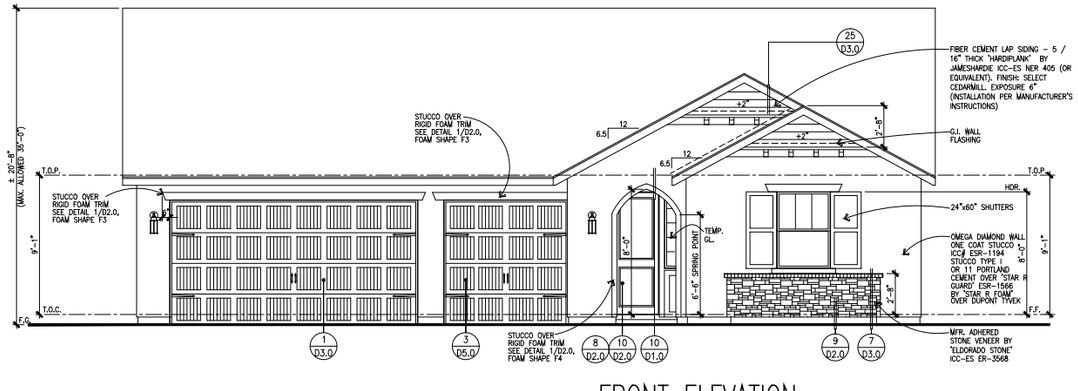

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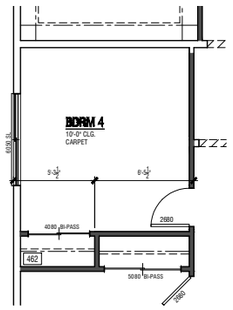
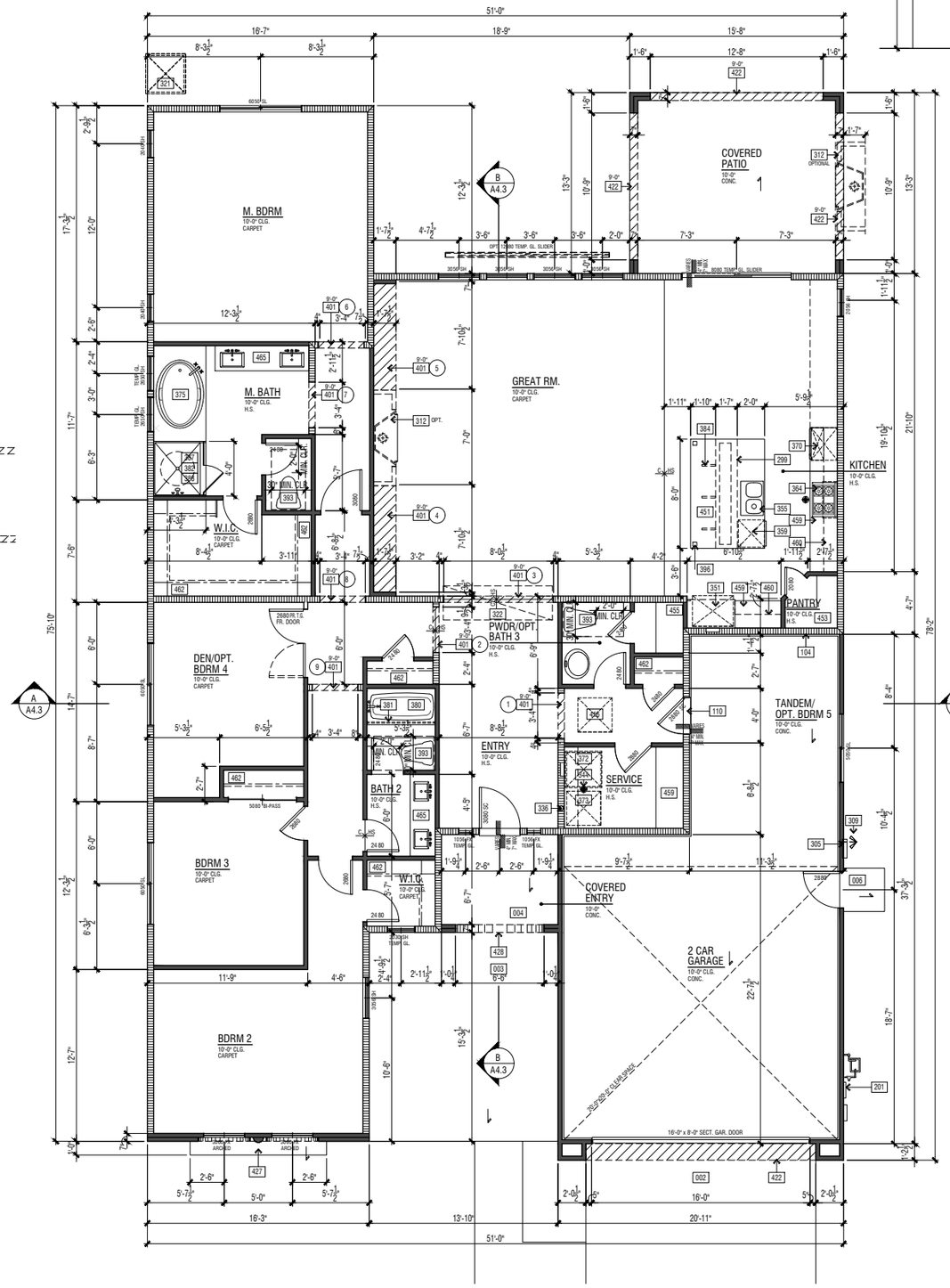
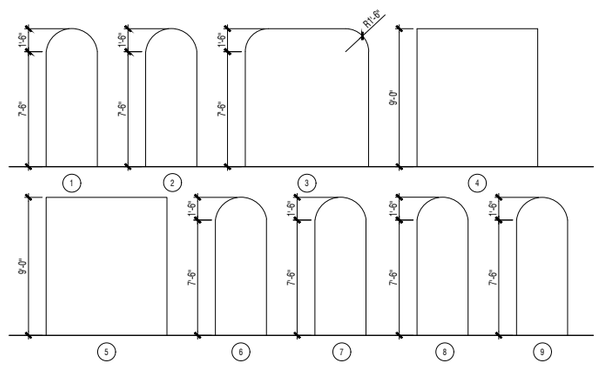


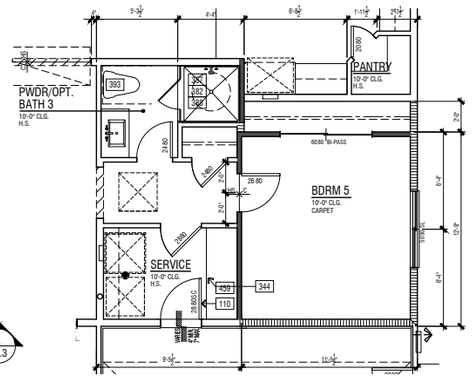
BDRM 4 ILO DEN



FLOOR PLAN



SOFFIT PROFILES



BDRM 5 ILO TANDEM

FLOOR PLAN NOTES

1. ATTICS: ACCESS PER CRC R807, DRAFTSTOPS PER CRC R302.12 AND VENTILATION PER R806.
2. CRAWL SPACES: ACCESS PER CRC R408.4 AND VENTILATION PER R408.1.
3. EMERGENCY ESCAPE AND RESCUE OPENINGS PER CRC R202 & R310. MEANS OF EGRESS PER CRC 311.
4. GLAZING PER CRC R303.1, R301.2.1.2 & R308.
5. FACTORY-BUILT FIREPLACES AND CHIMNEYS PER CRC R1004, R1005, R1006 AND A.Q.M.D. RULE 445.
6. COMBUSTION AIR TO FORCED AIR UNIT PER CMC CHAPTER 7.
7. COMBUSTION AIR TO WATER HEATER PER CPC SECTION 506.0.
8. ENVIRONMENTAL AIR DUCTS PER CMC SECTION 504.
9. MECHANICAL EQUIPMENT LOCATION AND PROTECTION AGAINST DAMAGE PER CMC 305.
10. MANDATORY REQUIREMENTS FOR APPLIANCES PER CEnC SECTION 110.1.
11. THE SILL HEIGHT IS NOT TO EXCEED 44" FROM THE BOTTOM OF THE CLEAR OPENING IN SLEEPING ROOMS. CRC R31.0.1
12. IN UPPER FLOOR PLANS, ANY OPERABLE WINDOW WITH A SILL THAT IS LOCATED LESS THAN 24" ABOVE THE FINISHED FLOOR AND MORE THAN 72" ABOVE FINISHED GRADE OR OTHER SURFACE BELOW AT THE EXTERIOR, MUST BE PROTECTED BY A GUARD OR, HAVE FIXED GLASS. THE GUARD MAY NOT HAVE OPENINGS THAT A SPHERE 4" IN DIAMETER CAN PASS THROUGH. CRC R312.2
13. A SHEETROCK NAILING INSPECTION IN REQUIRED. CRC R109.1.4.2 & 2016 CBC 110.3.5
14. GLAZING IN A HAZARDOUS LOCATION IS REQUIRED TO BE GLAZED WITH SAFETY MATERIAL CRC R308
15. PROVIDE A 6" SQUARE FRESH AIR INTAKE FOR THE GAS APPLIANCE FIREPLACE 2019 T-24
16. VERTICAL CLEARANCE ABOVE THE COOKTOP TO COMBUSTIBLES IS 30" UNPROTECTED, OR 24" PROTECTED, AND THE HORIZONTAL DIMENSIONS IS REQUIRED TO BE PER THE PERMANENT MARKING LISTED ON THE UNIT. CMC 916.1 & 916.2
17. A SHEETROCK NAILING INSPECTION IS REQUIRED. - CRC R106.1.1
18. THE WALL SURFACE BEHIND CERAMIC TILE OR OTHER FINISH WALL MATERIALS SUBJECT TO WATER SPLASH ARE CONSTRUCTED OF MATERIALS NOT ADVERSELY AFFECTED BY WATER. NOTE THE USE OF FIBER CEMENT, FIBER MAT, REINFORCED CEMENT OR GLASS MAT GYPSUM BACKERS ON THE FLOOR PLAN. NOTE THAT WATER RESISTANT GYPSUM BOARD IS NO LONGER PERMITTED TO BE USED IN THESE LOCATIONS. CRC R702.4.2
19. THE THREE CAR GARAGE IS NON-CONFORMING AND THE REQUIRED SIDEYARD SETBACKS MAY NOT BE RELAXED. CRC R106.1.1
20. NOTE THAT ALL ATTIC ACCESS OPENINGS ARE GASKETED TO PREVENT AIR LOSS. CEC 150.0(a)
21. A MINIMUM 30" DIA. CIRCLE IS PROVIDED AT THE SHOWER FLOOR. THE MINIMUM FLOOR AREA OF THE SHOWER COMPARTMENT IS 1024 SQUARE INCHES. CPC 408.6

FLOOR PLAN KEY NOTES

Name	NOTE
002	CONCRETE DRIVE (BY OTHERS)
003	CONCRETE WALK (BY OTHERS)
004	CONCRETE PORCH SLAB (BY OTHERS) SLOPE 1/4" PER FOOT MINIMUM IN DIRECTION INDICATED
006	CONCRETE STOOP 36" DEEP AND 2" WIDER THAN DOOR OPENING - SLOPE 1/4" PER FOOT MINIMUM TO DRAIN IN DIRECTION INDICATED
101	GARAGE AND/OR CARPORT SHALL BE SEPARATED FROM THE RESIDENCE AND ITS ATTIC BY MEANS OF A MIN. 1/2" GYP. BD., OR EQUIVALENT, APPLIED TO THE GARAGE SIDE PER CRC SECTION R302.6.
110	PROVIDE SOLID WOOD DOOR, OR SOLID OR HONEYCOMB CORE STEEL DOORS, NOT LESS THAN 1-3/8" THICK, OR 20 MINUTE FIRE RATED DOOR. DOORS SHALL BE SELF CLOSING AND SELF LATCHING PER CRC R302.5.1
201	UTILITY EQUIPMENT AND SERVICE PANELS - VERIFY LOCATION
299	2X6 LOW WALL AT ISLAND
305	TANK LESS WATER HEATER. INSTALLATION PER MANUFACTURE'S INSTRUCTIONS
309	TEMPERATURE AND PRESSURE RELIEF VALVE. DISCHARGE LINE PER CPC SECTION 608.5
312	METAL FIREPLACE (GAS APPLIANCE) - HEIGHT PER PLAN - INSTALL PER MANUFACTURER'S INSTRUCTIONS. BY HEATILATOR MODEL# ND48/42 ANSI Z21.88-2002. PROVIDE A 6" SQUARE FRESH AIR INTAKE FOR THE GAS APPLIANCE.
321	AIR CONDITIONING CONDENSER LOCATION - PAD SUPPORTING COMPRESSOR/ CONDENSER SHALL BE A MINIMUM OF 3" ABOVE GRADE PER C.M.C. SECTION 1105.2.
322	FORCED AIR UNIT (FAU) ATTIC INSTALLATION
336	4" G.I. DRYER VENT WITH APPROVED LINT TRAP - VENT THROUGH ROOF
344	WHOLE HOUSE EXHAUST FAN PER 2019 CEC. REFER TO ATTACHED "SUMMARY OF THE 2019 ENERGY CODE ASHRAE 62.2 REQUIREMENTS"
351	REFRIGERATOR SPACE WITH RECESSED COLD WATER BOX
355	SINK WITH GARBAGE DISPOSER
359	DISHWASHER
364	COOKTOP & EXHAUST HOOD WITH FAN AND LIGHT (EXHAUST VENT TO OUTSIDE). THE VERTICAL CLEARANCE ABOVE THE COOKTOP TO COMBUSTIBLE IS 30" UNPROTECTED, OR 24" PROTECTED., AND THE HORIZONTAL DIMENSION IS REQUIRED TO BE PER THE MARKING LISTED ON THE UNIT. 2019 CMC 921.3.2 & 921.4.3
370	OVEN/MICROWAVE COMBO
372	WASHER SPACE WITH RECESSED WATER BOX AND DRAIN PAN
373	DRYER SPACE
375	DROP-IN TUB - 42" X 60"
380	TUB/ SHOWER - 32"X60" MODEL 2603DT - GELCOAT SURFACE - BY AQUATIC
381	CURTAIN ROD
382	SHATTERPROOF SHOWER DOOR/ ENCLOSURE
384	CORBEL (TYP. - 3 PLACES) AT BOTTOM
386	SHOWER - PREFABRICATED STALL - 36"X60"X76" MODEL 1603DTS - GELCOAT SURFACE - BY AQUATIC
387	SHOWER - HOT MOP - SIZE PER PLAN
388	30" CIRCLE PROVIDED AT SHOWER
393	TOILET - PROVIDE MINIMUM 24" X 30" CLEAR FLOOR AREA IN FRONT OF TOILET
396	DECORATIVE POST AT KITCHEN ISLAND (TYP. 2 PLACES)
401	INTERIOR SOFFIT(S)/ DROPPED CEILING(S): HEIGHT PER PLAN
413	OPEN TO BELOW
416	30"X30" ATTIC ACCESS - DIMENSIONS ARE CLEAR, ATTIC ACCESS DOORS SHALL HAVE PERMANENTLY ATTACHED INSULATION USING ADHESIVE OR MECHANICAL FASTENERS. THE ATTIC ACCESS SHALL BE GASKETED TO PREVENT AIR LEAKAGE PER CENC 150.0(A)2 - SEE DETAIL X/X.X
422	STUCCO SOFFIT: HEIGHT PER ELEVATION
427	STUCCO SOFFIT OVER WATERPROOFED STUCCO SHELF-SLOPE FRAMING FOR DRAINAGE (1/4" PER FOOT MINIMUM)
442	EXTERIOR 2X PONY WALL - SIZE PER PLAN
451	KITCHEN ISLAND - PROVIDE APPROVED UNDERGROUND CONDUIT FOR ELECTRIC SERVICE TO ISLAND
453	PANTRY
454	DESK
455	LINEN
458	LINEN (UPPER ONLY)
459	BASE CABINET
460	UPPER CABINET
462	SHELF AND POLE
465	VANITY

BEDROOM 5 OPTION INCLUDED

SPN #	.
FLOOR AREA TABLE	PLAN 2528A
LOWER FLOOR PLAN	2702 SQ. FT.
TOTAL	2702 SQ. FT.
2 CAR GARAGE	473 SQ. FT.
COVERED PATIO	208 SQ. FT.
COVERED ENTRY	61 SQ. FT.

SPN #	.
FLOOR AREA TABLE	PLAN 2528A
FLOOR PLAN	2536 SQ. FT.
TOTAL	2536 SQ. FT.
2-CAR GARAGE W/ TANDEM	639 SQ. FT.
COVERED ENTRY/PORCH	61 SQ. FT.
COVERED PATIO	208 SQ. FT.
FLOOR PLAN W/ BEDROOM 4	2536 SQ. FT.
2-CAR GARAGE	473 SQ. FT.

NOTE: SQUARE FOOTAGE MAY VARY DUE TO METHOD OF CALCULATION

SCALE: 1/4" = 1'- 0"

INTERIOR ELEVATION KEY

ARCHITECTS . PLANNERS . DESIGNERS
WHA.
ORANGE COUNTY . LOS ANGELES . BAY AREA

AGEN

WILSON HOMES

TRACT NUMBER: 6174/6221
PROJECT TYPE: S.F.D.

CHADWICK - PLAN 2258

CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

REVISIONS

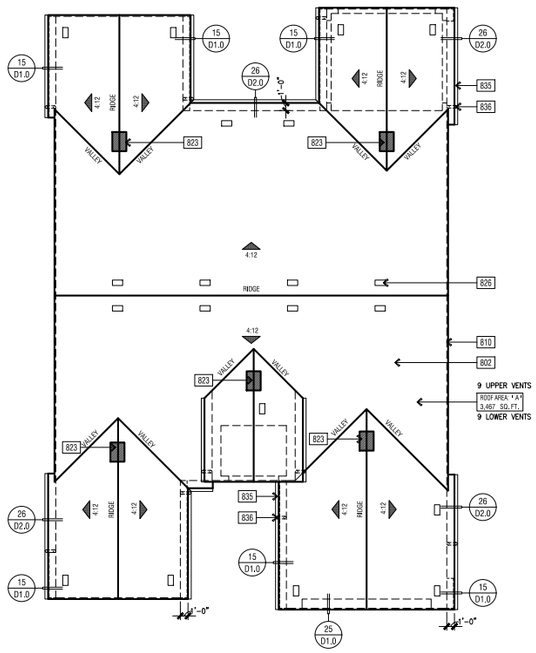
NO.	DATE	DESCRIPTION

PLAN 2528A
FLOOR PLAN AND OPTIONS

PROJECT MANAGER :	MM
DESIGNER :	AM
DRAWN BY :	-
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	-
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2015253
CAD FILE NAME :	A401

DATE: 12-06-19
SHEET: A4.1

2015253.05 - 1ST BUILDING DEPARTMENT SUBMITTAL PROGRESS SET XX-XX-19



ROOF ATTIC AREA	A	3467	SQ. FT.	CALCULATION FACTOR:	1/300
		499248	SQ. IN		
MIN. VENTILATION REQUIRED:	TOTAL	1664	SQ. IN	TOTAL PROVIDED:	1756 SQ. IN
MIN. VENTILATION REQUIRED:	HIGH	832	SQ. IN	TOTAL HIGH PROVI	878 SQ. IN
MIN. VENTILATION REQUIRED:	LOW	832	SQ. IN	TOTAL LOW PROVI	878 SQ. IN

HIGH VENTILATION METHOD	SIZE	FREE AREA		QUANTITY		FREE VENT AREA	
CLOAKED VENT - CONC.S-TILE	-	98	SQ. IN	X 9		878	SQ. IN
				TOTAL PROVIDED:		878	SQ. IN

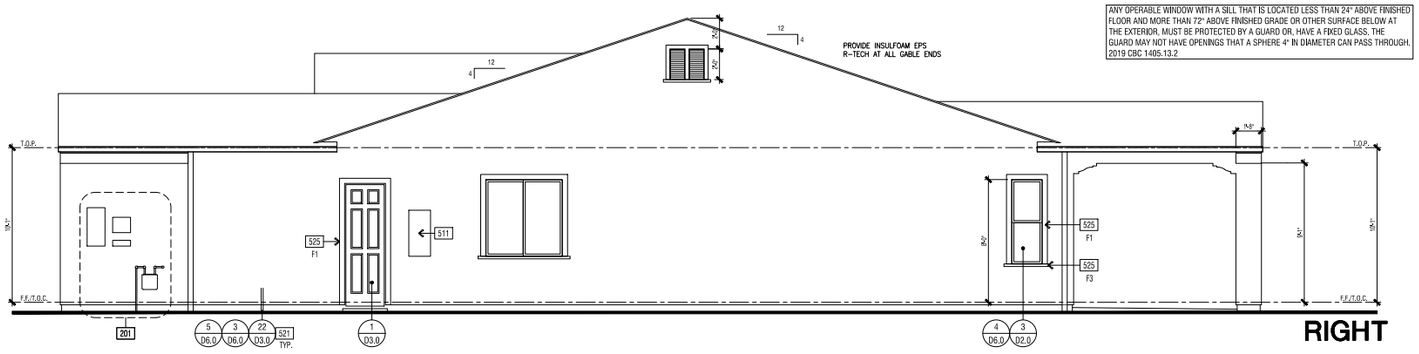
LOW VENTILATION METHOD	SIZE	FREE AREA		QUANTITY		FREE VENT AREA	
CLOAKED VENT - CONC.S-TILE	-	98	SQ. IN	X 9		878	SQ. IN
				TOTAL PROVIDED:		878	SQ. IN

FINISHED GRADE VARIES, SEE CIVIL ENGINEERS PLANS FOR FINAL GRADE AND SITE DRAINAGE.

ELEVATION KEY NOTES

Name	NOTE
201	UTILITY EQUIPMENT AND SERVICE PANELS - VERIFY LOCATION
202	INTEGRALLY ILLUMINATED ADDRESS PANEL. 6" MIN. HIGH BUILDING ADDRESS CHARACTERS PLACED IN SUCH A POSITION TO BE PLAINLY VISIBLE FROM THE STREET. CONNECT OF PHOTO CELL
206	DECORATIVE WALL SCONCE
321	AIR CONDITIONING CONDENSER LOCATION
511	RECESS BOX FOR TANKLESS WATER HEATER - INSTALL PER MFR. INSTRUCTIONS
515	-2" STUCCO RECESS - SIZE PER ELEVATION - SLOPE SILL 1 /4" PER FT. MINIMUM
521	STUCCO - OMEGA DIAMOND WALL ONE COAT STUCCO ICC# ESR-1194 STUCCO TYPE 1 OR 11 PORTLAND CEMENT OVER SRAT 'R' GUARD ESR-1566 BY 'START R FOAM'
525	STUCCO OVER RIGID FOAM TRIM - FOAM SHAPE PER ELEVATION (SEE DETAIL #6 SHEET D3.0)
591	DECORATIVE SHUTTER (SIZE AND STYLE PER ELEVATION). SEE DETAIL 13/D4.1
691	DECORATIVE METAL ACCENT - PROVIDE SOLID BACKING AND MINIMUM 12"X12" ELASTOMERIC SHEET WATERPROOFING AT ALL MOUNTING POINTS/ PENETRATIONS.
701	G.I. FLASHING
741	G.I. LOUVER VENT - RECTANGULAR (SIZE PER ELEVATION)
TYP.	2 LAYERS OF OF GRADE "D" BUILDING PAPER IS REQUIRED TO BE INSTALLED OVER WOOD SHEATHING. 2010 CRC R703.63

ANY OPERABLE WINDOW WITH A SILL THAT IS LOCATED LESS THAN 24" ABOVE FINISHED FLOOR AND MORE THAN 72" ABOVE FINISHED GRADE OR OTHER SURFACE BELOW AT THE EXTERIOR, MUST BE PROTECTED BY A GUARD OR, HAVE A FIXED GLASS. THE GUARD MAY NOT HAVE OPENINGS THAT A SPHERE 4" IN DIAMETER CAN PASS THROUGH. 2019 CBC 1405.13.2



RIGHT

ROOF PLAN

SCALE: 1/8" = 1'-0"

ELEVATION REFERENCE: A	ELEVATION STYLE: SANTA BARBARA				
ROOF MATERIAL	STANDARD ROOF DETAIL U.N.O.	FASCIA - U.N.O.	BARGE - U.N.O.	OVERHANG DIM. - U.N.O. EAVE	RAKE
CONCRETE 'S' TILE *EAGLE ROOFING" ICC# ESR-1900	1 D1.1	2X6	2X3	1'-0"	TIGHT

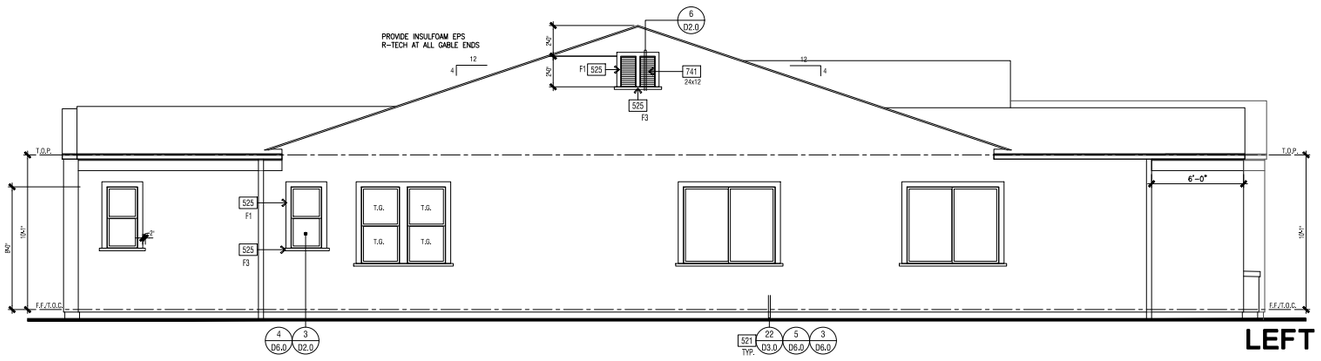
ROOF PLAN NOTES

NOTE: MANDATORY REQUIREMENTS FOR SOLAR READY BUILDINGS PER CEnC SECTION 110.10.

1. SEE GENERAL NOTES FOR ROOF NOTES.
2. SPARK ARRESTORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
3. ATTIC ACCESS PER CRC SECTION R807.
4. PROVIDE ATTIC & SOFFIT VENTILATION PER CRC SECTION R806. PER CRC SECTION R806.2, THE MINIMUM NET FREE VENTILATING AREA SHALL BE 1/150 OF THE AREA OF THE VENTED SPACE. EXCEPTION: THE MINIMUM NET FREE VENTILATION AREA SHALL BE 1/300 OF THE VENTED SPACE PROVIDED ONE OR MORE OF THE FOLLOWING CONDITIONS ARE MET:
   - IN CLIMATE ZONES 14 AND 16, A CLASS I OR II VAPOR RETARDER IS INSTALLED ON THE WARM-IN-WINTER SIDE OF THE CEILING.
   - NOT LESS THAN 40 PERCENT AND NOT MORE THAN 50 PERCENT OF THE REQUIRED VENTILATING AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE ATTIC OR RAFTER SPACE, UPPER VENTILATORS SHALL BE LOCATED NO MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE, MEASURED VERTICALLY, WITH THE BALANCE OF THE REQUIRED VENTILATION PROVIDED BY EAVE OR CORNICE VENTS, WHERE THE LOCATION OF WALL OR ROOF FRAMING MEMBERS CONFLICTS WITH THE INSTALLATION OF UPPER VENTILATORS, INSTALLATION MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE SHALL BE PERMITTED.

ROOF PLAN KEY NOTES

Name	NOTE
802	ROOFING - CONCRETE - 'S' TILE
810	LINE OF WALL BELOW
823	PROVIDE 22"X30" OPENING IN PLYWOOD SHEATHING BELOW CALIF. FRAMED ROOF FOR SHARE ATTIC VENTILATION
826	ROOF VENT - "CLOAKED" (SEE ROOF VENTILATION CALCULATIONS)
835	G.I. METAL GUTTER(S) - VERIFY LOCATION WITH INSTALLER
836	G.I. METAL DOWNSPOUT(S) - DISCHARGE TO APPROVED SITE DRAINAGE SYSTEM) - VERIFY LOCATION WITH INSTALLER.



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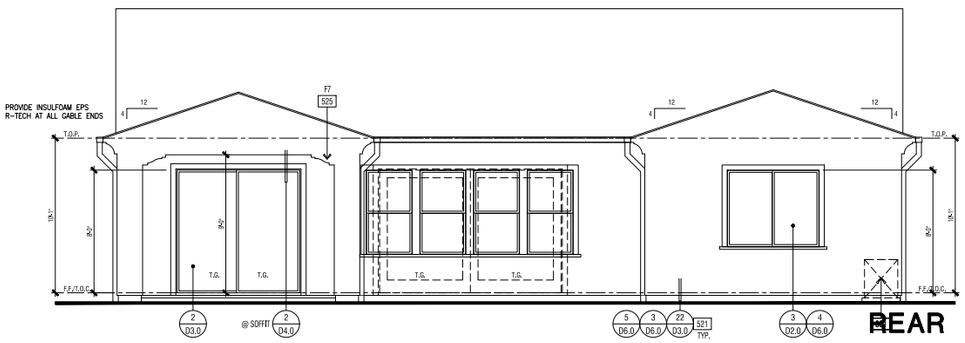

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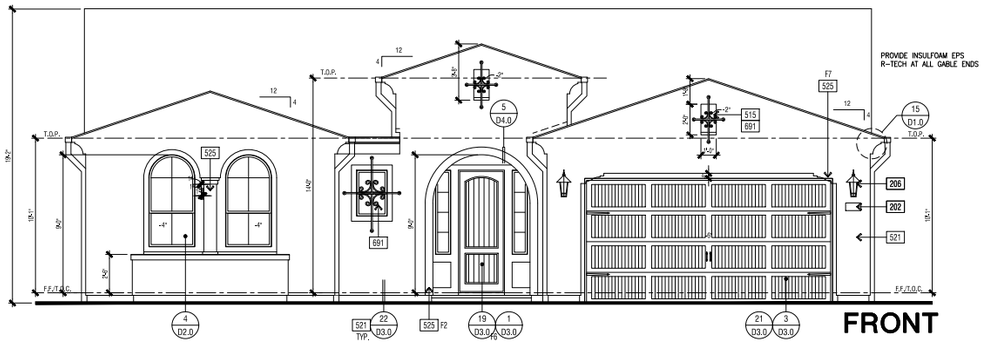


FRONT

992

SCALE: 1/4" = 1'-0"

ARCHITECTS . PLANNERS . DESIGNERS
WHA.
ORANGE COUNTY . LOS ANGELES . BAY AREA

WILSON HOMES

TRACT NUMBER: 6174/6221
PROJECT TYPE: S.F.D.

CHADWICK - PLAN 2258

CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

2015253.05 - 1ST BUILDING DEPARTMENT SUBMITTAL PROGRESS SET XX-XX-19

REVISIONS

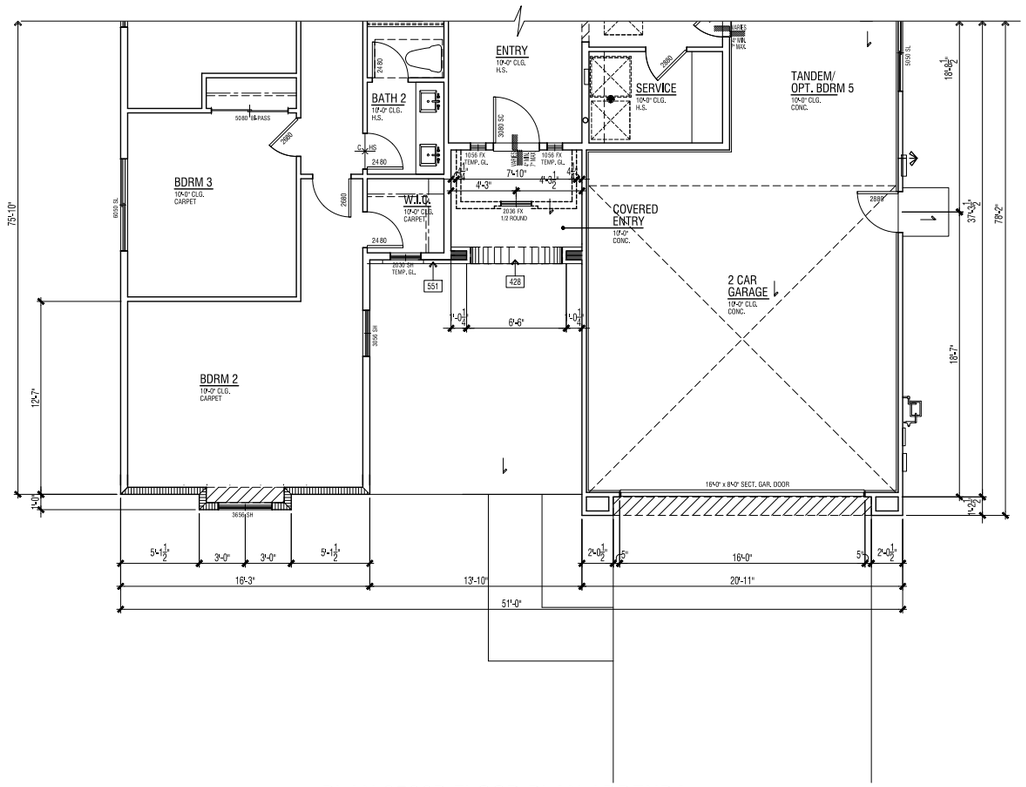
NO.	DATE	DESCRIPTION

PLAN 2528A
EXTERIOR ELEVATIONS
& ROOF PLAN

PROJECT MANAGER :	MM
DESIGNER :	AM
DRAWN BY :	-
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	-
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2015253
CAD FILE NAME :	A404

DATE: 12-06-19

SHEET: A4.4.1



PLAN 2528B FLOOR PLAN ADDENDA

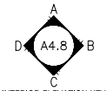
FLOOR PLAN KEY NOTES	
Name	NOTE
002	CONCRETE DRIVE (BY OTHERS)
004	CONCRETE PORCH SLAB (BY OTHERS) SLOPE 1/4" PER FOOT MINIMUM IN DIRECTION INDICATED
428	ARCHED STUCCO SOFFIT: HEIGHT PER ELEVATION
442	EXTERIOR 2X PONY WALL - SIZE PER PLAN
551	MANUFACTURED ADHERED STUCCO STONE VENEER BY CULTURED STONE ICC-ES ESR-1364. INSTALL PER MANUFACTURER'S INSTRUCTIONS

BEDROOM 5 OPTION INCLUDED

SPN #	.
FLOOR AREA TABLE	PLAN 2528B
LOWER FLOOR PLAN	2708 SQ. FT.
TOTAL	2708 SQ. FT.
2 CAR GARAGE	473 SQ. FT.
COVERED PATIO	208 SQ. FT.
COVERED ENTRY	61 SQ. FT.

SPN #	.
FLOOR AREA TABLE	PLAN 2528B
FLOOR PLAN	2542 SQ. FT.
TOTAL	2542 SQ. FT.
2-CAR GARAGE W/ TANDEM	639 SQ. FT.
COVERED ENTRY/PORCH	61 SQ. FT.
COVERED PATIO	208 SQ. FT.
FLOOR PLAN W/ BEDROOM 4	2542 SQ. FT.
2-CAR GARAGE	473 SQ. FT.

NOTE: SQUARE FOOTAGE MAY VARY DUE TO METHOD OF CALCULATION



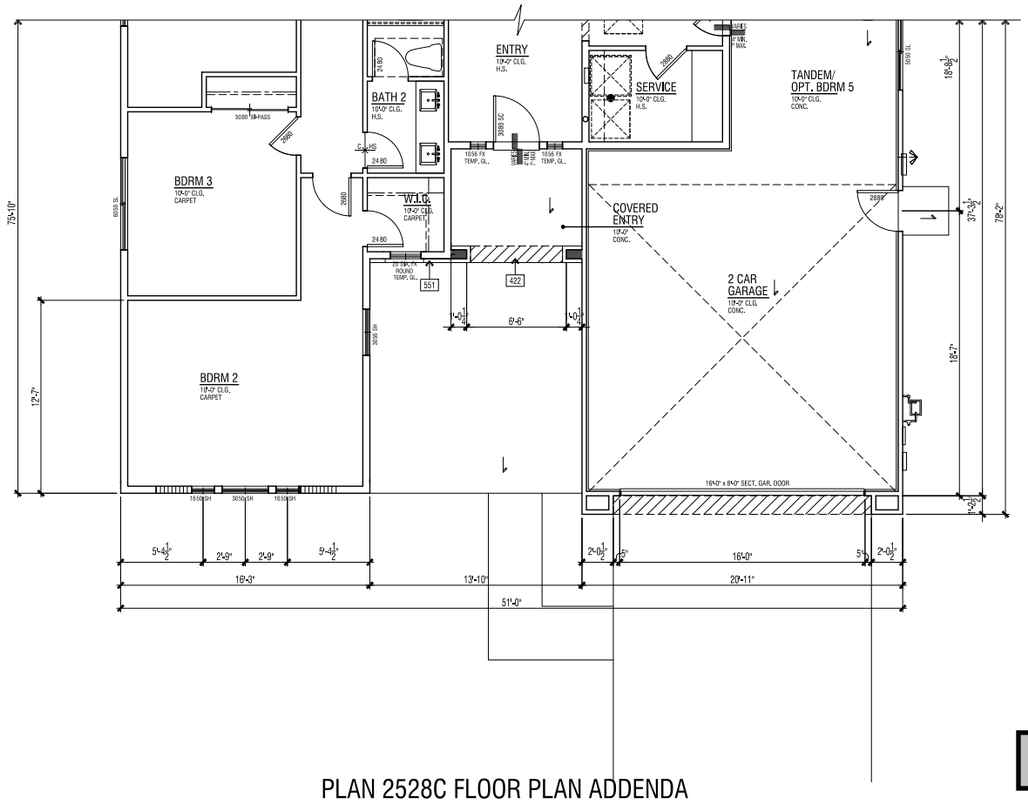
INTERIOR ELEVATION KEY

ADDENDA FLOOR PLAN NOTES

NOTE: SHADED WALLS INDICATE AREAS THAT ARE DIFFERENT THAN THE BASE FLOOR PLAN

NOTE: REFER TO CIVIL AND LANDSCAPE DRAWINGS BY OTHERS FOR ALL DRIVEWAYS AND SIDEWALK LOCATIONS.

REFER TO BASE PLAN SHEET A4.1 FOR ADDITIONAL NOTES AND DIMENSIONS.



PLAN 2528C FLOOR PLAN ADDENDA

993

FLOOR PLAN KEY NOTES	
Name	NOTE
002	CONCRETE DRIVE (BY OTHERS)
004	CONCRETE PORCH SLAB (BY OTHERS) SLOPE 1/4" PER FOOT MINIMUM IN DIRECTION INDICATED
422	SMOOTH STUCCO SOFFIT: HEIGHT PER ELEVATION
427	STUCCO SOFFIT OVER WATERPROOFED STUCCO SHELF-SLOPE FRAMING FOR DRAINAGE (1/4" PER FOOT MINIMUM)
442	EXTERIOR 2X PONY WALL - SIZE PER PLAN
551	MANUFACTURED ADHERED STUCCO STONE VENEER BY CULTURED STONE ICC-ES ESR-1364. INSTALL PER MANUFACTURERS INSTRUCTIONS

BEDROOM 5 OPTION

SPN #	.
FLOOR AREA TABLE	PLAN 2528C
LOWER FLOOR PLAN	2702 SQ. FT.
TOTAL	2702 SQ. FT.
2 CAR GARAGE	473 SQ. FT.
COVERED PATIO	208 SQ. FT.
COVERED ENTRY	61 SQ. FT.

SPN #	.
FLOOR AREA TABLE	PLAN 2528C
FLOOR PLAN	2536 SQ. FT.
TOTAL	2536 SQ. FT.
2-CAR GARAGE W/ TANDEM	639 SQ. FT.
COVERED ENTRY/PORCH	61 SQ. FT.
COVERED PATIO	208 SQ. FT.
FLOOR PLAN W/ BEDROOM 4	2536 SQ. FT.
2-CAR GARAGE	473 SQ. FT.

NOTE: SQUARE FOOTAGE MAY VARY DUE TO METHOD OF CALCULATION

SCALE: 1/4" = 1'- 0"

ARCHITECTS . PLANNERS . DESIGNERS
WHA.
ORANGE COUNTY . LOS ANGELES . BAY AREA

WILSON HOMES

TRACT NUMBER: 6174/6221
PROJECT TYPE: S.F.D.

CHADWICK - PLAN 2258

CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

REVISIONS

NO.	DATE	DESCRIPTION

PLAN 2258B & C
ADDENDA FLOOR PLANS
AND OPTIONS

PROJECT MANAGER :	MM
DESIGNER :	AM
DRAWN BY :	-
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	-
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2015253
CAD FILE NAME :	A405

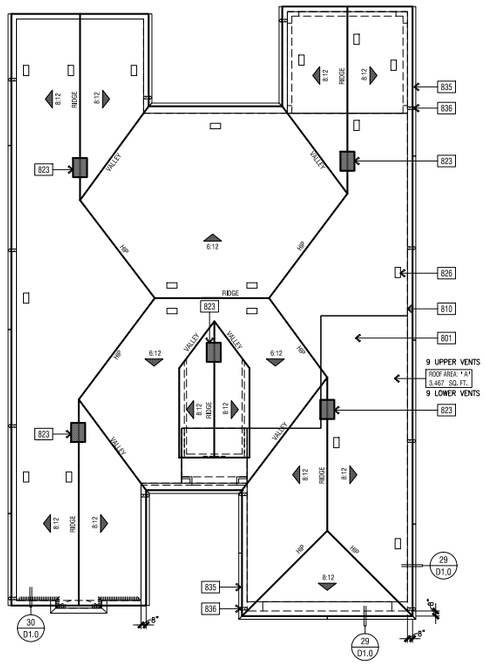
DATE: 12-06-19
SHEET: A4.5

2015253.05 - 1ST BUILDING DEPARTMENT SUBMITTAL PROGRESS SET XX-XX-19

ROOF ATTIC AREA	A	3467	SQ. FT.	CALCULATION FACTOR:	1/300
		499248	SQ. IN		
MIN. VENTILATION REQUIRED:	TOTAL	1664	SQ. IN	TOTAL PROVIDED: 1778	SQ. IN
MIN. VENTILATION REQUIRED:	HIGH	832	SQ. IN	TOTAL HIGH PROVII 889	SQ. IN
MIN. VENTILATION REQUIRED:	LOW	832	SQ. IN	TOTAL LOW PROVII 889	SQ. IN

HIGH VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA
CLOAKED VENT - CONC.FLAT TILE	--	99	SQ. IN X	9	889 SQ. IN
				TOTAL PROVIDED:	889 SQ. IN

LOW VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA
CLOAKED VENT - CONC.FLAT TILE	--	99	SQ. IN X	9	889 SQ. IN
				TOTAL PROVIDED:	889 SQ. IN



ROOF PLAN

SCALE: 1/8" = 1'-0"

ELEVATION REFERENCE: B	ELEVATION STYLE: COUNTRY FRENCH				
ROOF MATERIAL	STANDARD ROOF DETAIL U.N.O.	FASCIA - U.N.O.	BARGE - U.N.O.	OVERHANG DIM. - U.N.O. EAVE	RAKE
CONCRETE 'FLAT' TILE *EAGLE ROOFING' ICC# ESR-1900	2 D1.1	2X6	2X6	8"	8"

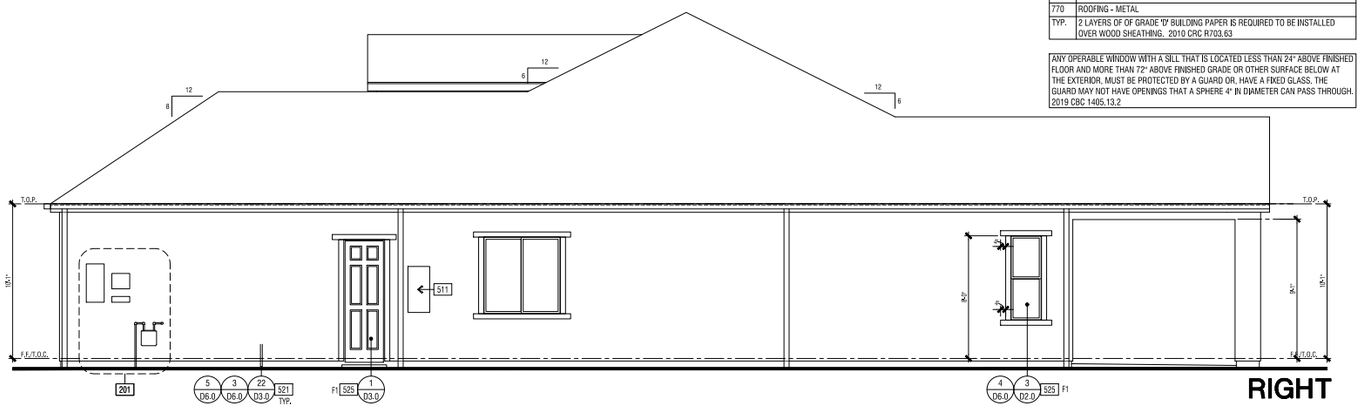
ROOF PLAN NOTES

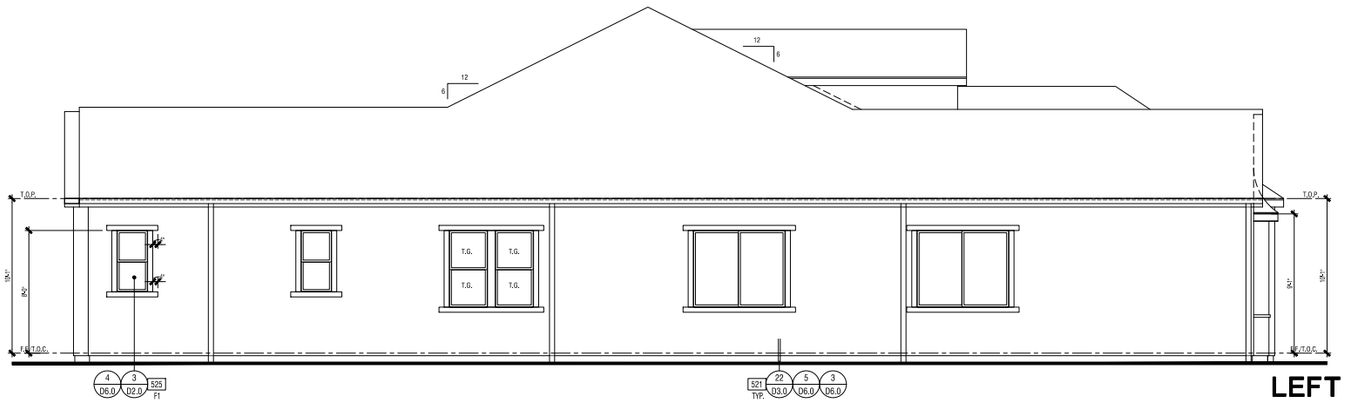
NOTE: MANDATORY REQUIREMENTS FOR SOLAR READY BUILDINGS PER CEnC SECTION 110.10.

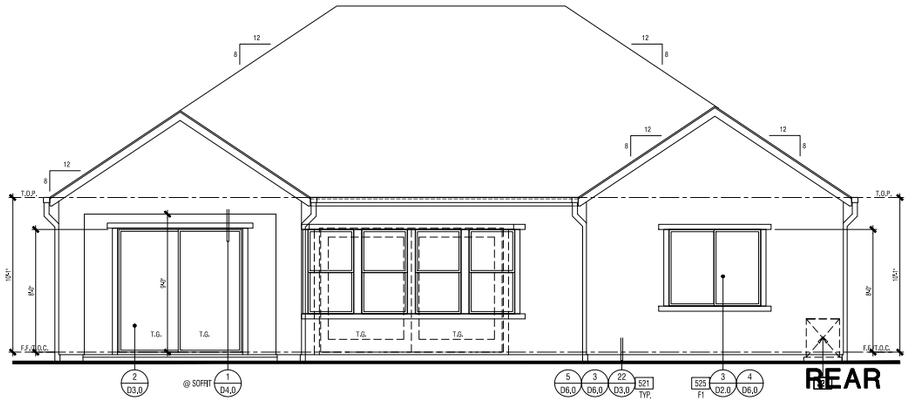
1. SEE GENERAL NOTES FOR ROOF NOTES.
2. SPARK ARRESTORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.
3. ATTIC ACCESS PER CRC SECTION R807.
4. PROVIDE ATTIC & SOFFIT VENTILATION PER CRC SECTION R806. PER CRC SECTION R806.2, THE MINIMUM NET FREE VENTILATING AREA SHALL BE 1/150 OF THE AREA OF THE VENTED SPACE. EXCEPTION: THE MINIMUM NET FREE VENTILATION AREA SHALL BE 1/300 OF THE VENTED SPACE PROVIDED ONE OR MORE OF THE FOLLOWING CONDITIONS ARE MET:
   - IN CLIMATE ZONES 14 AND 16, A CLASS I OR II VAPOR RETARDER IS INSTALLED ON THE WARM-IN-WINTER SIDE OF THE CEILING.
   - NOT LESS THAN 40 PERCENT AND NOT MORE THAN 50 PERCENT OF THE REQUIRED VENTILATING AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE ATTIC OR RAFTER SPACE. UPPER VENTILATORS SHALL BE LOCATED NO MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE, MEASURED VERTICALLY, WITH THE BALANCE OF THE REQUIRED VENTILATION PROVIDED BY EAVE OR CORNICE VENTS. WHERE THE LOCATION OF WALL OR ROOF FRAMING MEMBERS CONFLICTS WITH THE INSTALLATION OF UPPER VENTILATORS, INSTALLATION MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE SHALL BE PERMITTED.

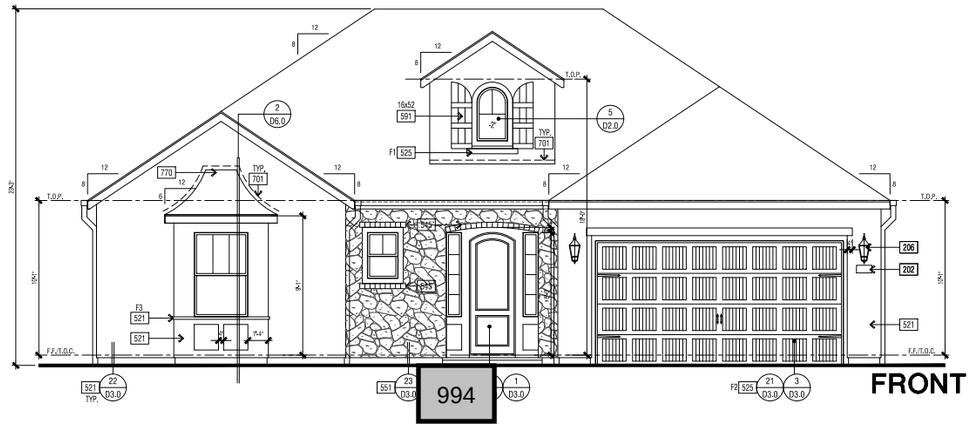
ROOF PLAN KEY NOTES

Name	NOTE
801	ROOFING - CONCRETE - FLAT TILE
810	LINE OF WALL BELOW
823	PROVIDE 22"X30" OPENING IN PLYWOOD SHEATHING BELOW CALIF. FRAMED ROOF FOR SHARE ATTIC VENTILATION
826	ROOF VENT - *CLOAKED* (SEE ROOF VENTILATION CALCULATIONS)
835	G.I. METAL GUTTER(S) - VERIFY LOCATION WITH INSTALLER
836	G.I. METAL DOWNSPOUT(S) - DISCHARGE TO APPROVED SITE DRAINAGE SYSTEM) - VERIFY LOCATION WITH INSTALLER.









SCALE: 1/4" = 1'-0"

FINISHED GRADE VARIES, SEE CIVIL ENGINEERS PLANS FOR FINAL GRADE AND SITE DRAINAGE.

ELEVATION KEY NOTES

Name	NOTE
201	UTILITY EQUIPMENT AND SERVICE PANELS - VERIFY LOCATION
202	INTEGRALLY ILLUMINATED ADDRESS PANEL. 6" MIN. HIGH BUILDING ADDRESS CHARACTERS PLACED IN SUCH A POSITION TO BE PLAINLY VISIBLE FROM THE STREET. CONNECT OF PHOTO CELL
206	DECORATIVE WALL SCONCE
321	AIR CONDITIONING CONDENSER LOCATION
511	RECESS BOX FOR TANKLESS WATER HEATER - INSTALL PER MFR. INSTRUCTIONS
512	EXTERIOR CEMENT COATED TRIM (PRECAST LOOK) . SIZE/SHAPE PER ELEVATION
515	-2" STUCCO RECESS. SIZE PER ELEVATION. SLOPE SILL 1/4" PER FT. MINIMUM
521	STUCCO - OMEGA DIAMOND WALL ONE COAT STUCCO ICC# ESR-1194 STUCCO TYPE 1 OR 11 PORTLAND CEMENT OVER SRAT 'R' GUARD ESR-1566 BY 'START R FOAM'
525	STUCCO OVER RIGID FOAM TRIM - FOAM SHAPE PER ELEVATION (SEE DETAIL #6 SHEET D3.0)
545	THIN SET BRICK VENEER BY ENDICOTT BRICK - ASTM C-1088 - INSTALL PER MANUFACTURER'S INSTRUCTIONS
551	MANUFACTURED ADHERED STUCCO STONE VENEER BY CULTURED STONE ICC-ES ESR-1364. INSTALL PER MANUFACTURER'S INSTRUCTIONS
575	CERAMIC TILE
591	DECORATIVE SHUTTER (SIZE AND STYLE PER ELEVATION). SEE DETAIL 13/D4.1
701	G.I. FLASHING
770	ROOFING - METAL
TYP.	2 LAYERS OF OF GRADE 'D' BUILDING PAPER IS REQUIRED TO BE INSTALLED OVER WOOD SHEATHING. 2010 CRC R703.63

ANY OPERABLE WINDOW WITH A SILL THAT IS LOCATED LESS THAN 24" ABOVE FINISHED FLOOR AND MORE THAN 72" ABOVE FINISHED GRADE OR OTHER SURFACE BELOW AT THE EXTERIOR, MUST BE PROTECTED BY A GUARD OR, HAVE A FIXED GLASS. THE GUARD MAY NOT HAVE OPENINGS THAT A SPHERE 4" IN DIAMETER CAN PASS THROUGH. 2019 CBC 1405.13.2

ARCHITECTS . PLANNERS . DESIGNERS
WHA.
ORANGE COUNTY . LOS ANGELES . BAY AREA

WILSON HOMES

TRACT NUMBER: 6174/6221
PROJECT TYPE: S.F.D.

CHADWICK - PLAN 2258

CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

DO NOT SCALE PLANS

REVISIONS

NO.	DATE	DESCRIPTION

PLAN 2528B
EXTERIOR ELEVATIONS & ROOF PLAN

PROJECT MANAGER :	MM
DESIGNER :	AM
DRAWN BY :	-
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	-
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2015253
CAD FILE NAME :	A6.1

DATE: 12-06-19

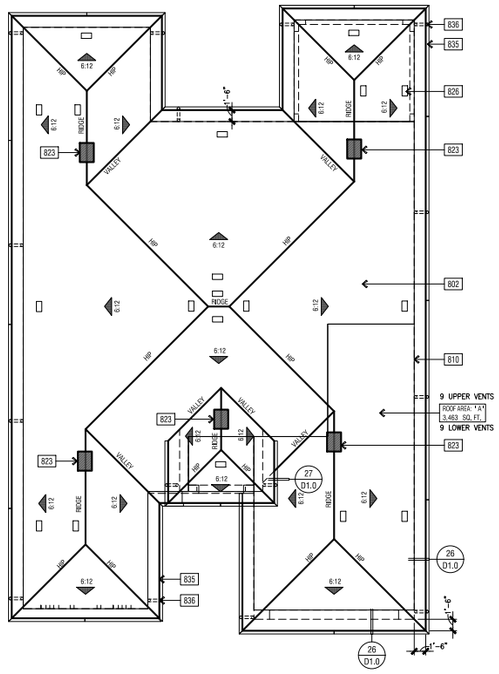
SHEET: A4.6.1

2015253.05 - 1ST BUILDING DEPARTMENT SUBMITTAL PROGRESS SET XX-XX-19

ROOF ATTIC AREA	A	3463	SQ. FT.	CALCULATION FACTOR:	1/300
		498672	SQ. IN		
MIN. VENTILATION REQUIRED:	TOTAL	1662	SQ. IN	TOTAL PROVIDED:	1778 SQ. IN
MIN. VENTILATION REQUIRED:	HIGH	831	SQ. IN	TOTAL HIGH PROVII	889 SQ. IN
MIN. VENTILATION REQUIRED:	LOW	831	SQ. IN	TOTAL LOW PROVII	889 SQ. IN

HIGH VENTILATION METHOD	SIZE	FREE AREA		QUANTITY		FREE VENT AREA
CLOAKED VENT - CONC.FLAT TILE	-	99	SQ. IN	X 9		889 SQ. IN
				TOTAL PROVIDED:		889 SQ. IN

LOW VENTILATION METHOD	SIZE	FREE AREA		QUANTITY		FREE VENT AREA
CLOAKED VENT - CONC.FLAT TILE	-	99	SQ. IN	X 9		889 SQ. IN
				TOTAL PROVIDED:		889 SQ. IN



ROOF PLAN

SCALE: 1/8" = 1'-0"

ELEVATION REFERENCE: C	ELEVATION STYLE: MEDITERRANEAN					
ROOF MATERIAL	STANDARD ROOF DETAIL U.N.O.	FASCIA - U.N.O.	BARGE - U.N.O.	OVERHANG DIM. - U.N.O.	
				EAVE	RAKE
CONCRETE ' FLAT ' TILE *EAGLE ROOFING* ICC# ESR-1900	4 D1.1	2X6	2X6	1'-6"	N/A

ROOF PLAN NOTES

NOTE: MANDATORY REQUIREMENTS FOR SOLAR READY BUILDINGS PER CEnC SECTION 110.10.

1. SEE GENERAL NOTES FOR ROOF NOTES.
2. SPARK ARRESTORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.
3. ATTIC ACCESS PER CRC SECTION R807.
4. PROVIDE ATTIC & SOFFIT VENTILATION PER CRC SECTION R806. PER CRC SECTION R806.2, THE MINIMUM NET FREE VENTILATING AREA SHALL BE 1/150 OF THE AREA OF THE VENTED SPACE. EXCEPTION: THE MINIMUM NET FREE VENTILATION AREA SHALL BE 1/300 OF THE VENTED SPACE PROVIDED ONE OR MORE OF THE FOLLOWING CONDITIONS ARE MET:
   - IN CLIMATE ZONES 14 AND 16, A CLASS I OR II VAPOR RETARDER IS INSTALLED ON THE WARM-IN-WINTER SIDE OF THE CEILING.
   - NOT LESS THAN 40 PERCENT AND NOT MORE THAN 50 PERCENT OF THE REQUIRED VENTILATING AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE ATTIC OR RAFTER SPACE, UPPER VENTILATORS SHALL BE LOCATED NO MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE, MEASURED VERTICALLY, WITH THE BALANCE OF THE REQUIRED VENTILATION PROVIDED BY EAVE OR CORNICE VENTS. WHERE THE LOCATION OF WALL OR ROOF FRAMING MEMBERS CONFLICTS WITH THE INSTALLATION OF UPPER VENTILATORS, INSTALLATION MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE SHALL BE PERMITTED.

ROOF PLAN KEY NOTES

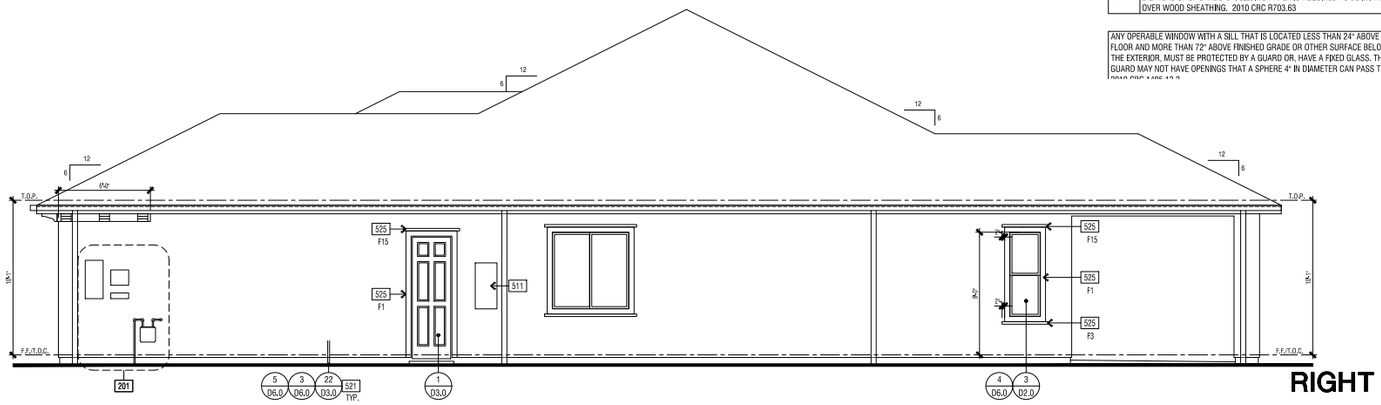
Name	NOTE
802	ROOFING - CONCRETE - "FLAT" TILE
810	LINE OF WALL BELOW
823	PROVIDE 22"X30" OPENING IN PLYWOOD SHEATHING BELOW CALIF. FRAMED ROOF FOR SHARE ATTIC VENTILATION
826	ROOF VENT - "CLOAKED" (SEE ROOF VENTILATION CALCULATIONS)
835	G.I. METAL GUTTER(S) - VERIFY LOCATION WITH INSTALLER
836	G.I. METAL DOWNSPOUT(S) - DISCHARGE TO APPROVED SITE DRAINAGE SYSTEM) - VERIFY LOCATION WITH INSTALLER.

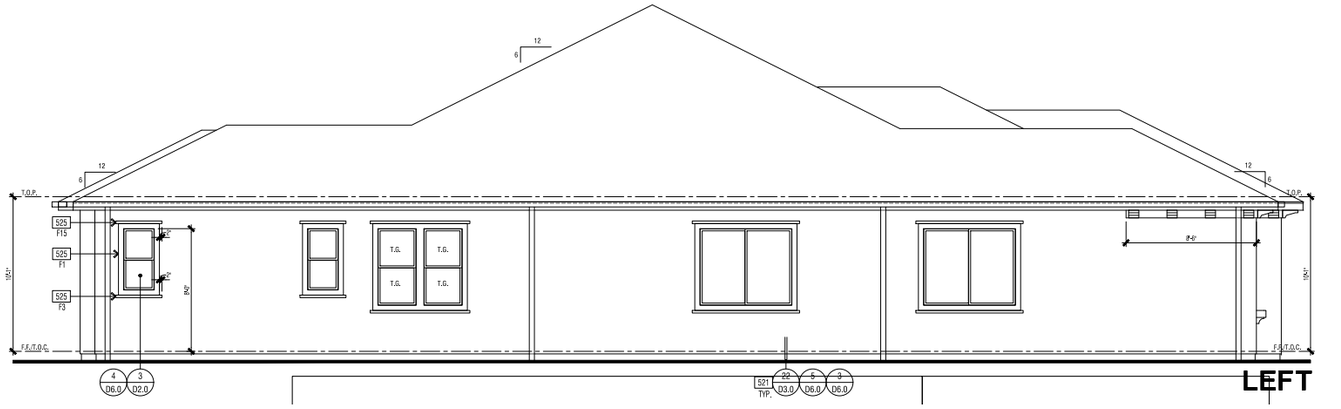
FINISHED GRADE VARIES, SEE CIVIL ENGINEERS PLANS FOR FINAL GRADE AND SITE DRAINAGE.

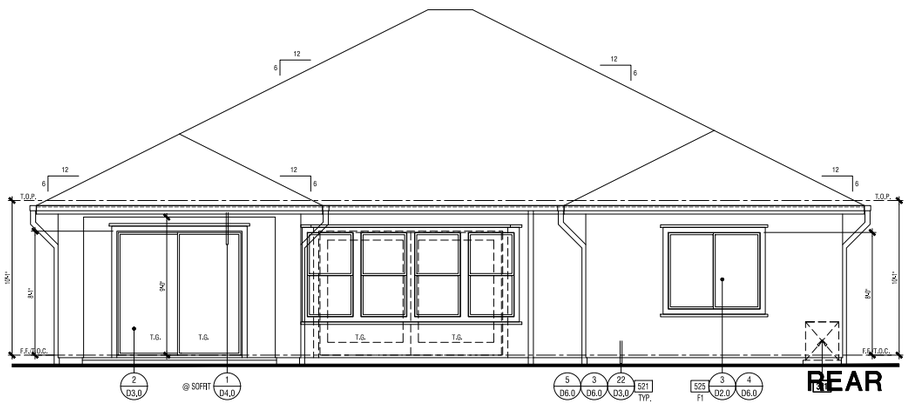
ELEVATION KEY NOTES

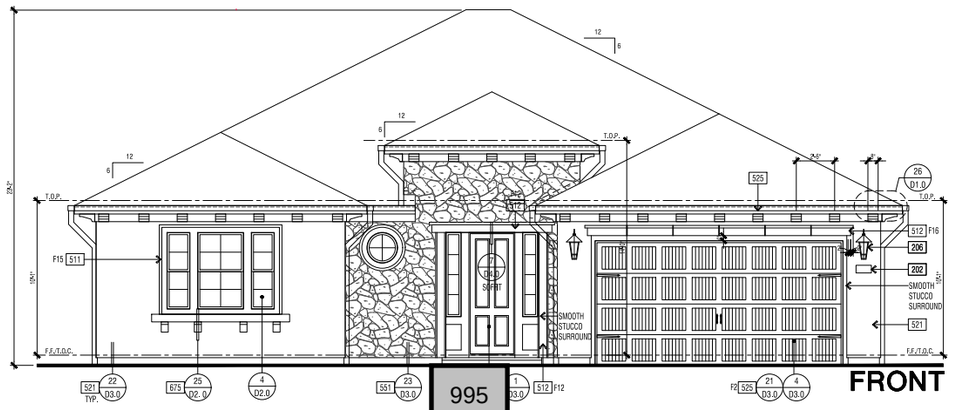
Name	NOTE
201	UTILITY EQUIPMENT AND SERVICE PANELS - VERIFY LOCATION
202	INTEGRALLY ILLUMINATED ADDRESS PANEL, 6" MIN, HIGH BUILDING ADDRESS CHARACTERS PLACED IN SUCH A POSITION TO BE PLAINLY VISIBLE FROM THE STREET. CONNECT OF PHOTO CELL
206	DECORATIVE WALL SCONCE
321	AIR CONDITIONING CONDENSER LOCATION
511	RECESS BOX FOR TANKLESS WATER HEATER - INSTALL PER MFR. INSTRUCTIONS
512	EXTERIOR CEMENT COATED TRIM (PRECAST LOOK) . SIZE/SHAPE PER ELEVATION
521	STUCCO - OMEGA DIAMOND WALL ONE COAT STUCCO ICC# ESR-1194 STUCCO TYPE 1 OR 11 PORTLAND CEMENT OVER SRAT 'R' GUARD ESR-1566 BY 'START R FOAM'
525	STUCCO OVER RIGID FOAM TRIM - FOAM SHAPE PER ELEVATION (SEE DETAIL #6 SHEET D3.0)
551	MANUFACTURED ADHERED STUCCO STONE VENEER BY CULTURED STONE ICC-ES ESR-1364. INSTALL PER MANUFACTURER'S INSTRUCTIONS
675	DECORATIVE WOOD SHELF - PROVIDE SOLID BACKING AND MINIMUM 12"X12" ELASTOMERIC WATERPROOFING AT ALL MOUNTING POINTS/PENETRATIONS.
701	G.I. FLASHING
TYP.	2 LAYERS OF OF GRADE "D" BUILDING PAPER IS REQUIRED TO BE INSTALLED OVER WOOD SHEATHING. 2010 CRC R703.63

ANY OPERABLE WINDOW WITH A SILL THAT IS LOCATED LESS THAN 24" ABOVE FINISHED FLOOR AND MORE THAN 72" ABOVE FINISHED GRADE OR OTHER SURFACE BELOW AT THE EXTERIOR, MUST BE PROTECTED BY A GUARD OR, HAVE A FIXED GLASS. THE GUARD MAY NOT HAVE OPENINGS THAT A SPHERE 4" IN DIAMETER CAN PASS THROUGH.









SCALE: 1/4" = 1'-0"

ARCHITECTS . PLANNERS . DESIGNERS

WHA.

ORANGE COUNTY . LOS ANGELES . BAY AREA

WILSON HOMES

TRACT NUMBER: 6174/6221
PROJECT TYPE: S.F.D.

CHADWICK - PLAN 2258

CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

REVISIONS

NO.	DATE	DESCRIPTION

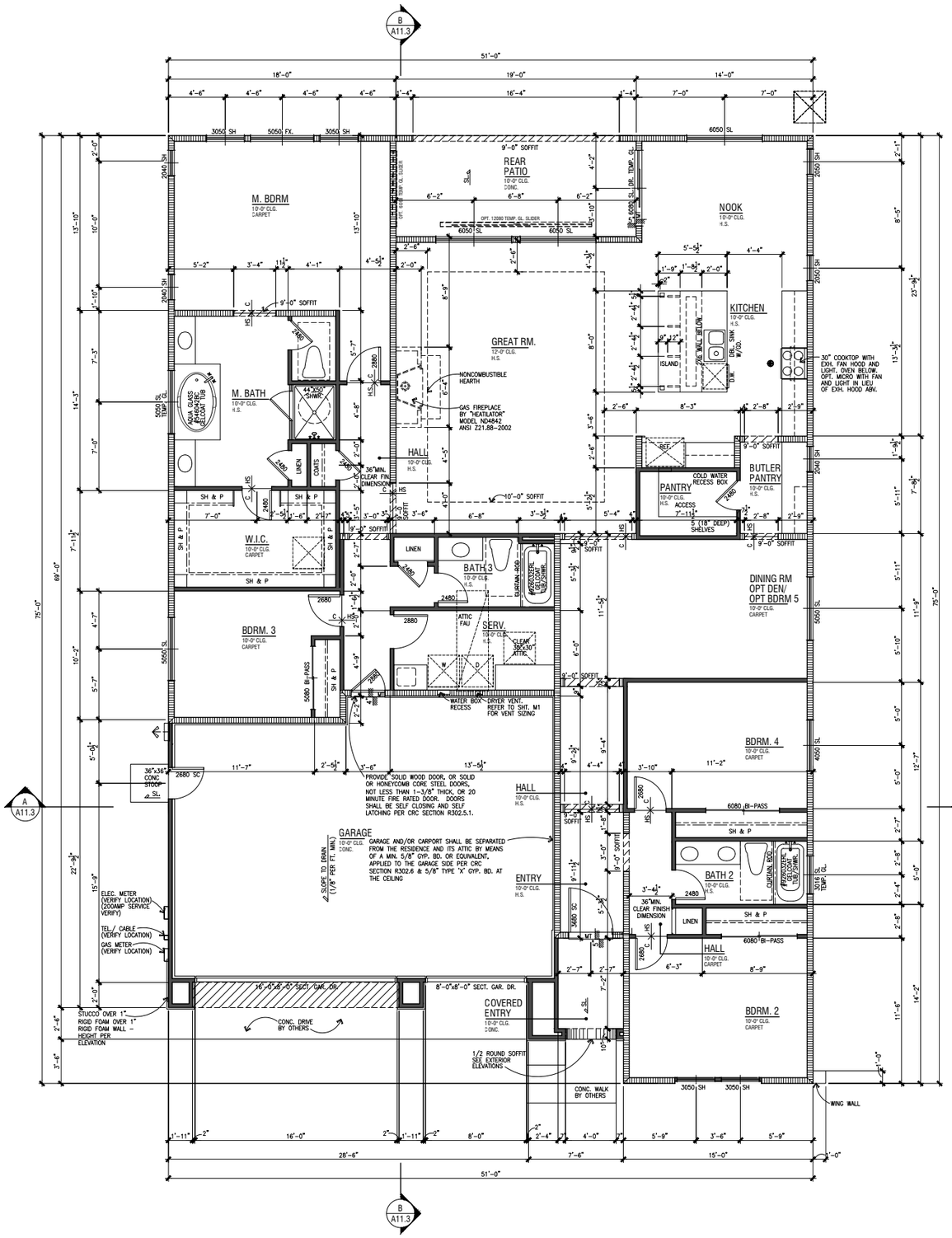
PLAN 2528C EXTERIOR ELEVATIONS & ROOF PLAN

PROJECT MANAGER :	MM
DESIGNER :	AM
DRAWN BY :	-
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	-
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2015253
CAD FILE NAME :	A471

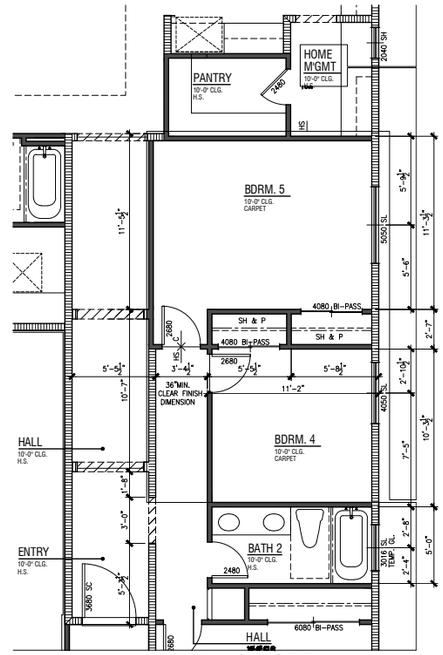
DATE: 12-06-19

SHEET: A4.7.1

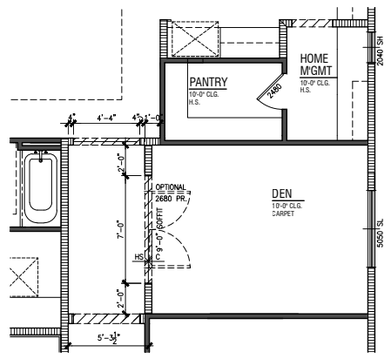
2015253.05 - 1ST BUILDING DEPARTMENT SUBMITTAL PROGRESS SET XX-XX-19



FLOOR PLAN



BDRM. 4/5 OPT.



DEN OPT.

INTERIOR ELEVATION KEY

EARLY CALIFORNIA/SANTA BARBARA

SPN #	X-X
FLOOR AREA TABLE	PLAN 2700A
FLOOR PLAN	2704 SQ. FT.
TOTAL	2704 SQ. FT.
3-CAR GARAGE	663 SQ. FT.
COVERED ENTRY/PORCH	43 SQ. FT.
COVERED PATIO	152 SQ. FT.

SCALE: 1/4" = 1'-0"

ARCHITECTS . PLANNERS . DESIGNERS
WHA AGEN
ORANGE COUNTY . LOS ANGELES . BAY AREA

WILSON HOMES

TRACT#
S.F.D.

PLAN 2700A EARLY CALIFORNIA / SANTA BARBARA - FLOOR PLANS AND OPTIONS

PLAN 2700
CLOVIS, CA.

WILSON HOMES
FRESNO, CALIFORNIA

REVISIONS

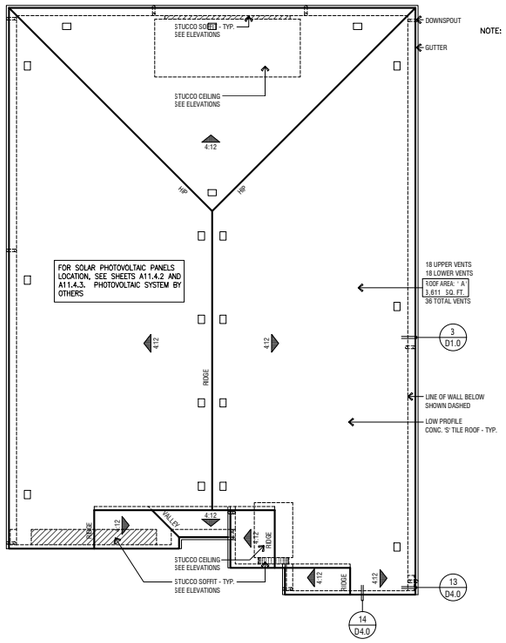
NO.	DATE	DESCRIPTION

PROJECT MANAGER :	
DESIGNER :	WH/AM
DRAWN BY :	MH
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	07-31-15
ISSUED FOR CONSTRUCTION :	
JOB NUMBER :	2015253
CAD FILE NAME :	13219A111

DATE: 09-23-19

SHEET: A11.1

2015253.05 - 2019 CODE CHANGE PROGRESS SET 09-23-19



NOTE:

ROOF PLAN

SCALE: 1/8" = 1'-0"

ELEVATION REFERENCE: A	ELEVATION STYLE: EARLY CALIFORNIA/SANTA BARBARA				
ROOF MATERIAL	STANDARD ROOF DETAIL U.N.O.	FASCIA – U.N.O.	BARGE – U.N.O.	OVERHANG DIM. – U.N.O. EAVE	RAKE
LOW PROFILE CONCRETE 'S' TILE *MONIER TILE * ER 4960	1 D1.1	2X6	2X6	1'-0"	6"

ROOF PLAN NOTES

NOTE: MANDATORY REQUIREMENTS FOR SOLAR READY BUILDINGS PER CEnC SECTION 110.10.

SEE GENERAL NOTES FOR ROOF NOTES.

SPARK ARRESTORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

ATTIC ACCESS PER CRC SECTION R807.

PROVIDE ATTIC & SOFFIT VENTILATION PER CRC SECTION R806. PER CRC SECTION R806.2, THE MINIMUM NET FREE VENTILATING AREA SHALL BE 1/150 OF THE AREA OF THE VENTED SPACE. EXCEPTION: THE MINIMUM NET FREE VENTILATION AREA SHALL BE 1/300 OF THE VENTED SPACE PROVIDED ONE OR MORE OF THE FOLLOWING CONDITIONS ARE MET:
1. IN CLIMATE ZONES 14 AND 16, A CLASS I OR II VAPOR RETARDER IS INSTALLED ON THE WARM-IN-WINTER SIDE OF THE CEILING.
2. AT LEAST 40 PERCENT AND NOT MORE THAN 50 PERCENT OF THE REQUIRED VENTILATING AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE ATTIC OR RAFTER SPACE. UPPER VENTILATORS SHALL BE LOCATED NO MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE, MEASURED VERTICALLY, WITH THE BALANCE OF THE REQUIRED VENTILATION PROVIDED BY EAVE OR CORNICE VENTS. WHERE THE LOCATION OF WALL OR ROOF FRAMING MEMBERS CONFLICTS WITH THE INSTALLATION OF UPPER VENTILATORS, INSTALLATION MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE SHALL BE PERMITTED.

ROOF PLAN LEGEND

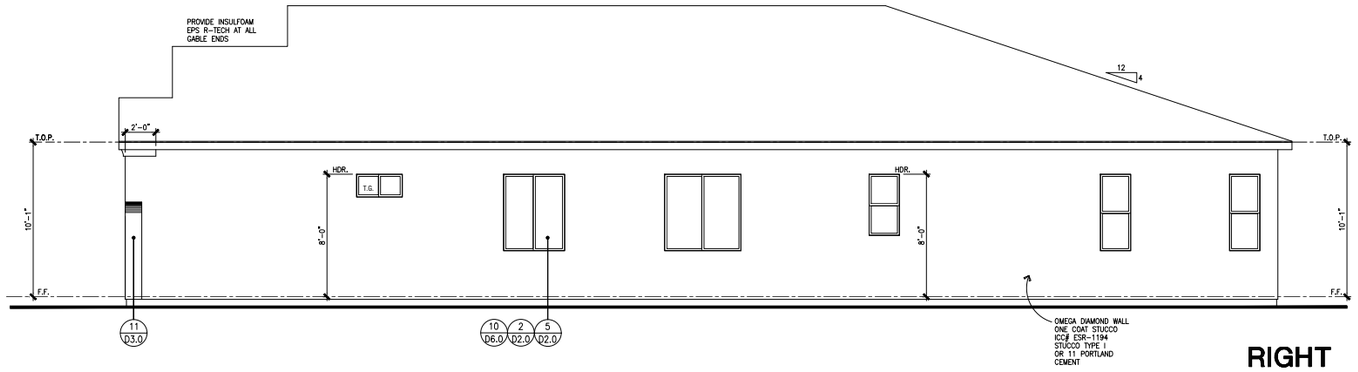
- 4:12 — INDICATES SLOPE/DIRECTION
- INDICATES DOWNSPOUT (IF REQUIRED). INDICATES ROOF GUTTER (IF REQUIRED). INDICATES LINE OF OVERHANG. INDICATES LINE OF STRUCTURE.
- INDICATES OHAGIN CLOAKED TILE ROOF VENT WITH INSECT SCREEN (97.5 SQ. IN. NET FREE VENT AREA-TYP.)
- MIN. 22"X30" CLEAR OPENING FOR ACCESS AND AIRFLOW CONTRACTOR TO VERIFY AIRFLOW TO ALL ATTIC AREAS

ROOF ATTIC AREA	A	3611 SQ. FT. / 519984 SQ. IN	CALCULATION FACTOR:	1/300
MIN. VENTILATION REQUIRED:	TOTAL	1733 SQ. IN	TOTAL PROVIDED:	1756 SQ. IN
MIN. VENTILATION REQUIRED:	HIGH	867 SQ. IN	TOTAL HIGH PROVII	878 SQ. IN
MIN. VENTILATION REQUIRED:	LOW	866 SQ. IN	TOTAL LOW PROVII	878 SQ. IN

HIGH VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA	
CLOAKED VENT - CONC.S-TILE	-	98	SQ. IN X	9	878	SQ. IN
				TOTAL PROVIDED:	878	SQ. IN

LOW VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA	
CLOAKED VENT - CONC.S-TILE	-	98	SQ. IN X	9	878	SQ. IN
				TOTAL PROVIDED:	878	SQ. IN

2 LAYERS OF 0F GRADE 'D' BUILDING PAPER IS REQUIRED TO BE INSTALLED OVER ROOF WOOD SHEATHING. 2016 CRC R703.63



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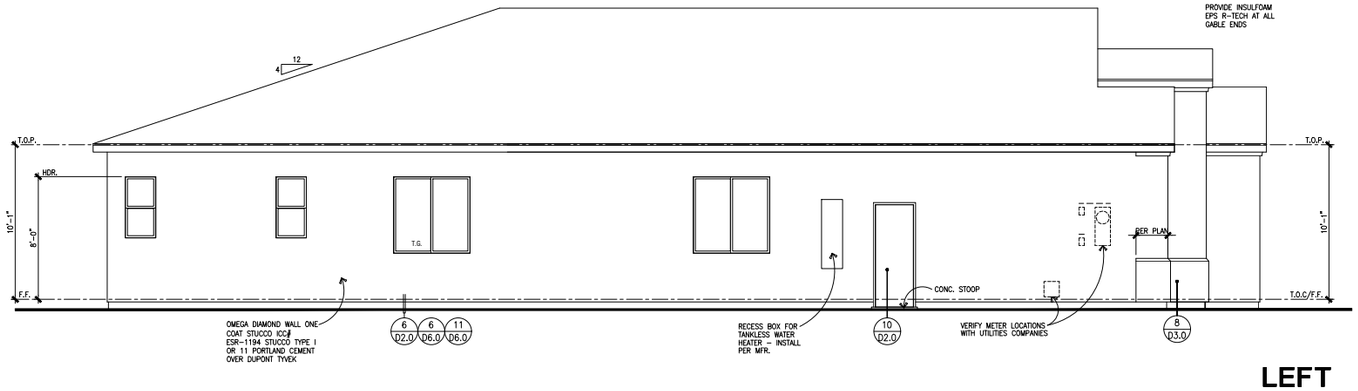

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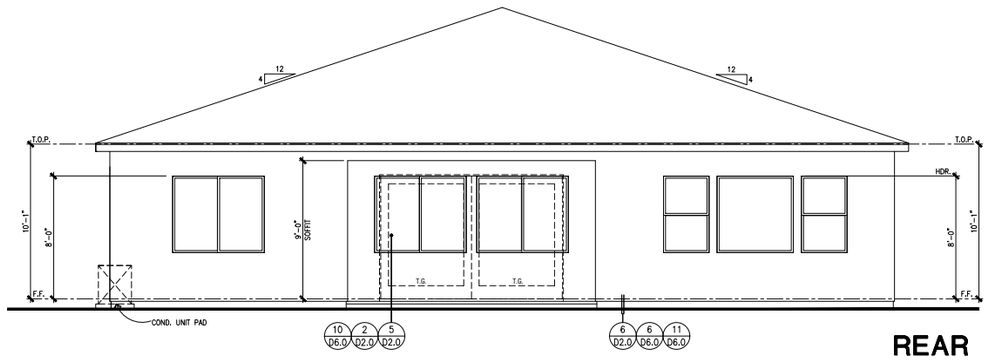

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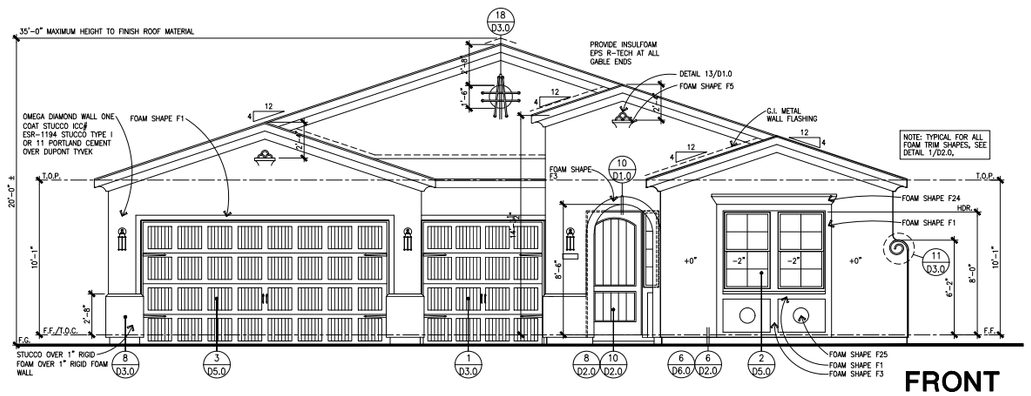


FRONT

EXTERIOR ELEVATIONS - PLAN 2700A - EARLY CALIFORNIA / SANTA BARBARA

SCALE: 1/4" = 1'-0"

ARCHITECTS . PLANNERS . DESIGNERS
WHA AGEN
ORANGE COUNTY . LOS ANGELES . BAY AREA

WILSON HOMES

TRACT#
S.F.D.

PLAN 2700A - EARLY CALIFORNIA / SANTA BARBARA EXTERIOR ELEVATIONS AND ROOF PLAN

PLAN 2700
CLOVIS, CA.

WILSON HOMES
FRESNO, CALIFORNIA

REVISIONS

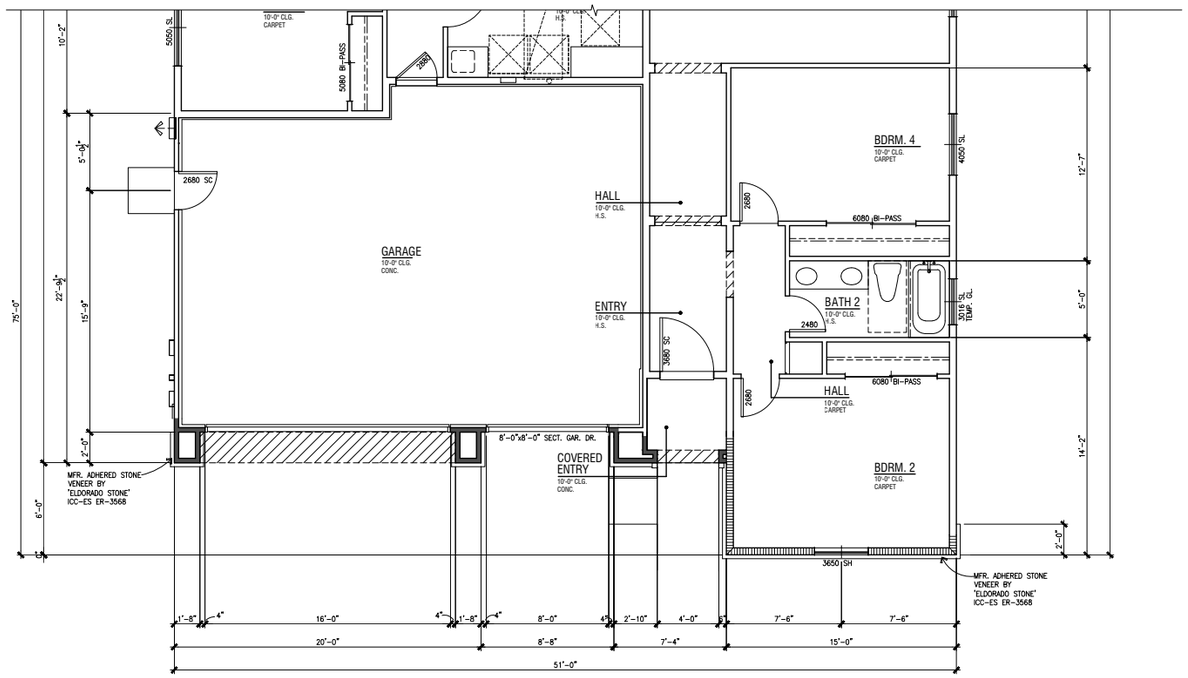
NO.	DATE	DESCRIPTION

PROJECT MANAGER :	
DESIGNER :	WH/AM
DRAWN BY :	MH
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	-
ISSUED FOR CONSTRUCTION :	
JOB NUMBER :	2015253
CAD FILE NAME :	A11.4.1

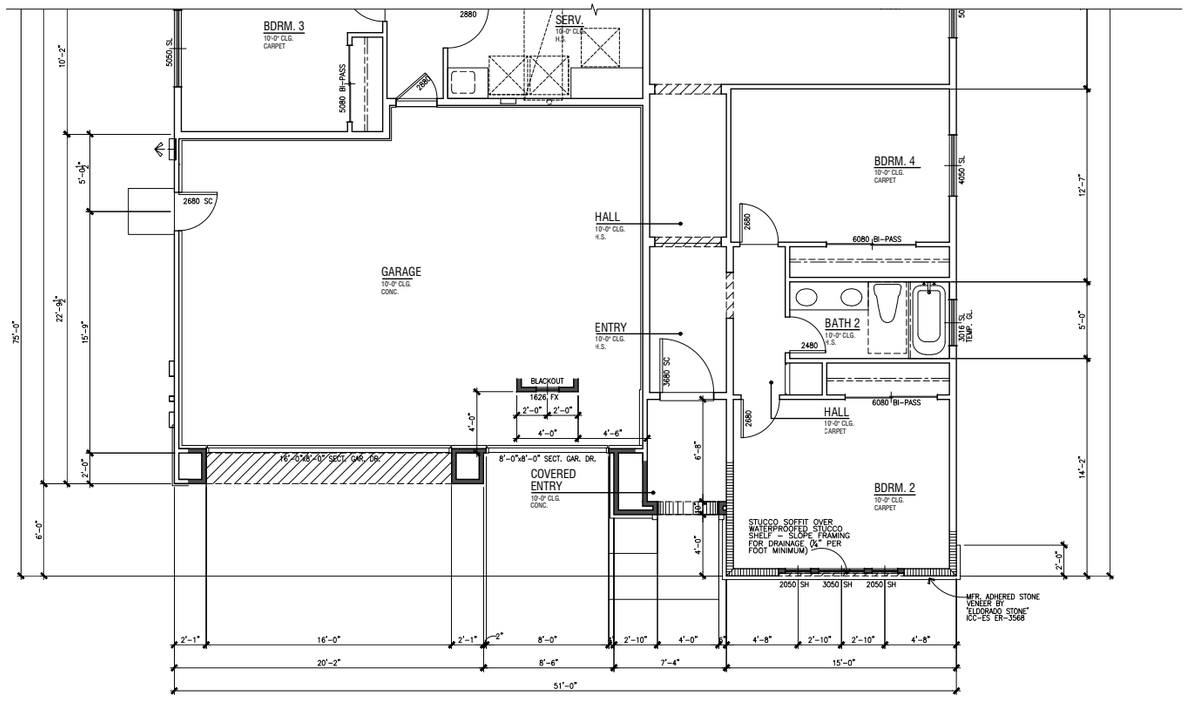
DATE: 09-23-19

SHEET: A11.4.1

2015253.05 - 2019 CODE CHANGE PROGRESS SET 09-23-19



PARTIAL FLOOR PLAN 2700B - TUSCAN



PARTIAL FLOOR PLAN 2700C - CRAFTSMAN

FLOOR PLAN

SCALE: 1/4" = 1'-0"

TUSCAN

SPN #	X-X
FLOOR AREA TABLE	PLAN 2700B
FLOOR PLAN	2704 SQ. FT.
TOTAL	2704 SQ. FT.
3-CAR GARAGE	663 SQ. FT.
COVERED ENTRY/PORCH	43 SQ. FT.
COVERED PATIO	152 SQ. FT.

CRAFTSMAN

SPN #	X-X
FLOOR AREA TABLE	PLAN 2700C
FLOOR PLAN	2704 SQ. FT.
TOTAL	2704 SQ. FT.
3-CAR GARAGE	663 SQ. FT.
COVERED ENTRY/PORCH	43 SQ. FT.
COVERED PATIO	152 SQ. FT.

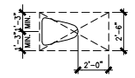
FLOOR PLAN NOTES

1. ATTICS: ACCESS PER CRC R807, DRAFTSTOPS PER CRC R302.12 AND VENTILATION PER R806.
2. EMERGENCY ESCAPE AND RESCUE OPENINGS PER CRC R310. MEANS OF EGRESS PER CRC R311.
3. GLAZING PER CRC R303.1 & R308
4. FACTORY-BUILT FIREPLACES AND CHIMNEYS PER CRC R1004, R1005, R1006 CGBSC SECTION 4.503 & CGnC SECTION 150.0(e).
5. ☐OMBUSTION AIR TO FORCED AIR UNIT PER CMC CHAPTER 7.
6. ☐OMBUSTION AIR TO WATER HEATER PER CPC SECTION 507.0.
7. ☐NVIRONMENTAL AIR DUCTS PER CMC SECTION 504.
8. MECHANICAL EQUIPMENT LOCATION AND PROTECTION AGAINST DAMAGE PER CMC 305 & 308.
9. MANDATORY REQUIREMENTS FOR APPLIANCES PER CGnC SECTION 110.1.
10. THE SILL HEIGHT IS NOT TO EXCEED 44" FROM THE BOTTOM OF THE CLEAR OPENING IN SLEEPING ROOMS. 2016 CRC R31.0.1
11. IN UPPER FLOOR PLANS, ANY OPERABLE WINDOW WITH A SILL THAT IS LOCATED LESS THAN 24" ABOVE THE FINISHED FLOOR AND MORE THAN 72" ABOVE FINISHED GRADE OR OTHER SURFACE BELOW AT THE EXTERIOR, MUST BE PROTECTED BY A GUARD OR, HAVE FIXED GLASS. THE GUARD MAY NOT HAVE OPENINGS THAT A SPHERE 4" IN DIAMETER CAN PASS THROUGH. 2016 CRC R312.2
12. A SHEETROCK NAILING INSPECTION IS REQUIRED. 2016 CRC R109.1.4.2 & 2016 CBC 110.3.5
13. GLAZING IN A HAZARDOUS LOCATION IS REQUIRED TO BE GLAZED WITH SAFETY MATERIAL. 2016 CRC R308
14. PROVIDE A 6" SQUARE FRESH AIR INTAKE FOR THE GAS APPLIANCE FIREPLACE 2016 T-24
15. VERTICAL CLEARANCE ABOVE THE COOKTOP TO COMBUSTIBLES IS 30" UNPROTECTED, OR 24" PROTECTED, AND THE HORIZONTAL DIMENSIONS IS REQUIRED TO BE PER THE PERMANENT MARKING LISTED ON THE UNIT. 2016 CMC 916.1 & 916.2
16. A SHEETROCK NAILING INSPECTION IS REQUIRED. - 2016 CRC R106.1.1
17. THE WALL SURFACE BEHIND CERAMIC TILE OR OTHER FINISH WALL MATERIALS SUBJECT TO WATER SPLASH ARE CONSTRUCTED OF MATERIALS NOT ADVERSELY AFFECTED BY WATER. NOTE THE USE OF FIBER CEMENT, FIBER MAT, REINFORCED CEMENT OR GLASS MAT GYPSUM BACKERS ON THE FLOOR PLAN. NOTE THAT WATER RESISTANT GYPSUM BOARD IS NO LONGER PERMITTED TO BE USED IN THESE LOCATIONS. -2016 CRC R702.4.2
18. THE THREE CAR GARAGE IS NON-CONFORMING AND THE REQUIRED SIDEYARD SETBACKS MAY NOT BE RELAXED. 2016 CRC R106.1.1
19. NOTE THAT ALL ATTIC ACCESS OPENINGS ARE GASKETED TO PREVENT AIR LOSS. 2016 CEC 150.0(a)
20. A MINIMUM 30" DIA. CIRCLE IS PROVIDED AT THE SHOWER FLOOR. THE MINIMUM FLOOR AREA OF THE SHOWER COMPARTMENT IS 1024 SQUARE INCHES. 2016 CPC 408.6
21. AFTER INSTALLING WALL, CEILING, OR FLOOR INSULATION, THE INSTALLER SHALL POST IN A CONSPICUOUS LOCATION IN THE BUILDING A CERTIFICATE SIGNED BY THE INSTALLER STATING THAT THE INSTALLATION WAS PERFORMED IN ACCORDANCE WITH TITLE 24 REQUIREMENTS.
22. THE BUILDER SHALL PROVIDE THE ORIGINAL OCCUPANT WITH THE LIST OF THE HEATING, COOLING, WATER HEATING AND LIGHTING SYSTEMS AND CONSERVATION OR SOLAR DEVICES INSTALLED IN THE BUILDING AND INSTRUCTIONS ON HOW TO USE THEM EFFICIENTLY. CCR TITLE 20

A
D A11.7 B
C

INTERIOR ELEVATION KEY

REQUIRED FLOOR CLEARANCES AT WATER CLOSETS - TYPICAL



ARCHITECTS . PLANNERS . DESIGNERS
WHA AGEN
ORANGE COUNTY . LOS ANGELES . BAY AREA

WILSON HOMES

TRACT#
S.F.D.

PLAN 2700 - ADDENDA FLOOR PLANS B TUSCAN & C CRAFTSMAN

PLAN 2700

CLOVIS, CA.

WILSON HOMES
FRESNO, CALIFORNIA

REVISIONS

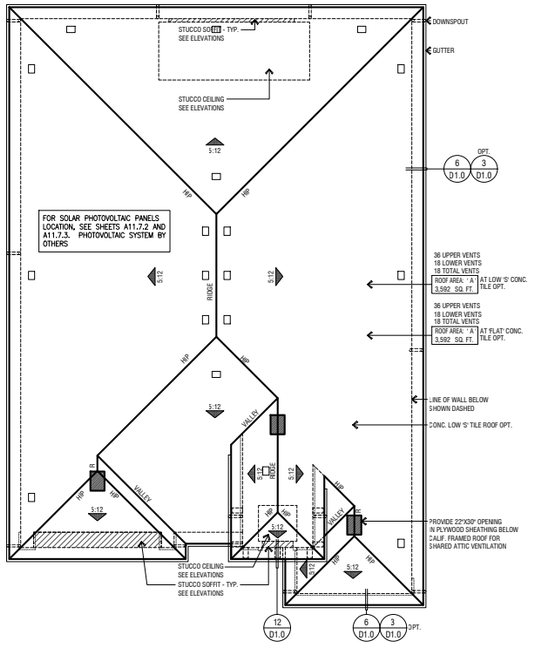
NO.	DATE	DESCRIPTION

PROJECT MANAGER :	
DESIGNER :	WH/AM
DRAWN BY :	MH
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	07-31-15
ISSUED FOR CONSTRUCTION :	
JOB NUMBER :	2015253
CAD FILE NAME :	13219A10.5

DATE: 09-23-19

SHEET: A11.5

2015253.05 - 2019 CODE CHANGE PROGRESS SET 09-23-19



ROOF PLAN

SCALE: 1/8" = 1'-0"

ELEVATION REFERENCE: B	ELEVATION STYLE: TUSCANY				
ROOF MATERIAL	STANDARD ROOF DETAIL U.N.O.	FASCIA - U.N.O.	BARGE - U.N.O.	OVERHANG DIM. - U.N.O. EAVE	RAKE
CONCRETE FLAT TILE *MONIER TILE * ER 4660	4 D1.0	2X6	2X6	1'-0"	N/A
ELEVATION REFERENCE: B	ELEVATION STYLE: TUSCANY				
ROOF MATERIAL	STANDARD ROOF DETAIL U.N.O.	FASCIA - U.N.O.	BARGE - U.N.O.	OVERHANG DIM. - U.N.O. EAVE	RAKE
LOW PROFILE CONC. 'S' TILE OPTION *MONIER TILE * ER 4660	1 D1.0	2X6	2X6	1'-0"	N/A

ROOF PLAN LEGEND

- 5:12 — INDICATES SLOPE/DIRECTION
- INDICATES DOWNSPOUT (IF REQUIRED); INDICATES ROOF GUTTER (IF REQUIRED).
- INDICATES LINE OF OVERHANG; INDICATES LINE OF STRUCTURE.
- INDICATES DYNAGIN CLOAKED TILE ROOF VENT WITH INSECT SCREEN (SEE SHEET A11.6.1 FOR TILE STYLE - SEE ROOF VENT CALCS)
- MIN. 22"X30" CLEAR OPENING FOR ACCESS AND AIRFLOW CONTRACTOR TO VERIFY AIRFLOW TO ALL ATTIC AREAS

ROOF PLAN NOTES

NOTE: MANDATORY REQUIREMENTS FOR SOLAR READY BUILDINGS PER CEnC SECTION 110.10.

1. SEE GENERAL NOTES FOR ROOF NOTES.
2. SPARK ARRESTORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
3. ATTIC ACCESS PER CRC SECTION R807.
4. PROVIDE ATTIC & SOFFIT VENTILATION PER CRC SECTION R806. PER CRC SECTION R806.2, THE MINIMUM NET FREE VENTILATING AREA SHALL BE 1/150 OF THE AREA OF THE VENTED SPACE. EXCEPTION: THE MINIMUM NET FREE VENTILATION AREA SHALL BE 1/300 OF THE VENTED SPACE PROVIDED ONE OR MORE OF THE FOLLOWING CONDITIONS ARE MET:
   1. IN CLIMATE ZONES 14 AND 16, A CLASS I OR II VAPOR RETARDER IS INSTALLED ON THE WARM-IN-WINTER SIDE OF THE CEILING.
   2. AT LEAST 40 PERCENT AND NOT MORE THAN 50 PERCENT OF THE REQUIRED VENTILATING AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE ATTIC OR RAFTER SPACE, UPPER VENTILATORS SHALL BE LOCATED NO MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE, MEASURED VERTICALLY, WITH THE BALANCE OF THE REQUIRED VENTILATION PROVIDED BY EAVE OR CORNICE VENTS. WHERE THE LOCATION OF WALL OR ROOF FRAMING MEMBERS CONFLICTS WITH THE INSTALLATION OF UPPER VENTILATORS, INSTALLATION MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE SHALL BE PERMITTED.

ROOF ATTIC AREA	A	3592 SQ. FT.	CALCULATION FACTOR:	1/300
		517248 SQ. IN		
MIN. VENTILATION REQUIRED:	TOTAL	1724 SQ. IN	TOTAL PROVIDED:	1755 SQ. IN
MIN. VENTILATION REQUIRED:	HIGH	862 SQ. IN	TOTAL HIGH PROVI	878 SQ. IN
MIN. VENTILATION REQUIRED:	LOW	862 SQ. IN	TOTAL LOW PROVI	878 SQ. IN

HIGH VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA
CLOAKED VENT - CONC.S-TILE	-	98	SQ. IN X	9	878 SQ. IN
				TOTAL PROVIDED:	878 SQ. IN

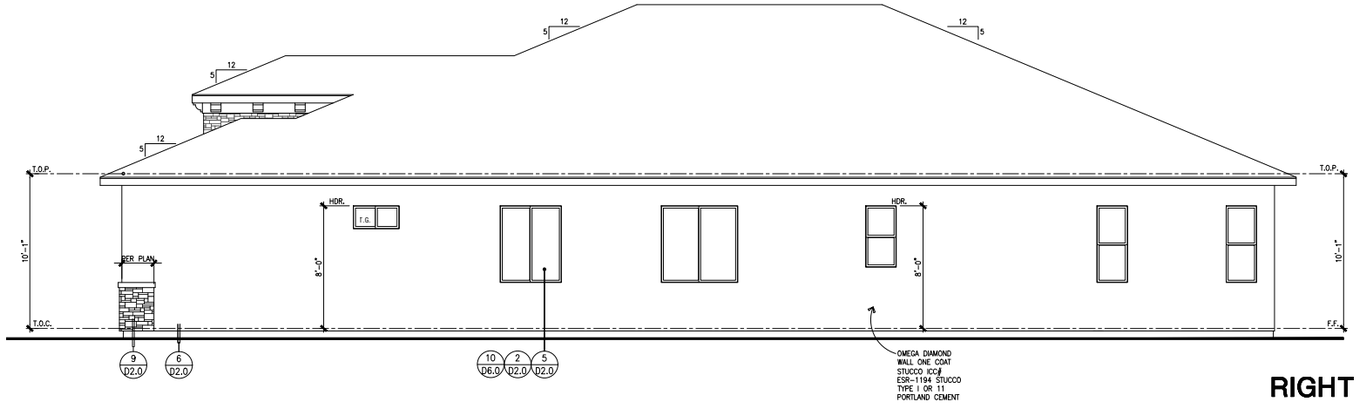
LOW VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA
CLOAKED VENT - CONC.S-TILE	-	98	SQ. IN X	9	878 SQ. IN
				TOTAL PROVIDED:	878 SQ. IN

ROOF ATTIC AREA	A	3592 SQ. FT.	CALCULATION FACTOR:	1/300
		517248 SQ. IN		
MIN. VENTILATION REQUIRED:	TOTAL	1724 SQ. IN	TOTAL PROVIDED:	1778 SQ. IN
MIN. VENTILATION REQUIRED:	HIGH	862 SQ. IN	TOTAL HIGH PROVI	889 SQ. IN
MIN. VENTILATION REQUIRED:	LOW	862 SQ. IN	TOTAL LOW PROVI	889 SQ. IN

HIGH VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA
CLOAKED VENT - CONC.FLAT TILE	-	99	SQ. IN X	9	889 SQ. IN
				TOTAL PROVIDED:	889 SQ. IN

LOW VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA
CLOAKED VENT - CONC.FLAT TILE	-	99	SQ. IN X	9	889 SQ. IN
				TOTAL PROVIDED:	889 SQ. IN

NOTE: 2 LAYERS OF OF GRADE 'D' BUILDING PAPER IS REQUIRED TO BE INSTALLED OVER ROOF WOOD SHEATHING. 2016 CRC R703.63



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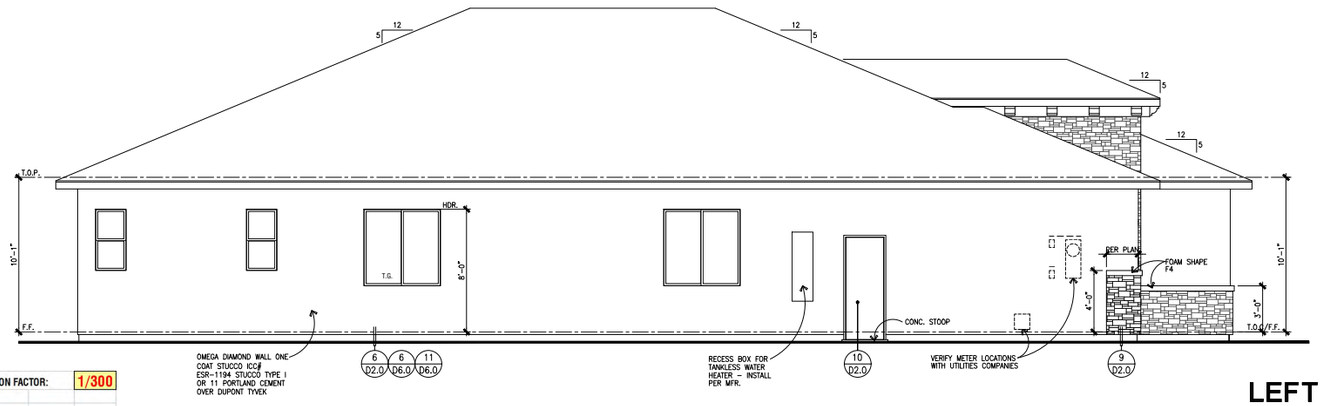

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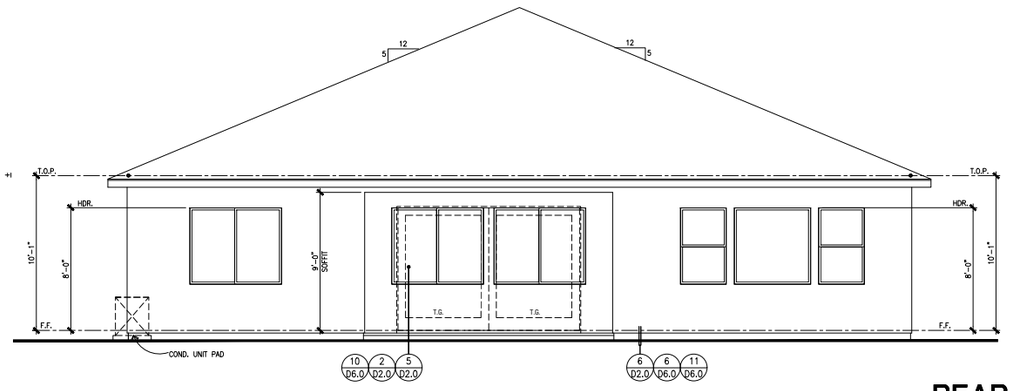

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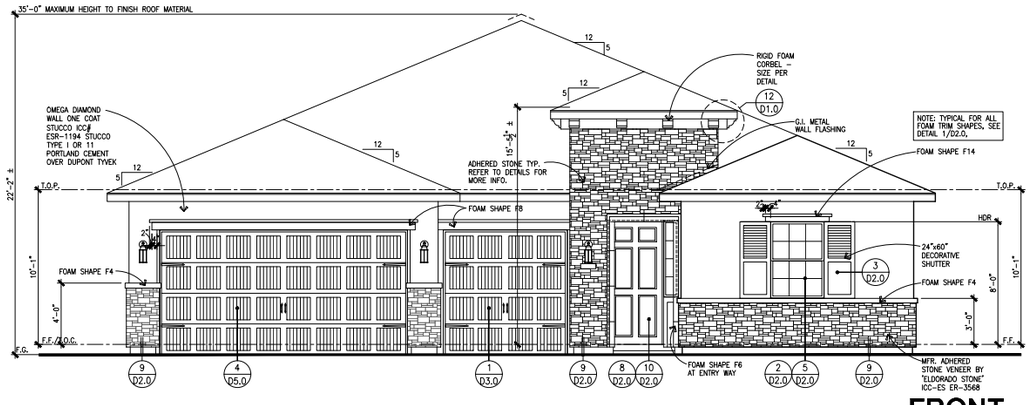


FRONT

EXTERIOR ELEVATIONS - PLAN 2700B - TUSCANY

SCALE: 1/4" = 1'-0"

ARCHITECTS . PLANNERS . DESIGNERS
WHA AGEN
ORANGE COUNTY . LOS ANGELES . BAY AREA

WILSON HOMES

TRACT#
S.F.D.

PLAN 2700
CLOVIS, CA.

WILSON HOMES
FRESNO, CALIFORNIA

REVISIONS

NO.	DATE	DESCRIPTION

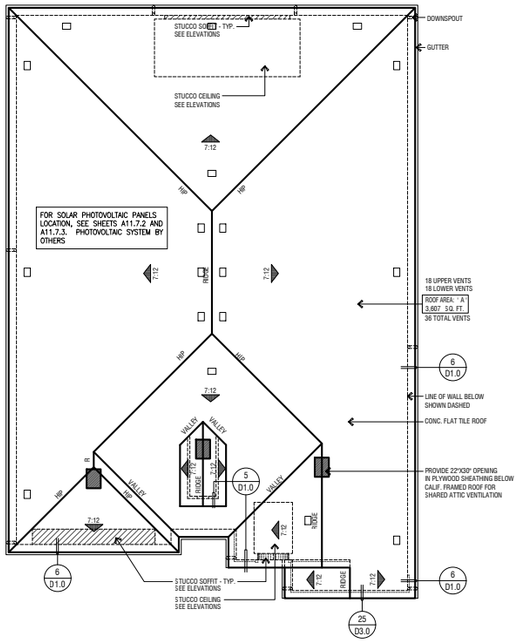
PROJECT MANAGER :	
DESIGNER :	WH/AM
DRAWN BY :	MH
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	-
ISSUED FOR CONSTRUCTION :	
JOB NUMBER :	2015253
CAD FILE NAME :	A11.6.1

DATE: 09-23-19

SHEET: A11.6.1

PLAN 2700B TUSCANY - EXTERIOR ELEVATIONS & ROOF PLAN

2015253.05 - 2019 CODE CHANGE PROGRESS SET 09-23-19



ROOF PLAN

SCALE: 1/8" = 1'-0"

ELEVATION REFERENCE: C	ELEVATION STYLE: CRAFTSMAN				
ROOF MATERIAL	STANDARD ROOF DETAIL U.N.O.	FASCIA – U.N.O.	BARGE – U.N.O.	OVERHANG DIM. – U.N.O. EAVE	RAKE
LOW-PROFILE CONCRETE 'FLAT' TILE BORAL ROOFING TILE ESR-1647	4 D1.0	2X6	2X6	1'-0"	1'-0"

ROOF PLAN NOTES

NOTE: MANDATORY REQUIREMENTS FOR SOLAR READY BUILDINGS PER CEnC SECTION 110.10.

1. SEE GENERAL NOTES FOR ROOF NOTES.
2. SPARK ARRESTORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
3. ATTIC ACCESS PER CRC SECTION R807.
4. PROVIDE ATTIC & SOFFIT VENTILATION PER CRC SECTION R806. PER CRC SECTION R806.2, THE MINIMUM NET FREE VENTILATING AREA SHALL BE 1/150 OF THE AREA OF THE VENTED SPACE. EXCEPTION: THE MINIMUM NET FREE VENTILATION AREA SHALL BE 1/300 OF THE VENTED SPACE PROVIDED ONE OR MORE OF THE FOLLOWING CONDITIONS ARE MET:
   1. IN CLIMATE ZONES 14 AND 16, A CLASS I OR II VAPOR RETARDER IS INSTALLED ON THE WARM-IN-WINTER SIDE OF THE CEILING.
   2. AT LEAST 40 PERCENT AND NOT MORE THAN 50 PERCENT OF THE REQUIRED VENTILATING AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE ATTIC OR RAFTER SPACE. UPPER VENTILATORS SHALL BE LOCATED NO MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE, MEASURED VERTICALLY, WITH THE BALANCE OF THE REQUIRED VENTILATION PROVIDED BY EAVE OR CORNICE VENTS. WHERE THE LOCATION OF WALL OR ROOF FRAMING MEMBERS CONFLICTS WITH THE INSTALLATION OF UPPER VENTILATORS, INSTALLATION MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE SHALL BE PERMITTED.

ROOF ATTIC AREA	A	3607 SQ. FT.	CALCULATION FACTOR:		1/300
		519408 SQ. IN			
MIN. VENTILATION REQUIRED:	TOTAL	1732 SQ. IN	TOTAL PROVIDED:	1756	SQ. IN
MIN. VENTILATION REQUIRED:	HIGH	866 SQ. IN	TOTAL HIGH PROVII	878	SQ. IN
MIN. VENTILATION REQUIRED:	LOW	866 SQ. IN	TOTAL LOW PROVII	878	SQ. IN

HIGH VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA	
CLOAKED VENT - CONC.S-TILE	-	98	SQ. IN X	9	878	SQ. IN
				TOTAL PROVIDED:	878	SQ. IN

LOW VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA	
CLOAKED VENT - CONC.S-TILE	-	98	SQ. IN X	9	878	SQ. IN
				TOTAL PROVIDED:	878	SQ. IN

ROOF ATTIC AREA	A	3607 SQ. FT.	CALCULATION FACTOR:		1/300
		519408 SQ. IN			
MIN. VENTILATION REQUIRED:	TOTAL	1731 SQ. IN	TOTAL PROVIDED:	1778	SQ. IN
MIN. VENTILATION REQUIRED:	HIGH	866 SQ. IN	TOTAL HIGH PROVII	889	SQ. IN
MIN. VENTILATION REQUIRED:	LOW	843 SQ. IN	TOTAL LOW PROVII	889	SQ. IN

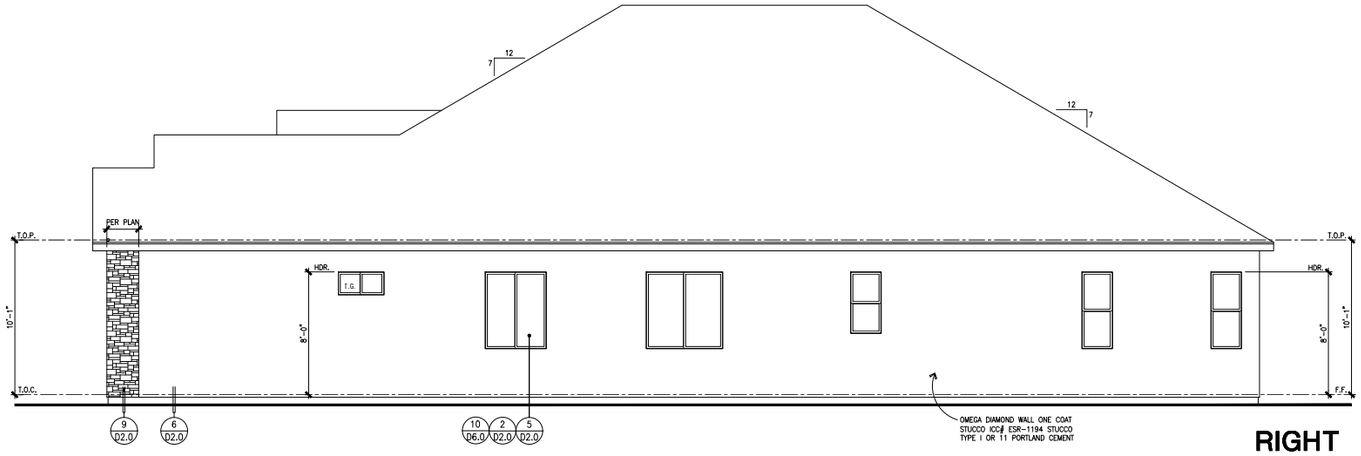
HIGH VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA	
CLOAKED VENT - CONC.FLAT TILE	-	99	SQ. IN X	9	889	SQ. IN
				TOTAL PROVIDED:	889	SQ. IN

LOW VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA	
CLOAKED VENT - CONC.FLAT TILE	-	99	SQ. IN X	9	889	SQ. IN
				TOTAL PROVIDED:	889	SQ. IN

ROOF PLAN LEGEND

- 7:12 — INDICATES SLOPE/DIRECTION
- INDICATES DOWNSPOUT (IF REQUIRED). INDICATES ROOF GUTTER (IF REQUIRED). INDICATES LINE OF OVERHANG. INDICATES LINE OF STRUCTURE.
- INDICATES O'HAGIN CLOAKED TILE ROOF VENT WITH INSECT SCREEN (97.5 SQ. IN. NET FREE VENT AREA-TYP.)
- MIN. 22"X30" CLEAR OPENING FOR ACCESS AND AIRFLOW CONTRACTOR TO VERIFY AIRFLOW TO ALL ATTIC AREAS

NOTE: 2 LAYERS OF GRADE 'D' BUILDING PAPER IS REQUIRED TO BE INSTALLED OVER ROOF WOOD SHEATHING. 2016 CRC R703.63



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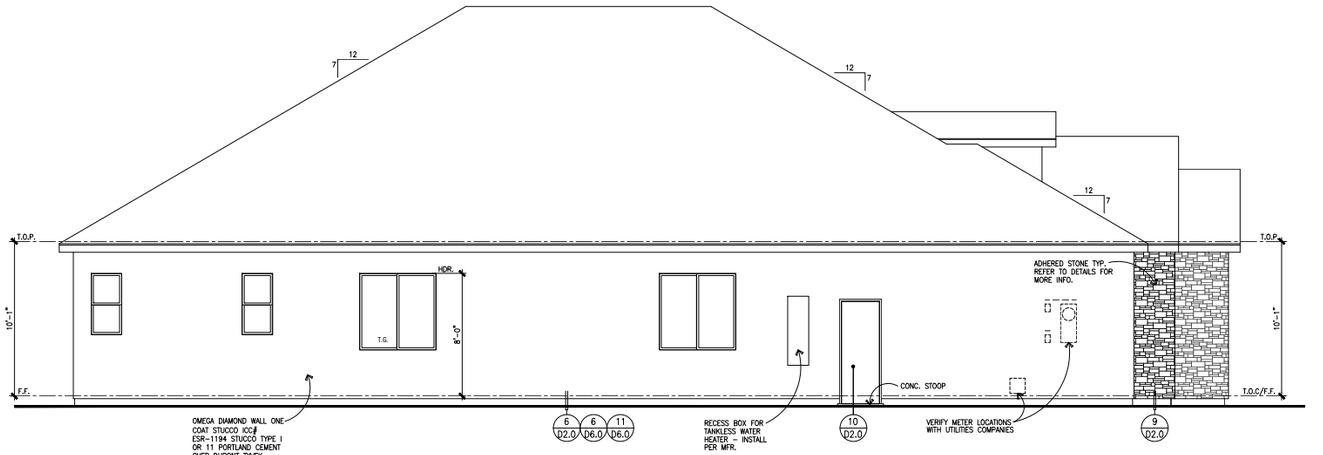

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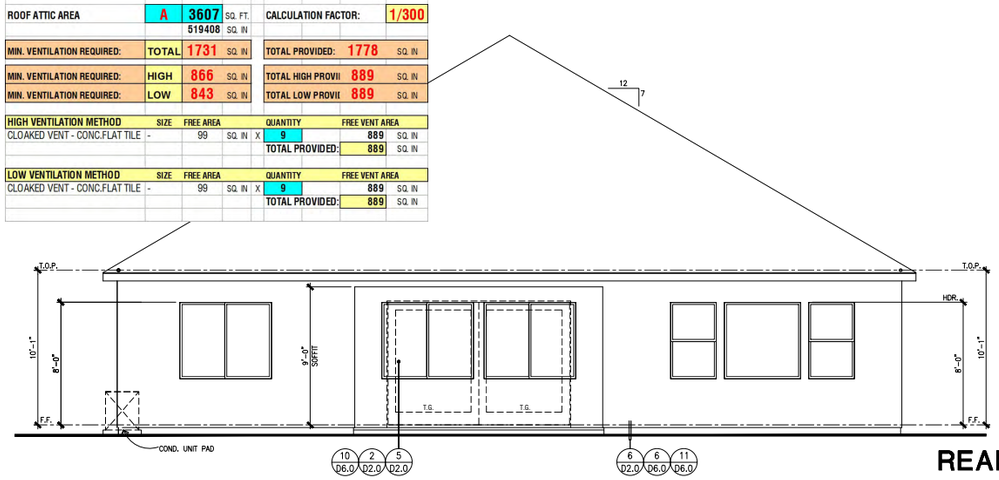
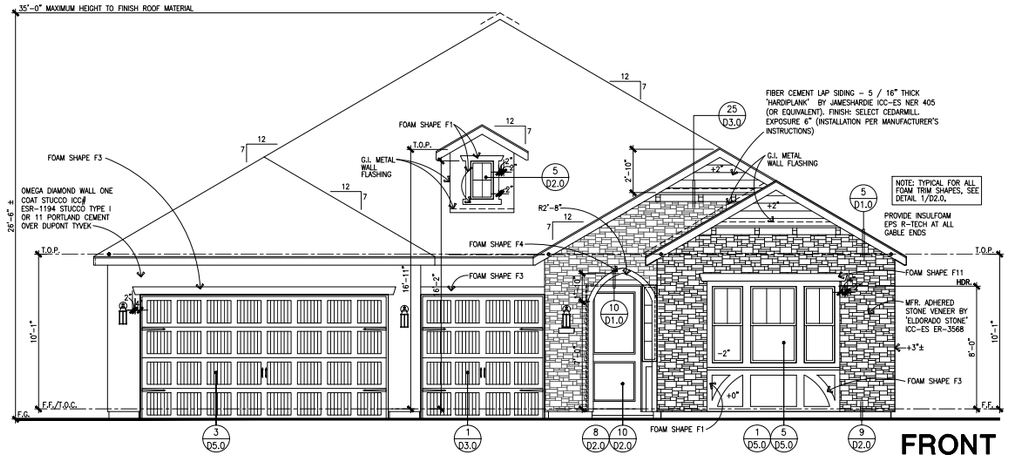


REAR



FRONT

EXTERIOR ELEVATIONS - PLAN 2700C - CRAFTSMAN

SCALE: 1/4" = 1'-0"

ARCHITECTS . PLANNERS . DESIGNERS
WHA AGEN
ORANGE COUNTY . LOS ANGELES . BAY AREA

WILSON HOMES

TRACT#
S.F.D.

PLAN 2700
CLOVIS, CA.

WILSON HOMES
FRESNO, CALIFORNIA

REVISIONS

NO.	DATE	DESCRIPTION

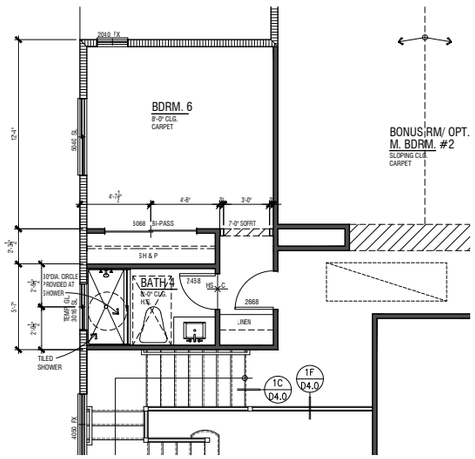
PROJECT MANAGER :	
DESIGNER :	WH/AM
DRAWN BY :	MH
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	-
ISSUED FOR CONSTRUCTION :	
JOB NUMBER :	2015253
CAD FILE NAME :	A11.7.1

DATE: 09-23-19

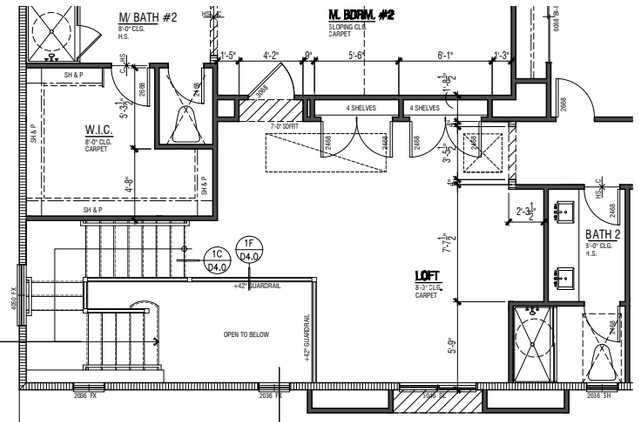
SHEET: A11.7.1

PLAN 2700C CRAFTSMAN - EXTERIOR ELEVATIONS & ROOF PLAN

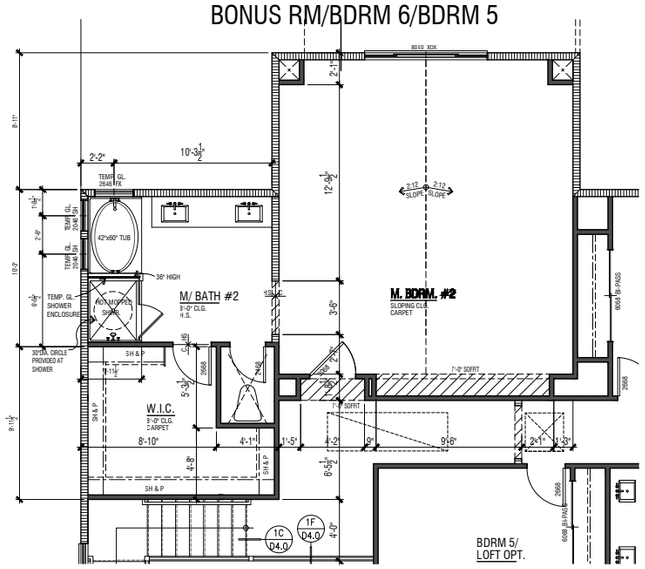
2015253.05 - 2019 CODE CHANGE PROGRESS SET 09-23-19



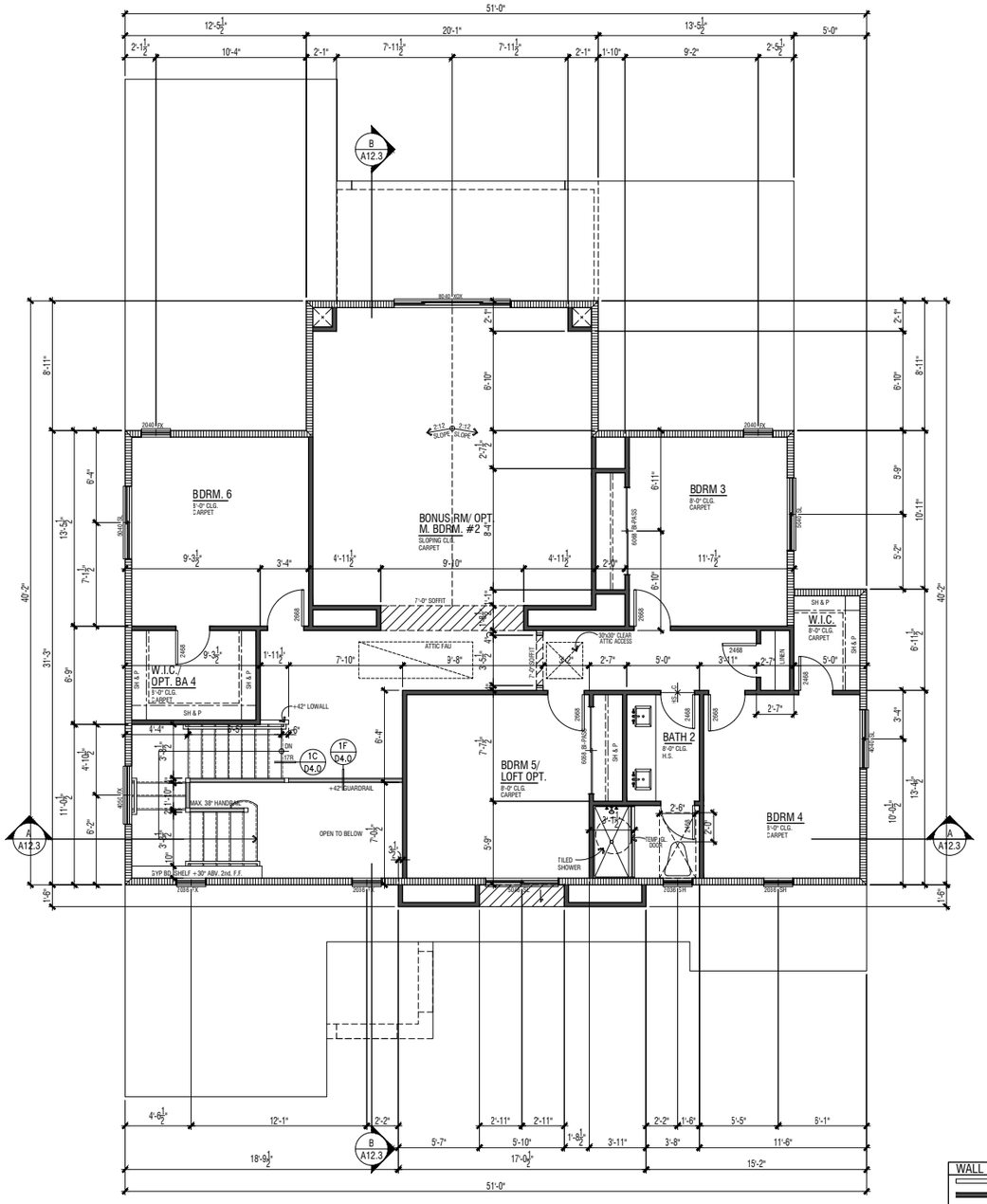
OPTIONAL BATH 4 ILO W.I.C.



OPT LOFT WHEN M. BDRM. 2 ELECTED ILO
BONUS RM/BDRM 6/BDRM 5



OPT. M. BDRM 2 ILO BONUS RM/BDRM 6



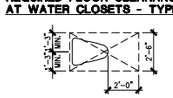
UPPER FLOOR PLAN

WALL LEGEND

- LOW WALL
- 2 x 4 STUD WALL
- 2 x 6 STUD WALL

INTERIOR ELEVATION KEY

REQUIRED FLOOR CLEARANCES AT WATER CLOSETS - TYPICAL



EARLY CALIFORNIA/SANTA BARBARA

FLOOR AREA TABLE	PLAN 3522A
LOWER FLOOR PLAN	1986 SQ. FT.
UPPER FLOOR PLAN	1541 SQ. FT.
TOTAL	3527 SQ. FT.
3-CAR GARAGE	670 SQ. FT.
CALIFORNIA ROOM	144 SQ. FT.
COVERED ENTRY/PORCH	49 SQ. FT.

SCALE: 1/4" = 1'-0"

FLOOR PLAN & OPTIONS - EARLY CALIFORNIA / SANTA BARBARA

FLOOR PLAN NOTES

1. ATTICS: ACCESS PER CRC R807, DRAFTSTOPS PER CRC R302.12 AND VENTILATION PER R806.
2. EMERGENCY ESCAPE AND RESCUE OPENINGS PER CRC R310. MEANS OF EGRESS PER CRC R311.
3. GLAZING PER CRC R303.1 & R308
4. FACTORY-BUILT FIREPLACES AND CHIMNEYS PER CRC R1004, R1005, R1006 CGBSC SECTION 4.503 & CEnC SECTION 150.0(e).
5. COMBUSTION AIR TO FORCED AIR UNIT PER CMC CHAPTER 7.
6. COMBUSTION AIR TO WATER HEATER PER CPC SECTION 507.0.
7. ENVIRONMENTAL AIR DUCTS PER CMC SECTION 504.
8. MECHANICAL EQUIPMENT LOCATION AND PROTECTION AGAINST DAMAGE PER CMC 305 & 308.
9. MANDATORY REQUIREMENTS FOR APPLIANCES PER CEnC SECTION 110.1.
10. THE SILL HEIGHT IS NOT TO EXCEED 44" FROM THE BOTTOM OF THE CLEAR OPENING IN SLEEPING ROOMS. 2016 CRC R31.0.1
11. IN UPPER FLOOR PLANS, ANY OPERABLE WINDOW WITH A SILL THAT IS LOCATED LESS THAN 24" ABOVE THE FINISHED FLOOR AND MORE THAN 72" ABOVE FINISHED GRADE OR OTHER SURFACE BELOW AT THE EXTERIOR, MUST BE PROTECTED BY A GUARD OR, HAVE FIXED GLASS. THE GUARD MAY NOT HAVE OPENINGS THAT A SPHERE 4" IN DIAMETER CAN PASS THROUGH. 2016 CRC R312.2.
12. A SHEETROCK NAILING INSPECTION IN REQUIRED. 2016 CRC R109.1.4.2 & 2016 CBC 110.3.5
13. GLAZING IN A HAZARDOUS LOCATION IS REQUIRED TO BE GLAZED WITH SAFETY MATERIAL. 2016 CRC R308
14. PROVIDE A 6" SQUARE FRESH AIR INTAKE FOR THE GAS APPLIANCE FIREPLACE 2016 T-24
15. VERTICAL CLEARANCE ABOVE THE COOKTOP TO COMBUSTIBLES IS 30" UNPROTECTED, OR 24" PROTECTED, AND THE HORIZONTAL DIMENSIONS IS REQUIRED TO BE PER THE PERMANENT MARKING LISTED ON THE UNIT. 2016 CMC 916.1 & 916.2
16. A SHEETROCK NAILING INSPECTION IS REQUIRED. - 2016 CRC R106.1.1
17. THE WALL SURFACE BEHIND CERAMIC TILE OR OTHER FINISH WALL MATERIALS SUBJECT TO WATER SPLASH ARE CONSTRUCTED OF MATERIALS NOT ADVERSELY AFFECTED BY WATER. NOTE THE USE OF FIBER CEMENT, FIBER MAT, REINFORCED CEMENT OR GLASS MAT GYPSUM BACKERS ON THE FLOOR PLAN. NOTE THAT WATER RESISTANT GYPSUM BOARD IS NO LONGER PERMITTED TO BE USED IN THESE LOCATIONS. -2016 CRC R702.4.2
18. THE THREE CAR GARAGE IS NON-CONFORMING AND THE REQUIRED SIDEYARD SETBACKS MAY NOT BE RELAXED. 2016 CRC R106.1.1
19. NOTE THAT ALL ATTIC ACCESS OPENINGS ARE GASKETED TO PREVENT AIR LOSS. 2016 CEC 150.0(a)
20. A MINIMUM 30" DIA. CIRCLE IS PROVIDED AT THE SHOWER FLOOR. THE MINIMUM FLOOR AREA OF THE SHOWER COMPARTMENT IS 1024 SQUARE INCHES. 2016 CPC 408.6
21. AFTER INSTALLING WALL, CEILING, OR FLOOR INSULATION, THE INSTALLER SHALL POST IN A CONSPICUOUS LOCATION IN THE BUILDING A CERTIFICATE SIGNED BY THE INSTALLER STATING THAT THE INSTALLATION WAS PERFORMED IN ACCORDANCE WITH TITLE 24 REQUIREMENTS.
22. THE BUILDER SHALL PROVIDE THE ORIGINAL OCCUPANT WITH THE LIST OF THE HEATING, COOLING, WATER HEATING AND LIGHTING SYSTEMS AND CONSERVATION OR SOLAR DEVICES INSTALLED IN THE BUILDING AND INSTRUCTIONS ON HOW TO USE THEM EFFICIENTLY. CCR TITLE 20

ARCHITECTS . PLANNERS . DESIGNERS
WHA.
ORANGE COUNTY . LOS ANGELES . BAY AREA

AGEN

WILSON HOMES

TRACT NUMBER:
PROJECT TYPE: S.F.D.

PLAN 3522
CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

REVISIONS

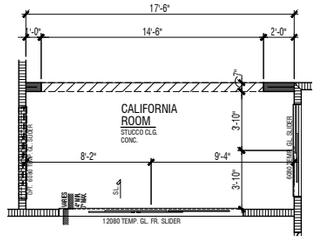
NO.	DATE	DESCRIPTION

PLAN 3522A
FLOOR PLAN &
OPTIONS

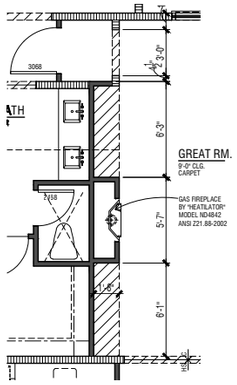
PROJECT MANAGER :	MM
DESIGNER :	MM
DRAWN BY :	MH
REVIEWED BY :	.
1ST BLDG. DEPT. SUBMITTAL :	.
ISSUED FOR CONSTRUCTION :	.
JOB NUMBER :	2018077
CAD FILE NAME :	1321241211

DATE: 10-31-19
SHEET: A12.1.2

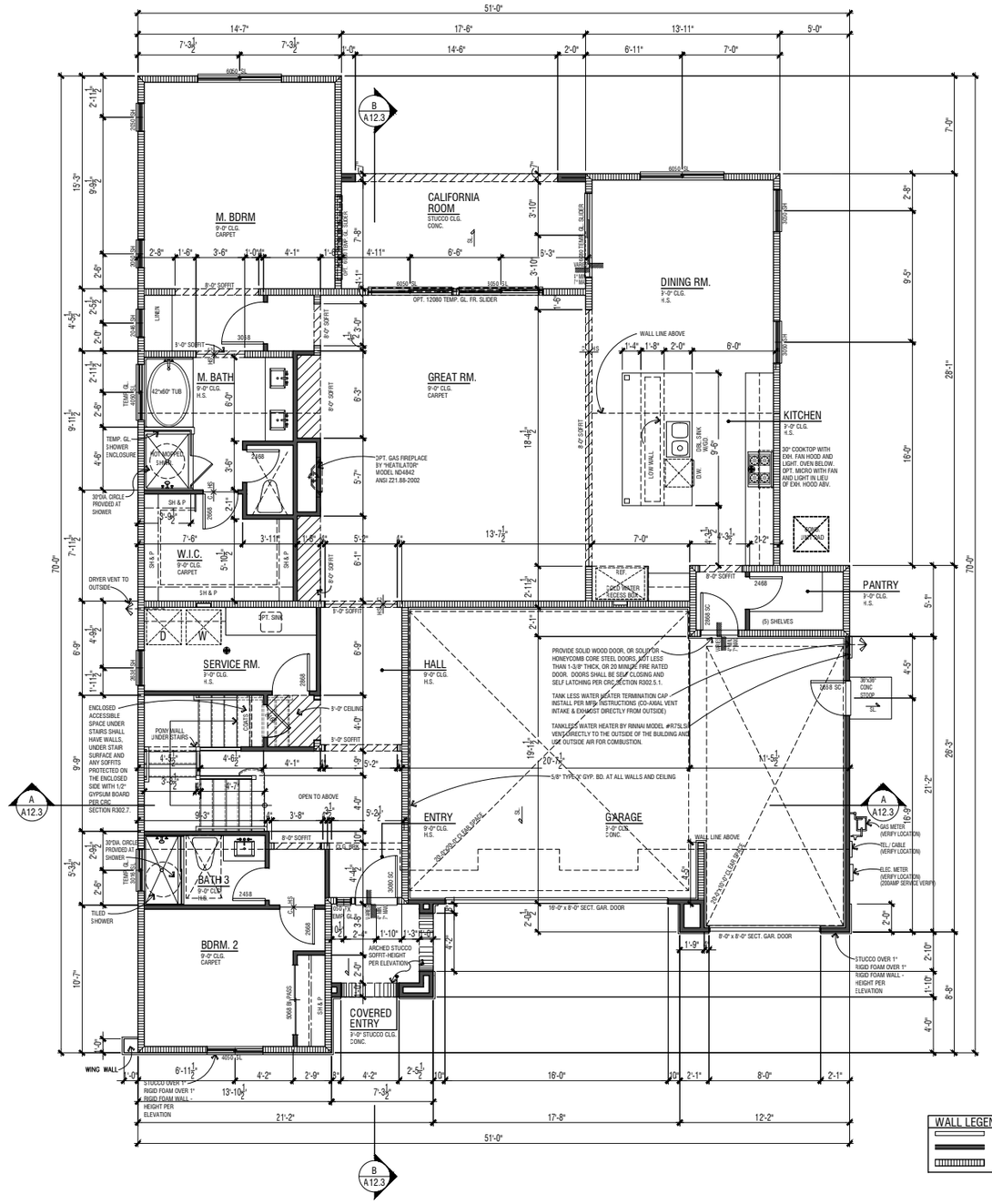
2015253.05 - 2019 CODE CHANGE PROGRESS SET 10-31-19



OPTIONAL SLIDER AT GREAT ROOM



OPTIONAL FIREPLACE AT GREAT ROOM



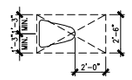
LOWER FLOOR PLAN

WALL LEGEND

	LOW WALL
	2 x 4 STUD WALL
	2 x 6 STUD WALL

INTERIOR ELEVATION KEY

REQUIRED FLOOR CLEARANCES AT WATER CLOSETS - TYPICAL



EARLY CALIFORNIA/SANTA BARBARA

FLOOR AREA TABLE	PLAN 3522A
LOWER FLOOR PLAN	1986 SQ. FT.
UPPER FLOOR PLAN	1541 SQ. FT.
TOTAL	3527 SQ. FT.
3-CAR GARAGE	670 SQ. FT.
CALIFORNIA ROOM	144 SQ. FT.
COVERED ENTRY/PORCH	49 SQ. FT.

SCALE: 1/4" = 1'-0"

FLOOR PLAN & OPTIONS - EARLY CALIFORNIA / SANTA BARBARA

FLOOR PLAN NOTES

1. ATTICS: ACCESS PER CRC R807, DRAFTSTOPS PER CRC R302.12 AND VENTILATION PER R806.
2. EMERGENCY ESCAPE AND RESCUE OPENINGS PER CRC R310. MEANS OF EGRESS PER CRC R311.
3. GLAZING PER CRC R303.1 & R308
4. FACTORY-BUILT FIREPLACES AND CHIMNEYS PER CRC R1004, R1005, R1006 CGBSC SECTION 4.503 & CEnC SECTION 150.0(e).
5. COMBUSTION AIR TO FORCED AIR UNIT PER CMC CHAPTER 7.
6. COMBUSTION AIR TO WATER HEATER PER CPC SECTION 507.0.
7. ENVIRONMENTAL AIR DUCTS PER CMC SECTION 504.
8. MECHANICAL EQUIPMENT LOCATION AND PROTECTION AGAINST DAMAGE PER CMC 305 & 308.
9. MANDATORY REQUIREMENTS FOR APPLIANCES PER CEnC SECTION 110.1.
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11. IN UPPER FLOOR PLANS, ANY OPERABLE WINDOW WITH A SILL THAT IS LOCATED LESS THAN 24" ABOVE THE FINISHED FLOOR AND MORE THAN 72" ABOVE FINISHED GRADE OR OTHER SURFACE BELOW AT THE EXTERIOR, MUST BE PROTECTED BY A GUARD OR, HAVE FIXED GLASS. THE GUARD MAY NOT HAVE OPENINGS THAT A SPHERE 4" IN DIAMETER CAN PASS THROUGH. 2016 CRC R312.2
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15. VERTICAL CLEARANCE ABOVE THE COOKTOP TO COMBUSTIBLES IS 30" UNPROTECTED, OR 24" PROTECTED, AND THE HORIZONTAL DIMENSIONS IS REQUIRED TO BE PER THE PERMANENT MARKING LISTED ON THE UNIT. 2016 CMC 916.1 & 916.2
16. A SHEETROCK NAILING INSPECTION IS REQUIRED. - 2016 CRC R106.1.1
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18. THE THREE CAR GARAGE IS NON-CONFORMING AND THE REQUIRED SIDEYARD SETBACKS MAY NOT BE RELAXED. 2016 CRC R106.1.1
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21. AFTER INSTALLING WALL, CEILING, OR FLOOR INSULATION, THE INSTALLER SHALL POST IN A CONSPICUOUS LOCATION IN THE BUILDING A CERTIFICATE SIGNED BY THE INSTALLER STATING THAT THE INSTALLATION WAS PERFORMED IN ACCORDANCE WITH TITLE 24 REQUIREMENTS.
22. THE BUILDER SHALL PROVIDE THE ORIGINAL OCCUPANT WITH THE LIST OF THE HEATING, COOLING, WATER HEATING AND LIGHTING SYSTEMS AND CONSERVATION OR SOLAR DEVICES INSTALLED IN THE BUILDING AND INSTRUCTIONS ON HOW TO USE THEM EFFICIENTLY. CCR TITLE 20

ARCHITECTS . PLANNERS . DESIGNERS
WHA.
ORANGE COUNTY . LOS ANGELES . BAY AREA

AGEN

WILSON HOMES

TRACT NUMBER:
PROJECT TYPE: S.F.D.

PLAN 3522
CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

REVISIONS

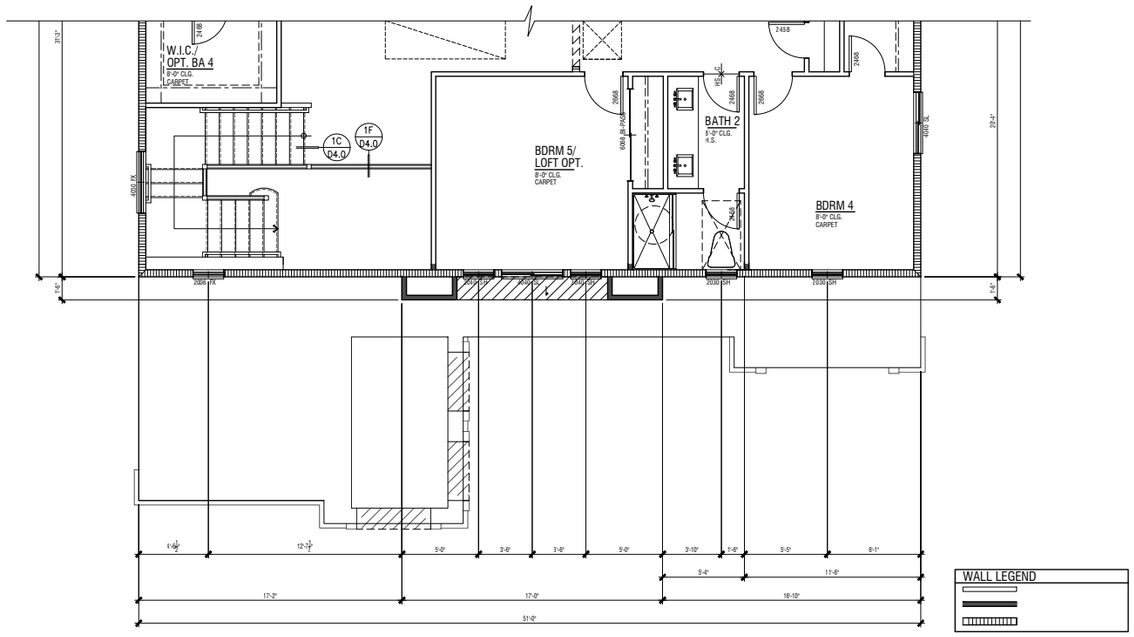
NO.	DATE	DESCRIPTION

PLAN 3522A
FLOOR PLAN & OPTIONS

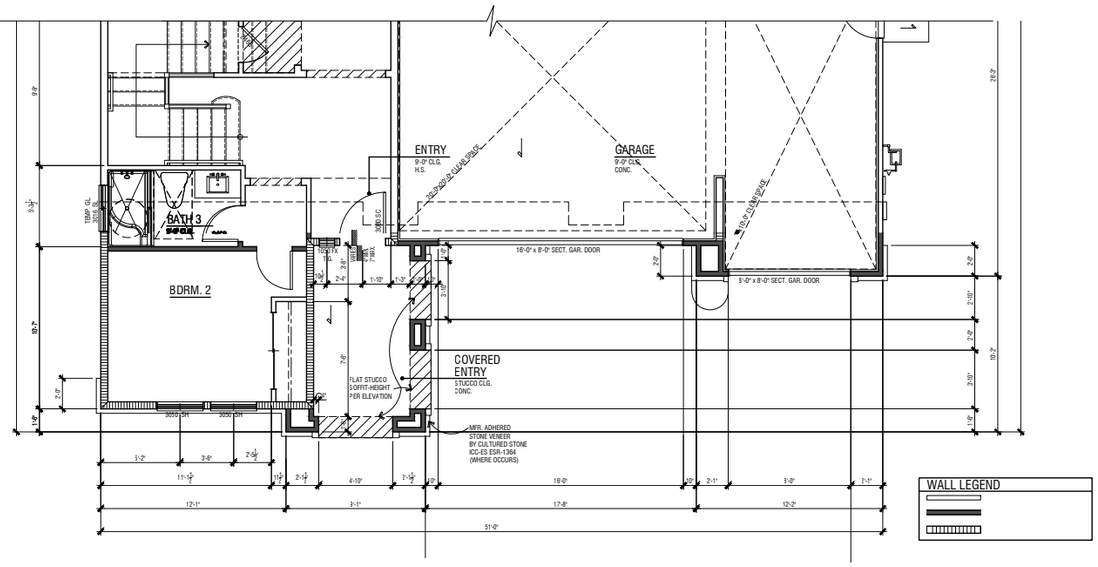
PROJECT MANAGER :	MM
DESIGNER :	MM
DRAWN BY :	MH
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	-
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2018077
CAD FILE NAME :	13219A121

DATE: 10-31-19
SHEET: A12.1.1

2015253.05 - 2019 CODE CHANGE PROGRESS SET 10-31-19



PLAN 3522B UPPER FLOOR PLAN ADDENDA



PLAN 3522B LOWER FLOOR PLAN ADDENDA

ADDENDA FLOOR PLAN NOTES

NOTE: SHADED WALLS INDICATE AREAS THAT ARE DIFFERENT THAN THE BASE FLOOR PLAN

NOTE: REFER TO CIVIL AND LANDSCAPE DRAWINGS BY OTHERS FOR ALL DRIVEWAYS AND SIDEWALK LOCATIONS.

REFER TO BASE PLAN SHEET A12.1.1 FOR ADDITIONAL NOTES AND DIMENSIONS.

TUSCAN

FLOOR AREA TABLE	PLAN 3522B
LOWER FLOOR PLAN	1986 SQ. FT.
UPPER FLOOR PLAN	1541 SQ. FT.
TOTAL	3527 SQ. FT.
3-CAR GARAGE	670 SQ. FT.
CALIFORNIA ROOM	144 SQ. FT.
COVERED ENTRY/PORCH	89 SQ. FT.

SCALE: 1/4" = 1'- 0"

ARCHITECTS . PLANNERS . DESIGNERS
WHA AGEN
ORANGE COUNTY . LOS ANGELES . BAY AREA

WILSON HOMES

TRACT NUMBER:
PROJECT TYPE: S.F.D.

PLAN 3522
CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

REVISIONS

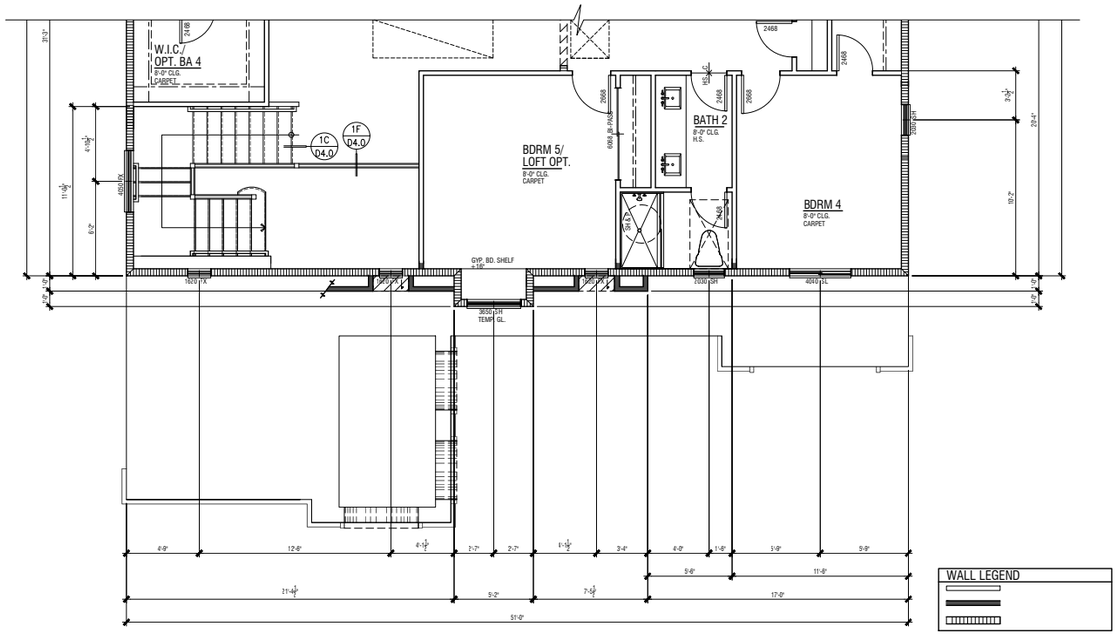
NO.	DATE	DESCRIPTION

PLAN 3522B ADDENDA
FLOOR PLANS

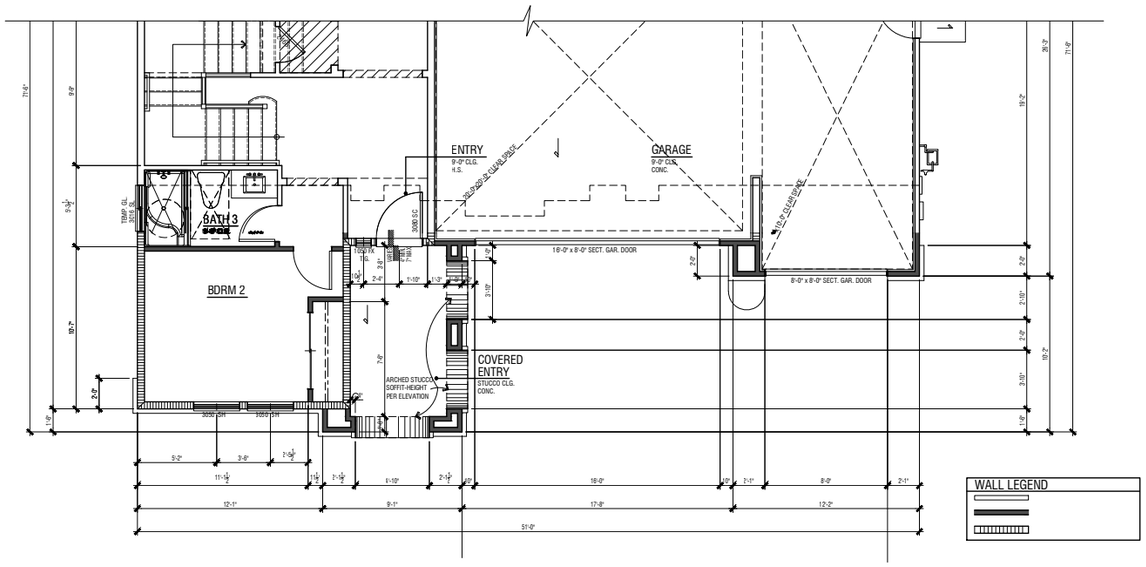
PROJECT MANAGER :	MM
DESIGNER :	AM
DRAWN BY :	-
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	-
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2018077
CAD FILE NAME :	A12DS

DATE: 10-31-19
SHEET: A12.5

2015253.05 - 2019 CODE CHANGE PROGRESS SET 10-31-19



PLAN 3522C UPPER FLOOR PLAN ADDENDA



PLAN 3522C LOWER FLOOR PLAN ADDENDA

ADDENDA FLOOR PLAN NOTES

NOTE: SHADED WALLS INDICATE AREAS THAT ARE DIFFERENT THAN THE BASE FLOOR PLAN

NOTE: REFER TO CIVIL AND LANDSCAPE DRAWINGS BY OTHERS FOR ALL DRIVEWAYS AND SIDEWALK LOCATIONS.

REFER TO BASE PLAN SHEET A12.1.1 FOR ADDITIONAL NOTES AND DIMENSIONS.

CRAFTSMAN

FLOOR AREA TABLE	PLAN 3522C
LOWER FLOOR PLAN	1986 SQ. FT.
UPPER FLOOR PLAN	1541 SQ. FT.
TOTAL	3527 SQ. FT.
3-CAR GARAGE	670 SQ. FT.
CALIFORNIA ROOM	144 SQ. FT.
COVERED ENTRY/PORCH	89 SQ. FT.

SCALE: 1/4" = 1'- 0"

ARCHITECTS . PLANNERS . DESIGNERS
WHA AGEN
ORANGE COUNTY . LOS ANGELES . BAY AREA

WILSON HOMES

TRACT NUMBER:
PROJECT TYPE: S.F.D.

PLAN 3522
CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

REVISIONS

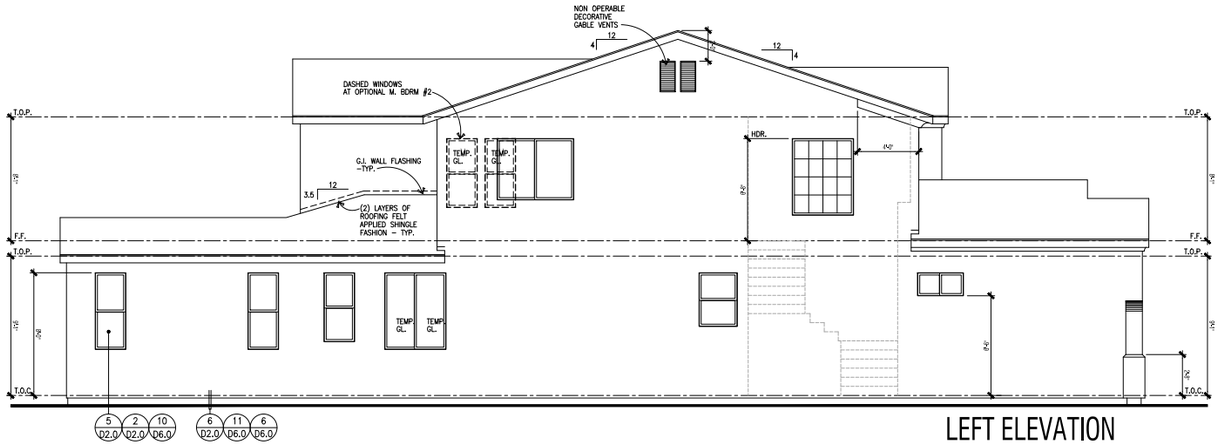
NO.	DATE	DESCRIPTION

PLAN 3522C ADDENDA
FLOOR PLANS

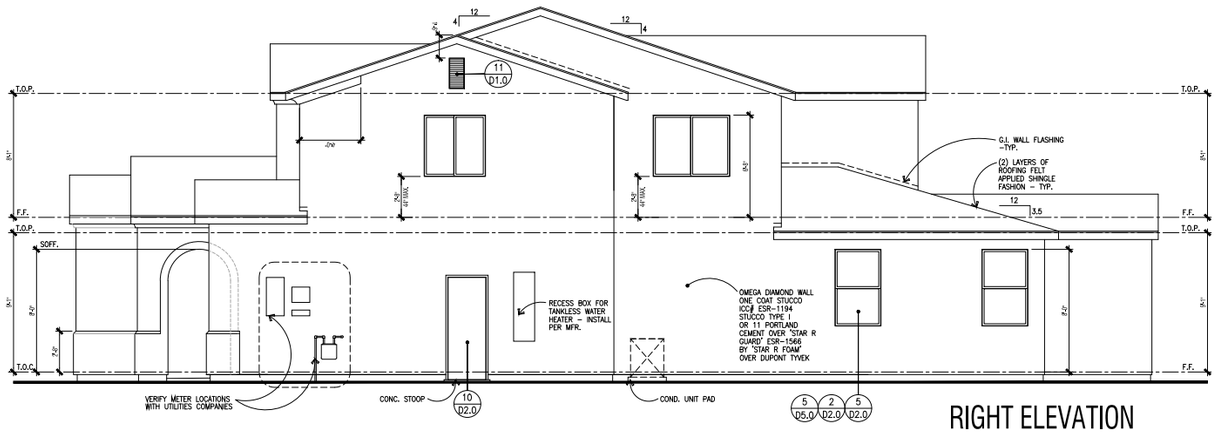
PROJECT MANAGER :	MM
DESIGNER :	AM
DRAWN BY :	-
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	-
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2018077
CAD FILE NAME :	A1207

DATE: 10-31-19
SHEET: A12.7

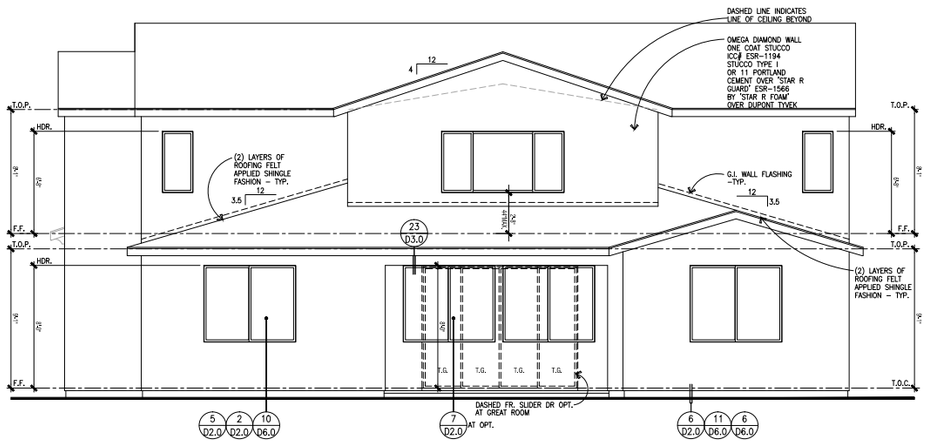
2015253.05 - 2019 CODE CHANGE PROGRESS SET 10-31-19



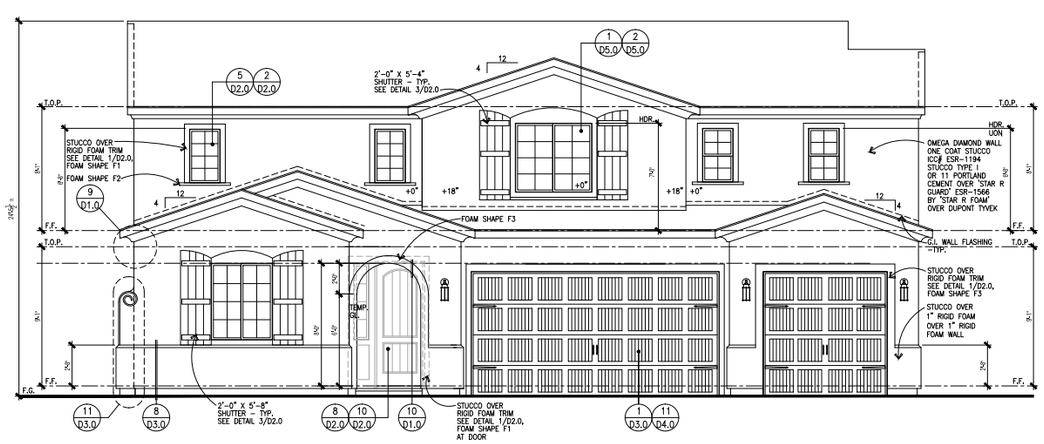
LEFT ELEVATION



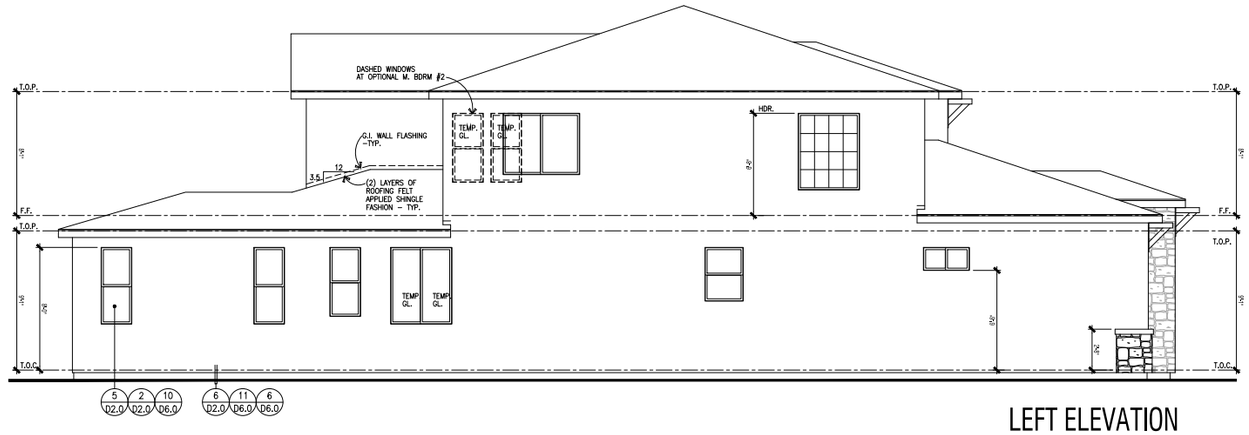
RIGHT ELEVATION



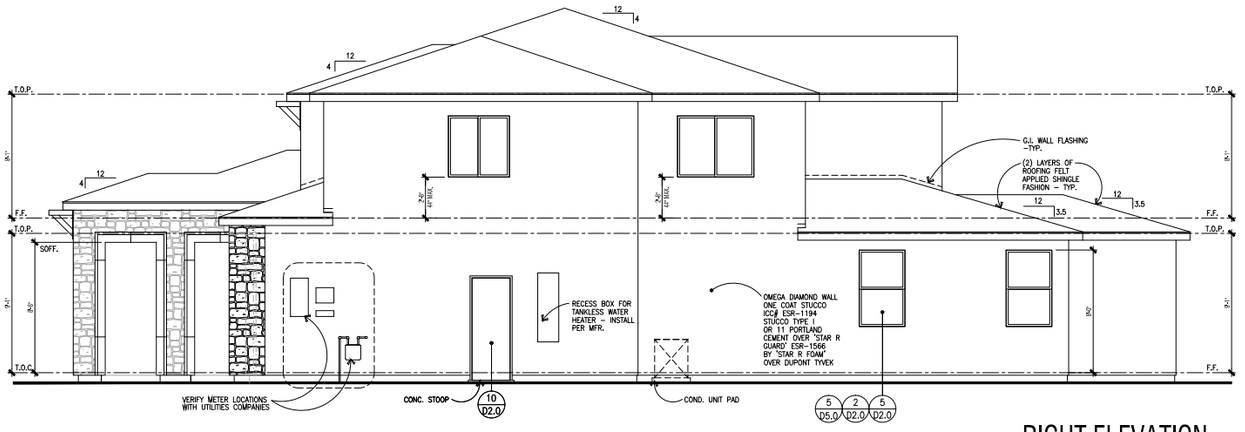
REAR ELEVATION



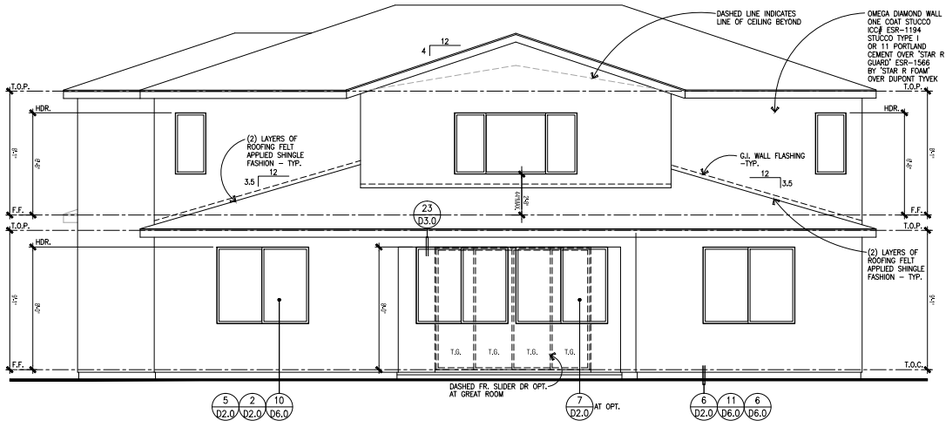
FRONT ELEVATION



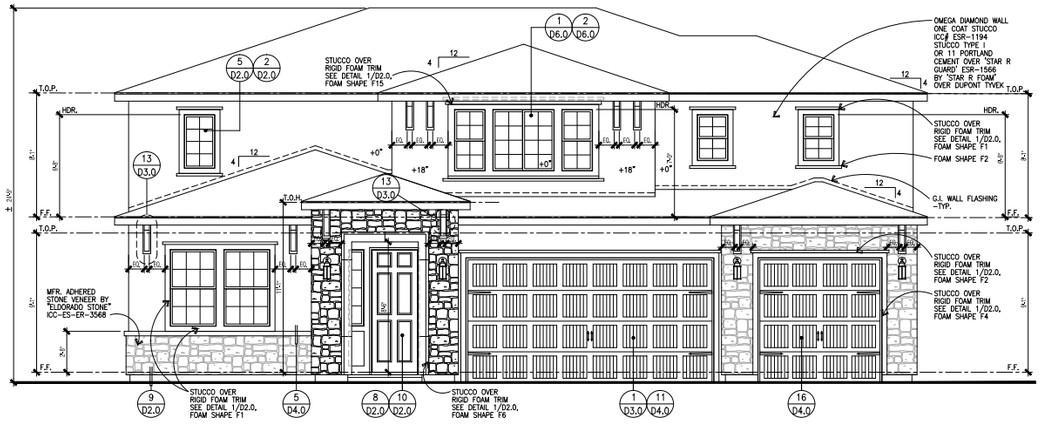
LEFT ELEVATION



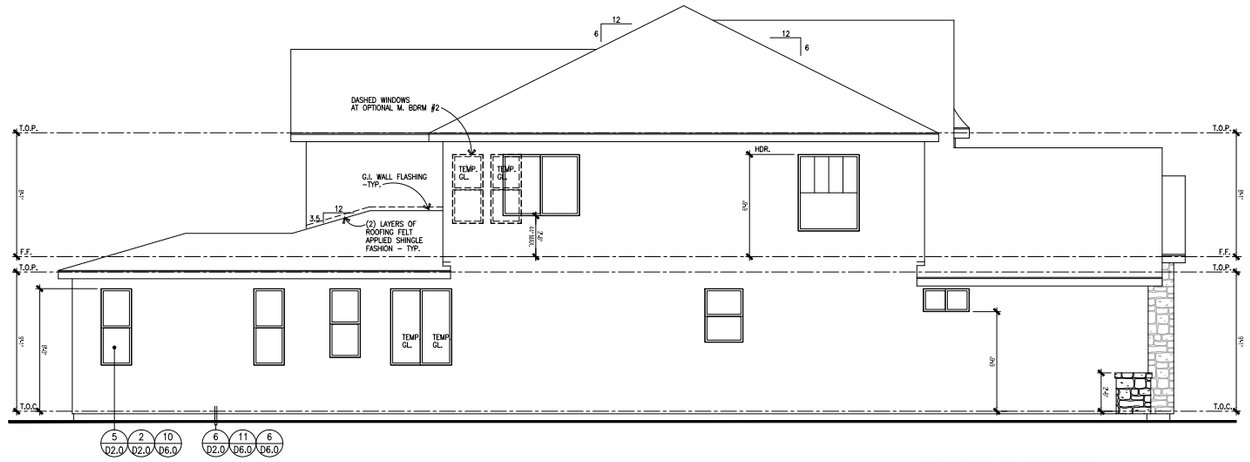
RIGHT ELEVATION



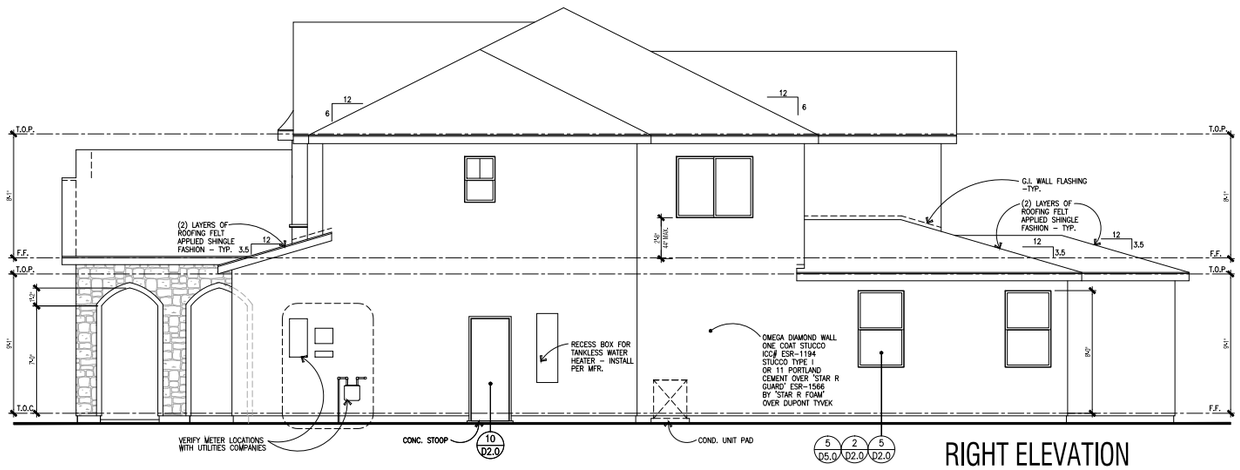
REAR ELEVATION



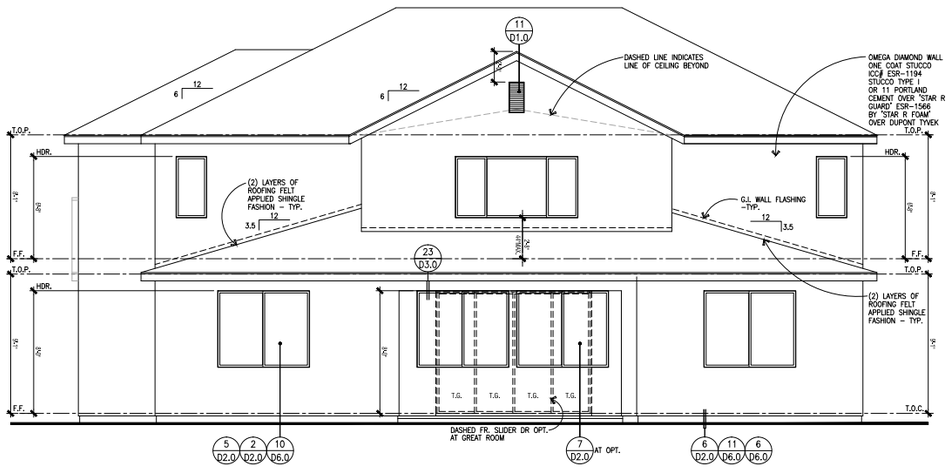
FRONT ELEVATION



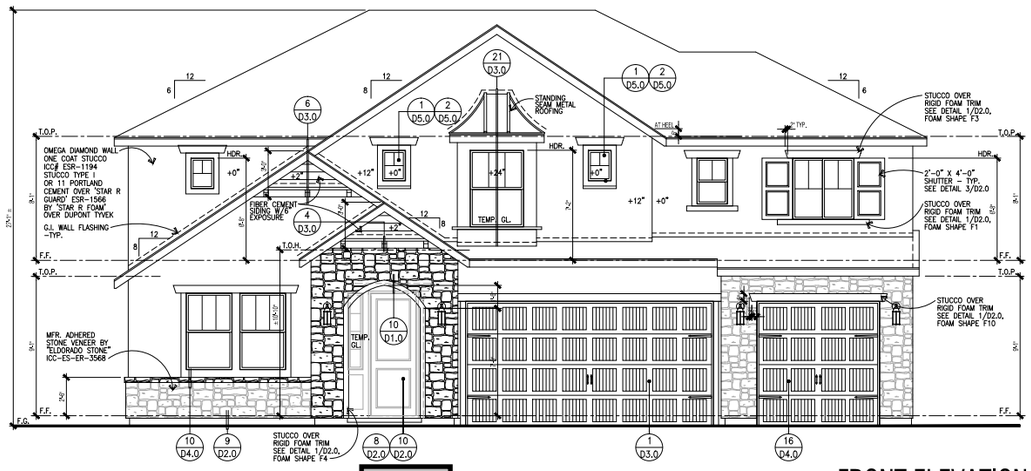
LEFT ELEVATION



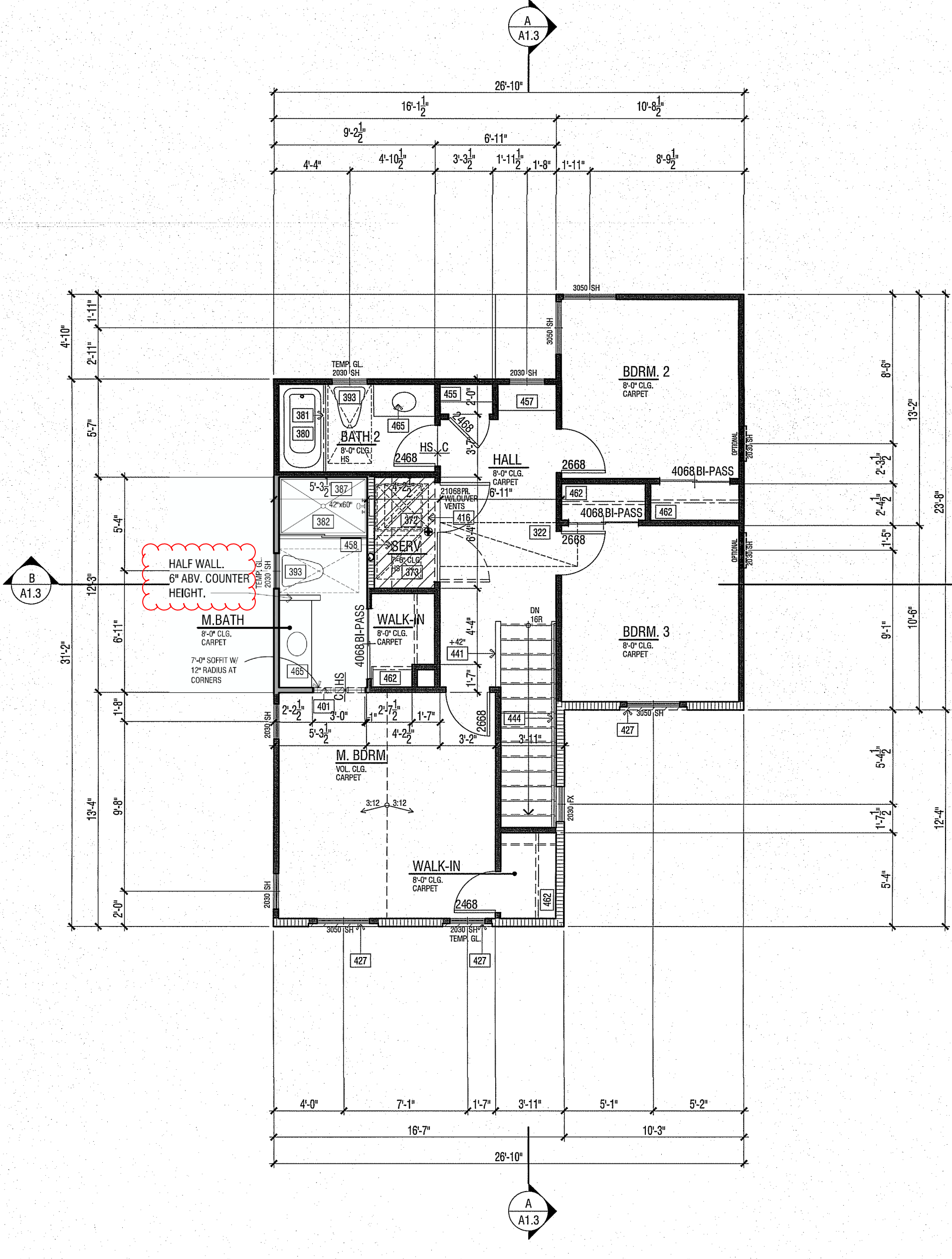
RIGHT ELEVATION



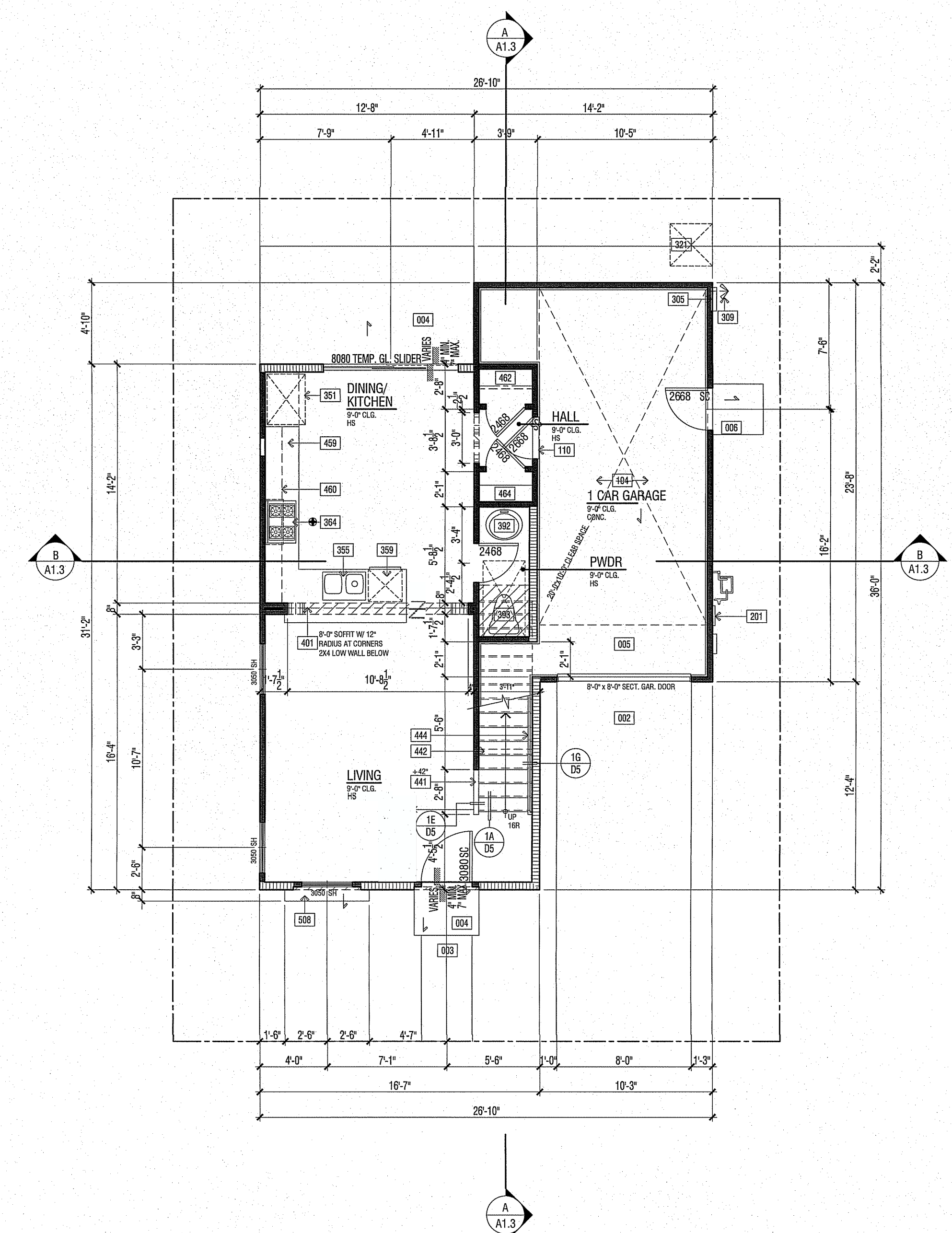
REAR ELEVATION



FRONT ELEVATION



UPPER FLOOR PLAN



LOWER FLOOR PLAN

FLOOR PLAN KEY NOTES

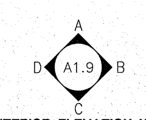
Name	NOTE
001	GALVANIZED STEEL PIPE BOLLARD W/ CONCRETE FILL (SEE DETAIL 15/D5.1)
002	CONCRETE DRIVE (BY OTHERS)
003	CONCRETE WALK (BY OTHERS)
004	CONCRETE PORCH SLAB (BY OTHERS) SLOPE 1/4" PER FOOT MINIMUM IN DIRECTION INDICATED
005	CONCRETE GARAGE SLAB - SLOPE 1/8" PER FOOT MINIMUM IN DIRECTION INDICATED
006	CONCRETE STOOP - 36" DEEP AND 2" WIDER THAN THE DOOR OPENING - SLOPE 1/4" PER FOOT MINIMUM TO DRAIN IN DIRECTION INDICATED
101	GARAGE AND/OR CARPORT SHALL BE SEPARATED FROM THE RESIDENCE AND ITS ATTIC BY MEANS OF A MIN. 1/2" GYP. BD., OR EQUIVALENT, APPLIED TO THE GARAGE SIDE PER CRC SECTION R302.6, TABLE 302.6.
104	GARAGE AND/OR CARPORT WITH HABITABLE ROOMS ABOVE SHALL BE SEPARATED FROM THE RESIDENCE BY A MIN. 5/8" TYPE 'X' GYP. BD., OR EQ. STRUCTURE(S) SUPPORTING THE FLR./CLG. ASSEMBLY USED FOR SEPARATION SHALL BE A MIN. 1/2" GYP. BD., OR EQ. PER CRC SEC. R302.6.
110	PROVIDE SOLID WOOD DOOR, OR SOLID OR HONEYCOMB CORE STEEL DOORS, NOT LESS THAN 1-3/8" THICK, OR 20 MINUTE FIRE RATED DOOR. DOORS SHALL BE SELF CLOSING AND SELF LATCHING PER CRC SECTION R302.5.1.
201	UTILITY EQUIPMENT AND SERVICE PANELS - VERIFY LOCATION
305	TANK LESS WATER HEATER. INSTALLATION PER MANUFACTURE'S INSTRUCTIONS
308	TANKLESS WATER HEATER TERMINATION CAP - INSTALL PER MFR. INSTRUCTIONS (CO-AXIAL VENT INTAKE & EXHAUST DIRECTLY FROM OUTSIDE)
309	TEMPERATURE AND PRESSURE RELIEF VALVE: DISCHARGE LINE TO THE OUTSIDE PER CPC SECTION 608.5
321	AIR CONDITIONING CONDENSER LOCATION
322	FORCED AIR UNIT (FAU) IN ATTIC ON 6' X 12' PLATFORM
336	5" DIA. G.I. DRYER VENT WITH APPROVED LINT TRAP - VENT THROUGH ROOF
349	SLIDE-IN RANGE/ OVEN AND MICRO WITH VENT/ LIGHT COMBINATION
351	REFRIGERATOR SPACE WITH RECESSED COLD WATER BOX
355	SINK WITH GARBAGE DISPOSER
359	DISHWASHER
364	COOKTOP & EXHAUST HOOD WITH FAN LIGHT (EXHAUST VENT TO OUTSIDE)
372	WASHER SPACE WITH RECESSED WATER BOX AND DRAIN
373	DRYER SPACE
374	SHELF ABOVE - OPT. CABINETS (SEE INTERIOR ELEV.)
380	*TUB/ SHOWER*
381	CURTAIN ROD
382	SHATTER PROOF SHOWER DOOR/ENCLOSURE
386	SHOWER - PREFABRICATED STALL - 60"X42"
387	SHOWER - HOT MOP - SIZE PER PLAN
392	PEDESTAL SINK
393	TOILET - PROVIDE MINIMUM 24"x30" CLEAR FLOOR AREA IN FRONT OF TOILET
401	INTERIOR SOFFIT(S)/ DROPPED CEILING(S): HEIGHT PER PLAN
410	LINE OF FLOOR ABOVE
411	LINE OF FLOOR BELOW
416	30"x30" ATTIC ACCESS - DIMENSIONS ARE CLEAR - PER CEnC 150.0(a)1, ATTIC ACCESS DOORS SHALL HAVE PERMANENTLY ATTACHED INSULATION USING ADHESIVE OR MECHANICAL FASTENERS AND THE ATTIC ACCESS SHALL BE GASKETED TO PREVENT AIR LEAKAGE
421	STUCCO CEILING: HEIGHT PER PLAN
422	STUCCO SOFFIT: HEIGHT PER PLAN
427	STUCCO SOFFIT OVER WATERPROOFED STUCCO SHELF - SLOPE FRAMING FOR DRAINAGE (1/4" PER FOOT MINIMUM)
428	ARCHED STUCCO SOFFIT - SEE EXTERIOR ELEVATION
441	GYP. BD. SHELF/LOW WALL - WIDTH AND HEIGHT PER PLAN
442	2X PONY WALL - SIZE & HEIGHT PER PLAN
443	2X CRIPPLE WALL - SIZE PER PLAN
444	+34"- +38" HANDRAIL (SEE DETAIL 1G/D5)
455	LINEN
457	LINEN (LOW ONLY)
458	LINEN (UPPER ONLY)
459	BASE CABINET
460	UPPER CABINET
462	WIRE SHELF AND POLE
463	DOUBLE SHELF & POLE
464	WIRE SHELF/SHELVES
465	VANITY
508	WATERPROOF STUCCO SHELF - SLOPE 1/4" PER FOOT

FLOOR PLAN NOTES

1. ATTICS: ACCESS PER CRC R807, DRAFTSTOPS PER CRC R302.12 AND VENTILATION PER R806.
2. EMERGENCY ESCAPE AND RESCUE OPENINGS PER CRC R310. MEANS OF EGRESS PER CRC R311.
3. GLAZING PER CRC R303.1 & R308
4. FACTORY-BUILT FIREPLACES AND CHIMNEYS PER CRC R1004, R1005, R1006 CGBSC SECTION 4.503 & CEnC SECTION 150.0(e).
5. COMBUSTION AIR TO FORCED AIR UNIT PER CMC CHAPTER 7.
6. COMBUSTION AIR TO WATER HEATER PER CPC SECTION 507.0.
7. ENVIRONMENTAL AIR DUCTS PER CMC SECTION 504.
8. MECHANICAL EQUIPMENT LOCATION AND PROTECTION AGAINST DAMAGE PER CMC 305 & 308.
9. MANDATORY REQUIREMENTS FOR APPLIANCES PER CEnC SECTION 110.1.

NOTE:

A SHEETROCK NAILING INSPECTION IS REQUIRED. - 2016 CRC.



INTERIOR ELEVATION KEY

FLOOR AREA TABLE	PLAN 1212A
LOWER FLOOR PLAN	490 SQ. FT.
UPPER FLOOR PLAN	722 SQ. FT.
TOTAL	1,212 SQ. FT.
GARAGE	288 SQ. FT.

NOTE: SQUARE FOOTAGE MAY VARY DUE TO METHOD OF CALCULATION

SCALE: 1/4" = 1'- 0"

ARCHITECTS . PLANNERS . DESIGNERS

WHA.

ORANGE COUNTY . LOS ANGELES . BAY AREA

LICENSED ARCHITECT William Hezmalhalch C 12... REN 6-30-19 STATE OF CALIFORNIA

WILSON HOMES

TRACT NUMBER: 6168,
PROJECT TYPE: S.F.D.

PLAN 1212
CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

DO NOT SCALE PLANS

REVISIONS

NO.	DATE	DESCRIPTION

PLAN 1212

PROJECT MANAGER :	MM
DESIGNER :	AM
DRAWN BY :	-
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	04-25-18
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2018077
CAD FILE NAME :	A101

DATE: 04-25-18

SHEET: A1.1

2018077 - FIRST BUILDING DEPARTMENT SUBMITTAL - 04-25-18

FLOOR PLAN KEY NOTES

Name	NOTE
002	CONCRETE DRIVE (BY OTHERS)
003	CONCRETE WALK (BY OTHERS)
004	CONCRETE PORCH SLAB (BY OTHERS) SLOPE 1/4" PER FOOT MINIMUM IN DIRECTION INDICATED
005	CONCRETE GARAGE SLAB - SLOPE 1/8" PER FOOT MINIMUM IN DIRECTION INDICATED
551	MANUFACTURED ADHERED STUCCO STONE VENEER - INSTALL PER MANUFACTURER'S INSTRUCTIONS" BY EL DORADO STONE PRODUCTS - TER# 1312-01

ARCHITECTS . PLANNERS . DESIGNERS

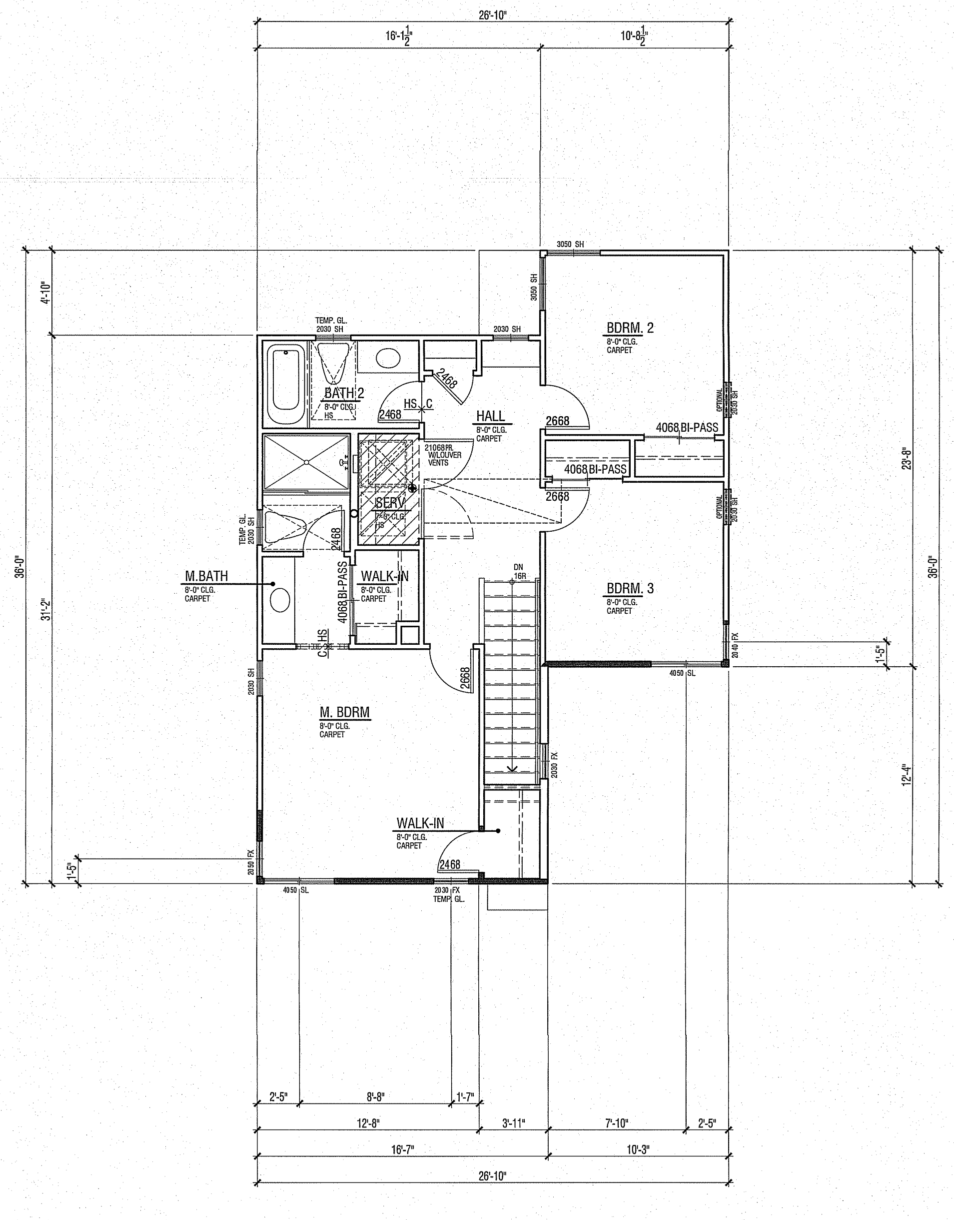
WHA.

ORANGE COUNTY . LOS ANGELES . BAY AREA

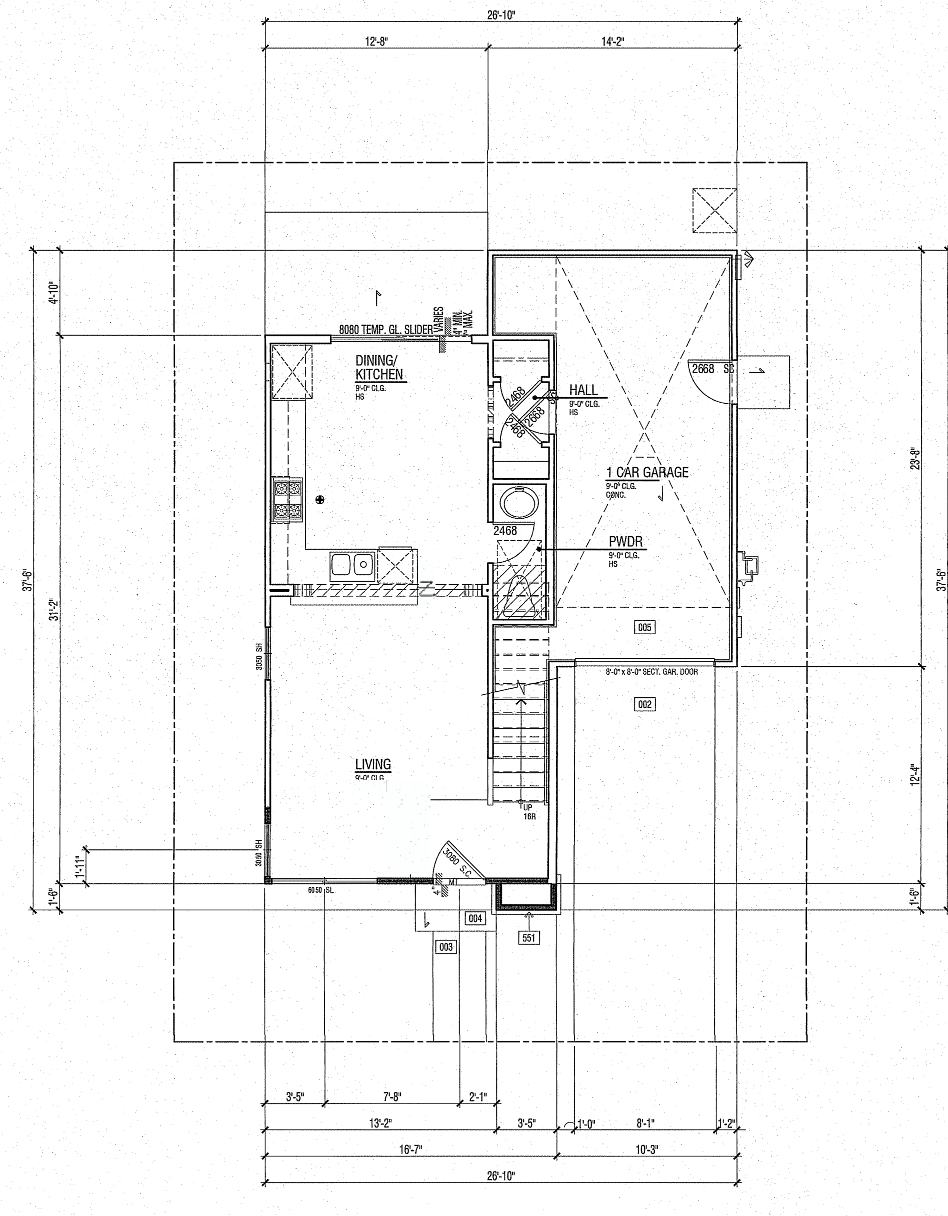
LICENSED ARCHITECT William Hezmalhalch C-1... REN 4-30-19 STATE OF CALIFORNIA

WILSON HOMES

TRACT NUMBER: 6168/
PROJECT TYPE: S.F.D.



UPPER FLOOR PLAN



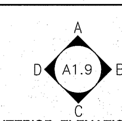
LOWER FLOOR PLAN

ADDENDA FLOOR PLAN NOTES

NOTE: SHADED WALLS INDICATE AREAS THAT ARE DIFFERENT THAN THE BASE FLOOR PLAN

NOTE: REFER TO CIVIL AND LANDSCAPE DRAWINGS BY OTHERS FOR ALL DRIVEWAYS AND SIDEWALK LOCATIONS.

REFER TO BASE PLAN SHEET A1.1 FOR ADDITIONAL NOTES AND DIMENSIONS.



INTERIOR ELEVATION KEY

PLAN 1212
CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

DO NOT SCALE PLANS

REVISIONS

NO.	DATE	DESCRIPTION

City of Clovis - Planning and Development Services - Building Division
Approved Under the 2016 California Building Codes
16SPN
JUN 29 2018
Subject To Field Approval, Laws, Codes, and Ordinances, With Noted Corrections

PLAN
1212B

PROJECT MANAGER :	MM
DESIGNER :	AM
DRAWN BY :	-
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	04-25-18
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2018077
CAD FILE NAME :	A105

DATE: 04-25-18

SHEET: A1.5

2018077 - FIRST BUILDING DEPARTMENT SUBMITTAL - 04-25-18

FLOOR AREA TABLE	PLAN 1212B
LOWER FLOOR PLAN	490 SQ. FT.
UPPER FLOOR PLAN	722 SQ. FT.
TOTAL	1,212 SQ. FT.
GARAGE	288 SQ. FT.

NOTE: SQUARE FOOTAGE MAY VARY DUE TO METHOD OF CALCULATION

SCALE: 1/4" = 1'- 0"

FLOOR PLAN KEY NOTES

Name	NOTE
002	CONCRETE DRIVE (BY OTHERS)
003	CONCRETE WALK (BY OTHERS)
004	CONCRETE PORCH SLAB (BY OTHERS) SLOPE 1/4" PER FOOT MINIMUM IN DIRECTION INDICATED
005	CONCRETE GARAGE SLAB - SLOPE 1/2" PER FOOT MINIMUM IN DIRECTION INDICATED

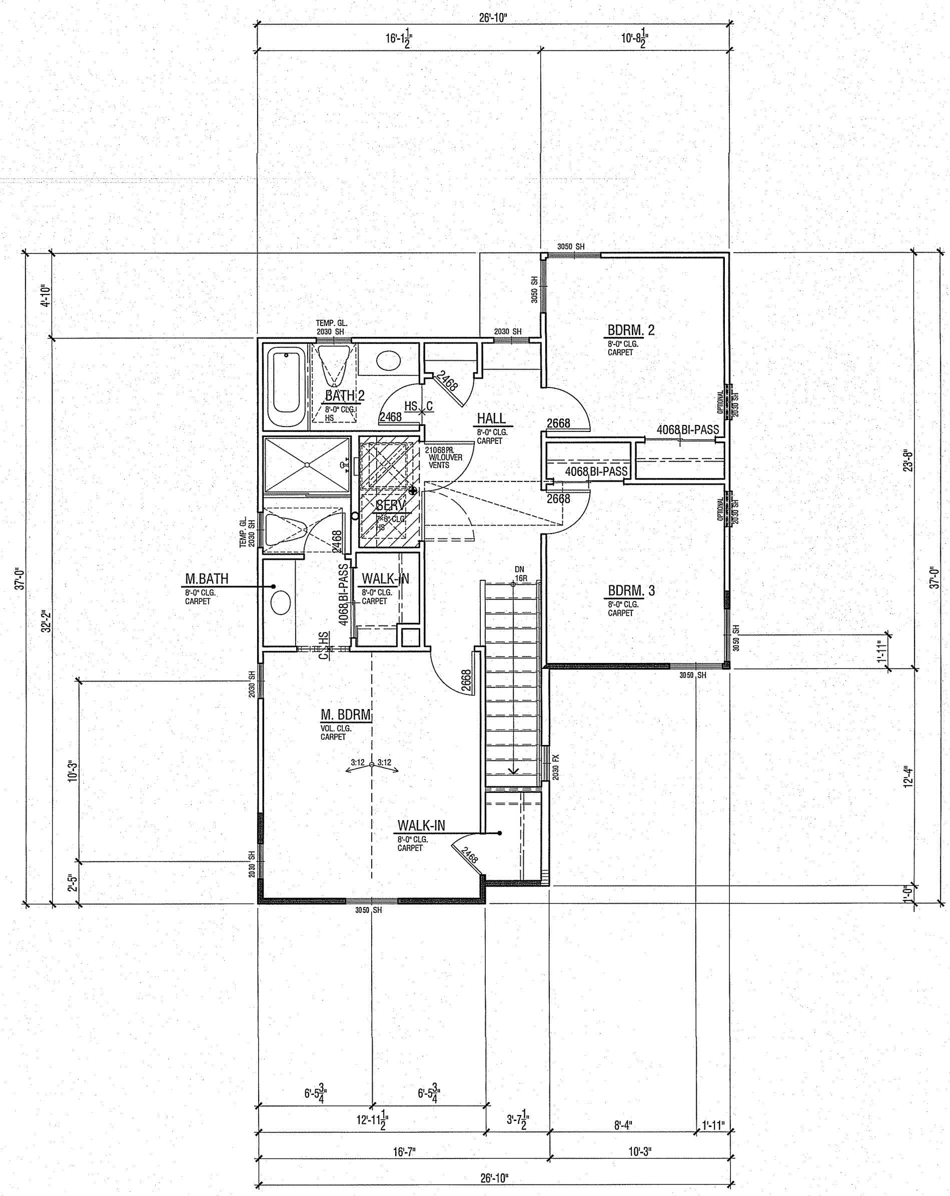
ARCHITECTS . PLANNERS . DESIGNERS

WHA.

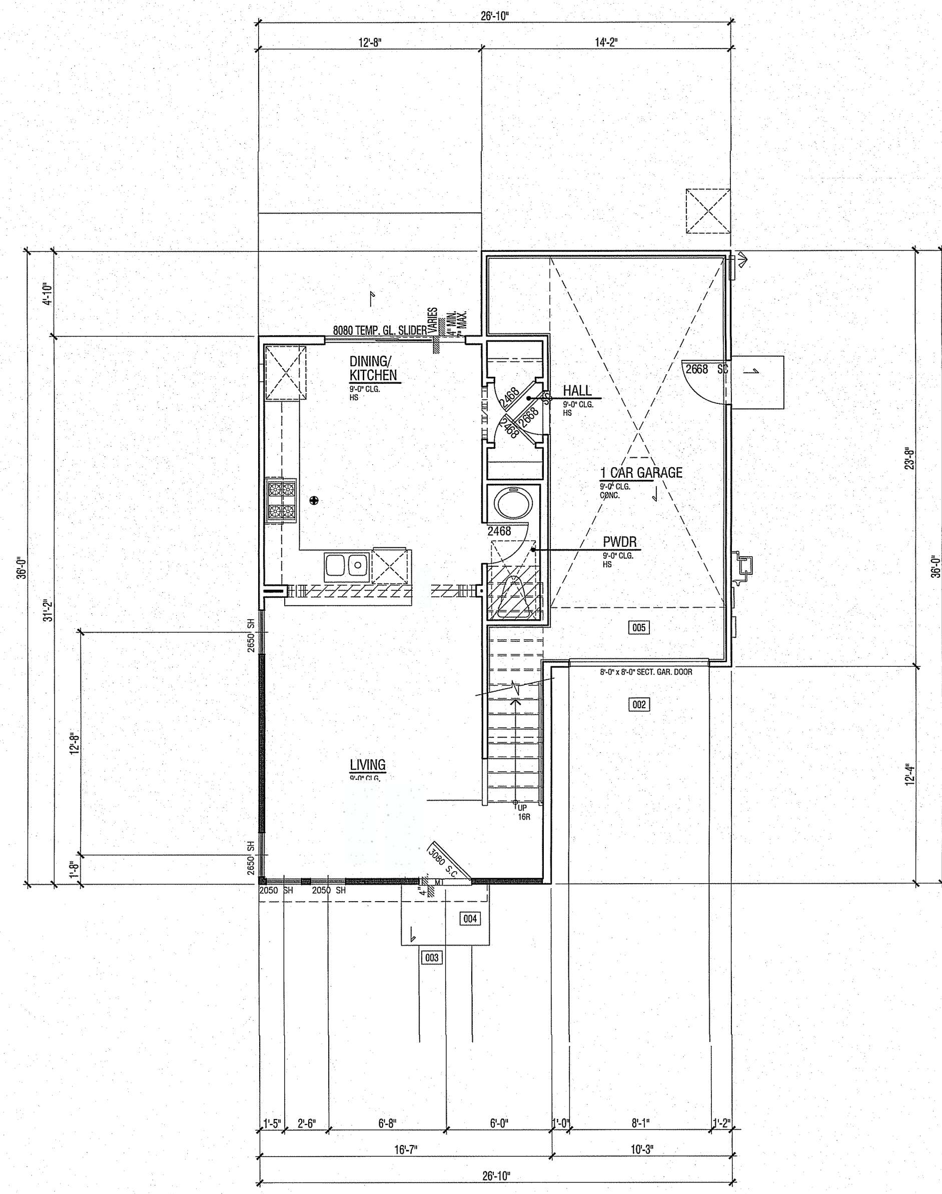
ORANGE COUNTY . LOS ANGELES . BAY AREA

WILSON HOMES

TRACT NUMBER: 6168/
PROJECT TYPE: S.F.D.



UPPER FLOOR PLAN



LOWER FLOOR PLAN

ADDENDA FLOOR PLAN NOTES

NOTE: SHADED WALLS INDICATE AREAS THAT ARE DIFFERENT THAN THE BASE FLOOR PLAN

NOTE: REFER TO CIVIL AND LANDSCAPE DRAWINGS BY OTHERS FOR ALL DRIVEWAYS AND SIDEWALK LOCATIONS.

REFER TO BASE PLAN SHEET A1.1 FOR ADDITIONAL NOTES AND DIMENSIONS.

A1.9

INTERIOR ELEVATION KEY

FLOOR AREA TABLE	PLAN 1212C
LOWER FLOOR PLAN	490 SQ. FT.
UPPER FLOOR PLAN	735 SQ. FT.
TOTAL	1,225 SQ. FT.
GARAGE	288 SQ. FT.

NOTE: SQUARE FOOTAGE MAY VARY DUE TO METHOD OF CALCULATION

SCALE: 1/4" = 1'- 0"

PLAN 1212
CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

REVISIONS

NO.	DATE	DESCRIPTION

PLAN 1212C

PROJECT MANAGER :	MM
DRAWN BY :	AM
DRAWN BY :	-
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	04-25-18
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2018077
CAD FILE NAME :	A107

DATE: 04-25-18

SHEET: A1.7

2018077 - FIRST BUILDING DEPARTMENT SUBMITTAL - 04-25-18

City of Clovis - Planning and Development Services - 16SPN - JUN 29 2018 - Building Division - Approved With Noted Corrections

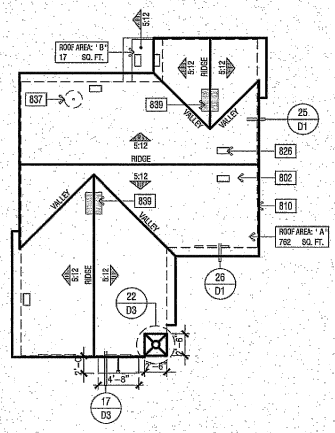
ARCHITECTS . PLANNERS . DESIGNERS
WHA.
ORANGE COUNTY . LOS ANGELES . BAY AREA

WILSON HOMES

TRACT NUMBER: 6168/
PROJECT TYPE: S.F.D.

PLAN 1212
CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA



ROOF PLAN

SCALE: 1/8" = 1'-0"

ELEVATION REFERENCE:	A	ELEVATION STYLE:	CONTEMPORARY SPANISH		
ROOF MATERIAL	STANDARD ROOF DETAIL U.N.O.	FASCIA - U.N.O.	BARGE - U.N.O.	OVERHANG DIM. - U.N.O. EAVE	OVERHANG DIM. - U.N.O. RAKE
CONCRETE ' S ' TILE "EAGLE ROOFING" ICC# ESR-1900	1/D1	2X6	NONE	1'-0"	TIGHT

ROOF PLAN NOTES

NOTE: MANDATORY REQUIREMENTS FOR SOLAR READY BUILDINGS PER CEnC SECTION 110.10.

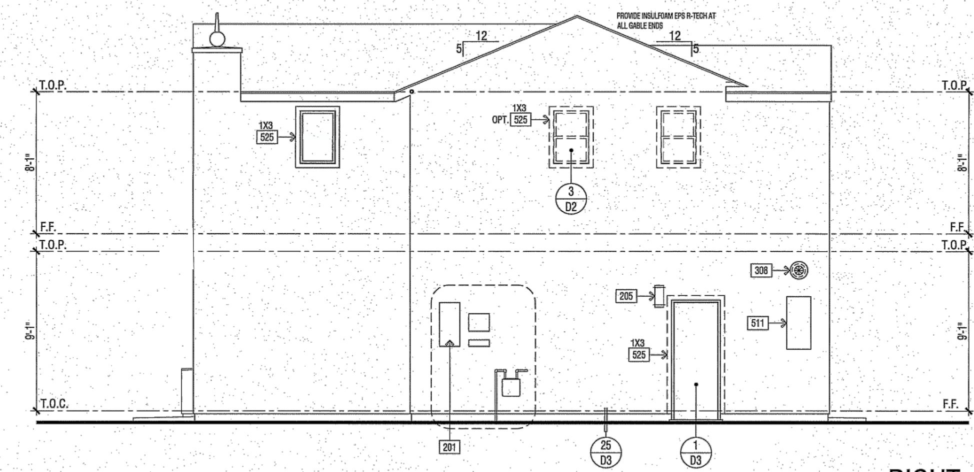
1. SEE GENERAL NOTES FOR ROOF NOTES.
2. SPARK ARRESTORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
3. ATTIC ACCESS PER CRC SECTION R807.
4. PROVIDE ATTIC & SOFFIT VENTILATION PER CRC SECTION R806. PER CRC SECTION R806.2, THE MINIMUM NET FREE VENTILATING AREA SHALL BE 1/150 OF THE AREA OF THE VENTED SPACE. EXCEPTION: THE MINIMUM NET FREE VENTILATION AREA SHALL BE 1/300 OF THE VENTED SPACE PROVIDED ONE OR MORE OF THE FOLLOWING CONDITIONS ARE MET:
   - IN CLIMATE ZONES 14 AND 16, A CLASS I OR II VAPOR RETARDER IS INSTALLED ON THE WARM-IN-WINTER SIDE OF THE CEILING.
   - NOT LESS THAN 40 PERCENT AND NOT MORE THAN 50 PERCENT OF THE REQUIRED VENTILATING AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE ATTIC OR RAFTER SPACE. UPPER VENTILATORS SHALL BE LOCATED NO MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE, MEASURED VERTICALLY, WITH THE BALANCE OF THE REQUIRED VENTILATION PROVIDED BY EAVE OR CORNICE VENTS. WHERE THE LOCATION OF WALL OR ROOF FRAMING MEMBERS CONFLICTS WITH THE INSTALLATION OF UPPER VENTILATORS, INSTALLATION MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE SHALL BE PERMITTED.

ROOF PLAN KEY NOTES

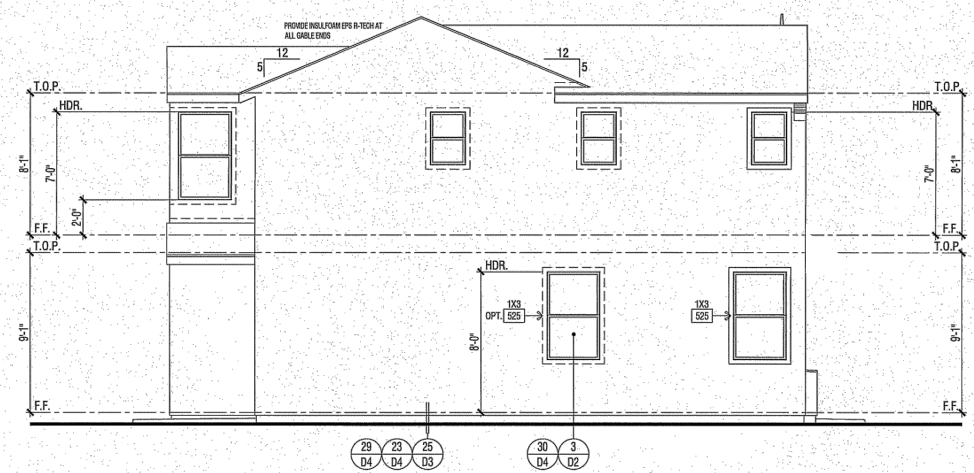
Name	NOTE
802	CLASS 'A' ROOFING - CONCRETE - 'S' TILE - BY EAGLE ROOFING ICC# ESR 1900
810	LINE OF WALL BELOW
826	ROOF VENT - O'HAGIN "XL SERIES" CLOAKED VENT (ICC # NER-9650A)
837	PROVIDE 1" CONDUIT FROM THE ELECTRIC PANEL TO LOCATION IN ATTIC FOR FUTURE SOLAR INSTALLATION.
839	MIN. 22"X30" OPENING IN CALIFORNIA ROOF FRAMING CONDITIONS FOR ATTIC ACCESS AND CROSS VENTILATION - CONTRACTOR TO VERIFY AIRFLOW TO ALL ATTIC AREAS

ROOF ATTIC AREA	A	762	SQ. FT.		CALCULATION FACTOR:			1/300
		109728	SQ. IN					
MIN. VENTILATION REQUIRED:	TOTAL	366	SQ. IN		TOTAL PROVIDED:		390	SQ. IN
MIN. VENTILATION REQUIRED:	HIGH	183	SQ. IN		TOTAL HIGH PROVID		195	SQ. IN
MIN. VENTILATION REQUIRED:	LOW	183	SQ. IN		TOTAL LOW PROVIDI		195	SQ. IN
HIGH VENTILATION METHOD	SIZE	FREE AREA			QUANTITY		FREE VENT AREA	
CLOAKED VENT - CONC.S-TILE	-	98	SQ. IN	X	2		195	SQ. IN
					TOTAL PROVIDED:		195	SQ. IN
LOW VENTILATION METHOD	SIZE	FREE AREA			QUANTITY		FREE VENT AREA	
CLOAKED VENT - CONC.S-TILE	-	98	SQ. IN	X	2		195	SQ. IN
					TOTAL PROVIDED:		195	SQ. IN

ROOF ATTIC AREA	B	17	SQ. FT.		CALCULATION FACTOR:			1/300
		2448	SQ. IN					
MIN. VENTILATION REQUIRED:	TOTAL	8	SQ. IN		TOTAL PROVIDED:		195	SQ. IN
MIN. VENTILATION REQUIRED:	HIGH	4	SQ. IN		TOTAL HIGH PROVID		98	SQ. IN
MIN. VENTILATION REQUIRED:	LOW	4	SQ. IN		TOTAL LOW PROVIDI		98	SQ. IN
HIGH VENTILATION METHOD	SIZE	FREE AREA			QUANTITY		FREE VENT AREA	
CLOAKED VENT - CONC.S-TILE	-	98	SQ. IN	X	1		98	SQ. IN
					TOTAL PROVIDED:		98	SQ. IN
LOW VENTILATION METHOD	SIZE	FREE AREA			QUANTITY		FREE VENT AREA	
CLOAKED VENT - CONC.S-TILE	-	98	SQ. IN	X	1		98	SQ. IN
					TOTAL PROVIDED:		98	SQ. IN



RIGHT



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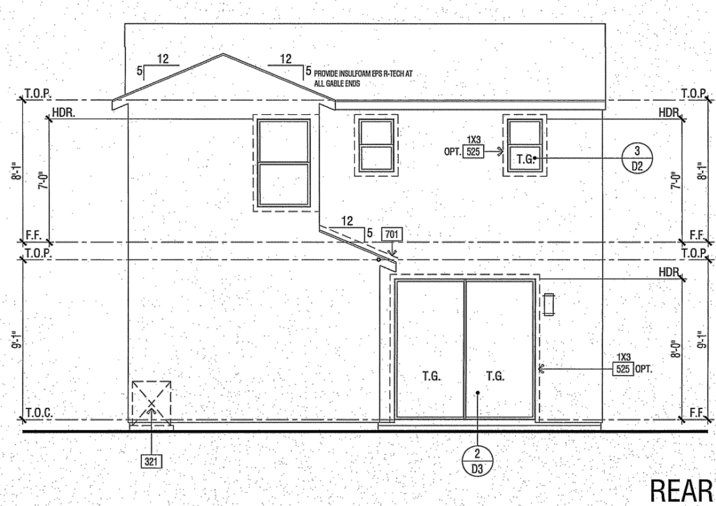
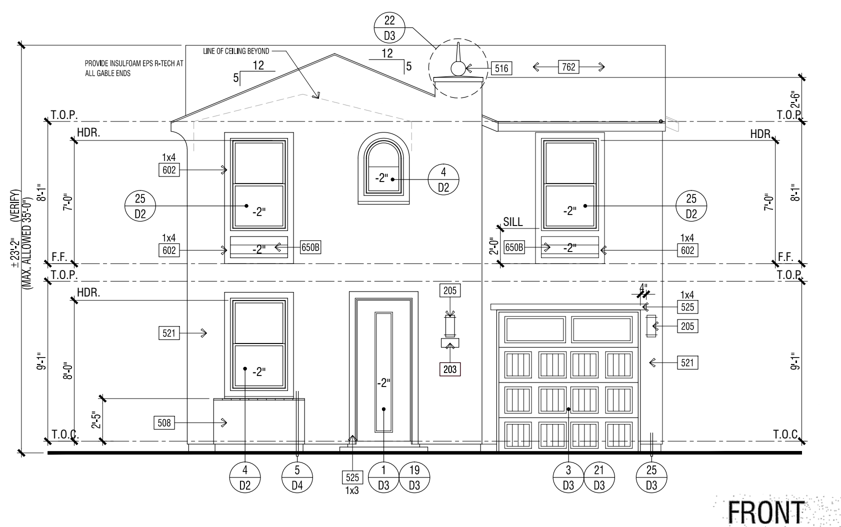


REAR



FRONT

SCALE: 1/4" = 1'-0"

FINISHED GRADE VARIES. SEE CIVIL ENGINEERS PLANS FOR FINAL GRADE AND SITE DRAINAGE.

ELEVATION KEY NOTES

Name	NOTE
201	UTILITY EQUIPMENT AND SERVICE PANELS - VERIFY LOCATION
203	ADDRESS PANEL. 6" MIN. HIGH BUILDING ADDRESS CHARACTERS PLACED IN SUCH A POSITION TO BE PLAINLY VISIBLE FROM THE STREET.
205	ACCENT EXTERIOR WALL LIGHT
308	TANKLESS WATER HEATER TERMINATION CAP - INSTALL PER MFR. INSTRUCTIONS (CO-AXIAL VENT INTAKE & EXHAUST DIRECTLY FROM OUTSIDE)
321	AIR CONDITIONING CONDENSER LOCATION
508	WATERPROOF STUCCO SHELF - SLOPE 1/4" PER FOOT
511	RECESS BOX FOR TANKLESS WATER HEATER - INSTALL PER MFR. INSTRUCTIONS
516	DECORATIVE FOAM ACCENT - PER ELEVATION
521	STUCCO - INSTALL PER MANUFACTURER'S LISTING BY: OMEGA DIAMOND WALL ONE COAT SYSTEM ICC-ES ESR-1194
525	STUCCO OVER RIGID FOAM TRIM - FOAM SHAPE PER ELEVATION
602	WOOD TRIM(S) - SIZE PER ELEVATION
650B	FIBER CEMENT LAP SIDING - 5/16" THICK 'HARDIPLANK' (OR EQUIVALENT. FINISH: SELECT CEDARMILL. EXPOSURE: 6" (INSTALLATION PER MANUFACTURER'S INSTRUCTIONS)
674	DECORATIVE METAL WINDOW SHADE
701	G.I. FLASHING
762	CLASS 'A' ROOFING - CONCRETE - 'S' TILE - BY EAGLE ROOFING ICC# ESR 1900

ANY OPERABLE WINDOW WITH A SILL THAT IS LOCATED LESS THAN 24" ABOVE FINISHED FLOOR AND MORE THAN 72" ABOVE FINISHED GRADE OR OTHER SURFACE BELOW AT THE EXTERIOR, MUST BE PROTECTED BY A GUARD OR, HAVE A FIXED GLASS. THE GUARD MAY NOT HAVE OPENINGS THAT A SPHERE 4" IN DIAMETER CAN PASS THROUGH. 2016 CBC 1405.13.2

REVISIONS

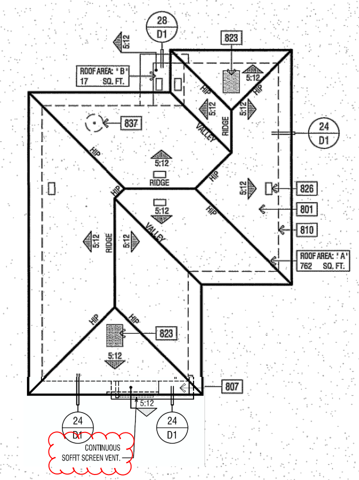
NO.	DATE	DESCRIPTION

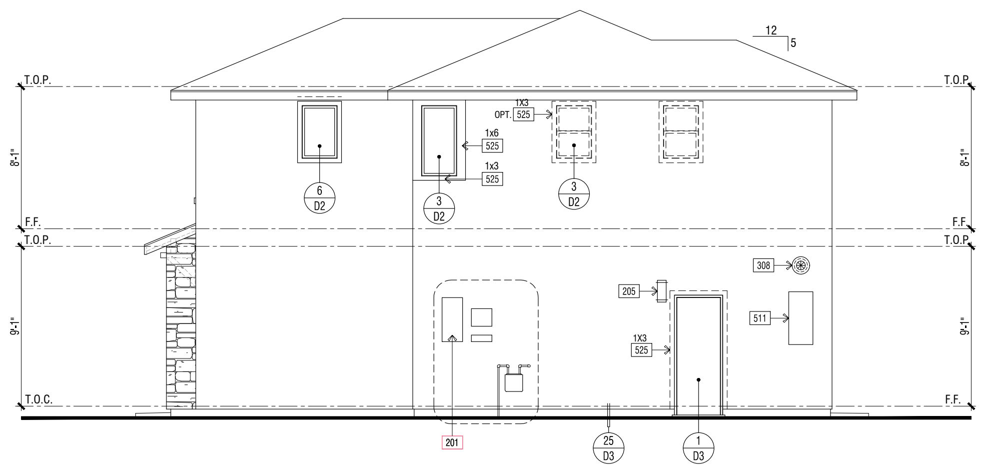
ELEVATIONS
1212A

PROJECT MANAGER :	MM
DESIGNER :	AM
DRAWN BY :	-
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	04-25-18
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2018077
CAD FILE NAME :	A104

DATE: 04-25-18
SHEET: A1.4

2018077 - FIRST BUILDING DEPARTMENT SUBMITTAL - 04-25-18





ROOF PLAN

SCALE: 1/8" = 1'-0"

ELEVATION REFERENCE:	B	ELEVATION STYLE:	MODERN		
ROOF MATERIAL	STANDARD ROOF DETAIL U.N.O.	FASCIA - U.N.O.	BARGE - U.N.O.	OVERHANG DIM. - U.N.O. EAVE	OVERHANG DIM. - U.N.O. RAKE
CONCRETE 'FLAT' TILE "EAGLE ROOFING" ICC# ESR-1900	1 / D1.1	2X6	2X6	1'-6"	1'-0"

ROOF PLAN NOTES

NOTE: MANDATORY REQUIREMENTS FOR SOLAR READY BUILDINGS PER CEnC SECTION 110.10.

1. SEE GENERAL NOTES FOR ROOF NOTES.
2. SPARK ARRESTORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
3. ATTIC ACCESS PER CRC SECTION R807.
4. PROVIDE ATTIC & SOFFIT VENTILATION PER CRC SECTION R806. PER CRC SECTION R806.2, THE MINIMUM NET FREE 4. VENTILATING AREA SHALL BE 1/150 OF THE AREA OF THE VENTED SPACE. EXCEPTION: THE MINIMUM NET FREE VENTILATION AREA SHALL BE 1/300 OF THE VENTED SPACE PROVIDED ONE OR MORE OF THE FOLLOWING CONDITIONS ARE MET:
   - IN CLIMATE ZONES 14 AND 16, A CLASS I OR II VAPOR RETARDER IS INSTALLED ON THE WARM-IN-WINTER SIDE OF THE CEILING.
   - NOT LESS THAN 40 PERCENT AND NOT MORE THAN 50 PERCENT OF THE REQUIRED VENTILATING AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE ATTIC OR RAFTER SPACE. UPPER VENTILATORS SHALL BE LOCATED NO MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE, MEASURED VERTICALLY, WITH THE BALANCE OF THE REQUIRED VENTILATION PROVIDED BY EAVE OR CORNICE VENTS. WHERE THE LOCATION OF WALL OR ROOF FRAMING MEMBERS CONFLICTS WITH THE INSTALLATION OF UPPER VENTILATORS, INSTALLATION MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE SHALL BE PERMITTED.

ROOF PLAN KEY NOTES

Name	NOTE
801	CLASS 'A' ROOFING - CONCRETE - 'FLAT' TILE - BY EAGLE ROOFING ICC# ESR 1900
807	ROOFING - METAL BY CUSTOM BILT METALS - ASTM A792
810	LINE OF WALL BELOW
823	MIN. 22"X30" CLEAR OPENING FOR ACCESS AND AIRFLOW CONTRACTOR TO VERIFY AIRFLOW TO ALL ATTIC AREAS
826	ROOF VENT - O'HAGIN "XL SERIES" CLOAKED VENT (ICC # NER-9650A)
837	PROVIDE 1" CONDUIT FROM THE ELECTRIC PANEL TO LOCATION IN ATTIC FOR FUTURE SOLAR INSTALLATION.

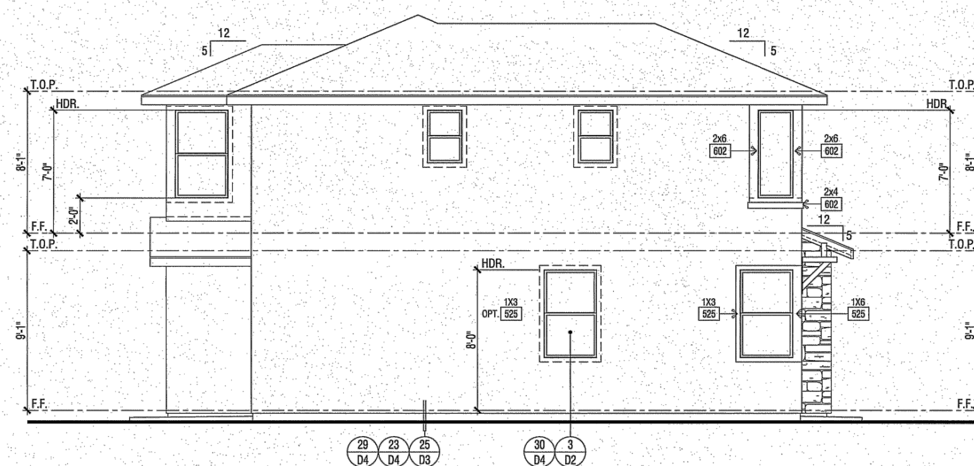
ROOF ATTIC AREA	A	762	SQ. FT.		CALCULATION FACTOR:			1/300
		109728	SQ. IN					
MIN. VENTILATION REQUIRED:	TOTAL	366	SQ. IN		TOTAL PROVIDED:	395		SQ. IN
MIN. VENTILATION REQUIRED:	HIGH	183	SQ. IN		TOTAL HIGH PROVID	198		SQ. IN
MIN. VENTILATION REQUIRED:	LOW	168	SQ. IN		TOTAL LOW PROVIDI	198		SQ. IN
HIGH VENTILATION METHOD	SIZE	FREE AREA			QUANTITY		FREE VENT AREA	
CLOAKED VENT - CONC.FLAT TILE	-	99	SQ. IN	X	2		198	SQ. IN
					TOTAL PROVIDED:		198	SQ. IN
LOW VENTILATION METHOD	SIZE	FREE AREA			QUANTITY		FREE VENT AREA	
CLOAKED VENT - CONC.FLAT TILE	-	99	SQ. IN	X	2		198	SQ. IN
					TOTAL PROVIDED:		198	SQ. IN

ROOF ATTIC AREA	B	17	SQ. FT.		CALCULATION FACTOR:			1/300
		2448	SQ. IN					
MIN. VENTILATION REQUIRED:	TOTAL	8	SQ. IN		TOTAL PROVIDED:	198		SQ. IN
MIN. VENTILATION REQUIRED:	HIGH	4	SQ. IN		TOTAL HIGH PROVID	99		SQ. IN
MIN. VENTILATION REQUIRED:	LOW	2	SQ. IN		TOTAL LOW PROVIDI	99		SQ. IN
HIGH VENTILATION METHOD	SIZE	FREE AREA			QUANTITY		FREE VENT AREA	
CLOAKED VENT - CONC.FLAT TILE	-	99	SQ. IN	X	1		99	SQ. IN
					TOTAL PROVIDED:		99	SQ. IN
LOW VENTILATION METHOD	SIZE	FREE AREA			QUANTITY		FREE VENT AREA	
CLOAKED VENT - CONC.FLAT TILE	-	99	SQ. IN	X	1		99	SQ. IN
					TOTAL PROVIDED:		99	SQ. IN

FINISHED GRADE VARIES. SEE CIVIL ENGINEERS PLANS FOR FINAL GRADE AND SITE DRAINAGE.

ELEVATION KEY NOTES

Name	NOTE
201	UTILITY EQUIPMENT AND SERVICE PANELS - VERIFY LOCATION
203	ADDRESS PANEL. 6" MIN. HIGH BUILDING ADDRESS CHARACTERS PLACED IN SUCH A POSITION TO BE PLAINLY VISIBLE FROM THE STREET.
205	ACCENT EXTERIOR WALL LIGHT
308	TANKLESS WATER HEATER TERMINATION CAP - INSTALL PER MFR. INSTRUCTIONS (CO-AXIAL VENT INTAKE & EXHAUST DIRECTLY FROM OUTSIDE)
321	AIR CONDITIONING CONDENSER LOCATION
511	RECESS BOX FOR TANKLESS WATER HEATER - INSTALL PER MFR. INSTRUCTIONS
521	STUCCO - INSTALL PER MANUFACTURER'S LISTING BY: OMEGA DIAMOND WALL ONE COAT SYSTEM ICC-ES ESR-1194
525	STUCCO OVER RIGID FOAM TRIM - FOAM SHAPE PER ELEVATION
551	MANUFACTURED ADHERED STUCCO STONE VENEER - INSTALL PER MANUFACTURER'S INSTRUCTIONS" BY EL DORADO STONE PRODUCTS - TER# 1312-01
602	WOOD TRIM(S) - SIZE PER ELEVATION
650B	FIBER CEMENT LAP SIDING - 5/16" THICK 'HARDIPLANK' (OR EQUIVALENT. FINISH: SELECT CEDARMILL. EXPOSURE: 6" (INSTALLATION PER MANUFACTURER'S INSTRUCTIONS)
701	G.I. FLASHING
761	ROOFING - CONCRETE - FLAT TILE - BY EAGLE ROOFING ICC# ESR 1900
770	ROOFING - METAL BY CUSTOM BILT METALS - ASTM A792



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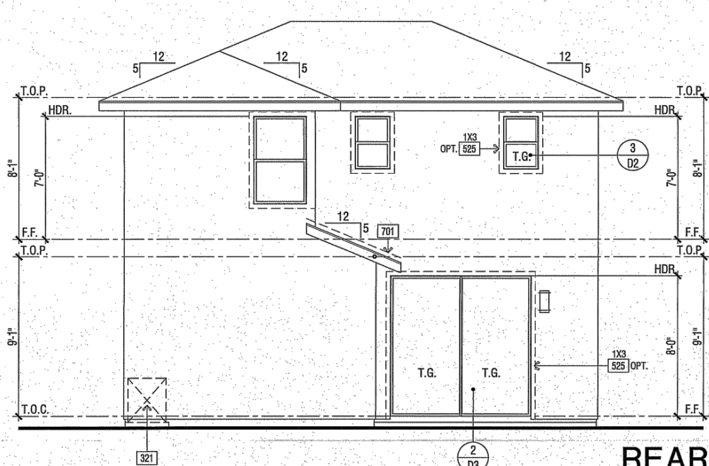

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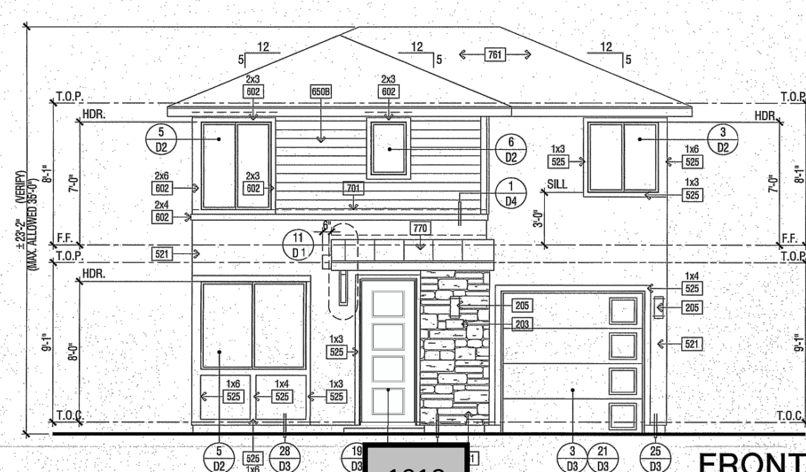


FRONT

SCALE: 1/4" = 1'-0"

ARCHITECTS . PLANNERS . DESIGNERS

WHA.

ORANGE COUNTY . LOS ANGELES . BAY AREA

WILSON HOMES

TRACT NUMBER:
PROJECT TYPE: S.F.D.

PLAN 1212
CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

REVISIONS

NO.	DATE	DESCRIPTION

ELEVATIONS
PLAN
1212B

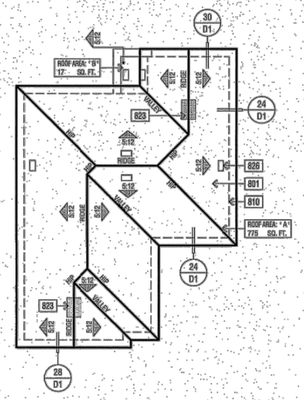
PROJECT MANAGER :	MM
DESIGNER :	AM
DRAWN BY :	-
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	04-25-18
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2018077
CAD FILE NAME :	A106

DATE: 04-25-18

SHEET: A1.6

2018077 - FIRST BUILDING DEPARTMENT SUBMITTAL - 04-25-18

City of Clovis - Planning and Development Services
JUN 29 2018



ROOF PLAN

SCALE: 1/8" = 1'-0"

ELEVATION REFERENCE:	C	ELEVATION STYLE:	PROGRESSIVE NAPA			
ROOF MATERIAL	STANDARD ROOF DETAIL U.N.O.	FASCIA - U.N.O.	BARGE - U.N.O.	OVERHANG/ENK. - U.N.O. EAVE	RAKE
CONCRETE 'FLAT' TILE *EAGLE ROOFING* ICC# ESR-1900	1 / D1.1	2X6	2X6	1'-0"	1'-0"

ROOF PLAN NOTES

NOTE: MANDATORY REQUIREMENTS FOR SOLAR READY BUILDINGS PER CEnC SECTION 110.10.

1. SEE GENERAL NOTES FOR ROOF NOTES.
2. SPARK ARRESTORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
3. ATTIC ACCESS PER CRC SECTION R807.
4. PROVIDE ATTIC & SOFFIT VENTILATION PER CRC SECTION R806. PER CRC SECTION R806.2, THE MINIMUM NET FREE 4. VENTILATING AREA SHALL BE 1/150 OF THE AREA OF THE VENTED SPACE. EXCEPTION: THE MINIMUM NET FREE VENTILATION AREA SHALL BE 1/300 OF THE VENTED SPACE PROVIDED ONE OR MORE OF THE FOLLOWING CONDITIONS ARE MET:
   - IN CLIMATE ZONES 14 AND 16, A CLASS I OR II VAPOR RETARDER IS INSTALLED ON THE WARM-IN-WINTER SIDE OF THE CEILING.
   - NOT LESS THAN 40 PERCENT AND NOT MORE THAN 50 PERCENT OF THE REQUIRED VENTILATING AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE ATTIC OR RAFTER SPACE. UPPER VENTILATORS SHALL BE LOCATED NO MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE, MEASURED VERTICALLY, WITH THE BALANCE OF THE REQUIRED VENTILATION PROVIDED BY EAVE OR CORNICE VENTS. WHERE THE LOCATION OF WALL OR ROOF FRAMING MEMBERS CONFLICTS WITH THE INSTALLATION OF UPPER VENTILATORS, INSTALLATION MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE SHALL BE PERMITTED.

ROOF PLAN KEY NOTES

Name	NOTE
601	CLASS 'A' ROOFING - CONCRETE - 'FLAT' TILE - BY EAGLE ROOFING ICC# ESR 1900
810	LINE OF WALL BELOW
823	MIN. 22"X30" CLEAR OPENING FOR ACCESS AND AIRFLOW CONTRACTOR TO VERIFY AIRFLOW TO ALL ATTIC AREAS
826	ROOF VENT - O'HAGIN "XL SERIES" CLOAKED VENT (ICC # NER-665OA)
837	PROVIDE 1" CONDUIT FROM THE ELECTRIC PANEL TO LOCATION IN ATTIC FOR FUTURE SOLAR INSTALLATION.

ROOF ATTIC AREA	A	775	SQ.FT.	CALCULATION FACTOR:	1/300
		1/11600	SQ.IN		
MIN. VENTILATION REQUIRED: TOTAL		372	SQ. IN	TOTAL PROVIDED:	395 SQ. IN
MIN. VENTILATION REQUIRED: HIGH		186	SQ. IN	TOTAL HIGH PROVID	198 SQ. IN
MIN. VENTILATION REQUIRED: LOW		174	SQ. IN	TOTAL LOW PROVID	198 SQ. IN

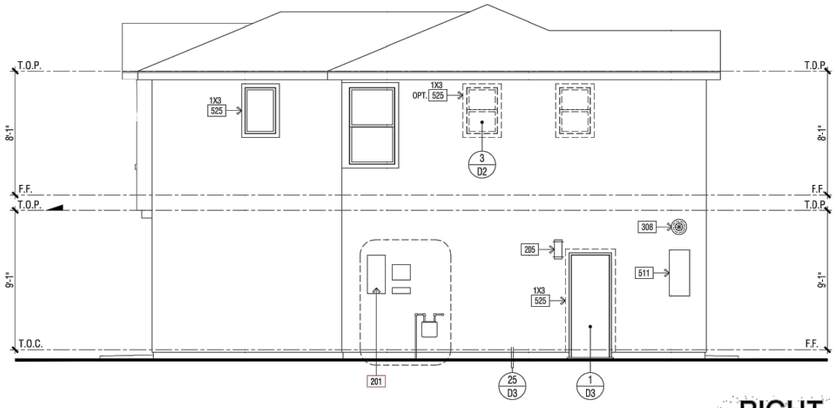
HIGH VENTILATION METHOD	SIZE	FREE AREA		QUANTITY		FREE VENT AREA	
CLOAKED VENT - CONC.FLAT TILE -		99	SQ.IN	X 2		198	SQ.IN
				TOTAL PROVIDED:		198	SQ.IN

LOW VENTILATION METHOD	SIZE	FREE AREA		QUANTITY		FREE VENT AREA	
CLOAKED VENT - CONC.FLAT TILE -		99	SQ.IN	X 2		198	SQ.IN
				TOTAL PROVIDED:		198	SQ.IN

ROOF ATTIC AREA	B	17	SQ.FT.	CALCULATION FACTOR:	1/300
		2448	SQ.IN		
MIN. VENTILATION REQUIRED: TOTAL		8	SQ. IN	TOTAL PROVIDED:	198 SQ. IN
MIN. VENTILATION REQUIRED: HIGH		4	SQ. IN	TOTAL HIGH PROVID	99 SQ. IN
MIN. VENTILATION REQUIRED: LOW		2	SQ. IN	TOTAL LOW PROVID	99 SQ. IN

HIGH VENTILATION METHOD	SIZE	FREE AREA		QUANTITY		FREE VENT AREA	
CLOAKED VENT - CONC.FLAT TILE -		99	SQ.IN	X 1		99	SQ.IN
				TOTAL PROVIDED:		99	SQ.IN

LOW VENTILATION METHOD	SIZE	FREE AREA		QUANTITY		FREE VENT AREA	
CLOAKED VENT - CONC.FLAT TILE -		99	SQ.IN	X 1		99	SQ.IN
				TOTAL PROVIDED:		99	SQ.IN



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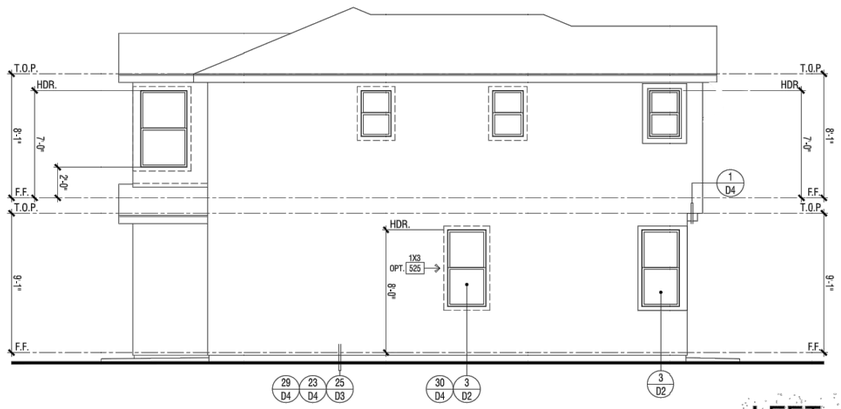

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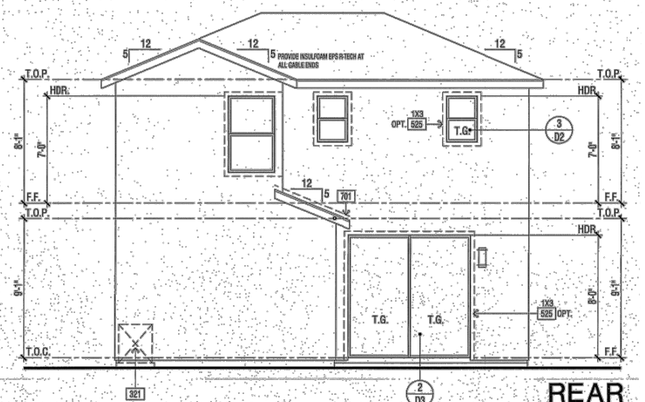

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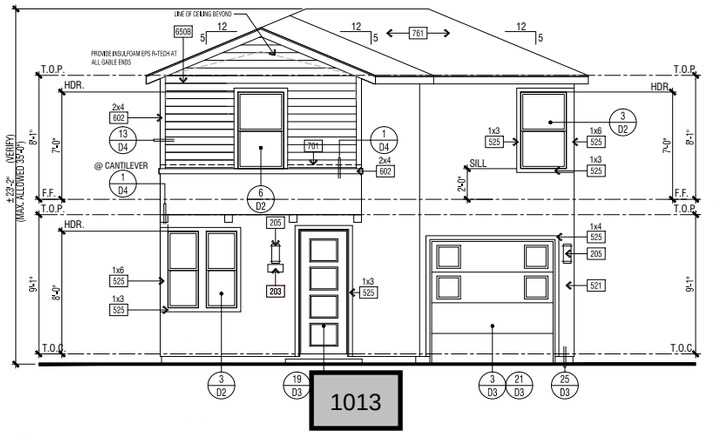


1013

SCALE: 1/4" = 1'-0"

FINISHED GRADE VARIES. SEE CIVIL ENGINEERS PLANS FOR FINAL GRADE AND SITE DRAINAGE.

ELEVATION KEY NOTES

Name	NOTE
201	UTILITY EQUIPMENT AND SERVICE PANELS - VERIFY LOCATION
203	ADDRESS PANEL. 6" MIN. HIGH BUILDING ADDRESS CHARACTERS PLACED IN SUCH A POSITION TO BE PLAINLY VISIBLE FROM THE STREET.
205	ACCENT EXTERIOR WALL LIGHT
309	TANKLESS WATER HEATER TERMINATION CAP - INSTALL PER MFR. INSTRUCTIONS (CO-AXIAL VENT INTAKE & EXHAUST DIRECTLY FROM OUTSIDE)
521	AIR CONDITIONING CONDENSER LOCATION
511	RECESS BOX FOR TANKLESS WATER HEATER - INSTALL PER MFR. INSTRUCTIONS
515	STUCCO NICHE. SIZE PER ELEVATION - SLOPE SILL ¼" PER FT. MINIMUM
521	STUCCO - INSTALL PER MANUFACTURER'S LISTING BY: OMEGA DIMOND WALL ONE COAT SYSTEM ICC-ES ESR-1194
535	STUCCO OVER RIGID FOAM TRIM - FOAM SHAPE PER ELEVATION
592	OVERHEAD SHUTTER - SIZE AND STYLE PER ELEVATION
602	WOOD TRIM(S) - SIZE PER ELEVATION
650B	FIBER CEMENT LAP SIDING - 5/16" THICK HARDIPLANK (OR EQUIVALENT. FINISH: SELECT CEDARMILL. EXPOSURE: 6" (INSTALLATION PER MANUFACTURER'S INSTRUCTIONS)
701	G.I. FLASHING
761	ROOFING - CONCRETE - FLAT TILE - BY EAGLE ROOFING ICC# ESR 1900

ANY OPERABLE WINDOW WITH A SILL THAT IS LOCATED LESS THAN 24" ABOVE FINISHED FLOOR AND MORE THAN 72" ABOVE FINISHED GRADE OR OTHER SURFACE BELOW AT THE EXTERIOR, MUST BE PROTECTED BY A GUARD OR, HAVE A FIXED GLASS. THE GUARD MAY NOT HAVE OPENINGS THAT A SPHERE 4" IN DIAMETER CAN PASS THROUGH. 2016 CBC 1405.13.2

ARCHITECTS . PLANNERS . DESIGNERS

WHA.

ORANGE COUNTY . LOS ANGELES . BAY AREA

LICENSED ARCHITECT William Hezmalhalch REN 4-30-19 STATE OF CALIFORNIA

WILSON HOMES

TRACT NUMBER: 6168
PROJECT TYPE: S.F.D.

PLAN 1212

CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

REVISIONS

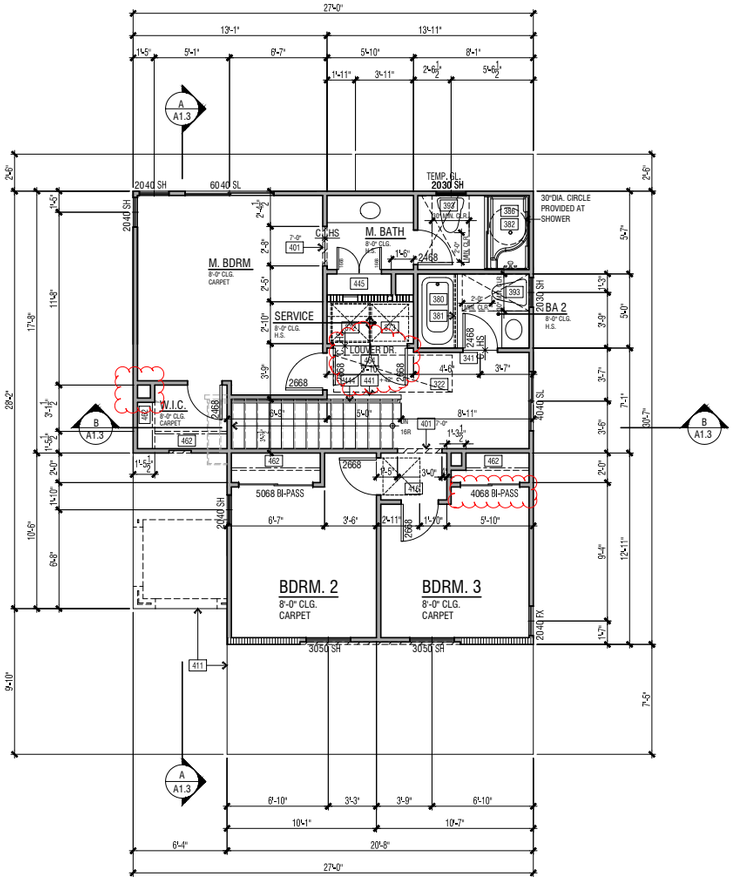
NO.	DATE	DESCRIPTION

City of Clovis - Planning and Development Services - Building Division
16SPN
JUN 29 2018
Approved With Notes
Shall Conform to Applicable Laws, Codes and Ordinances. Corrections Required

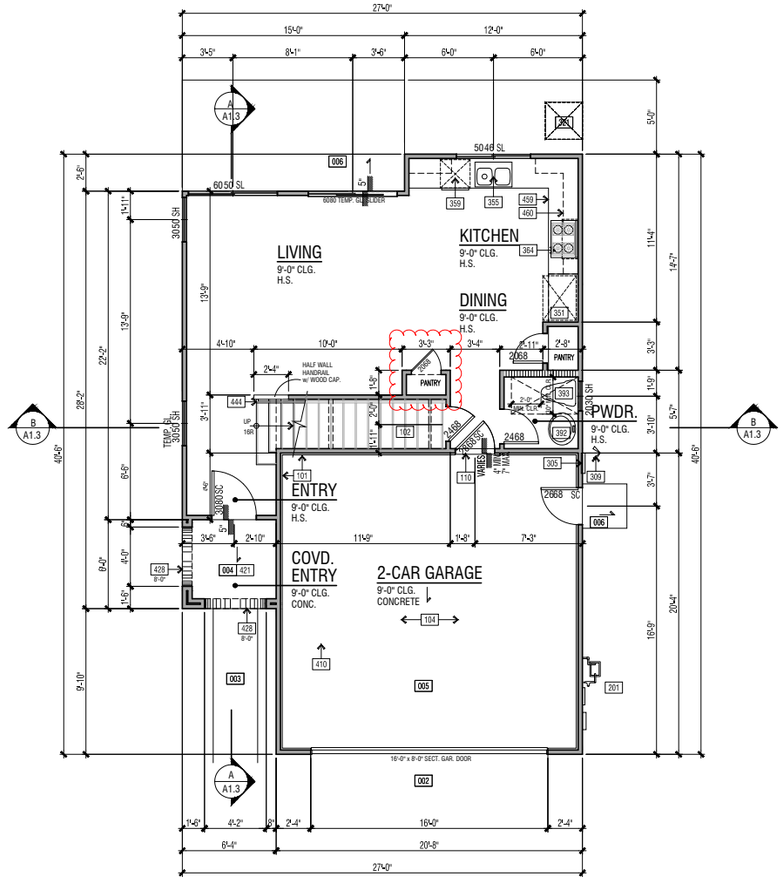
ELEVATIONS PLAN 1212C

PROJECT MANAGER:	MM
DESIGNER:	AH
DRAWN BY:	-
REVIEWED BY:	-
1ST BLDG. DEPT. SUBMITTAL:	04-25-18
ISSUED FOR CONSTRUCTION:	-
JOB NUMBER:	2018077
CAD FILE NAME:	A1.8
DATE:	04-25-18
SHEET:	A1.8

2018077 - FIRST BUILDING DEPARTMENT SUBMITTAL - 04-25-18



UPPER FLOOR PLAN



LOWER FLOOR PLAN

1014

FLOOR PLAN KEY NOTES

Name	NOTE
001	GALVANIZED STEEL PIPE BOLLARD W/ CONCRETE FILL (SEE DETAIL 15/DS.1)
002	CONCRETE DRIVE (BY OTHERS)
003	CONCRETE WALK (BY OTHERS)
004	CONCRETE PORCH SLAB (BY OTHERS) SLOPE 1/4" PER FOOT MINIMUM IN DIRECTION INDICATED
005	CONCRETE GARAGE SLAB - SLOPE 1/8" PER FOOT MINIMUM IN DIRECTION INDICATED
006	CONCRETE STOOP - 36" DEEP AND 2" WIDER THAN THE DOOR OPENING - SLOPE 1/4" PER FOOT MINIMUM TO DRAIN IN DIRECTION INDICATED
101 ⚠	GARAGE AND/OR CARPORT SHALL BE SEPARATED FROM THE RESIDENCE AND ITS ATTIC BY MEANS OF A MIN. 1/2" GYP. BD., OR EQUIVALENT, APPLIED TO THE GARAGE SIDE PER CRC SECTION R302.6, TABLE 302.6.
104	GARAGE AND/OR CARPORT WITH HABITABLE ROOMS ABOVE SHALL BE SEPARATED FROM THE RESIDENCE BY A MIN. 5/8" TYPE 'X' GYP. BD., OR EQ. STRUCTURE(S) SUPPORTING THE FLR./CLG. ASSEMBLY USED FOR SEPARATION SHALL BE A MIN. 1/2" GYP. BD., OR EQ. PER CRC SEC. R302.6.
110	PROVIDE SOLID WOOD DOOR, OR SOLID OR HONEYCOMB CORE STEEL DOORS, NOT LESS THAN 1-3/8" THICK, OR 20 MINUTE FIRE RATED DOOR. DOORS SHALL BE SELF CLOSING AND SELF LATCHING PER CRC SECTION R302.5.1.
201	UTILITY EQUIPMENT AND SERVICE PANELS - VERIFY LOCATION
305	TANK LESS WATER HEATER. INSTALLATION PER MANUFACTURE'S INSTRUCTIONS
308	TANKLESS WATER HEATER TERMINATION CAP - INSTALL PER MFR. INSTRUCTIONS (CO-AXIAL VENT INTAKE & EXHAUST DIRECTLY FROM OUTSIDE)
309	TEMPERATURE AND PRESSURE RELIEF VALVE: DISCHARGE LINE TO THE OUTSIDE PER CPC SECTION 608.5
321	AIR CONDITIONING CONDENSER LOCATION
322	FORCED AIR UNIT (FAU) IN ATTIC ON 6'X 12' PLATFORM
336	6"DIA. G.I. DRYER VENT WITH APPROVED LINT TRAP - VENT THROUGH ROOF
349	SLIDE-IN RANGE/ OVEN AND MICRO WITH VENT/ LIGHT COMBINATION
351	REFRIGERATOR SPACE WITH RECESSED COLD WATER BOX
355	SINK WITH GARBAGE DISPOSER
359	DISHWASHER
364	COOKTOP & EXHAUST HOOD WITH FAN LIGHT (EXHAUST VENT TO OUTSIDE)
372	WASHER SPACE WITH RECESSED WATER BOX AND DRAIN
373	DRYER SPACE
374	SHELF ABOVE - OPT. CABINETS (SEE INTERIOR ELEV.)
380	TUB/ SHOWER
381	CURTAIN ROD
382	SHATTER PROOF SHOWER DOOR/ENCLOSURE
386	SHOWER - PREFABRICATED STALL - 60"x36"
387	SHOWER - HOT MOP - SIZE PER PLAN
392	PEDESTAL SINK
393	TOILET - PROVIDE MINIMUM 24"x39" CLEAR FLOOR AREA IN FRONT OF TOILET
401	INTERIOR SOFFIT(S)/ DROPPED CEILING(S); HEIGHT PER PLAN
410	LINE OF FLOOR ABOVE
411	LINE OF FLOOR BELOW
416 ⚠	30x30" ATTIC ACCESS - DIMENSIONS ARE CLEAR - PER CEnC 150.0(q)1, ATTIC ACCESS DOORS SHALL HAVE PERMANENTLY ATTACHED INSULATION USING ADHESIVE OR MECHANICAL FASTENERS AND THE ATTIC ACCESS SHALL BE GASKETED TO PREVENT AIR LEAKAGE
421	STUCCO CEILING: HEIGHT PER PLAN
422	STUCCO SOFFIT: HEIGHT PER PLAN
427	STUCCO SOFFIT OVER WATERPROOFED STUCCO SHELF- SLOPE FRAMING FOR DRAINAGE (1/4" PER FOOT MINIMUM)
428	ARCHED STUCCO SOFFIT - SEE EXTERIOR ELEVATION
441	GYP. BD. SHELF/LOW WALL - WIDTH AND HEIGHT PER PLAN
442	2X PONY WALL - SIZE & HEIGHT PER PLAN
443	2X CRIPPLE WALL - SIZE PER PLAN
444	+34"- +38" HANDRAIL (SEE DETAIL 16/DS)
455	LIBEN
457	LIBEN (LOW ONLY)
458	LIBEN (UPPER ONLY)
459	BASE CABINET
460	UPPER CABINET
462	WIRE SHELF AND POLE
463	DOUBLE SHELF & POLE
464	WIRE SHELF/SHELVES
465	VANITY

FLOOR PLAN NOTES

1. ATTICS: ACCESS PER CRC R807, DRAFTSTOPS PER CRC R302.12 AND VENTILATION PER R806.
2. EMERGENCY ESCAPE AND RESCUE OPENINGS PER CRC R310. MEANS OF EGRESS PER CRC R311.
3. GLAZING PER CRC R303.1 & R308
4. FACTORY-BUILT FIREPLACES AND CHIMNEYS PER CRC R1004, R1005, R1006 CSBSC SECTION 4.503 & CEnC SECTION 150.0(e).
5. COMBUSTION AIR TO FORCED AIR UNIT PER CMC CHAPTER 7.
6. COMBUSTION AIR TO WATER HEATER PER CPC SECTION 507.0.
7. ENVIRONMENTAL AIR DUCTS PER CMC SECTION 504.
8. MECHANICAL EQUIPMENT LOCATION AND PROTECTION AGAINST DAMAGE PER CMC 305 & 308.
9. ⚠ MANDATORY REQUIREMENTS FOR APPLIANCES PER CEnC SECTION 110.1.
10. A SHEETROCK NAILING INSPECTION IS REQUIRED, 2016 CRC R109.1.4.2 & CBC 110.3.5

A
D A1.9 B
C

INTERIOR ELEVATION KEY

FLOOR AREA TABLE	PLAN 1245A
LOWER FLOOR PLAN	537 SQ. FT.
UPPER FLOOR PLAN	708 SQ. FT.
TOTAL	1,245 SQ. FT.
GARAGE	419 SQ. FT.
COVERED ENTRY	38 SQ. FT.

NOTE: SQUARE FOOTAGE MAY VARY DUE TO METHOD OF CALCULATION

SCALE: 1/4" = 1'- 0"

ARCHITECTS . PLANNERS . DESIGNERS

WHA.

ORANGE COUNTY . LOS ANGELES . BAY AREA

LICENSED ARCHITECT — Steven Vermeulen — REN 6-30-19 — STATE OF CALIFORNIA

WILSON HOMES

TRACT NUMBER: 6168
PROJECT TYPE

PLAN 1245

CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

REVISIONS

NO.	DATE	DESCRIPTION
⚠	07-02-18	BLDG. DEPT. REVS.
	10-16-18	AS-BUILT PLAN
	04/01/2019	AS-BUILT PLAN

AS-BUILT PLAN

City of Clovis - Planning and Development Services - Building Division - 16SPN - NOV 14 2018 - Approved As Noted Subject To Compliance With Applicable Codes and Ordinances - Noted Corrections Shall Be Made Prior To Construction

PROJECT MANAGER :	MM
DESIGNER :	AM
DRAWN BY :	-
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	04-25-18
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2018077
CAD FILE NAME :	A101

DATE: 07-02-18

SHEET: A1.1

2018077 - 07-02-18

FLOOR PLAN KEY NOTES

Name	NOTE
002	CONCRETE DRIVE (BY OTHERS)
003	CONCRETE WALK (BY OTHERS)
004	CONCRETE PORCH SLAB (BY OTHERS) SLOPE 1/4" PER FOOT MINIMUM IN DIRECTION INDICATED
005	CONCRETE GARAGE SLAB - SLOPE ⅛" PER FOOT MINIMUM IN DIRECTION INDICATED
421	STUCCO CEILING: HEIGHT PER PLAN
422	STUCCO SOFFIT: HEIGHT PER PLAN
551	MANUFACTURED ADHERED STUCCO STONE VENEER - INSTALL PER MANUFACTURER'S INSTRUCTIONS" BY EL DORADO STONE PRODUCTS - TER# 1312-01

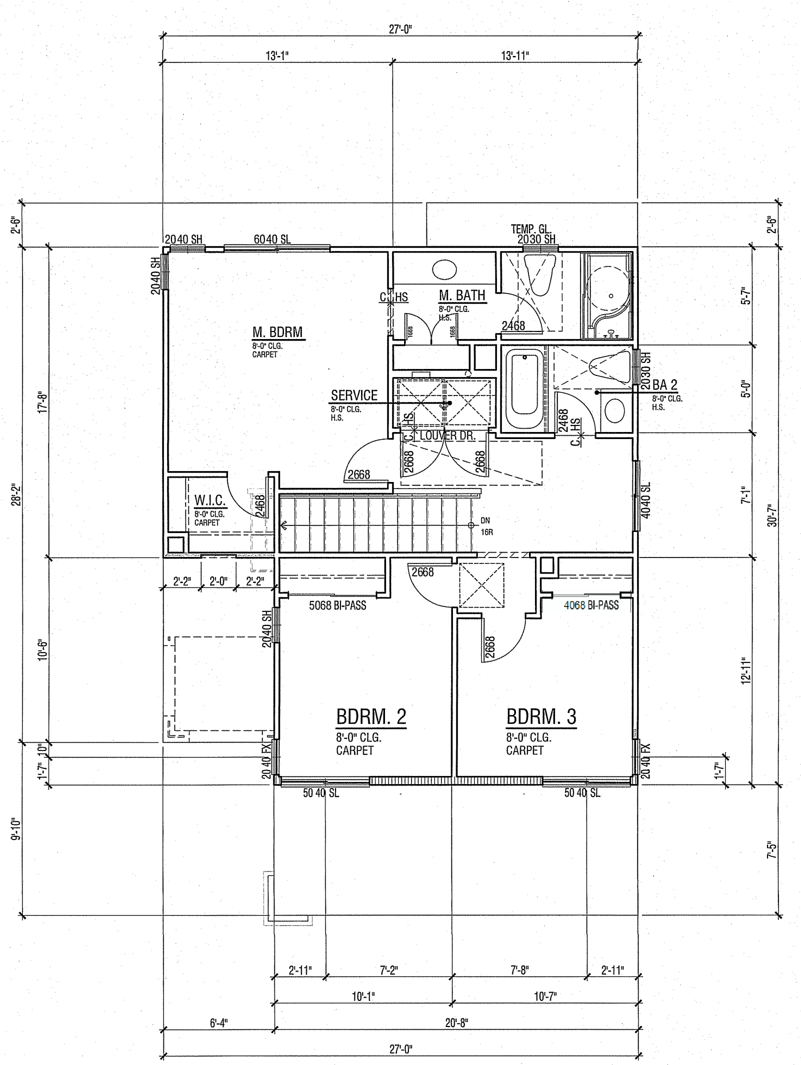
ARCHITECTS . PLANNERS . DESIGNERS

WHA.

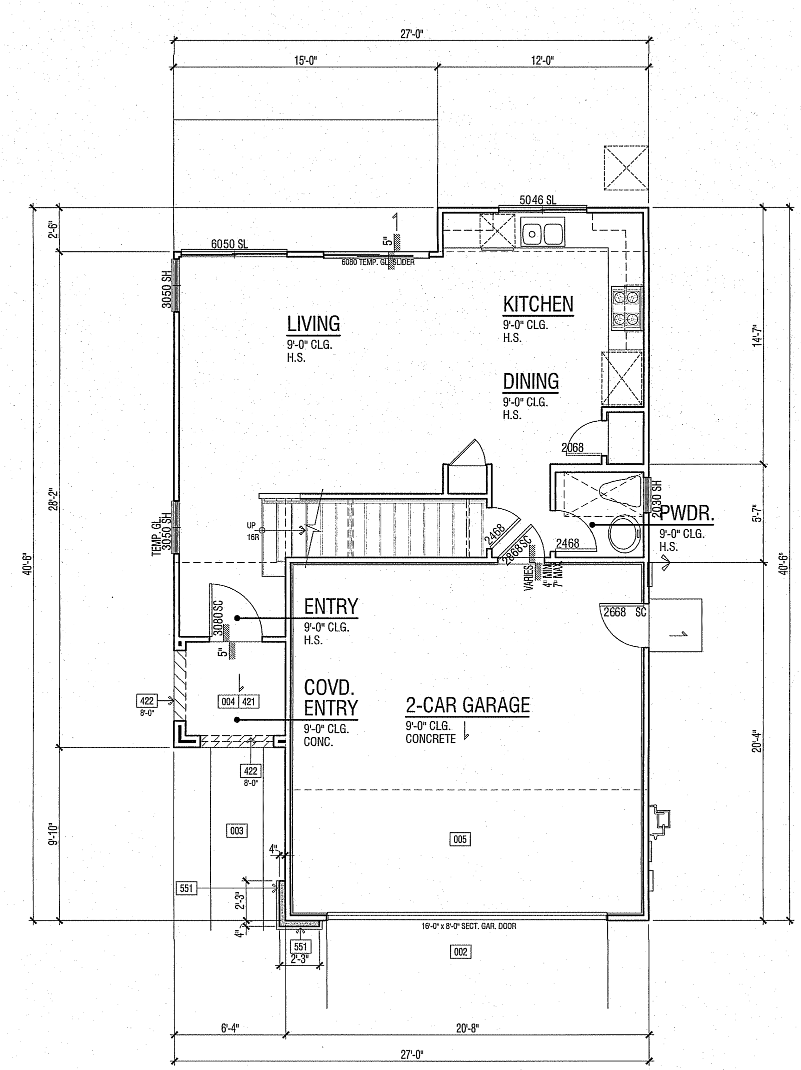
ORANGE COUNTY . LOS ANGELES . BAY AREA

WILSON HOMES

TRACT NUMBER: 6168
PROJECT TYPE



UPPER FLOOR PLAN



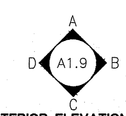
LOWER FLOOR PLAN

ADDENDA FLOOR PLAN NOTES

NOTE: SHADED WALLS INDICATE AREAS THAT ARE DIFFERENT THAN THE BASE FLOOR PLAN

NOTE: REFER TO CIVIL AND LANDSCAPE DRAWINGS BY OTHERS FOR ALL DRIVEWAYS AND SIDEWALK LOCATIONS.

REFER TO BASE PLAN SHEET A1.1 FOR ADDITIONAL NOTES AND DIMENSIONS.



INTERIOR ELEVATION KEY

PLAN 1245
CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

REVISIONS

NO.	DATE	DESCRIPTION
1	07-02-18	BLDG. DEPT. REVS.
	10-16-18	AS-BUILT PLAN

AS-BUILT PLAN

City of Clovis - Planning and Development Services - Building Division
Plans Approved Under the 2016 California Building Codes
16SPN
NOV 2 8 2018
Subject To Field Approval, Laws, Codes, and Ordinances Approved With Noted Corrections

FLOOR AREA TABLE	PLAN 1245B
LOWER FLOOR PLAN	537 SQ. FT.
UPPER FLOOR PLAN	708 SQ. FT.
TOTAL	1,245 SQ. FT.
GARAGE	419 SQ. FT.
COVERED ENTRY	38 SQ. FT.

NOTE: SQUARE FOOTAGE MAY VARY DUE TO METHOD OF CALCULATION

SCALE: 1/4" = 1'- 0"

PROJECT MANAGER :	MM
DESIGNER :	AM
DRAWN BY :	-
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	04-25-18
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2018077
CAD FILE NAME :	A105

DATE:	SHEET:
07-02-18	A1.5

2018077 - 07-02-18

FLOOR PLAN KEY NOTES	
Name	NOTE
002	CONCRETE DRIVE (BY OTHERS)
003	CONCRETE WALK (BY OTHERS)
004	CONCRETE PORCH SLAB (BY OTHERS) SLOPE 1/4" PER FOOT MINIMUM IN DIRECTION INDICATED
005	CONCRETE GARAGE SLAB - SLOPE ¼" PER FOOT MINIMUM IN DIRECTION INDICATED
421	STUCCO CEILING: HEIGHT PER PLAN
425	WOOD SOFFIT: HEIGHT PER PLAN

ARCHITECTS . PLANNERS . DESIGNERS

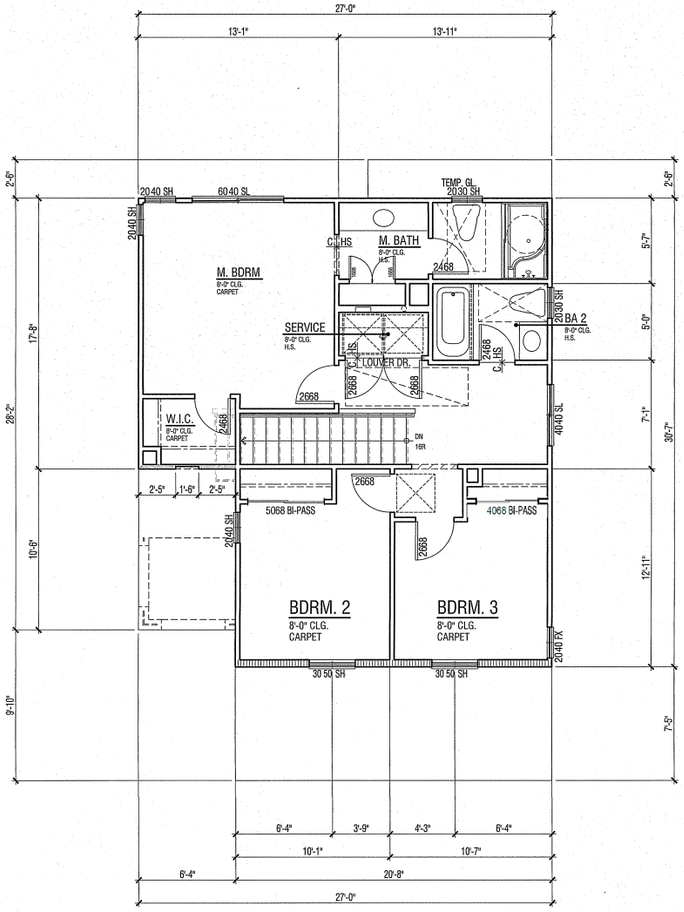
WHA.

ORANGE COUNTY . LOS ANGELES . BAY AREA

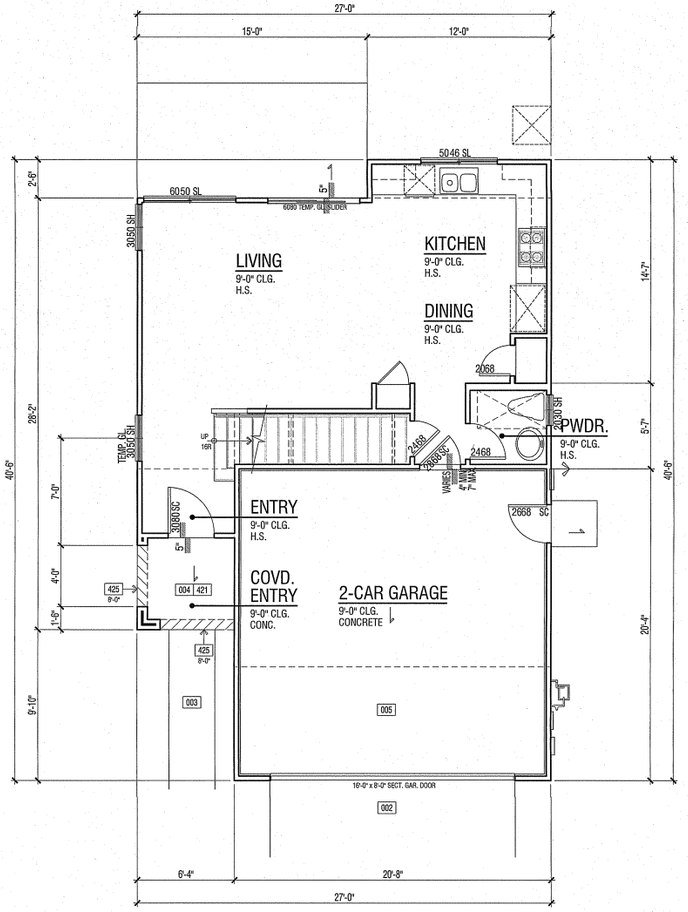
LICENSED ARCHITECT William Hezmalhalch REN 4-30-19 STATE OF CALIFORNIA

WILSON HOMES

TRACT NUMBER: 6168
PROJECT TYPE



UPPER FLOOR PLAN



LOWER FLOOR PLAN

1016

ADDENDA FLOOR PLAN NOTES

NOTE: SHADED WALLS INDICATE AREAS THAT ARE DIFFERENT THAN THE BASE FLOOR PLAN

NOTE: REFER TO CIVIL AND LANDSCAPE DRAWINGS BY OTHERS FOR ALL DRIVEWAYS AND SIDEWALK LOCATIONS.

REFER TO BASE PLAN SHEET A1.1 FOR ADDITIONAL NOTES AND DIMENSIONS.

A
D A1.9 B
C

INTERIOR ELEVATION KEY

PLAN 1245

CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

REVISIONS

NO.	DATE	DESCRIPTION
1	07-02-18	BLDG. DEPT. REVS.
	10-16-18	AS-BUILT PLAN

AS-BUILT PLAN

PLAN
1245C

City of Clovis - Planning and Development Services - Building Division - Approved for Compliance with Clovis Municipal Code Title 15 Buildings and Construction and Related Codes and Ordinances - 16SPN - NOV 26 2018

FLOOR AREA TABLE	PLAN 1245C
LOWER FLOOR PLAN	537 SQ. FT.
UPPER FLOOR PLAN	708 SQ. FT.
TOTAL	1,245 SQ. FT.
GARAGE	419 SQ. FT.
COVERED ENTRY	38 SQ. FT.

NOTE: SQUARE FOOTAGE MAY VARY DUE TO METHOD OF CALCULATION

SCALE: 1/4" = 1'- 0"

PROJECT MANAGER :	MM
DESIGNER :	AM
DRAWN BY :	-
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	04-25-18
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2018077
CAD FILE NAME :	A107

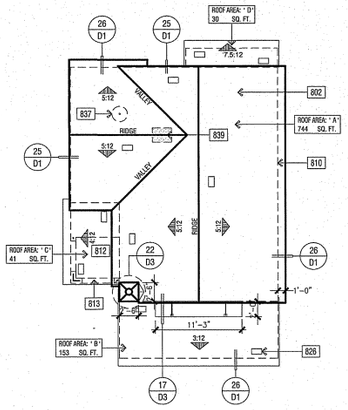
DATE: 07-02-18

SHEET: A1.7

2018077 - 07-02-18

ROOF PLAN

SCALE: 1/8" = 1'-0"



ELEVATION REFERENCE:	A	ELEVATION STYLE:	CONTEMPORARY SPANISH			
ROOF MATERIAL	STANDARD ROOF DETAIL, U.N.O.	FASCIA - U.N.O.	BARGE - U.N.O.	OVERHANG DIM. - U.N.O. EAVE	RAKE
CONCRETE ' S ' TILE *EAGLE ROOFING* ICC# ESR-1900	1 D1	2X6	NONE	1'-0"	TIGHT

ROOF PLAN NOTES

NOTE: MANDATORY REQUIREMENTS FOR SOLAR READY BUILDINGS PER CEnC SECTION 110.10.

1. SEE GENERAL NOTES FOR ROOF NOTES.
2. SPARK ARRESTORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
3. ATTIC ACCESS PER CRC SECTION R807.
4. PROVIDE ATTIC & SOFFIT VENTILATION PER CRC SECTION R806. PER CRC SECTION R806.2, THE MINIMUM NET FREE VENTILATING AREA SHALL BE 1/150 OF THE AREA OF THE VENTED SPACE. EXCEPTION: THE MINIMUM NET FREE VENTILATION AREA SHALL BE 1/300 OF THE VENTED SPACE PROVIDED ONE OR MORE OF THE FOLLOWING CONDITIONS ARE MET:
   - IN CLIMATE ZONES 14 AND 16, A CLASS I OR II VAPOR RETARDER IS INSTALLED ON THE WARM-IN-WINTER SIDE OF THE CEILING.
   - NOT LESS THAN 40 PERCENT AND NOT MORE THAN 50 PERCENT OF THE REQUIRED VENTILATING AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE ATTIC OR RAFTER SPACE. UPPER VENTILATORS SHALL BE LOCATED NO MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE, MEASURED VERTICALLY, WITH THE BALANCE OF THE REQUIRED VENTILATION PROVIDED BY EAVE OR CORNICE VENTS. WHERE THE LOCATION OF WALL OR ROOF FRAMING MEMBERS CONFLICTS WITH THE INSTALLATION OF UPPER VENTILATORS, INSTALLATION MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE SHALL BE PERMITTED.

ROOF PLAN KEY NOTES

Name	NOTE
802	CLASS 'A' ROOFING - CONCRETE - 'S' TILE - BY EAGLE ROOFING ICC# ESR 1900
810	LINE OF WALL BELOW
812	STUCCO CEILING
813	STUCCO SOFFIT
826	ROOF VENT - OHAGIN "XL SERIES" CLOAKED VENT (ICC # NER-9650A)
837	PROVIDE 1" CONDUIT FROM THE ELECTRIC PANEL TO LOCATION IN ATTIC FOR FUTURE SOLAR INSTALLATION.
839	MIN. 22"x30" OPENING IN CALIFORNIA ROOF FRAMING CONDITIONS FOR ATTIC ACCESS AND CROSS VENTILATION - CONTRACTOR TO VERIFY AIRFLOW TO ALL ATTIC AREAS

ATTIC VENTILATION CALCULATIONS — PLAN 5A

ROOF ATTIC AREA	A	744 SQ. FT. / 107136 SQ. IN	CALCULATION FACTOR:		1/300
MIN. VENTILATION REQUIRED:	TOTAL	354 SQ. IN	TOTAL PROVIDED:	392	SQ. IN
MIN. VENTILATION REQUIRED:	HIGH	177 SQ. IN	TOTAL HIGH PROVII	196	SQ. IN
MIN. VENTILATION REQUIRED:	LOW	177 SQ. IN	TOTAL LOW PROVII	196	SQ. IN

HIGH VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA
CLOAKED VENT - CONC.S-TILE	-	98 SQ. IN	X	2	196 SQ. IN
				TOTAL PROVIDED:	196 SQ. IN

LOW VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA
CLOAKED VENT - CONC.S-TILE	-	98 SQ. IN	X	2	196 SQ. IN
				TOTAL PROVIDED:	196 SQ. IN

ROOF ATTIC AREA	B	153 SQ. FT. / 22032 SQ. IN	CALCULATION FACTOR:		1/300
MIN. VENTILATION REQUIRED:	TOTAL	73 SQ. IN	TOTAL PROVIDED:	196	SQ. IN
MIN. VENTILATION REQUIRED:	HIGH	36 SQ. IN	TOTAL HIGH PROVII	98	SQ. IN
MIN. VENTILATION REQUIRED:	LOW	36 SQ. IN	TOTAL LOW PROVII	98	SQ. IN

HIGH VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA
CLOAKED VENT - CONC.S-TILE	-	98 SQ. IN	X	1	98 SQ. IN
				TOTAL PROVIDED:	98 SQ. IN

LOW VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA
CLOAKED VENT - CONC.S-TILE	-	98 SQ. IN	X	1	98 SQ. IN
				TOTAL PROVIDED:	98 SQ. IN

ROOF ATTIC AREA	C	41 SQ. FT. / 5904 SQ. IN	CALCULATION FACTOR:		1/300
MIN. VENTILATION REQUIRED:	TOTAL	19 SQ. IN	TOTAL PROVIDED:	196	SQ. IN
MIN. VENTILATION REQUIRED:	HIGH	10 SQ. IN	TOTAL HIGH PROVII	98	SQ. IN
MIN. VENTILATION REQUIRED:	LOW	10 SQ. IN	TOTAL LOW PROVII	98	SQ. IN

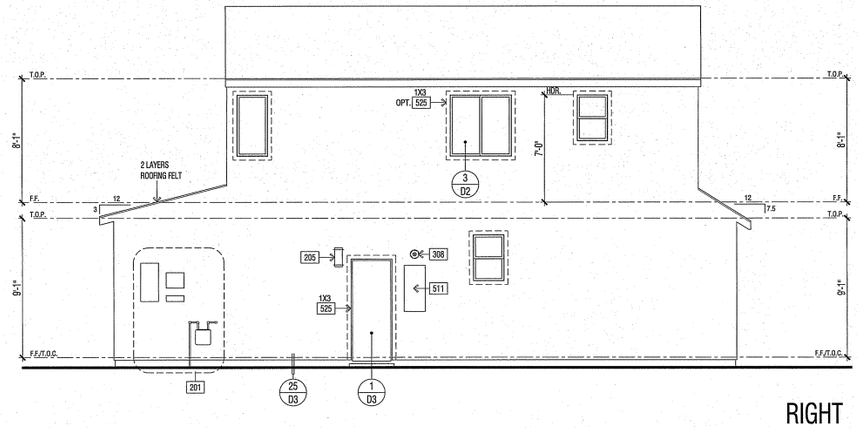
HIGH VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA
CLOAKED VENT - CONC.S-TILE	-	98 SQ. IN	X	1	98 SQ. IN
				TOTAL PROVIDED:	98 SQ. IN

LOW VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA
CLOAKED VENT - CONC.S-TILE	-	98 SQ. IN	X	1	98 SQ. IN
				TOTAL PROVIDED:	98 SQ. IN

ROOF ATTIC AREA	D	30 SQ. FT. / 4320 SQ. IN	CALCULATION FACTOR:		1/300
MIN. VENTILATION REQUIRED:	TOTAL	14 SQ. IN	TOTAL PROVIDED:	196	SQ. IN
MIN. VENTILATION REQUIRED:	HIGH	7 SQ. IN	TOTAL HIGH PROVII	98	SQ. IN
MIN. VENTILATION REQUIRED:	LOW	7 SQ. IN	TOTAL LOW PROVII	98	SQ. IN

HIGH VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA
CLOAKED VENT - CONC.S-TILE	-	98 SQ. IN	X	1	98 SQ. IN
				TOTAL PROVIDED:	98 SQ. IN

LOW VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA
CLOAKED VENT - CONC.S-TILE	-	98 SQ. IN	X	1	98 SQ. IN
				TOTAL PROVIDED:	98 SQ. IN



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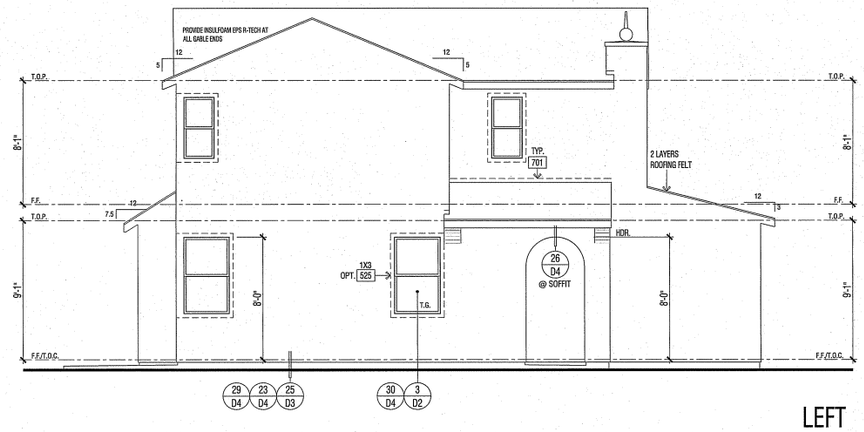

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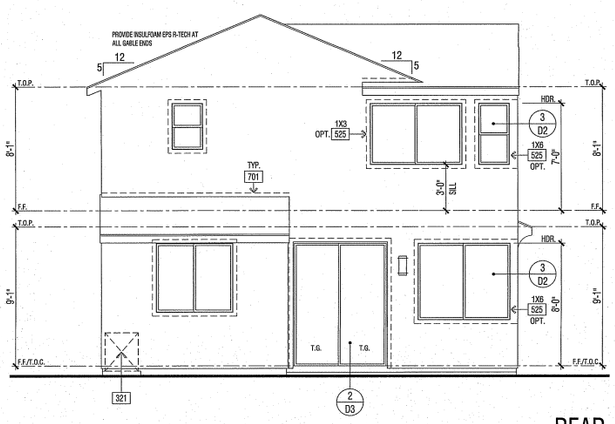

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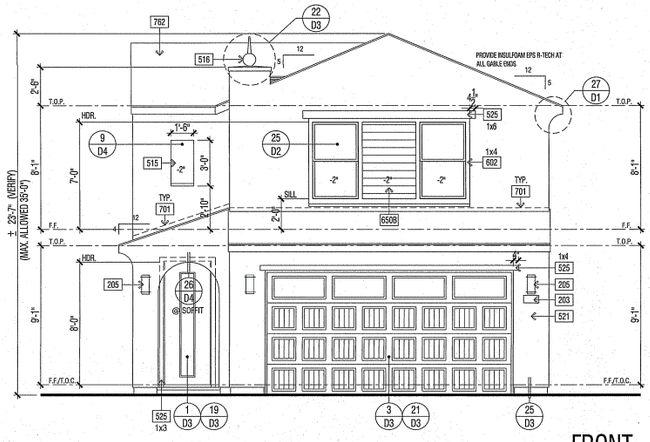


FRONT

1017

SCALE: 1/4" = 1'-0"

FINISHED GRADE VARIES. SEE CIVIL ENGINEERS PLANS FOR FINAL GRADE AND SITE DRAINAGE.

ELEVATION KEY NOTES

Name	NOTE
201	UTILITY EQUIPMENT AND SERVICE PANELS - VERIFY LOCATION
203	ADDRESS PANEL. 8" MIN. HIGH BUILDING ADDRESS CHARACTERS PLACED IN SUCH A POSITION TO BE PLAINLY VISIBLE FROM THE STREET.
205	ACCENT EXTERIOR WALL LIGHT
308	TANKLESS WATER HEATER TERMINATION CAP - INSTALL PER MFR. INSTRUCTIONS (CO-AXIAL VENT INTAKE & EXHAUST DIRECTLY FROM OUTSIDE)
321	AIR CONDITIONING CONDENSER LOCATION
508	WATERPROOF STUCCO SHELF - SLOPE 1/4" PER FOOT
511	RECESS BOX FOR TANKLESS WATER HEATER - INSTALL PER MFR. INSTRUCTIONS
515	STUCCO NICHE. SIZE PER ELEVATION - SLOPE SILL 1" PER FT. MINIMUM
516	DECORATIVE FOAM ACCENT - PER ELEVATION
521 ⚠	STUCCO - INSTALL PER MANUFACTURER'S LISTING BY: OMEGA DIAMOND WALL ONE COAT SYSTEM, ICC-ES ESR-1194
525	STUCCO OVER RIGID FOAM TRIM - FOAM SHAPE PER ELEVATION
602	WOOD TRIM(S) - SIZE PER ELEVATION
650B ⚠	FIBER CEMENT LAP SIDING - 5/16" THICK "HARDIPLANK" (OR EQUIVALENT. FINISH: SELECT CEDARMILL, EXPOSURE: 6" (INSTALLATION PER MANUFACTURER'S INSTRUCTIONS)
674	DECORATIVE METAL WINDOW SHADE
701	G.I. FLASHING
762	CLASS 'A' ROOFING - CONCRETE - 'S' TILE - BY EAGLE ROOFING ICC# ESR 1900

ANY OPERABLE WINDOW WITH A SILL THAT IS LOCATED LESS THAN 24" ABOVE FINISHED FLOOR AND MORE THAN 72" ABOVE FINISHED GRADE OR OTHER SURFACE BELOW AT THE EXTERIOR, MUST BE PROTECTED BY A GUARD OR, HAVE A FIXED GLASS. THE GUARD MAY NOT HAVE OPENINGS THAT A SPHERE 4" IN DIAMETER CAN PASS THROUGH. 2016 CBC 1405.13.2

2 - LAYERS OF GRADE 'D' BUILDING PAPER IS REQUIRED TO BE INSTALLED OVER WOOD SHEATHING. 2016 CRC R703.7.3

ARCHITECTS . PLANNERS . DESIGNERS

WHA.

ORANGE COUNTY . LOS ANGELES . BAY AREA

LICENSED ARCHITECT — REN 4-30-19 — STATE OF CALIFORNIA

WILSON HOMES

TRACT NUMBER: 6168
PROJECT TYPE

PLAN 1245

CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

REVISIONS

NO.	DATE	DESCRIPTION
⚠	07-02-18	BLDG. DEPT. REVS.
	10-16-18	AS=BUILT PLAN

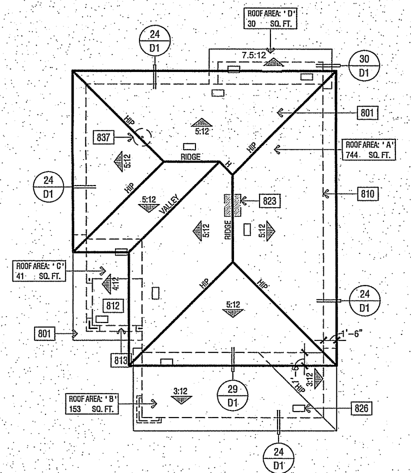
City of Clovis - Planning and Development Services - Building Division
16SPN
NOV 2 8 2018
Shall be Field Approved Approved Plans, Codes, and Ordinances Apply with Noted Corrections

ELEVATIONS PLAN 1245A

PROJECT MANAGER :	MM
DESIGNER :	AM
DRAWN BY :	-
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	04-25-18
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2018077
CAD FILE NAME :	A104

DATE:	SHEET:
07-02-18	A1.4

2018077 - 07-02-18



ROOF PLAN

SCALE: 1/8" = 1'-0"

ELEVATION REFERENCE: B		ELEVATION STYLE: MODERN			
ROOF MATERIAL	STANDARD ROOF DETAIL U.N.O.	FASCIA - U.N.O.	BARGE - U.N.O.	OVERHANG DIM. - U.N.O. EAVE	OVERHANG DIM. - U.N.O. RAKE
CONCRETE 'FLAT' TILE "EAGLE ROOFING" ICC# ESR-1900	1 / D1.1	2X6	2X6	1'-6"	1'-0"

ROOF PLAN NOTES

NOTE: MANDATORY REQUIREMENTS FOR SOLAR READY BUILDINGS PER CEnC SECTION 110.10.

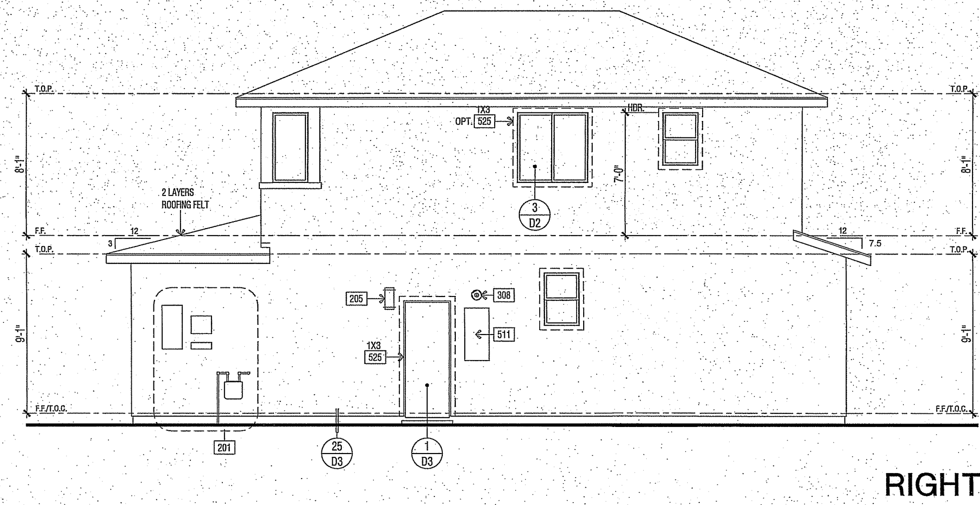
1. SEE GENERAL NOTES FOR ROOF NOTES.
2. SPARK ARRESTORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
3. ATTIC ACCESS PER CRC SECTION R807.
4. PROVIDE ATTIC & SOFFIT VENTILATION PER CRC SECTION R806. PER CRC SECTION R806.2, THE MINIMUM NET FREE 4. VENTILATING AREA SHALL BE 1/150 OF THE AREA OF THE VENTED SPACE. EXCEPTION: THE MINIMUM NET FREE VENTILATION AREA SHALL BE 1/300 OF THE VENTED SPACE PROVIDED ONE OR MORE OF THE FOLLOWING CONDITIONS ARE MET:
   - IN CLIMATE ZONES 14 AND 16, A CLASS I OR II VAPOR RETARDER IS INSTALLED ON THE WARM-IN-WINTER SIDE OF THE CEILING.
   - NOT LESS THAN 40 PERCENT AND NOT MORE THAN 50 PERCENT OF THE REQUIRED VENTILATING AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE ATTIC OR RAFTER SPACE. UPPER VENTILATORS SHALL BE LOCATED NO MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE, MEASURED VERTICALLY, WITH THE BALANCE OF THE REQUIRED VENTILATION PROVIDED BY EAVE OR CORNICE VENTS. WHERE THE LOCATION OF WALL OR ROOF FRAMING MEMBERS CONFLICTS WITH THE INSTALLATION OF UPPER VENTILATORS, INSTALLATION MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE SHALL BE PERMITTED.

ROOF PLAN KEY NOTES

Name	NOTE
801	CLASS 'A' ROOFING - CONCRETE - 'FLAT' TILE - BY EAGLE ROOFING ICC# ESR 1900
810	LINE OF WALL BELOW
812	STUCCO CEILING
813	STUCCO SOFFIT
823	MIN. 22"X30" CLEAR OPENING FOR ACCESS AND AIRFLOW CONTRACTOR TO VERIFY AIRFLOW TO ALL ATTIC AREAS
826	ROOF VENT - O'HAGIN "XL SERIES" CLOAKED VENT. (ICC # NER-9650A)
837	PROVIDE 1" CONDUIT FROM THE ELECTRIC PANEL TO LOCATION IN ATTIC FOR FUTURE SOLAR INSTALLATION.

ATTIC VENTILATION CALCULATIONS — PLAN 5B

ROOF ATTIC AREA	A	744	SQ. FT.	CALCULATION FACTOR:	1/300	
		107136	SQ. IN			
MIN. VENTILATION REQUIRED:	TOTAL	354	SQ. IN	TOTAL PROVIDED:	396	SQ. IN
MIN. VENTILATION REQUIRED:	HIGH	177	SQ. IN	TOTAL HIGH PROVI	198	SQ. IN
MIN. VENTILATION REQUIRED:	LOW	177	SQ. IN	TOTAL LOW PROVI	198	SQ. IN
HIGH VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA	
CLOAKED VENT - CONC. FLAT TILE	-	99	SQ. IN X	2	198	SQ. IN
				TOTAL PROVIDED:	198	SQ. IN
LOW VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA	
CLOAKED VENT - CONC. FLAT TILE	-	99	SQ. IN X	2	198	SQ. IN
				TOTAL PROVIDED:	198	SQ. IN
ROOF ATTIC AREA	B	153	SQ. FT.	CALCULATION FACTOR:	1/300	
		22032	SQ. IN			
MIN. VENTILATION REQUIRED:	TOTAL	73	SQ. IN	TOTAL PROVIDED:	198	SQ. IN
MIN. VENTILATION REQUIRED:	HIGH	36	SQ. IN	TOTAL HIGH PROVI	99	SQ. IN
MIN. VENTILATION REQUIRED:	LOW	36	SQ. IN	TOTAL LOW PROVI	99	SQ. IN
HIGH VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA	
CLOAKED VENT - CONC. FLAT TILE	-	99	SQ. IN X	1	99	SQ. IN
				TOTAL PROVIDED:	99	SQ. IN
LOW VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA	
CLOAKED VENT - CONC. FLAT TILE	-	99	SQ. IN X	1	99	SQ. IN
				TOTAL PROVIDED:	99	SQ. IN
ROOF ATTIC AREA	C	41	SQ. FT.	CALCULATION FACTOR:	1/300	
		5904	SQ. IN			
MIN. VENTILATION REQUIRED:	TOTAL	19	SQ. IN	TOTAL PROVIDED:	198	SQ. IN
MIN. VENTILATION REQUIRED:	HIGH	10	SQ. IN	TOTAL HIGH PROVI	99	SQ. IN
MIN. VENTILATION REQUIRED:	LOW	10	SQ. IN	TOTAL LOW PROVI	99	SQ. IN
HIGH VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA	
CLOAKED VENT - CONC. FLAT TILE	-	99	SQ. IN X	1	99	SQ. IN
				TOTAL PROVIDED:	99	SQ. IN
LOW VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA	
CLOAKED VENT - CONC. FLAT TILE	-	99	SQ. IN X	1	99	SQ. IN
				TOTAL PROVIDED:	99	SQ. IN
ROOF ATTIC AREA	D	30	SQ. FT.	CALCULATION FACTOR:	1/300	
		4320	SQ. IN			
MIN. VENTILATION REQUIRED:	TOTAL	14	SQ. IN	TOTAL PROVIDED:	198	SQ. IN
MIN. VENTILATION REQUIRED:	HIGH	7	SQ. IN	TOTAL HIGH PROVI	99	SQ. IN
MIN. VENTILATION REQUIRED:	LOW	7	SQ. IN	TOTAL LOW PROVI	99	SQ. IN
HIGH VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA	
CLOAKED VENT - CONC. FLAT TILE	-	99	SQ. IN X	1	99	SQ. IN
				TOTAL PROVIDED:	99	SQ. IN
LOW VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA	
CLOAKED VENT - CONC. FLAT TILE	-	99	SQ. IN X	1	99	SQ. IN
				TOTAL PROVIDED:	99	SQ. IN



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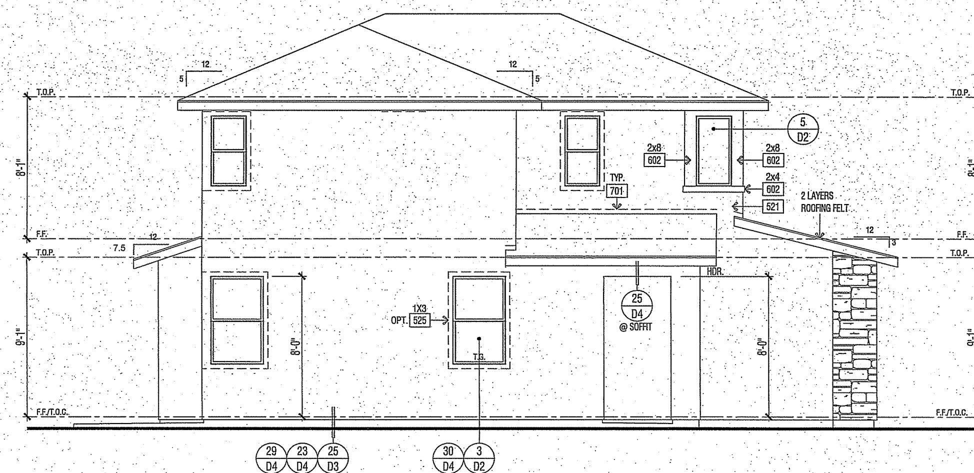

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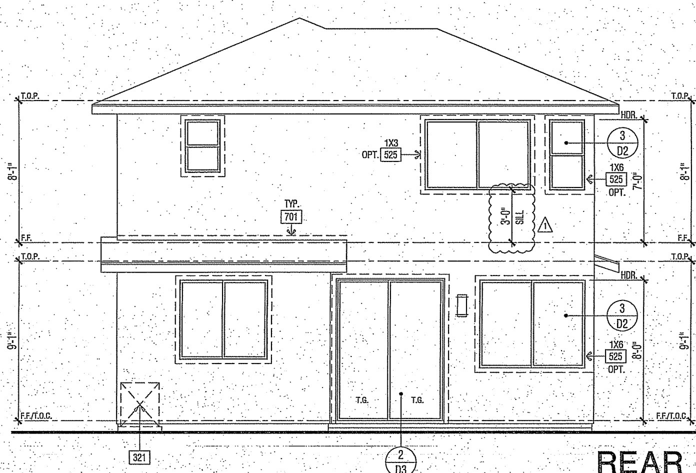

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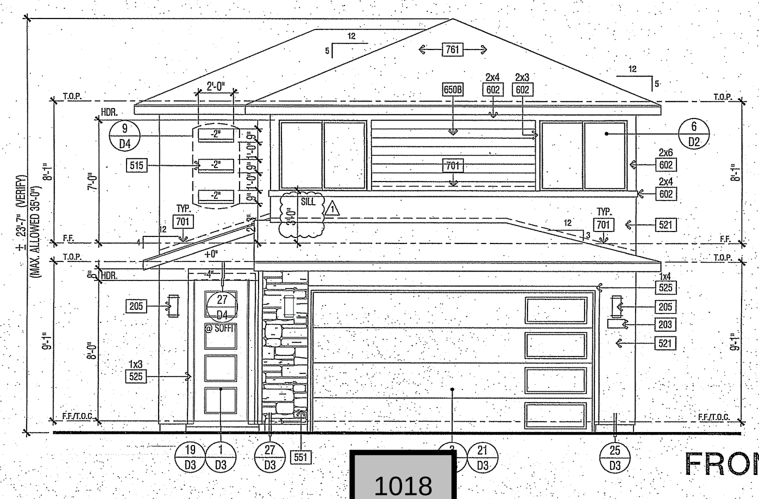


FRONT

SCALE: 1/4" = 1'-0"

FINISHED GRADE VARIES. SEE CIVIL ENGINEERS PLANS FOR FINAL GRADE AND SITE DRAINAGE.

ELEVATION KEY NOTES

Name	NOTE
201	UTILITY EQUIPMENT AND SERVICE PANELS - VERIFY LOCATION
203	ADDRESS PANEL. 6" MIN. HIGH BUILDING ADDRESS CHARACTERS PLACED IN SUCH A POSITION TO BE PLAINLY VISIBLE FROM THE STREET.
205	ACCENT EXTERIOR WALL LIGHT
308	TANKLESS WATER HEATER TERMINATION CAP - INSTALL PER MFR. INSTRUCTIONS (CO-AXIAL VENT INTAKE & EXHAUST DIRECTLY FROM OUTSIDE)
511	RECESS BOX FOR TANKLESS WATER HEATER - INSTALL PER MFR. INSTRUCTIONS
515	STUCCO NICHE. SIZE PER ELEVATION - SLOPE SILL 1" PER FT. MINIMUM
521 △1	STUCCO - INSTALL PER MANUFACTURER'S LISTING BY: OMEGA DIAMOND WALL ONE COAT SYSTEM ICC-ES ESR-1194
525	STUCCO OVER RIGID FOAM TRIM - FOAM SHAPE PER ELEVATION
551 △1	MANUFACTURED ADHERED STUCCO STONE VENEER - INSTALL PER MANUFACTURER'S INSTRUCTIONS" BY EL DORADO STONE PRODUCTS - TER# 1312-01
602	WOOD TRIM(S) - SIZE PER ELEVATION
650B △1	FIBER CEMENT LAP SIDING - 5/16" THICK 'HARDIPLANK' (OR EQUIVALENT. FINISH: SELECT CEDARMILL. EXPOSURE: 6" (INSTALLATION PER MANUFACTURER'S INSTRUCTIONS)
701	G.I. FLASHING
761	ROOFING - CONCRETE - FLAT TILE - BY EAGLE ROOFING ICC# ESR 1900

ANY OPERABLE WINDOW WITH A SILL THAT IS LOCATED LESS THAN 24" ABOVE FINISHED FLOOR AND MORE THAN 72" ABOVE FINISHED GRADE OR OTHER SURFACE BELOW AT THE EXTERIOR, MUST BE PROTECTED BY A GUARD OR, HAVE A FIXED GLASS. THE GUARD MAY NOT HAVE OPENINGS THAT A SPHERE 4" IN DIAMETER CAN PASS THROUGH. 2016 CBC 1405.13.2

2 - LAYERS OF GRADE 'D' BUILDING PAPER IS REQUIRED TO BE INSTALLED OVER WOOD SHEATHING. 2016 CRC R703.7.3

ARCHITECTS . PLANNERS . DESIGNERS
WHA.
ORANGE COUNTY . LOS ANGELES . BAY AREA

WILSON HOMES

TRACT NUMBER: 6168
PROJECT TYPE

PLAN 1245

CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

ELEVATION 1245 B

REVISIONS

NO.	DATE	DESCRIPTION
△1	07-02-18	BLDG. DEPT. REVS.

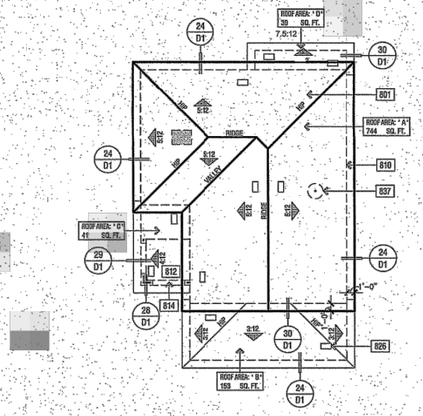
ELEVATIONS
PLAN
1245B

PROJECT MANAGER :	MM
DESIGNER :	AM
DRAWN BY :	-
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	04-25-18
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2018077
CAD FILE NAME :	A106

DATE: 07-02-18

SHEET: A1.6

2018077 - 07-02-18



ROOF PLAN

SCALE: 1/8" = 1'-0"

ELEVATION REFERENCE: C	ELEVATION STYLE: PROGRESSIVE NAPA				
* ROOF MATERIAL	STANDARD ROOF DETAIL U.N.O.	FASCIA - U.N.O.	BARGE - U.N.O.	OVERHANG DIM. - U.N.O.: SIDE	EAVE
CONCRETE 'FLAT' TILE *EAGLE ROOFING" ICC# ESR-1900	1 / D1.1	2X6	2X6	1'-0"	1'-0"

ROOF PLAN NOTES

NOTE: MANDATORY REQUIREMENTS FOR SOLAR READY BUILDINGS PER CEnC SECTION 110.10.

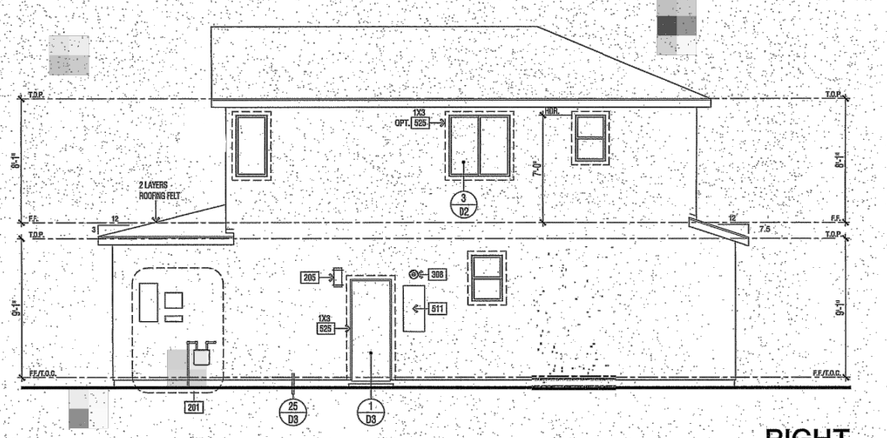
1. SEE GENERAL NOTES FOR ROOF NOTES.
2. SPARK ARRESTORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
3. ATTIC ACCESS PER CRC SECTION R807.
4. PROVIDE ATTIC & SOFFIT VENTILATION PER CRC SECTION R806. PER CRC SECTION R806.2, THE MINIMUM NET FREE 4. VENTILATING AREA SHALL BE 1/150 OF THE AREA OF THE VENTED SPACE. EXCEPTION: THE MINIMUM NET FREE VENTILATION AREA SHALL BE 1/300 OF THE VENTED SPACE PROVIDED ONE OR MORE OF THE FOLLOWING CONDITIONS ARE MET:
   - IN CLIMATIC ZONES 14 AND 16, A CLASS I OR II VAPOR RETARDER IS INSTALLED ON THE WARM-IN-WINTER SIDE OF THE CEILING.
   - NOT LESS THAN 40 PERCENT AND NOT MORE THAN 50 PERCENT OF THE REQUIRED VENTILATING AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE ATTIC OR RAFTER SPACE. UPPER VENTILATORS SHALL BE LOCATED NO MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE, MEASURED VERTICALLY, WITH THE BALANCE OF THE REQUIRED VENTILATION PROVIDED BY EAVE OR CORNICE VENTS. WHERE THE LOCATION OF WALL OR ROOF FRAMING MEMBERS CONFLICTS WITH THE INSTALLATION OF UPPER VENTILATORS, INSTALLATION MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE SHALL BE PERMITTED.

ROOF PLAN KEY NOTES

Name	NOTE
801	CLASS 'A' ROOFING - CONCRETE - "FLAT" TILE - BY EAGLE ROOFING ICC# ESR 1900
810	LINE OF WALL BELOW
812	STUCCO CEILING
814	WOOD SOFFIT
823	MIN. 22"X30" CLEAR OPENING FOR ACCESS AND AIRFLOW CONTRACTOR TO VERIFY AIRFLOW TO ALL ATTIC AREAS
826	ROOF VENT - OHAGIN "XL SERIES" CLOAKED VENT (ICC # NER-9650A)
837	PROVIDE 1" CONDUIT FROM THE ELECTRIC PANEL TO LOCATION IN ATTIC FOR FUTURE SOLAR INSTALLATION.

ATTIC VENTILATION CALCULATIONS — PLAN 5C

ROOF ATTIC AREA	A	744	SQ. FT.	CALCULATION FACTOR:			1/300
		107136	SQ. IN				
MIN. VENTILATION REQUIRED:	TOTAL	354	SQ. IN	TOTAL PROVIDED:	396	SQ. IN	
MIN. VENTILATION REQUIRED:	HIGH	177	SQ. IN	TOTAL HIGH PROVI	198	SQ. IN	
MIN. VENTILATION REQUIRED:	LOW	177	SQ. IN	TOTAL LOW PROVI	198	SQ. IN	
HIGH VENTILATION METHOD	SIZE:	FREE AREA		QUANTITY:		FREE VENT AREA:	
CLOAKED VENT - CONC. FLAT TILE -		99	SQ. IN	X 2	198	SQ. IN	
				TOTAL PROVIDED:	198	SQ. IN	
LOW VENTILATION METHOD	SIZE:	FREE AREA		QUANTITY:		FREE VENT AREA:	
CLOAKED VENT - CONC. FLAT TILE -		99	SQ. IN	X 2	198	SQ. IN	
				TOTAL PROVIDED:	198	SQ. IN	
ROOF ATTIC AREA	B	153	SQ. FT.	CALCULATION FACTOR:			1/300
		22032	SQ. IN				
MIN. VENTILATION REQUIRED:	TOTAL	73	SQ. IN	TOTAL PROVIDED:	198	SQ. IN	
MIN. VENTILATION REQUIRED:	HIGH	36	SQ. IN	TOTAL HIGH PROVI	99	SQ. IN	
MIN. VENTILATION REQUIRED:	LOW	36	SQ. IN	TOTAL LOW PROVI	99	SQ. IN	
HIGH VENTILATION METHOD	SIZE:	FREE AREA		QUANTITY:		FREE VENT AREA:	
CLOAKED VENT - CONC. FLAT TILE -		99	SQ. IN	X 1	99	SQ. IN	
				TOTAL PROVIDED:	99	SQ. IN	
LOW VENTILATION METHOD	SIZE:	FREE AREA		QUANTITY:		FREE VENT AREA:	
CLOAKED VENT - CONC. FLAT TILE -		99	SQ. IN	X 1	99	SQ. IN	
				TOTAL PROVIDED:	99	SQ. IN	
ROOF ATTIC AREA	C	41	SQ. FT.	CALCULATION FACTOR:			1/300
		5904	SQ. IN				
MIN. VENTILATION REQUIRED:	TOTAL	19	SQ. IN	TOTAL PROVIDED:	198	SQ. IN	
MIN. VENTILATION REQUIRED:	HIGH	10	SQ. IN	TOTAL HIGH PROVI	99	SQ. IN	
MIN. VENTILATION REQUIRED:	LOW	10	SQ. IN	TOTAL LOW PROVI	99	SQ. IN	
HIGH VENTILATION METHOD	SIZE:	FREE AREA		QUANTITY:		FREE VENT AREA:	
CLOAKED VENT - CONC. FLAT TILE -		99	SQ. IN	X 1	99	SQ. IN	
				TOTAL PROVIDED:	99	SQ. IN	
LOW VENTILATION METHOD	SIZE:	FREE AREA		QUANTITY:		FREE VENT AREA:	
CLOAKED VENT - CONC. FLAT TILE -		99	SQ. IN	X 1	99	SQ. IN	
				TOTAL PROVIDED:	99	SQ. IN	
ROOF ATTIC AREA	D	30	SQ. FT.	CALCULATION FACTOR:			1/300
		4320	SQ. IN				
MIN. VENTILATION REQUIRED:	TOTAL	14	SQ. IN	TOTAL PROVIDED:	198	SQ. IN	
MIN. VENTILATION REQUIRED:	HIGH	7	SQ. IN	TOTAL HIGH PROVI	99	SQ. IN	
MIN. VENTILATION REQUIRED:	LOW	7	SQ. IN	TOTAL LOW PROVI	99	SQ. IN	
HIGH VENTILATION METHOD	SIZE:	FREE AREA		QUANTITY:		FREE VENT AREA:	
CLOAKED VENT - CONC. FLAT TILE -		99	SQ. IN	X 1	99	SQ. IN	
				TOTAL PROVIDED:	99	SQ. IN	
LOW VENTILATION METHOD	SIZE:	FREE AREA		QUANTITY:		FREE VENT AREA:	
CLOAKED VENT - CONC. FLAT TILE -		99	SQ. IN	X 1	99	SQ. IN	
				TOTAL PROVIDED:	99	SQ. IN	



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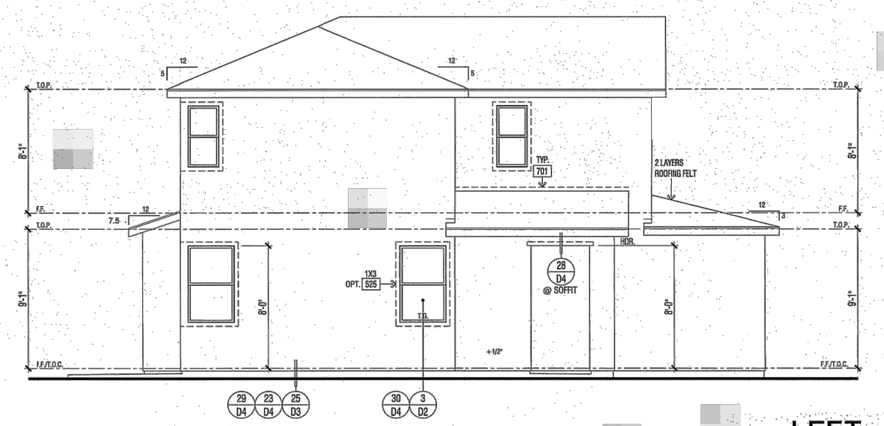

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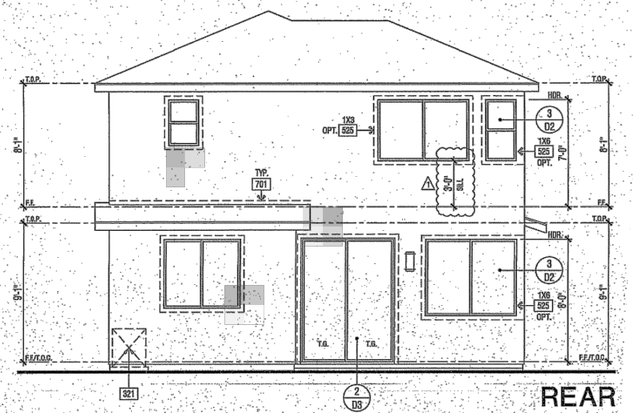
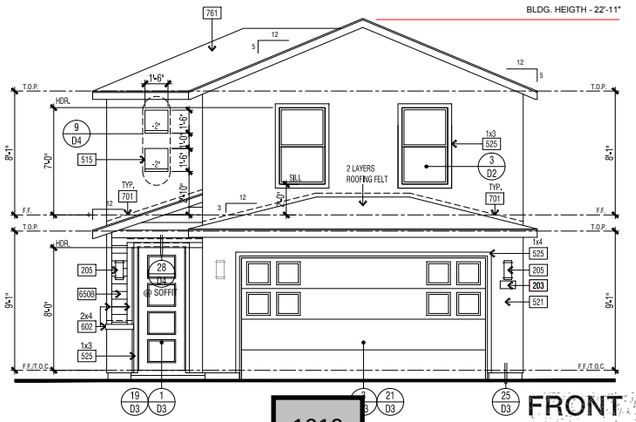


REAR



FRONT

1019

SCALE: 1/4" = 1'-0"

FINISHED GRADE VARIES. SEE CIVIL ENGINEERS PLANS FOR FINAL GRADE AND SITE DRAINAGE.

ELEVATION KEY NOTES

Name	NOTE
201	UTILITY EQUIPMENT AND SERVICE PANELS - VERIFY LOCATION
203	ADDRESS PANEL - 6" MIN. HIGH BUILDING ADDRESS CHARACTERS PLACED IN SUCH A POSITION TO BE PLAINLY VISIBLE FROM THE STREET.
205	ACCENT EXTERIOR WALL LIGHT
308	TANKLESS WATER HEATER TERMINATION CAP - INSTALL PER MFR. INSTRUCTIONS (CO-AXIAL VENT INTAKE & EXHAUST DIRECTLY FROM OUTSIDE)
321	AIR CONDITIONING CONDENSER LOCATION
511	RECESS BOX FOR TANKLESS WATER HEATER - INSTALL PER MFR. INSTRUCTIONS
515	STUCCO NICHE - SIZE PER ELEVATION - SLOPE SILL 1" PER FT. MINIMUM
521 ⚠1	STUCCO - INSTALL PER MANUFACTURER'S LISTING BY: OMEGA DIAMOND WALL ONE COAT SYSTEM ICC-ES ESR-1184
525	STUCCO OVER RIGID FOAM TRIM - FOAM SHAPE PER ELEVATION
592	OVERHEAD SHUTTER - SIZE AND STYLE PER ELEVATION
602	WOOD TRIM(S) - SIZE PER ELEVATION
608 ⚠1	FIBER CEMENT LAP SIDING - 5/16" THICK "HARDIPLANK" (OR EQUIVALENT, FINISH: SELECT CEDARMILL, EXPOSURE: 8" (INSTALLATION PER MANUFACTURER'S INSTRUCTIONS)
701	G.I. FLASHING
761	ROOFING - CONCRETE - FLAT TILE - BY EAGLE ROOFING ICC# ESR 1900

ANY OPERABLE WINDOW WITH A SILL THAT IS LOCATED LESS THAN 24" ABOVE FINISHED FLOOR AND MORE THAN 72" ABOVE FINISHED GRADE OR OTHER SURFACE BELOW AT THE EXTERIOR, MUST BE PROTECTED BY A GUARD OR, HAVE A FIXED GLASS. THE GUARD MAY NOT HAVE OPENINGS THAT A SPHERE 4" IN DIAMETER CAN PASS THROUGH. 2016 CBC 1405.13.2

2 - LAYERS OF GRADE 'D' BUILDING PAPER IS REQUIRED TO BE INSTALLED OVER WOOD SHEATHING. 2016 CRC R703.7.3

ARCHITECTS . PLANNERS . DESIGNERS

WHA.

ORANGE COUNTY . LOS ANGELES . BAY AREA

LICENSED ARCHITECT — William Hezmalhalch — REN. 8-30-19 — STATE OF CALIFORNIA

WILSON HOMES

TRACT NUMBER: 6168
PROJECT TYPE

PLAN 1245

CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

REVISIONS

NO.	DATE	DESCRIPTION
⚠1	07-02-18	BLDG. DEPT. REVS.

City of Clovis - Planning and Development Services - Building Division - Approved with Noted Conditions - 16SPN - JUL 12 2018

City of Clovis - Planning and Development Services - Building Division - Approved with Noted Conditions - 16SPN - NOV 28 2018

DRAWN BY:	MM
DESIGNER:	AH
REVIEWED BY:	
1ST BLDG. DEPT. SUBMITTAL:	04-25-18
ISSUED FOR CONSTRUCTION:	
JOB NUMBER:	2018077
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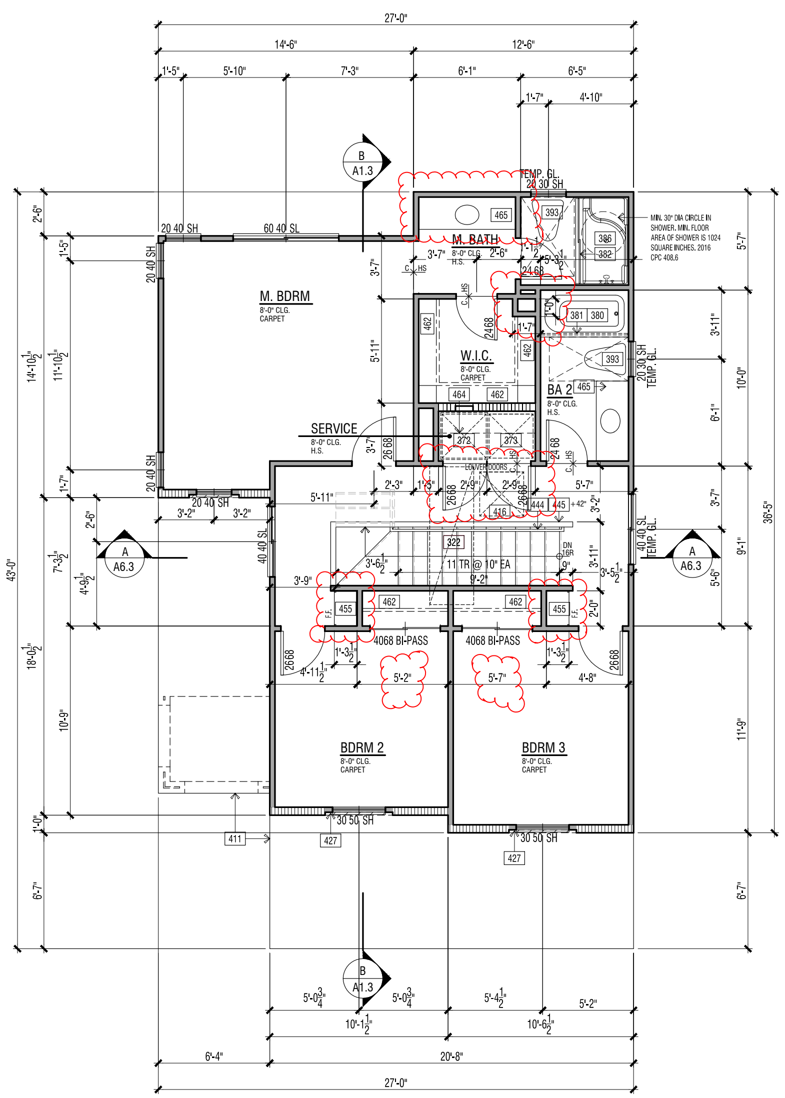
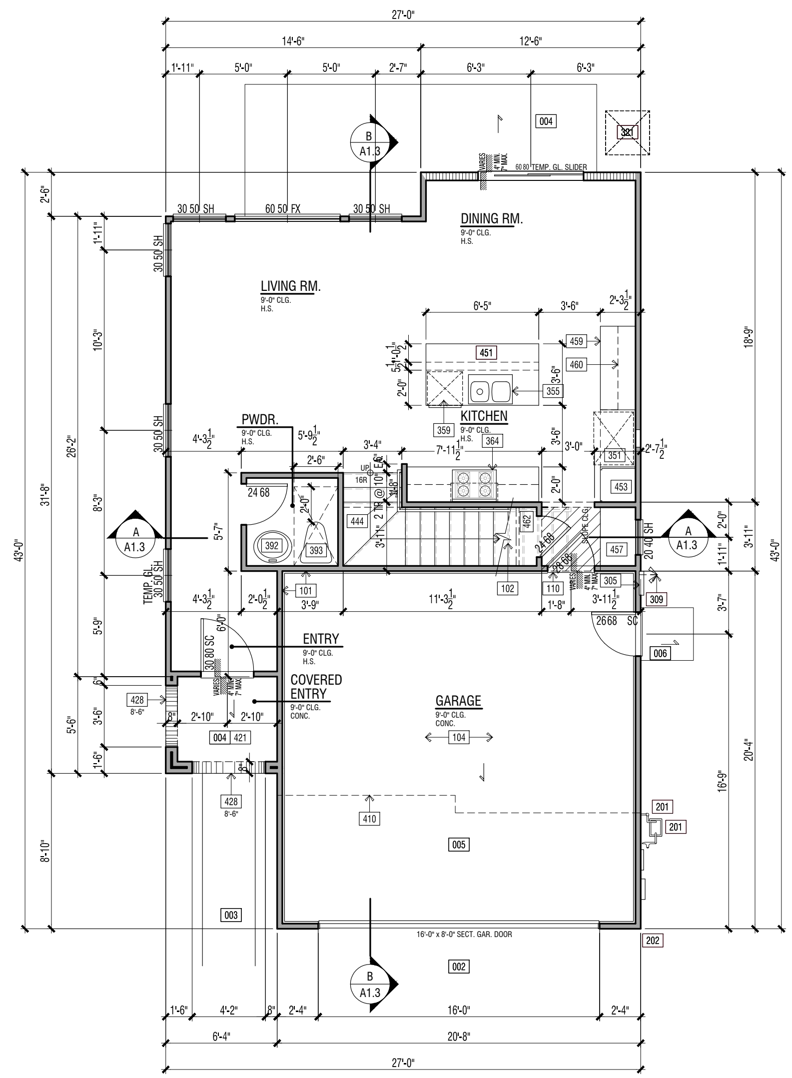
2018077 - 07-02-18



UPPER FLOOR PLAN



LOWER FLOOR PLAN

FLOOR PLAN KEY NOTES

Name	NOTE
001	CONCRETE SLAB (SEE STRUCTURAL DRAWINGS)
002	CONCRETE DRIVE (BY OTHERS)
003	CONCRETE WALK (BY OTHERS)
004	CONCRETE PORCH SLAB (BY OTHERS) SLOPE 1/4" PER FOOT MINIMUM IN DIRECTION INDICATED
005	CONCRETE GARAGE SLAB - SLOPE 1/8" PER FOOT MINIMUM IN DIRECTION INDICATED
006	CONCRETE STOOP - 36" DEEP AND 2" WIDER THAN THE DOOR OPENING - SLOPE 1/4" PER FOOT MINIMUM TO DRAIN IN DIRECTION INDICATED
010	CONCRETE PATIO (BY OTHERS)
101	GARAGE AND/OR CARPORT SHALL BE SEPARATED FROM THE RESIDENCE AND ITS ATTIC BY MEANS OF A MIN. 1/2" GYP. BD., OR EQUIVALENT, APPLIED TO THE GARAGE SIDE PER CRC SECTION R302.6.
102	ENCLOSED ACCESSIBLE SPACE UNDER STAIRS SHALL HAVE WALLS, UNDER STAIR SURFACE AND ANY SOFFITS PROTECTED ON THE ENCLOSED SIDE WITH 1/2" GYPSUM BOARD PER CRC SECTION R302.7.
104	GARAGE AND/OR CARPORT WITH HABITABLE ROOMS ABOVE SHALL BE SEPARATED FROM THE RESIDENCE BY A MIN. 5/8" TYPE 'X' GYP. BD., OR EQ. STRUCTURE(S) SUPPORTING THE FLR./CLG. ASSEMBLY USED FOR SEPARATION SHALL BE A MIN. 1/2" GYP. BD., OR EQ. PER CRC SEC. R302.6.
110	PROVIDE SOLID WOOD DOOR, OR SOLID OR HONEYCOMB CORE STEEL DOORS, NOT LESS THAN 1-3/8" THICK, OR 20 MINUTE FIRE RATED DOOR. DOORS SHALL BE SELF CLOSING AND SELF LATCHING PER CRC SECTION R302.5.1.
201	UTILITY EQUIPMENT AND SERVICE PANELS - VERIFY LOCATION
305	TANKLESS WATER HEATER - MODEL RINNAI (R75LS) - INSTALL PER MANUFACTURER'S INSTRUCTIONS
309	TEMPERATURE AND PRESSURE RELIEF VALVE. DISCHARGE LINE TO THE OUTSIDE OUTSIDE PER CPC SECTION 608.5
312	METAL FIREPLACE (GAS APPLIANCE) - HEIGHT PER PLAN - INSTALL PER MANUFACTURER'S INSTRUCTIONS. BY HEATILATOR MODEL# ND4842 ANSI Z21.88-2002
321	AIR CONDITIONING CONDENSER LOCATION
322	FORCED AIR UNIT (FAU) ATTIC INSALLATION
334	4" DIA. G.I. DRYER VENT WITH APPROVED LINT TRAP - VENT TO OUTSIDE
336	5" DIA. G.I. DRYER VENT WITH APPROVED LINT TRAP - VENT THROUGH ROOF
342	RETURN AIR GRILL - SEE MECHANICAL
344	WHOLE HOUSE EXHAUST FAN PER 2010 CEC. REFER TO ATTACHED "SUMMARY OF THE 2010 ENERGY CODE ASHRAE 62.2 REQUIREMENTS"
351	REFRIGERATOR SPACE WITH RECESSED COLD WATER BOX
355	SINK WITH GARBAGE DISPOSER
357	UTILITY SINK
359	DISHWASHER - ENERGY STAR
364	30" COOKTOP & EXHAUST HOOD WITH FAN AND LIGHT. EXHAUST VENT TO OUTSIDE
372	WASHER SPACE WITH RECESSED WATER BOX AND DBL. WIDE SMITTY PAN
373	DRYER SPACE
380	TUB/ SHOWER - 32"X60" MODEL 2603DT - GELCOAT SURFACE - BY AQUATIC
381	CURTAIN ROD
382	SHATTERPROOF SHOWER DOOR/ ENCLOSURE
383	TUB ACCESS PANEL
386	SHOWER - PREFABRICATED STALL - 36"x60"X76" MODEL 1603DTS - GELCOAT SURFACE - BY AQUATIC
390	SHOWER SEAT - SLOPE $\frac{1}{4}$" MINIMUM TO DRAIN
392	PEDESTAL SINK
393	TOILET - PROVIDE MINIMUM 24" X 30" CLEAR FLOOR AREA IN FRONT OF TOILET
401	INTERIOR SOFFIT(S)/ DROPPED CEILING(S): HEIGHT PER PLAN
410	LINE OF FLOOR ABOVE
411	LINE OF FLOOR BELOW
412	OPEN TO ABOVE
413	OPEN TO BELOW
416	30"x30" ATTIC ACCESS - DIMENSIONS ARE CLEAR - PER CEnC 150.0(a)1, ATTIC ACCESS DOORS SHALL HAVE PERMANENTLY ATTACHED INSULATION USING ADHESIVE OR MECHANICAL FASTENERS AND THE ATTIC ACCESS SHALL BE GASKETED TO PREVENT AIR LEAKAGE
417	22"X30" 1-HOUR ATTIC ACCESS-DIMENSIONS CLEAR
421	STUCCO CEILING: HEIGHT PER PLAN
422	STUCCO SOFFIT: HEIGHT PER PLAN
427	STUCCO SOFFIT OVER WATERPROOFED STUCCO SHELF - SLOPE FRAMING FOR DRAINAGE (1/4" PER FOOT MINIMUM)
428	ARCHED STUCCO SOFFIT - HEIGHT PER ELEVATION
441	GYP. BD. SHELF/LOW WALL - WIDTH AND HEIGHT PER PLAN
442	2X PONY WALL - SIZE PER PLAN
444	+34"- +38" HANDRAIL (SEE DETAIL 1G/D5)
445	+42" GUARD (SEE DETAIL 1F/D5)
451	KITCHEN ISLAND - PROVIDE APPROVED UNDERGROUND CONDUIT FOE ELECTRIC SERVICE TO ISLAND
453	PANTRY WITH WIRE SHELVING
454	DESK
455	LINEN
456	LINEN (UPPER & LOWER)
457	LINEN (LOW ONLY)
458	WIRE SHELF
459	BASE CABINET
460	UPPER CABINET
462	WIRE SHELF AND POLE
464	WIRE SHELF (OR SHELVES)
465	VANITY

FLOOR PLAN NOTES

1. ATTICS: ACCESS PER CRC R807, DRAFTSTOPS PER CRC R302.12 AND VENTILATION PER R806.
2. EMERGENCY ESCAPE AND RESCUE OPENINGS PER CRC R310. MEANS OF EGRESS PER CRC R311.
3. GLAZING PER CRC R303.1 & R308
4. FACTORY-BUILT FIREPLACES AND CHIMNEYS PER CRC R1004, R1005, R1006 CGBSC SECTION 4.503 & CEnC SECTION 150.0(e).
5. COMBUSTION AIR TO FORCED AIR UNIT PER CMC CHAPTER 7.
6. COMBUSTION AIR TO WATER HEATER PER CPC SECTION 507.0.
7. ENVIRONMENTAL AIR DUCTS PER CMC SECTION 504.
8. MECHANICAL EQUIPMENT LOCATION AND PROTECTION AGAINST DAMAGE PER CMC 305 & 308.
9. MANDATORY REQUIREMENTS FOR APPLIANCES PER CEnC SECTION 110.1.
10. A SHEETROCK NAILING INSPECTION IS REQUIRED. 2016 CRC R109.1.4.2 & CBC 110.3.5

D A1.9 B C

INTERIOR ELEVATION KEY

FLOOR AREA TABLE	PLAN 1390A
LOWER FLOOR PLAN	616 SQ. FT.
UPPER FLOOR PLAN	774 SQ. FT.
TOTAL	1,390 SQ. FT.
GARAGE	419 SQ. FT.
COVERED ENTRY	43 SQ. FT.

NOTE: SQUARE FOOTAGE MAY VARY DUE TO METHOD OF CALCULATION

SCALE: 1/4" = 1'- 0"

City of Clovis - Planning and Development Services - Building Division
Plans Approved Under the 2016 California Building Codes
16SPN
JUL 29 2018
Subject To: Field Approval, Laws, Codes, and Ordinances
Approved With Noted Corrections

ARCHITECTS . PLANNERS . DESIGNERS

WHA.

ORANGE COUNTY . LOS ANGELES . BAY AREA

LICENSED ARCHITECT
William Hezmalhalch
C 19
REN 4-30-19
STATE OF CALIFORNIA

WILSON HOMES

TRACT NUMBER: 6168
PROJECT TYPE

PLAN 1390
CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

REVISIONS

NO.	DATE	DESCRIPTION
1	7-27-18	BLDG. DEPT. REVS.
	10-16-18	AS-BUILT PLAN
	04/01/2019	AS-BUILT PLAN

AS-BUILT PLAN

PLAN 1390A

PROJECT MANAGER :	MM
DESIGNER :	AM
DRAWN BY :	-
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	-
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2018077
CAD FILE NAME :	A101

DATE: 07-27-18

SHEET: A1.1

2018077 - 07-27-18

FLOOR PLAN KEY NOTES

Name	NOTE
002	CONCRETE DRIVE (BY OTHERS)
003	CONCRETE WALK (BY OTHERS)
004	CONCRETE PORCH SLAB (BY OTHERS) SLOPE 1/4" PER FOOT MINIMUM IN DIRECTION INDICATED
005	CONCRETE GARAGE SLAB - SLOPE 1/2" PER FOOT MINIMUM IN DIRECTION INDICATED
421	STUCCO CEILING: HEIGHT PER PLAN
422	STUCCO SOFFIT: HEIGHT PER PLAN
551	MANUFACTURED ADHERED STUCCO STONE VENEER - INSTALL PER MANUFACTURER'S INSTRUCTIONS. BY 'EL DORADO STONE' ICC-ES ER-3568

ARCHITECTS . PLANNERS . DESIGNERS

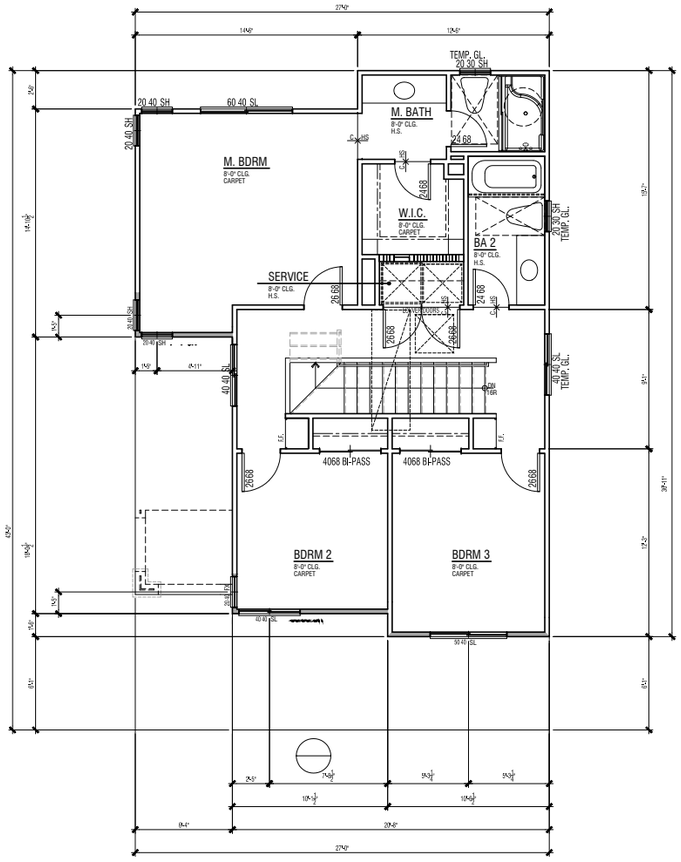
WHA.

ORANGE COUNTY . LOS ANGELES . BAY AREA

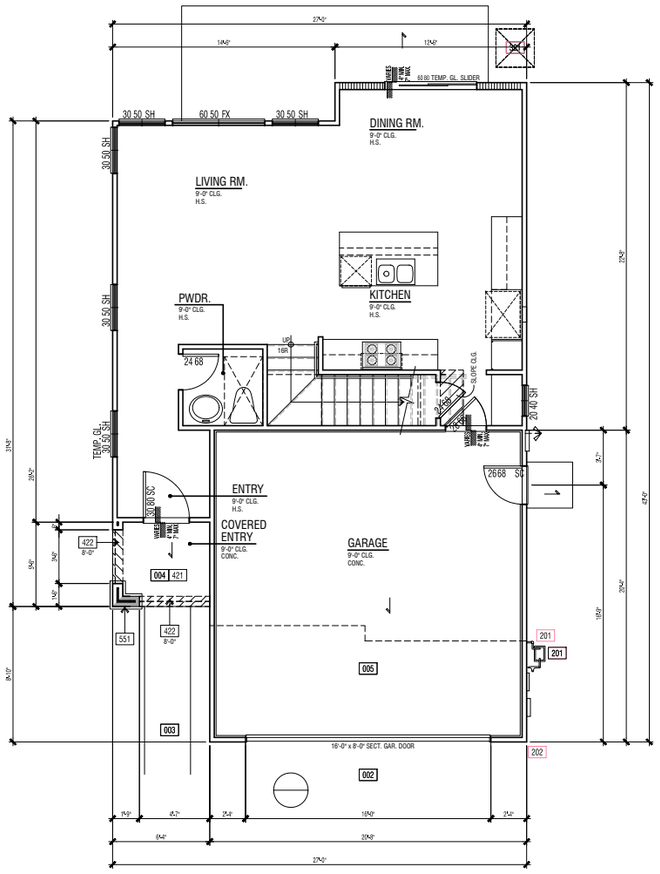
LICENSED ARCHITECT — WILLIAM M. HEZMALHALCH — C-18 — REN 4-30-19 — STATE OF CALIFORNIA

WILSON HOMES

TRACT NUMBER: 6168
PROJECT TYPE



UPPER FLOOR PLAN



LOWER FLOOR PLAN

1021

ADDENDA FLOOR PLAN NOTES

NOTE: SHADED WALLS INDICATE AREAS THAT ARE DIFFERENT THAN THE BASE FLOOR PLAN

NOTE: REFER TO CIVIL AND LANDSCAPE DRAWINGS BY OTHERS FOR ALL DRIVEWAYS AND SIDEWALK LOCATIONS.

REFER TO BASE PLAN SHEET A1.1 FOR ADDITIONAL NOTES AND DIMENSIONS.

INTERIOR ELEVATION KEY

FLOOR AREA TABLE	PLAN 1396B
LOWER FLOOR PLAN	616 SQ. FT.
UPPER FLOOR PLAN	780 SQ. FT.
TOTAL	1,396 SQ. FT.
GARAGE	419 SQ. FT.
COVERED ENTRY	43 SQ. FT.

NOTE: SQUARE FOOTAGE MAY VARY DUE TO METHOD OF CALCULATION

SCALE: 1/4" = 1'- 0"

PLAN 1390

CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

REVISIONS

NO.	DATE	DESCRIPTION
	10-16-18	AS-BUILT PLAN

AS-BUILT PLAN

PLAN
1390B

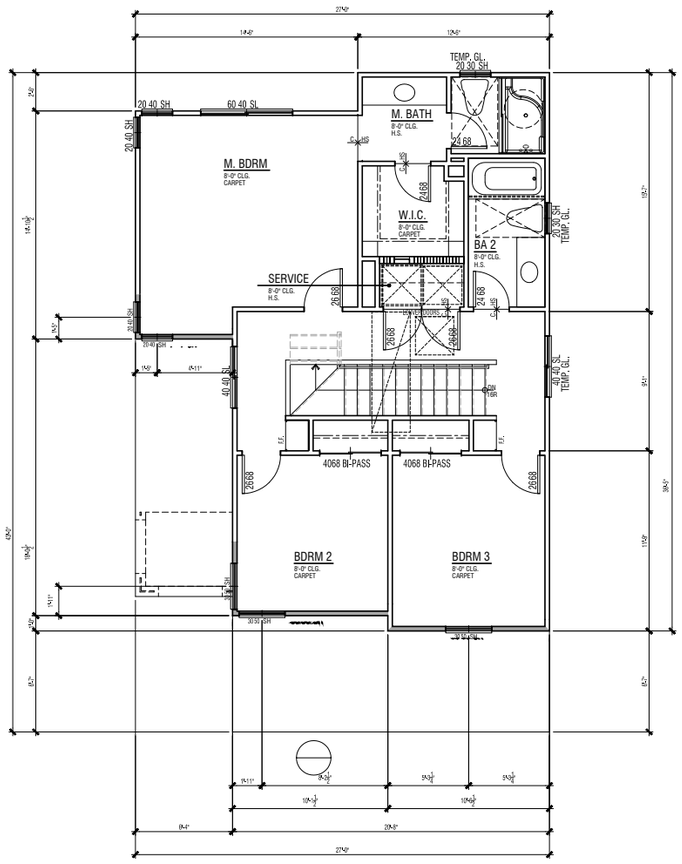
PROJECT MANAGER :	MM
DESIGNER :	AM
DRAWN BY :	-
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	-
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2018077
CAD FILE NAME :	A105

DATE: 07-27-18

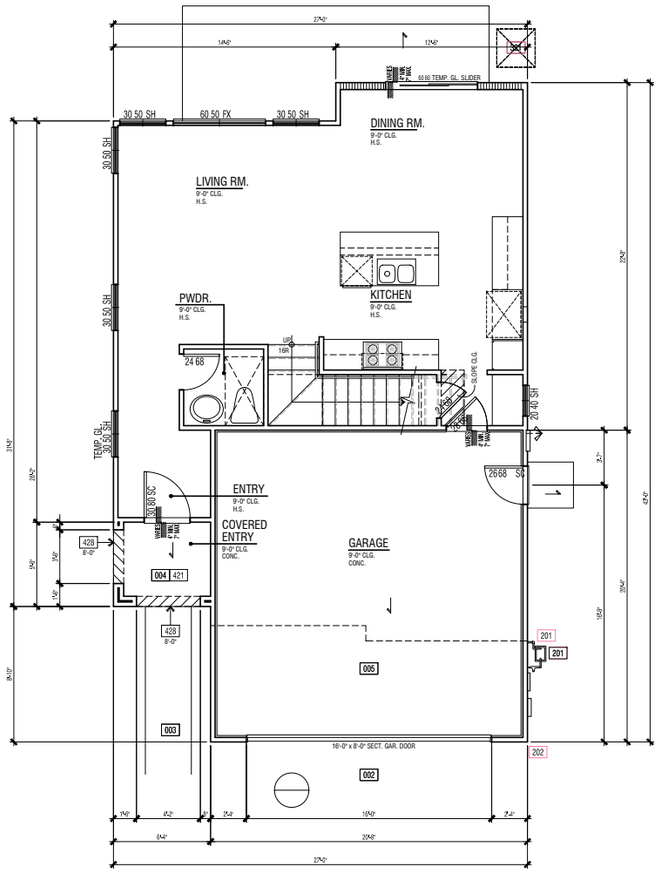
SHEET: A1.5

2018077 - 07-27-18

FLOOR PLAN KEY NOTES	
Name	NOTE
002	CONCRETE DRIVE (BY OTHERS)
003	CONCRETE WALK (BY OTHERS)
004	CONCRETE PORCH SLAB (BY OTHERS) SLOPE 1/4" PER FOOT MINIMUM IN DIRECTION INDICATED
005	CONCRETE GARAGE SLAB - SLOPE ¼" PER FOOT MINIMUM IN DIRECTION INDICATED
421	STUCCO CEILING: HEIGHT PER PLAN
428	ARCHED STUCCO SOFFIT: HEIGHT PER PLAN



UPPER FLOOR PLAN



LOWER FLOOR PLAN

1022

ADDENDA FLOOR PLAN NOTES

NOTE: SHADED WALLS INDICATE AREAS THAT ARE DIFFERENT THAN THE BASE FLOOR PLAN

NOTE: REFER TO CIVIL AND LANDSCAPE DRAWINGS BY OTHERS FOR ALL DRIVEWAYS AND SIDEWALK LOCATIONS.

REFER TO BASE PLAN SHEET A1.1 FOR ADDITIONAL NOTES AND DIMENSIONS.

INTERIOR ELEVATION KEY

FLOOR AREA TABLE	PLAN 1390C
LOWER FLOOR PLAN	616 SQ. FT.
UPPER FLOOR PLAN	774 SQ. FT.
TOTAL	1,390 SQ. FT.
GARAGE	419 SQ. FT.
COVERED ENTRY	43 SQ. FT.

NOTE: SQUARE FOOTAGE MAY VARY DUE TO METHOD OF CALCULATION

SCALE: 1/4" = 1'- 0"

ARCHITECTS . PLANNERS . DESIGNERS

WHA.

ORANGE COUNTY . LOS ANGELES . BAY AREA

LICENSED ARCHITECT
WILLIAM M. HEZMALHALCH
C-18
REN 4-30-19
STATE OF CALIFORNIA

WILSON HOMES

TRACT NUMBER: 6168
PROJECT TYPE

PLAN 1390

CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

REVISIONS

NO.	DATE	DESCRIPTION
	10-16-18	AS-BUILT PLAN

AS-BUILT PLAN

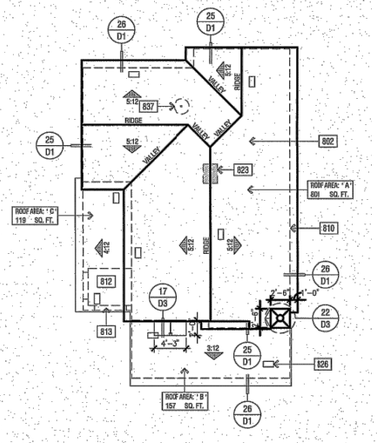
PLAN
1390C

PROJECT MANAGER :	MM
DESIGNER :	AM
DRAWN BY :	-
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	-
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2018077
CAD FILE NAME :	A107

DATE: 07-27-18

SHEET: A1.7

2018077 - 07-27-18



ROOF PLAN

SCALE: 1/8" = 1'-0"

ELEVATION REFERENCE: A	ELEVATION STYLE: CONTEMPORARY SPANISH				
ROOF MATERIAL	STANDARD ROOF DETAIL U.N.O.	FASCIA - U.N.O.	BARGE - U.N.O.	OVERHANG DIM. - U.N.O. EAVE	RAKE
CONCRETE 'S' TILE *EAGLE ROOFING* ICC# ESR-1900	1/D1	2X6	NONE	1'-0"	TIGHT

ROOF PLAN NOTES

NOTE: MANDATORY REQUIREMENTS FOR SOLAR READY BUILDINGS PER CEnC SECTION 110.10.

1. SEE GENERAL NOTES FOR ROOF NOTES.
2. SPARK ARRESTORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
3. ATTIC ACCESS PER CRC SECTION R807.
4. PROVIDE ATTIC & SOFFIT VENTILATION PER CRC SECTION R806. PER CRC SECTION R806.2, THE MINIMUM NET FREE VENTILATING AREA SHALL BE 1/150 OF THE AREA OF THE VENTED SPACE. EXCEPTION: THE MINIMUM NET FREE VENTILATION AREA SHALL BE 1/300 OF THE VENTED SPACE PROVIDED ONE OR MORE OF THE FOLLOWING CONDITIONS ARE MET:
   - IN CLIMATE ZONES 14 AND 16, A CLASS I OR II VAPOR RETARDER IS INSTALLED ON THE WARM-IN-WINTER SIDE OF THE CEILING.
   - NOT LESS THAN 40 PERCENT AND NOT MORE THAN 50 PERCENT OF THE REQUIRED VENTILATING AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE ATTIC OR RAFTER SPACE. UPPER VENTILATORS SHALL BE LOCATED NO MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE, MEASURED VERTICALLY, WITH THE BALANCE OF THE REQUIRED VENTILATION PROVIDED BY EAVE OR CORNICE VENTS. WHERE THE LOCATION OF WALL OR ROOF FRAMING MEMBERS CONFLICTS WITH THE INSTALLATION OF UPPER VENTILATORS, INSTALLATION MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE SHALL BE PERMITTED.

ROOF PLAN KEY NOTES

Name	NOTE
802	ROOFING - CONCRETE - LOW PROFILE "S" TILE BY EAGLE ROOFING ICC# ESR 1900
810	LINE OF WALL BELOW
812	STUCCO CEILING
813	STUCCO SOFFIT
826	ROOF VENT - O'HAGIN "XL SERIES" CLOAKED VENT (ICC # NER-9650A)
837	PROVIDE 1" CONDUIT FROM THE ELECTRIC PANEL TO LOCATION IN ATTIC FOR FUTURE SOLAR INSTALLATION.
839	MIN. 22"X30" OPENING IN CALIFORNIA ROOF FRAMING CONDITIONS FOR ATTIC ACCESS AND CROSS VENTILATION - CONTRACTOR TO VERIFY AIRFLOW TO ALL ATTIC AREAS

ATTIC VENTILATION CALCULATIONS — PLAN 6A

ROOF ATTIC AREA	A	801	SQ. FT.	CALCULATION FACTOR:			1/300
		115344	SQ. IN.				
MIN. VENTILATION REQUIRED:	TOTAL	381	SQ. IN.	TOTAL PROVIDED:	392	SQ. IN.	
MIN. VENTILATION REQUIRED:	HIGH	190	SQ. IN.	TOTAL HIGH PROVI	196	SQ. IN.	
MIN. VENTILATION REQUIRED:	LOW	190	SQ. IN.	TOTAL LOW PROVI	196	SQ. IN.	

HIGH VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA	
CLOAKED VENT - CONC.S-TILE	-	98	SQ. IN. X	2	196	SQ. IN.
				TOTAL PROVIDED:	196	SQ. IN.

LOW VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA	
CLOAKED VENT - CONC.S-TILE	-	98	SQ. IN. X	2	196	SQ. IN.
				TOTAL PROVIDED:	196	SQ. IN.

ROOF ATTIC AREA	B	157	SQ. FT.	CALCULATION FACTOR:			1/300
		22608	SQ. IN.				
MIN. VENTILATION REQUIRED:	TOTAL	75	SQ. IN.	TOTAL PROVIDED:	196	SQ. IN.	
MIN. VENTILATION REQUIRED:	HIGH	37	SQ. IN.	TOTAL HIGH PROVI	98	SQ. IN.	
MIN. VENTILATION REQUIRED:	LOW	37	SQ. IN.	TOTAL LOW PROVI	98	SQ. IN.	

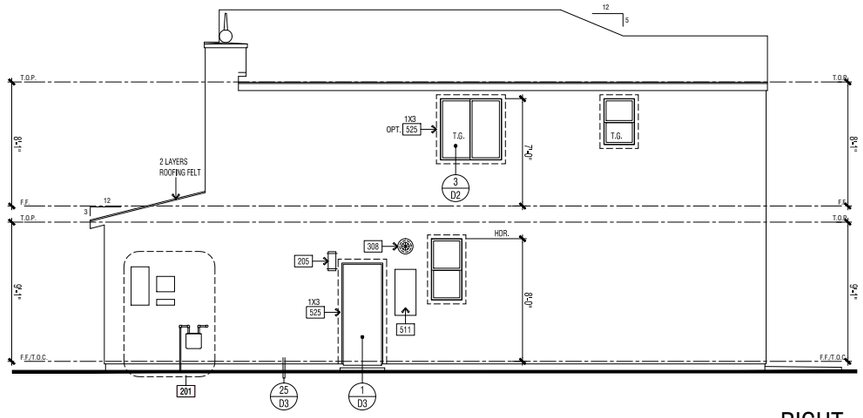
HIGH VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA	
CLOAKED VENT - CONC.S-TILE	-	98	SQ. IN. X	1	98	SQ. IN.
				TOTAL PROVIDED:	98	SQ. IN.

LOW VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA	
CLOAKED VENT - CONC.S-TILE	-	98	SQ. IN. X	1	98	SQ. IN.
				TOTAL PROVIDED:	98	SQ. IN.

ROOF ATTIC AREA	C	119	SQ. FT.	CALCULATION FACTOR:			1/300
		17136	SQ. IN.				
MIN. VENTILATION REQUIRED:	TOTAL	57	SQ. IN.	TOTAL PROVIDED:	196	SQ. IN.	
MIN. VENTILATION REQUIRED:	HIGH	28	SQ. IN.	TOTAL HIGH PROVI	98	SQ. IN.	
MIN. VENTILATION REQUIRED:	LOW	28	SQ. IN.	TOTAL LOW PROVI	98	SQ. IN.	

HIGH VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA	
CLOAKED VENT - CONC.S-TILE	-	98	SQ. IN. X	1	98	SQ. IN.
				TOTAL PROVIDED:	98	SQ. IN.

LOW VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA	
CLOAKED VENT - CONC.S-TILE	-	98	SQ. IN. X	1	98	SQ. IN.
				TOTAL PROVIDED:	98	SQ. IN.



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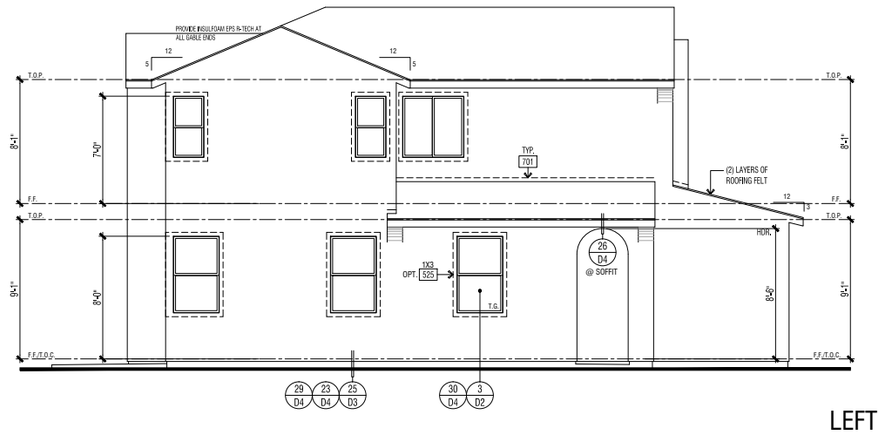

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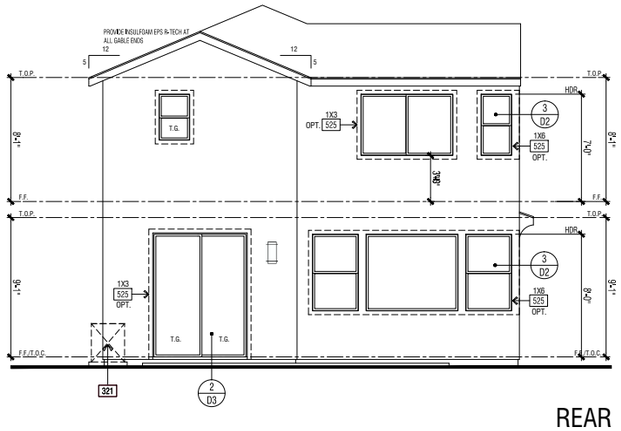

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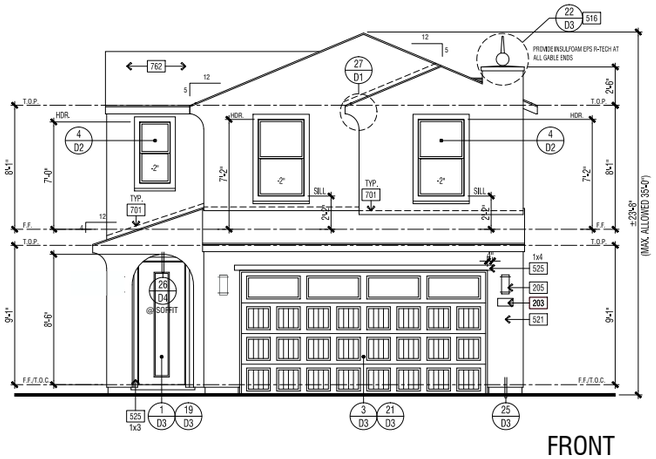


FRONT

1023

FINISHED GRADE VARIES. SEE CIVIL ENGINEERS PLANS FOR FINAL GRADE AND SITE DRAINAGE.

ELEVATION KEY NOTES

Name	NOTE
201	UTILITY EQUIPMENT AND SERVICE PANELS - VERIFY LOCATION
203	ADDRESS PANEL. 6" MIN. HIGH BUILDING ADDRESS CHARACTERS PLACED IN SUCH A POSITION TO BE PLAINLY VISIBLE FROM THE STREET.
205	ACCENT EXTERIOR WALL LIGHT
308	TANKLESS WATER HEATER TERMINATION CAP - INSTALL PER MFR. INSTRUCTIONS (CO-AXIAL VENT INTAKE & EXHAUST DIRECTLY FROM OUTSIDE)
321	AIR CONDITIONING CONDENSER LOCATION
511	RECESS BOILER TANKLESS WATER HEATER - INSTALL PER MFR. INSTRUCTIONS
516	DECORATIVE FOAM ACCENT - SEE DETAIL 22/D3 - ICC ESR 1566
521	STUCCO - INSTALL PER MANUFACTURER'S LISTING BY; OMEGA DIAMOND WALL ONE COAT SYSTEM ICC-ES ESR-1194
525	STUCCO OVER RIGID FOAM TRIM - FOAM SHAPE PER ELEVATION
674	DECORATIVE METAL WINDOW SHADE
701	G.I. FLASHING
762	ROOFING - CONCRETE - LOW PROFILE "S" TILE BY EAGLE ROOFING ICC# ESR 1900

ANY OPERABLE WINDOW WITH A SILL THAT IS LOCATED LESS THAN 24" ABOVE FINISHED FLOOR AND MORE THAN 72" ABOVE FINISHED GRADE OR OTHER SURFACE BELOW AT THE EXTERIOR, MUST BE PROTECTED BY A GUARD OR, HAVE A FIXED GLASS. THE GUARD MAY NOT HAVE OPENINGS THAT A SPHERE 4" IN DIAMETER CAN PASS THROUGH, 2016 CBC 1405.13.2.

(2) LAYERS OF GRADE 'D' PAPER IS REQUIRED TO BE INSTALLED OVER WOOD SHEATHING 2016 CRC R703.7.3

ARCHITECTS . PLANNERS . DESIGNERS

WHA.

ORANGE COUNTY . LOS ANGELES . BAY AREA

LICENSED ARCHITECT William Hezmalhalch C-14 REN 4-30-19 STATE OF CALIFORNIA

WILSON HOMES

TRACT NUMBER: 6168
PROJECT TYPE

PLAN 1390

CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

REVISIONS

NO.	DATE	DESCRIPTION
1	7-27-18	BLDG. DEPT. REVS.

ELEVATIONS
PLAN
1390A

PROJECT MANAGER :	MM
DESIGNER :	AM
DRAWN BY :	-
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	-
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2018077
CAD FILE NAME :	A104
DATE: 07-27-18	SHEET: A1.4

2018077 - 07-27-18

City of Clovis - Planning and Development Services - Building Division
Approved with Noted Corrections
Subject to Field Inspection, Laws, Codes, and Ordinances
JUL 27 2018
16SPN

SCALE: 1/4" = 1'-0"

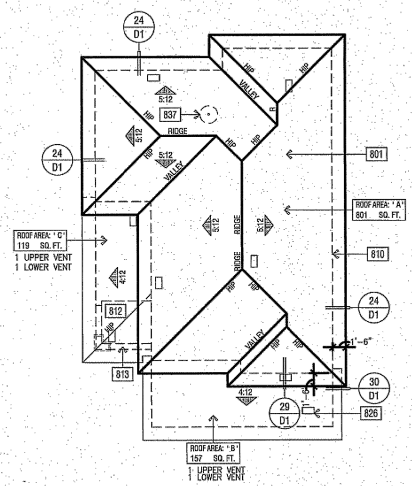
ARCHITECTS . PLANNERS . DESIGNERS

WHA.

ORANGE COUNTY . LOS ANGELES . BAY AREA

WILSON HOMES

TRACT NUMBER: 6168
PROJECT TYPE



ROOF PLAN

SCALE: 1/8" = 1'-0"

ELEVATION REFERENCE: B		ELEVATION STYLE: MODERN			
ROOF MATERIAL	STANDARD ROOF DETAIL U.N.O.	FASCIA - U.N.O.	BARGE - U.N.O.	OVERHANG DIM. - U.N.O. EAVE	OVERHANG DIM. - U.N.O. RAKE
CONCRETE 'FLAT' TILE "EAGLE ROOFING" ICC# ESR-1900	1 / D1.1	2X6	2X6	1'-6"	1'-0"

ROOF PLAN NOTES

NOTE: MANDATORY REQUIREMENTS FOR SOLAR READY BUILDINGS PER CEnC SECTION 110.10.

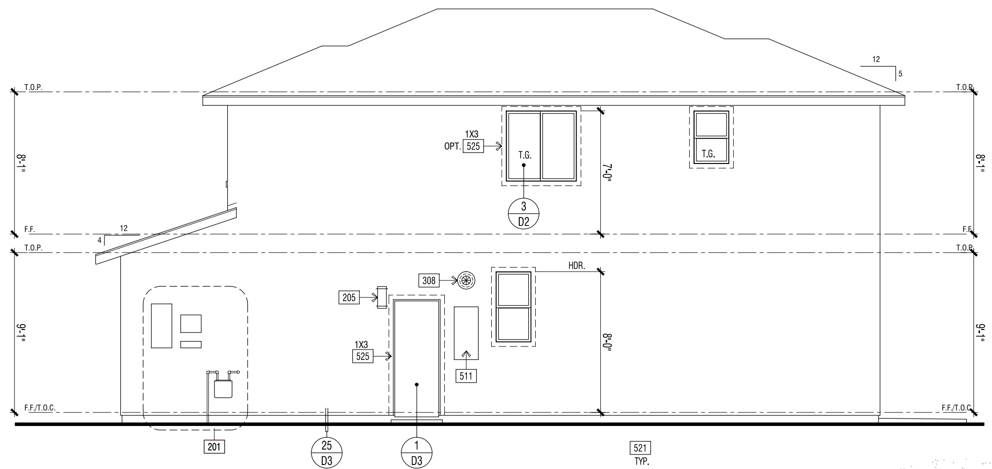
1. SEE GENERAL NOTES FOR ROOF NOTES.
2. SPARK ARRESTORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
3. ATTIC ACCESS PER CRC SECTION R807.
4. PROVIDE ATTIC & SOFFIT VENTILATION PER CRC SECTION R806. PER CRC SECTION R806.2, THE MINIMUM NET FREE 4. VENTILATING AREA SHALL BE 1/150 OF THE AREA OF THE VENTED SPACE. EXCEPTION: THE MINIMUM NET FREE VENTILATION AREA SHALL BE 1/300 OF THE VENTED SPACE PROVIDED ONE OR MORE OF THE FOLLOWING CONDITIONS ARE MET:
   - IN CLIMATE ZONES 14 AND 16, A CLASS I OR II VAPOR RETARDER IS INSTALLED ON THE WARM-IN-WINTER SIDE OF THE CEILING.
   - NOT LESS THAN 40 PERCENT AND NOT MORE THAN 50 PERCENT OF THE REQUIRED VENTILATING AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE ATTIC OR RAFTER SPACE. UPPER VENTILATORS SHALL BE LOCATED NO MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE, MEASURED VERTICALLY, WITH THE BALANCE OF THE REQUIRED VENTILATION PROVIDED BY EAVE OR CORNICE VENTS. WHERE THE LOCATION OF WALL OR ROOF FRAMING MEMBERS CONFLICTS WITH THE INSTALLATION OF UPPER VENTILATORS, INSTALLATION MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE SHALL BE PERMITTED.

ROOF PLAN KEY NOTES

Name	NOTE
801	CLASS 'A' ROOFING - CONCRETE - 'FLAT' TILE BY EAGLE ROOFING ICC# ESR 1900
810	LINE OF WALL BELOW
812	STUCCO CEILING
813	STUCCO SOFFIT
826	ROOF VENT - O'HAGIN "XL SERIES" CLOAKED VENT (ICC # NER-9650A)
837	PROVIDE 1" CONDUIT FROM THE ELECTRIC PANEL TO LOCATION IN ATTIC FOR FUTURE SOLAR INSTALLATION.
839	MIN. 22"X30" OPENING IN CALIFORNIA ROOF FRAMING CONDITIONS FOR ATTIC ACCESS AND CROSS VENTILATION - CONTRACTOR TO VERIFY AIRFLOW TO ALL ATTIC AREAS

ATTIC VENTILATION CALCULATIONS — PLAN 6B

ROOF ATTIC AREA	A	801	SQ. FT.		CALCULATION FACTOR:	1/300	
		115344	SQ. IN				
MIN. VENTILATION REQUIRED:	TOTAL	381	SQ. IN		TOTAL PROVIDED:	396	SQ. IN
MIN. VENTILATION REQUIRED:	HIGH	190	SQ. IN		TOTAL HIGH PROVI	198	SQ. IN
MIN. VENTILATION REQUIRED:	LOW	190	SQ. IN		TOTAL LOW PROVI	198	SQ. IN
HIGH VENTILATION METHOD	SIZE	FREE AREA			QUANTITY	FREE VENT AREA	
CLOAKED VENT - CONC. FLAT TILE	-	99	SQ. IN	X	2	198	SQ. IN
					TOTAL PROVIDED:	198	SQ. IN
LOW VENTILATION METHOD	SIZE	FREE AREA			QUANTITY	FREE VENT AREA	
CLOAKED VENT - CONC. FLAT TILE	-	99	SQ. IN	X	2	198	SQ. IN
					TOTAL PROVIDED:	198	SQ. IN
ROOF ATTIC AREA	B	157	SQ. FT.		CALCULATION FACTOR:	1/300	
		22608	SQ. IN				
MIN. VENTILATION REQUIRED:	TOTAL	75	SQ. IN		TOTAL PROVIDED:	198	SQ. IN
MIN. VENTILATION REQUIRED:	HIGH	37	SQ. IN		TOTAL HIGH PROVI	99	SQ. IN
MIN. VENTILATION REQUIRED:	LOW	37	SQ. IN		TOTAL LOW PROVI	99	SQ. IN
HIGH VENTILATION METHOD	SIZE	FREE AREA			QUANTITY	FREE VENT AREA	
CLOAKED VENT - CONC. FLAT TILE	-	99	SQ. IN	X	1	99	SQ. IN
					TOTAL PROVIDED:	99	SQ. IN
LOW VENTILATION METHOD	SIZE	FREE AREA			QUANTITY	FREE VENT AREA	
CLOAKED VENT - CONC. FLAT TILE	-	99	SQ. IN	X	1	99	SQ. IN
					TOTAL PROVIDED:	99	SQ. IN
ROOF ATTIC AREA	C	119	SQ. FT.		CALCULATION FACTOR:	1/300	
		17136	SQ. IN				
MIN. VENTILATION REQUIRED:	TOTAL	57	SQ. IN		TOTAL PROVIDED:	198	SQ. IN
MIN. VENTILATION REQUIRED:	HIGH	28	SQ. IN		TOTAL HIGH PROVI	99	SQ. IN
MIN. VENTILATION REQUIRED:	LOW	28	SQ. IN		TOTAL LOW PROVI	99	SQ. IN
HIGH VENTILATION METHOD	SIZE	FREE AREA			QUANTITY	FREE VENT AREA	
CLOAKED VENT - CONC. FLAT TILE	-	99	SQ. IN	X	1	99	SQ. IN
					TOTAL PROVIDED:	99	SQ. IN
LOW VENTILATION METHOD	SIZE	FREE AREA			QUANTITY	FREE VENT AREA	
CLOAKED VENT - CONC. FLAT TILE	-	99	SQ. IN	X	1	99	SQ. IN
					TOTAL PROVIDED:	99	SQ. IN



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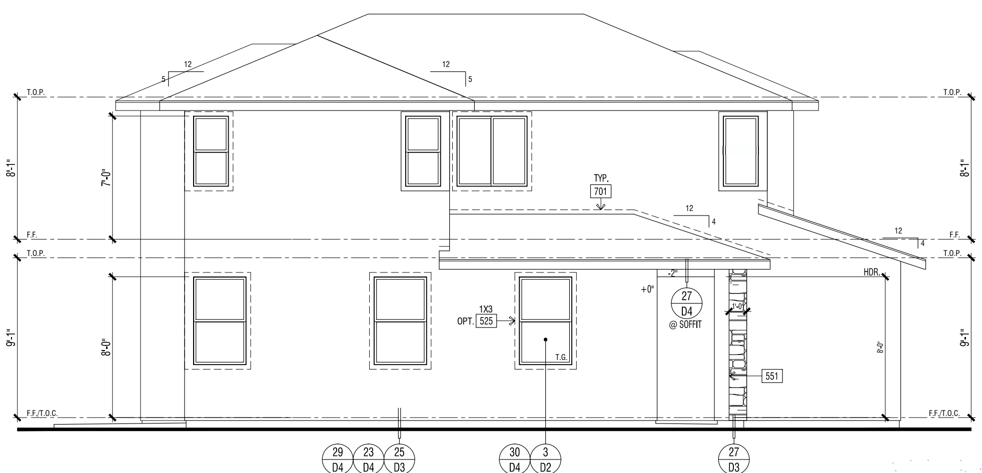

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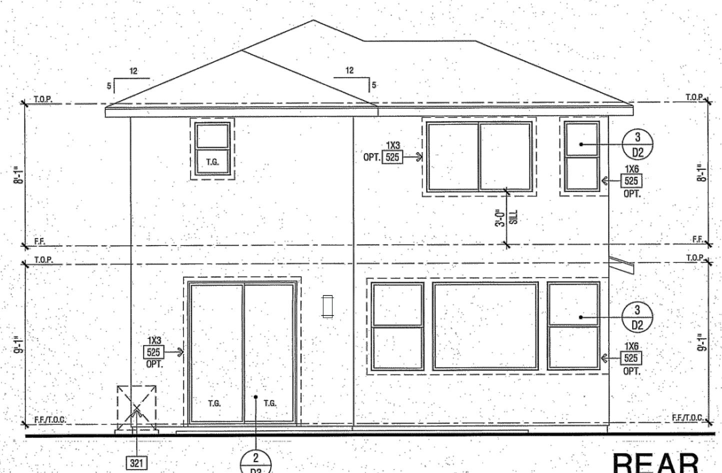

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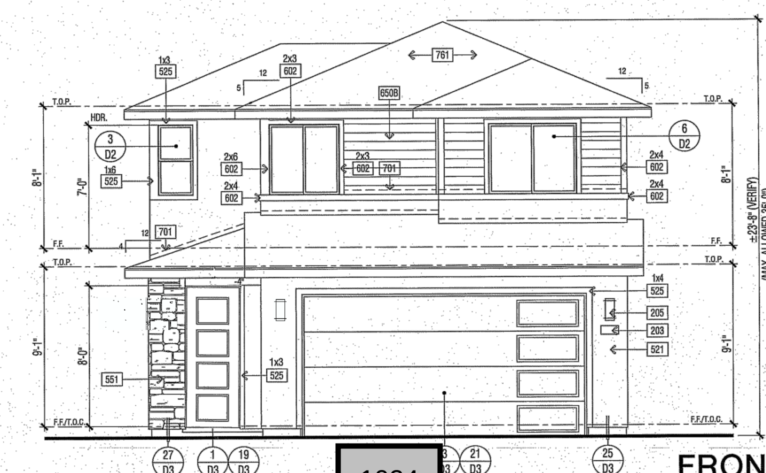


FRONT

FINISHED GRADE VARIES. SEE CIVIL ENGINEERS PLANS FOR FINAL GRADE AND SITE DRAINAGE.

ELEVATION KEY NOTES

Name	NOTE
201	UTILITY EQUIPMENT AND SERVICE PANELS - VERIFY LOCATION
203	ADDRESS PANEL. 6" MIN. HIGH BUILDING ADDRESS CHARACTERS PLACED IN SUCH A POSITION TO BE PLAINLY VISIBLE FROM THE STREET.
205	ACCENT EXTERIOR WALL LIGHT
308	TANKLESS WATER HEATER TERMINATION CAP - INSTALL PER MFR. INSTRUCTIONS (CO-AXIAL VENT INTAKE & EXHAUST DIRECTLY FROM OUTSIDE)
511	RECESS BOX FOR TANKLESS WATER HEATER - INSTALL PER MFR. INSTRUCTIONS
521	STUCCO - INSTALL PER MANUFACTURER'S LISTING BY: OMEGA DIAMOND WALL ONE COAT SYSTEM ICC-ES ESR-1194
525	STUCCO OVER RIGID FOAM TRIM - FOAM SHAPE PER ELEVATION
551	MANUFACTURED ADHERED STUCCO STONE VENEER - INSTALL PER MANUFACTURER'S INSTRUCTIONS. BY 'EL DORADO STONE' ICC-ES ER-3568
602	WOOD TRIM(S) - SIZE PER ELEVATION
650B	FIBER CEMENT LAP SIDING - 5/16" THICK 'HARDIPLANK' (OR EQUIVALENT. FINISH: SELECT CEDARMILL. EXPOSURE: 6" (INSTALLATION PER MANUFACTURER'S INSTRUCTIONS) ICC-ES NER-405
701	G.I. FLASHING
761	ROOFING - CONCRETE - FLAT TILE BY EAGLE ROOFING ICC# ESR 1900

ANY OPERABLE WINDOW WITH A SILL THAT IS LOCATED LESS THAN 24" ABOVE FINISHED FLOOR AND MORE THAN 72" ABOVE FINISHED GRADE OR OTHER SURFACE BELOW AT THE EXTERIOR, MUST BE PROTECTED BY A GUARD OR, HAVE A FIXED GLASS. THE GUARD MAY NOT HAVE OPENINGS THAT A SPHERE 4" IN DIAMETER CAN PASS THROUGH. 2016 CBC 1405.13.2

(2) LAYERS OF GRADE 'D' PAPER IS REQUIRED TO BE INSTALLED OVER WOOD SHEATHING 2016 CRC R703.7.3

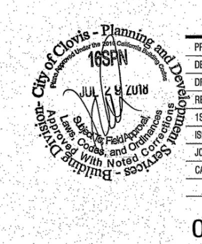
PLAN 1390
CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

REVISIONS

NO.	DATE	DESCRIPTION
1	7-27-18	BLDG. DEPT. REVS.

ELEVATIONS
PLAN
1390B

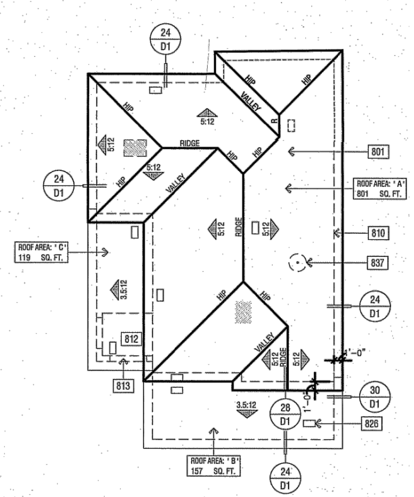


PROJECT MANAGER :	MM
DESIGNER :	AM
DRAWN BY :	-
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	-
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2018077
CAD FILE NAME :	A106

DATE:	SHEET:
07-27-18	A1.6

2018077 - 07-27-18

SCALE: 1/4" = 1'-0"



ROOF PLAN

SCALE: 1/8" = 1'-0"

ELEVATION REFERENCE: C		ELEVATION STYLE: PROGRESSIVE NAPA			
ROOF MATERIAL	STANDARD ROOF DETAIL U.N.O.	FASCIA - U.N.O.	BARGE - U.N.O.	OVERHANG DIM. - U.N.O. EAVE	RAKE
CONCRETE 'FLAT' TILE "EAGLE ROOFING" ICC# ESR-1900	1/D1.1	2X6	2X6	1'-0"	1'-0"

ROOF PLAN NOTES

NOTE: MANDATORY REQUIREMENTS FOR SOLAR READY BUILDINGS PER CEnC SECTION 110.10.

1. SEE GENERAL NOTES FOR ROOF NOTES.
2. SPARK ARRESTORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
3. ATTIC ACCESS PER CRC SECTION R807.
4. PROVIDE ATTIC & SOFFIT VENTILATION PER CRC SECTION R806. PER CRC SECTION R806.2, THE MINIMUM NET FREE 4. VENTILATING AREA SHALL BE 1/150 OF THE AREA OF THE VENTED SPACE. EXCEPTION: THE MINIMUM NET FREE VENTILATION AREA SHALL BE 1/300 OF THE VENTED SPACE PROVIDED ONE OR MORE OF THE FOLLOWING CONDITIONS ARE MET:
   - IN CLIMATE ZONES 14 AND 16, A CLASS I OR II VAPOR RETARDER IS INSTALLED ON THE WARM-IN-WINTER SIDE OF THE CEILING.
   - NOT LESS THAN 40 PERCENT AND NOT MORE THAN 50 PERCENT OF THE REQUIRED VENTILATING AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE ATTIC OR RAFTER SPACE. UPPER VENTILATORS SHALL BE LOCATED NO MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE, MEASURED VERTICALLY, WITH THE BALANCE OF THE REQUIRED VENTILATION PROVIDED BY EAVE OR CORNICE VENTS. WHERE THE LOCATION OF WALL OR ROOF FRAMING MEMBERS CONFLICTS WITH THE INSTALLATION OF UPPER VENTILATORS, INSTALLATION MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE SHALL BE PERMITTED.

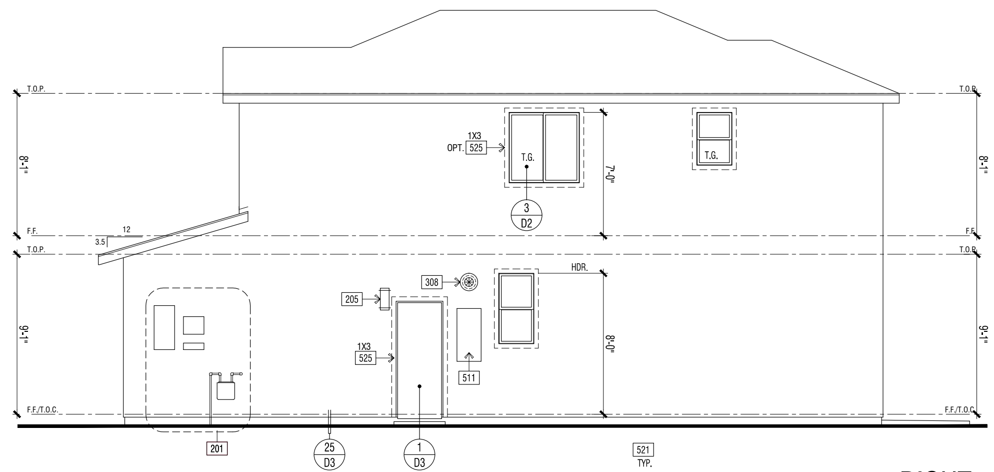
ROOF PLAN KEY NOTES

Name	NOTE
801	CLASS 'A' ROOFING - CONCRETE - 'FLAT' TILE BY EAGLE ROOFING ICC# ESR 1900
810	LINE OF WALL BELOW
812	STUCCO CEILING
813	STUCCO SOFFIT
826	ROOF VENT - O'HAGIN "XL SERIES" CLOAKED VENT (ICC # NER-9650A)
837	PROVIDE 1" CONDUIT FROM THE ELECTRIC PANEL TO LOCATION IN ATTIC FOR FUTURE SOLAR INSTALLATION.
839	MIN. 22"X30" OPENING IN CALIFORNIA ROOF FRAMING CONDITIONS FOR ATTIC ACCESS AND CROSS VENTILATION - CONTRACTOR TO VERIFY AIRFLOW TO ALL ATTIC AREAS

ATTIC VENTILATION CALCULATIONS

PLAN 6C

ROOF ATTIC AREA	A	801	SQ. FT.	CALCULATION FACTOR:			1/300
		115344	SQ. IN				
MIN. VENTILATION REQUIRED:	TOTAL	381	SQ. IN	TOTAL PROVIDED:		396	SQ. IN
MIN. VENTILATION REQUIRED:	HIGH	190	SQ. IN	TOTAL HIGH PROVI		198	SQ. IN
MIN. VENTILATION REQUIRED:	LOW	190	SQ. IN	TOTAL LOW PROVI		198	SQ. IN
HIGH VENTILATION METHOD	SIZE	FREE AREA		QUANTITY		FREE VENT AREA	
CLOAKED VENT - CONC. FLAT TILE	-	99	SQ. IN X	2		198	SQ. IN
				TOTAL PROVIDED:		198	SQ. IN
LOW VENTILATION METHOD	SIZE	FREE AREA		QUANTITY		FREE VENT AREA	
CLOAKED VENT - CONC. FLAT TILE	-	99	SQ. IN X	2		198	SQ. IN
				TOTAL PROVIDED:		198	SQ. IN
ROOF ATTIC AREA	B	157	SQ. FT.	CALCULATION FACTOR:			1/300
		22608	SQ. IN				
MIN. VENTILATION REQUIRED:	TOTAL	75	SQ. IN	TOTAL PROVIDED:		198	SQ. IN
MIN. VENTILATION REQUIRED:	HIGH	37	SQ. IN	TOTAL HIGH PROVI		99	SQ. IN
MIN. VENTILATION REQUIRED:	LOW	37	SQ. IN	TOTAL LOW PROVI		99	SQ. IN
HIGH VENTILATION METHOD	SIZE	FREE AREA		QUANTITY		FREE VENT AREA	
CLOAKED VENT - CONC. FLAT TILE	-	99	SQ. IN X	1		99	SQ. IN
				TOTAL PROVIDED:		99	SQ. IN
LOW VENTILATION METHOD	SIZE	FREE AREA		QUANTITY		FREE VENT AREA	
CLOAKED VENT - CONC. FLAT TILE	-	99	SQ. IN X	1		99	SQ. IN
				TOTAL PROVIDED:		99	SQ. IN
ROOF ATTIC AREA	C	119	SQ. FT.	CALCULATION FACTOR:			1/300
		17136	SQ. IN				
MIN. VENTILATION REQUIRED:	TOTAL	57	SQ. IN	TOTAL PROVIDED:		198	SQ. IN
MIN. VENTILATION REQUIRED:	HIGH	28	SQ. IN	TOTAL HIGH PROVI		99	SQ. IN
MIN. VENTILATION REQUIRED:	LOW	28	SQ. IN	TOTAL LOW PROVI		99	SQ. IN
HIGH VENTILATION METHOD	SIZE	FREE AREA		QUANTITY		FREE VENT AREA	
CLOAKED VENT - CONC. FLAT TILE	-	99	SQ. IN X	1		99	SQ. IN
				TOTAL PROVIDED:		99	SQ. IN
LOW VENTILATION METHOD	SIZE	FREE AREA		QUANTITY		FREE VENT AREA	
CLOAKED VENT - CONC. FLAT TILE	-	99	SQ. IN X	1		99	SQ. IN
				TOTAL PROVIDED:		99	SQ. IN



RIGHT

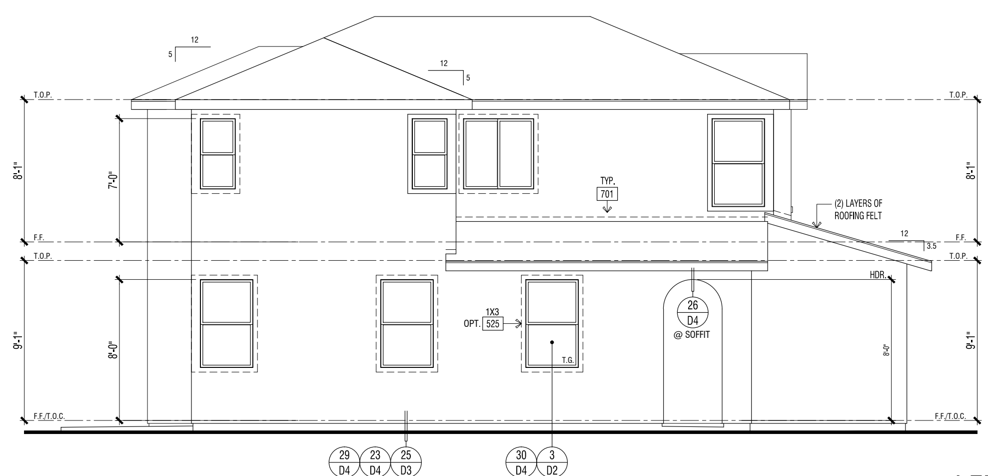
FINISHED GRADE VARIES. SEE CIVIL ENGINEERS PLANS FOR FINAL GRADE AND SITE DRAINAGE.

ELEVATION KEY NOTES

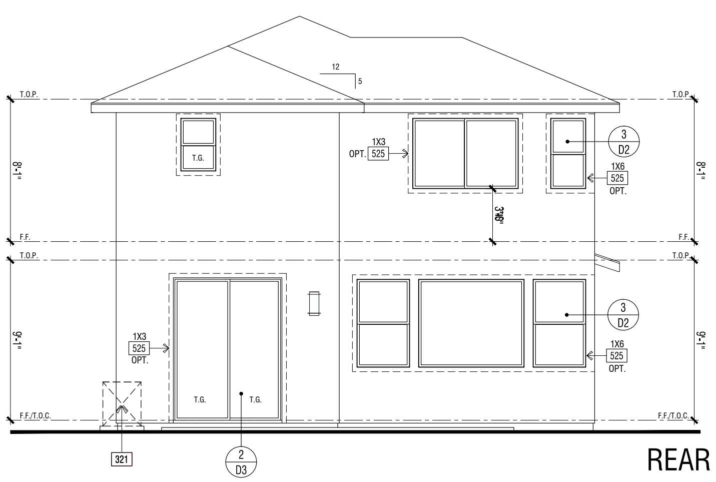
Name	NOTE
201	UTILITY EQUIPMENT AND SERVICE PANELS - VERIFY LOCATION
203	ADDRESS PANEL. 6" MIN. HIGH BUILDING ADDRESS CHARACTERS PLACED IN SUCH A POSITION TO BE PLAINLY VISIBLE FROM THE STREET.
205	ACCENT EXTERIOR WALL LIGHT
308	TANKLESS WATER HEATER TERMINATION CAP - INSTALL PER MFR. INSTRUCTIONS (CO-AXIAL VENT INTAKE & EXHAUST DIRECTLY FROM OUTSIDE)
321	AIR CONDITIONING CONDENSER LOCATION
511	RECESS BOX FOR TANKLESS WATER HEATER - INSTALL PER MFR. INSTRUCTIONS
515	STUCCO NICHE. SIZE PER ELEVATION - SLOPE SILL 1/4" PER FT. MINIMUM
521	STUCCO - INSTALL PER MANUFACTURER'S LISTING BY: OMEGA DIAMOND WALL ONE COAT SYSTEM ICC-ES ESR-1194
525	STUCCO OVER RIGID FOAM TRIM - FOAM SHAPE PER ELEVATION
592	OVERHEAD AWNING - SIZE AND STYLE PER ELEVATION
602	WOOD TRIM(S) - SIZE PER ELEVATION
650B	FIBER CEMENT LAP SIDING - 5/16" THICK 'HARDIPLANK' (OR EQUIVALENT. FINISH: SELECT CEDARMILL. EXPOSURE: 6" (INSTALLATION PER MANUFACTURER'S INSTRUCTIONS) ICC-ES NER-405
701	G.I. FLASHING
761	ROOFING - CONCRETE - FLAT TILE BY EAGLE ROOFING ICC# ESR 1900

ANY OPERABLE WINDOW WITH A SILL THAT IS LOCATED LESS THAN 24" ABOVE FINISHED FLOOR AND MORE THAN 72" ABOVE FINISHED GRADE OR OTHER SURFACE BELOW AT THE EXTERIOR, MUST BE PROTECTED BY A GUARD OR, HAVE A FIXED GLASS. THE GUARD MAY NOT HAVE OPENINGS THAT A SPHERE 4" IN DIAMETER CAN PASS THROUGH. 2016 CBC 1405.13.2

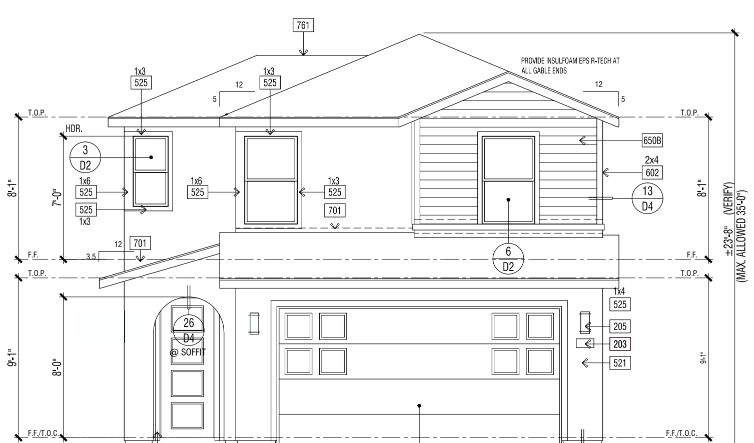
(2) LAYERS OF GRADE 'D' PAPER IS REQUIRED TO BE INSTALLED OVER WOOD SHEATHING 2016 CRC R703.7.3



LEFT



REAR



FRONT

SCALE: 1/4" = 1'-0"

ARCHITECTS . PLANNERS . DESIGNERS

WHA.

ORANGE COUNTY . LOS ANGELES . BAY AREA

WILSON HOMES

TRACT NUMBER: 6168

PROJECT TYPE

PLAN 1390

CLOVIS, CALIFORNIA

WILSON HOMES

FRESNO, CALIFORNIA

REVISIONS

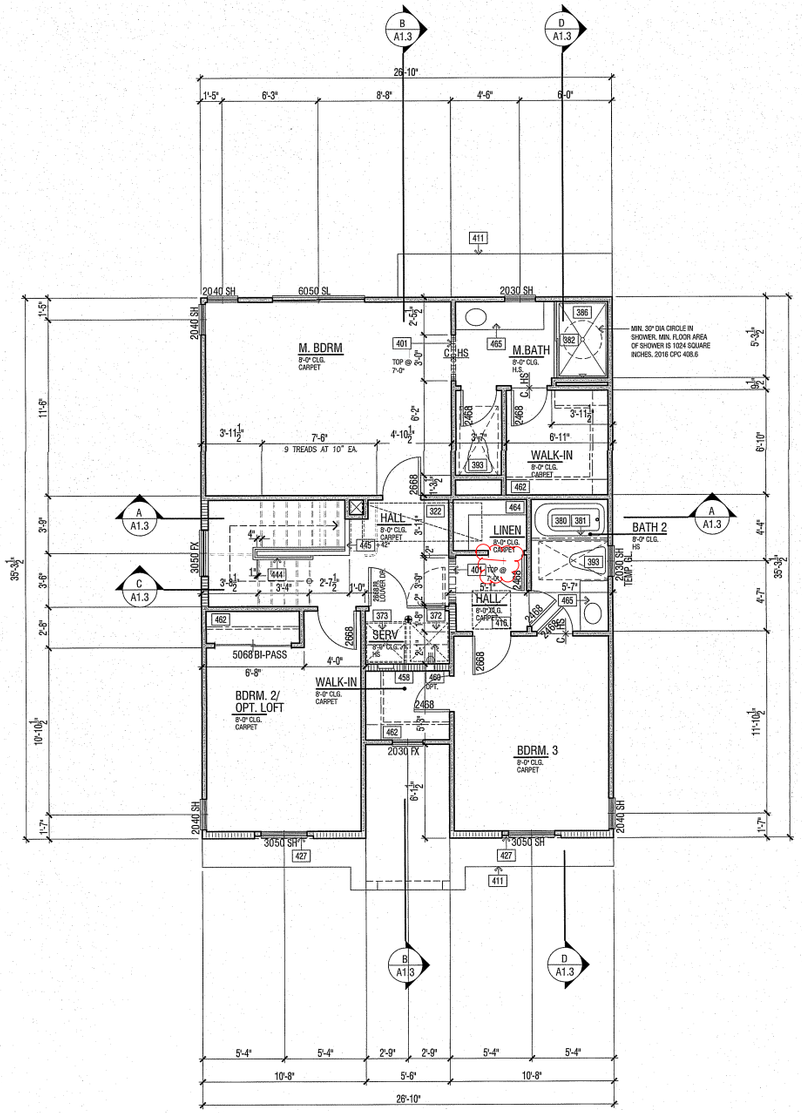
NO.	DATE	DESCRIPTION
1	7-27-18	BLDG. DEPT. REVS.

ELEVATIONS
PLAN
1390C

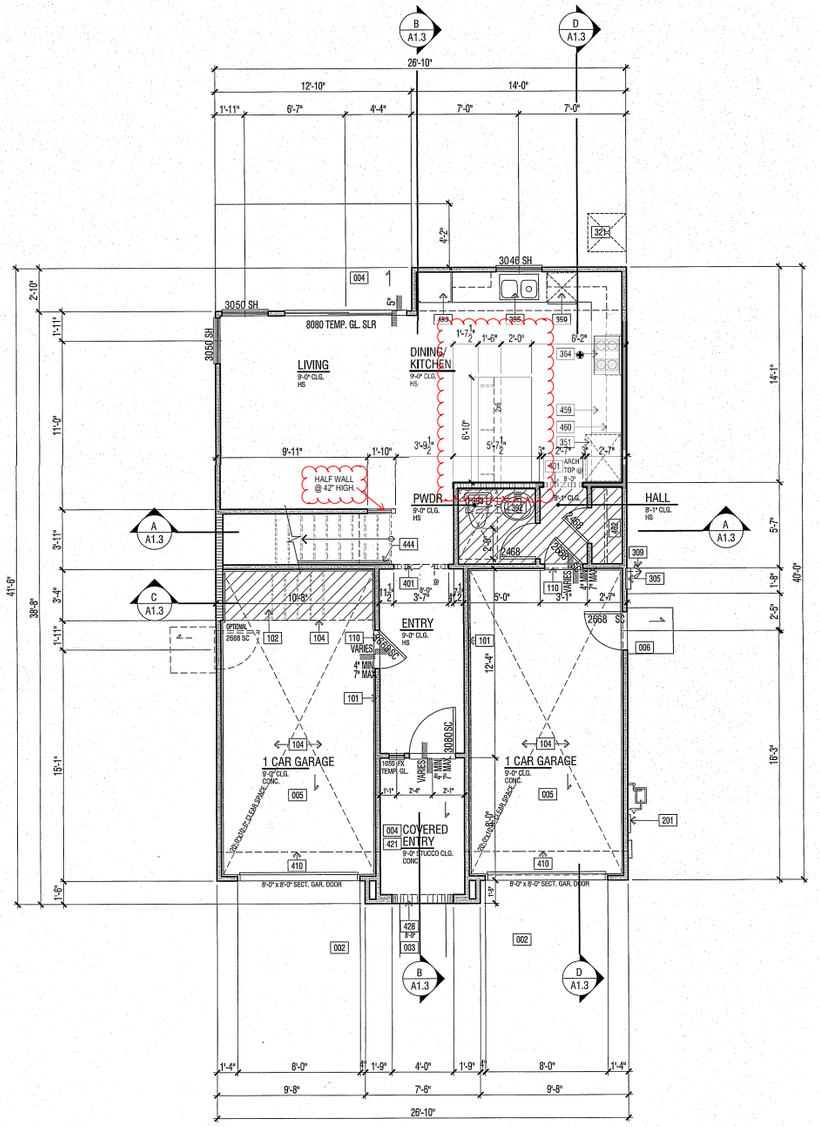
PROJECT MANAGER :	MM
DESIGNER :	AM
DRAWN BY :	-
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	-
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2018077
CAD FILE NAME :	A108

DATE:	SHEET:
07-27-18	A1.8

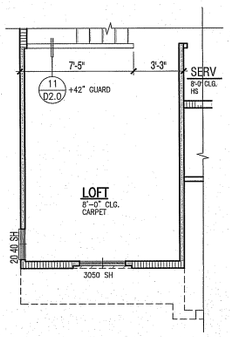
2018077 - 07-27-18



UPPER FLOOR PLAN



LOWER FLOOR PLAN



OPT. LOFT

FLOOR PLAN KEY NOTES

Name	NOTE
001	CONCRETE SLAB (SEE STRUCTURAL DRAWINGS)
002	CONCRETE DRIVE (BY OTHERS)
003	CONCRETE WALK (BY OTHERS)
004	CONCRETE PORCH SLAB (BY OTHERS) SLOPE 1/4" PER FOOT MINIMUM IN DIRECTION INDICATED
005	CONCRETE GARAGE SLAB - SLOPE 1/8" PER FOOT MINIMUM IN DIRECTION INDICATED
006	CONCRETE STOOP - 36" DEEP AND 2" WIDER THAN THE DOOR OPENING - SLOPE 1/4" PER FOOT MINIMUM TO DRAIN IN DIRECTION INDICATED
010	CONCRETE PATIO (BY OTHERS)
101	GARAGE AND/OR CARPORT SHALL BE SEPARATED FROM THE RESIDENCE AND ITS ATTIC BY MEANS OF A MIN. 1/2" GYP. BD., OR EQUIVALENT, APPLIED TO THE GARAGE SIDE PER CRC SECTION R302.6.
102	ENCLOSED ACCESSIBLE SPACE UNDER STAIRS SHALL HAVE WALLS, UNDER STAIR SURFACE AND ANY SOFFITS PROTECTED ON THE ENCLOSED SIDE WITH 1/2" GYPSUM BOARD PER CRC SECTION R302.7.
104	GARAGE AND/OR CARPORT WITH HABITABLE ROOMS ABOVE SHALL BE SEPARATED FROM THE RESIDENCE BY A MIN. 5/8" TYPE 'X' GYP. BD., OR EQ. STRUCTURE(S) SUPPORTING THE FLR./CLG. ASSEMBLY USED FOR SEPARATION SHALL BE A MIN. 1/2" GYP. BD., OR EQ. PER CRC SEC. R302.6.
110	PROVIDE SOLID WOOD DOOR, OR SOLID OR HONEYCOMB CORE STEEL DOORS, NOT LESS THAN 1-3/8" THICK, OR 20 MINUTE FIRE RATED DOOR. DOORS SHALL BE SELF CLOSING AND SELF LATCHING PER CRC SECTION R302.5.1.
201	UTILITY EQUIPMENT AND SERVICE PANELS - VERIFY LOCATION
305	TANKLESS WATER HEATER - MODEL RINNAI (R75LS) - INSTALL PER MANUFACTURER'S INSTRUCTIONS
309	TEMPERATURE AND PRESSURE RELIEF VALVE. DISCHARGE LINE TO THE OUTSIDE OUTSIDE PER CPC SECTION 608.5
312	METAL FIREPLACE (GAS APPLIANCE) - HEIGHT PER PLAN - INSTALL PER MANUFACTURER'S INSTRUCTIONS. BY HEATILATOR MODEL # IID4942 ARSI Z21.88-2002
321	AIR CONDITIONING CONDENSER LOCATION
322	FORCED AIR UNIT (FAU) ATTIC INSTALLATION
334	4" DIA. G.I. DRYER VENT WITH APPROVED LINT TRAP - VENT TO OUTSIDE
336	5" DIA. G.I. DRYER VENT WITH APPROVED LINT TRAP - VENT THROUGH ROOF
342	RETURN AIR GRILL - SEE MECHANICAL
344	WHOLE HOUSE EXHAUST FAN PER 2010 CEC. REFER TO ATTACHED "SUMMARY OF THE 2010 ENERGY CODE ASHRAE 62.2 REQUIREMENTS"
351	REFRIGERATOR SPACE WITH RECESSED COLD WATER BOX
355	SINK WITH GARBAGE DISPOSER
357	UTILITY SINK
359	DISHWASHER - ENERGY STAR
364	30" COOKTOP & EXHAUST HOOD WITH FAN AND LIGHT. EXHAUST VENT TO OUTSIDE
372	WASHER SPACE WITH RECESSED WATER BOX AND DBL. WIDE SMITTY PAN
373	DRYER SPACE
380	TUB/ SHOWER - 32"X60" MODEL 2693DT - GELCOAT SURFACE - BY AQUATIC
381	CURTAIN ROD
382	SHATTERPROOF SHOWER DOOR/ ENCLOSURE
383	TUB ACCESS PANEL
386	SHOWER - PREFABRICATED STALL - 36"x60"X76" MODEL 1603DTS - GELCOAT SURFACE - BY AQUATIC
390	SHOWER SEAT - SLOPE ¼" MINIMUM TO DRAIN
392	PEDESTAL SINK
393	TOILET - PROVIDE MINIMUM 24" X 30" CLEAR FLOOR AREA IN FRONT OF TOILET
401	INTERIOR SOFFIT(S)/ DROPPED CEILING(S): HEIGHT PER PLAN
410	LINE OF FLOOR ABOVE
411	LINE OF FLOOR BELOW
412	OPEN TO ABOVE
413	OPEN TO BELOW
416	30"x30" ATTIC ACCESS - DIMENSIONS ARE CLEAR - PER CEnC 150.0(q)1. ATTIC ACCESS DOORS SHALL HAVE PERMANENTLY ATTACHED INSULATION USING ADHESIVE OR MECHANICAL FASTENERS AND THE ATTIC ACCESS SHALL BE GASKETED TO PREVENT AIR LEAKAGE
417	22"X30" 1-HOUR ATTIC ACCESS-DIMENSIONS CLEAR
421	STUCCO CEILING: HEIGHT PER PLAN
422	STUCCO SOFFIT: HEIGHT PER PLAN
427	STUCCO SOFFIT OVER WATERPROOFED STUCCO SHELF - SLOPE FRAMING FOR DRAINAGE (1/4" PER FOOT MINIMUM)
428	ARCHED STUCCO SOFFIT - HEIGHT PER ELEVATION
441	GYP. BD. SHELF/LOW WALL - WIDTH AND HEIGHT PER PLAN
442	2X PONY WALL - SIZE PER PLAN
444	+34"- +38" HANDRAIL (SEE DETAIL 10/D5)
445	+42" GUARD (SEE DETAIL 9/D5)
453	PANTRY WITH WIRE SHELVING
454	DESK
455	LINEN
456	LINEN (UPPER & LOWER)
457	LINEN (LOW ONLY)
458	WIRE SHELF
459	BASE CABINET
460	UPPER CABINET
462	WIRE SHELF AND POLE
464	WIRE SHELF (OR SHELVES)
465	VANITY

FLOOR PLAN NOTES

1. ATTICS: ACCESS PER CRC R807, DRAFTSTOPS PER CRC R302.12 AND VENTILATION PER R806.
2. EMERGENCY ESCAPE AND RESCUE OPENINGS PER CRC R310. MEANS OF EGRESS PER CRC R311.
3. GLAZING PER CRC R303.1 & R308
4. FACTORY-BUILT FIREPLACES AND CHIMNEYS PER CRC R1004, R1005, R1006 CGBSC SECTION 4.503 & CEnC SECTION 150.0(e).
5. COMBUSTION AIR TO FORCED AIR UNIT PER CMC CHAPTER 7.
6. COMBUSTION AIR TO WATER HEATER PER CPC SECTION 507.0.
7. ENVIRONMENTAL AIR DUCTS PER CMC SECTION 504.
8. MECHANICAL EQUIPMENT LOCATION AND PROTECTION AGAINST DAMAGE PER CMC 305 & 308.
9. MANDATORY REQUIREMENTS FOR APPLIANCES PER CEnC SECTION 110.1.
10. A SHEETROCK NAILING INSPECTION IS REQUIRED. 2016 CRC R109.1.4.2 & CBC 110.3.5

A1.9 — INTERIOR ELEVATION KEY

FLOOR AREA TABLE	PLAN 1413A
LOWER FLOOR PLAN	566 SQ. FT.
UPPER FLOOR PLAN	847 SQ. FT.
TOTAL	1413 SQ. FT.
2 GARAGES	426 SQ. FT.
COVERED ENTRY/PORCH	52 SQ. FT.

NOTE: SQUARE FOOTAGE MAY VARY DUE TO METHOD OF CALCULATION

SCALE: 1/4" = 1'- 0"

1026

ARCHITECTS . PLANNERS . DESIGNERS
WHA.
ORANGE COUNTY . LOS ANGELES . BAY AREA
LICENSED ARCHITECT William Hezmalhalch C-26191 REN 4/30/19 STATE OF CALIFORNIA
WILSON HOMES

TRACT NUMBER: 6168
PROJECT TYPE

PLAN 1413
CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

REVISIONS

NO.	DATE	DESCRIPTION
	11-09-18	AS-BUILT PLAN

City of Clovis - Planning and Development Services - Building Division - Approved with Noted Corrections - Subject to Field Inspection and Compliance with Applicable Codes and Ordinances - NOV 28 2018 - 165PN

AS-BUILT PLAN
PLAN 1413A

PROJECT MANAGER :	MM
DESIGNER :	AM
DRAWN BY :	-
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	04-25-18
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2018077
CAD FILE NAME :	A101

DATE: 04-25-18
SHEET: A1.1

2018077 - FIRST BUILDING DEPARTMENT SUBMITTAL - 04-25-18

FLOOR PLAN KEY NOTES

Name	NOTE
002	CONCRETE DRIVE (BY OTHERS)
003	CONCRETE WALK (BY OTHERS)
004	CONCRETE PORCH SLAB (BY OTHERS) SLOPE 1/4" PER FOOT MINIMUM IN DIRECTION INDICATED
005	CONCRETE GARAGE SLAB - SLOPE 1/8" PER FOOT MINIMUM IN DIRECTION INDICATED
421	STUCCO CEILING: HEIGHT PER PLAN
422	STUCCO SOFFIT: HEIGHT PER PLAN
551	MANUFACTURED ADHERED STUCCO STONE VENEER - INSTALL PER MANUFACTURER'S INSTRUCTIONS" BY EL DORADO STONE PRODUCTS - TER# 1312-01

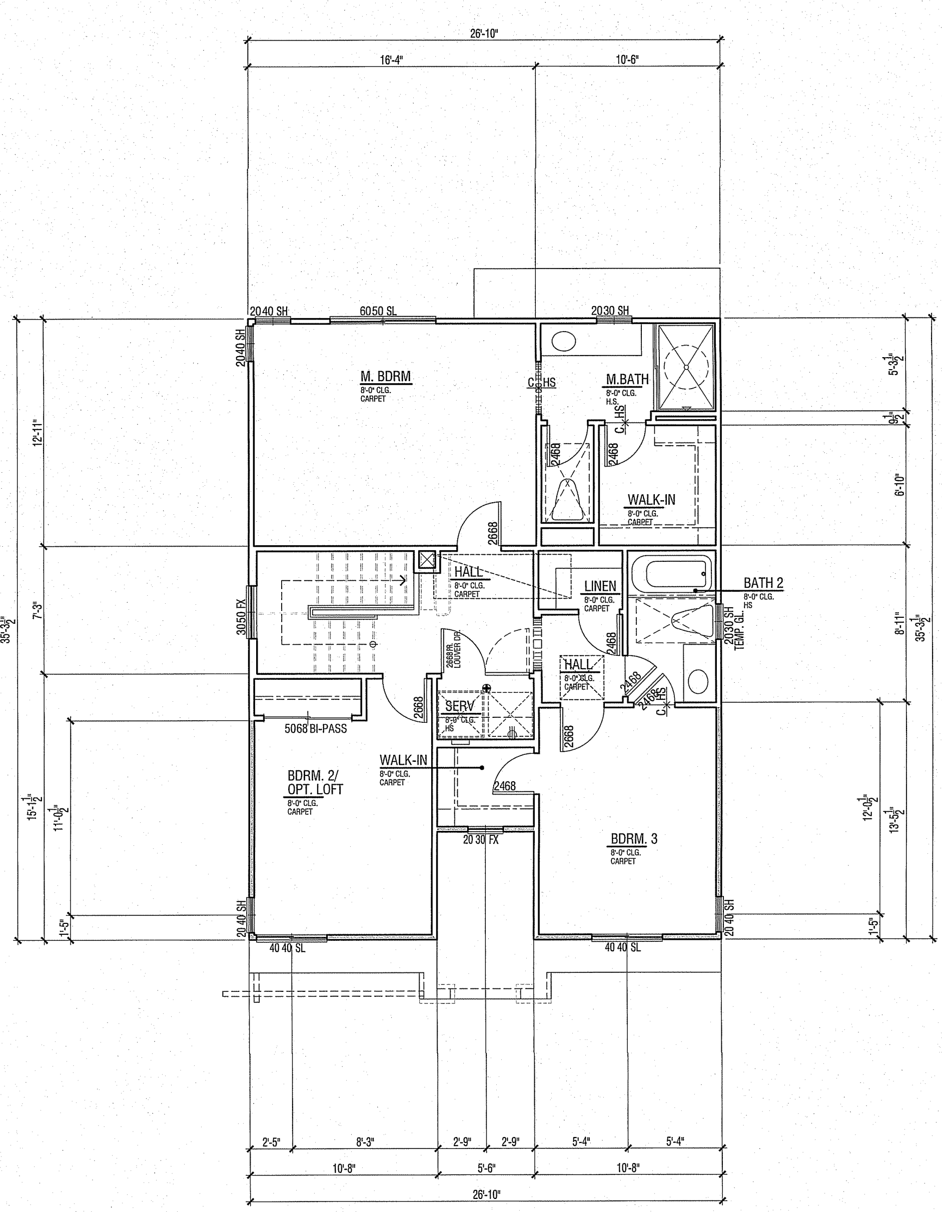
ARCHITECTS . PLANNERS . DESIGNERS

WHA.

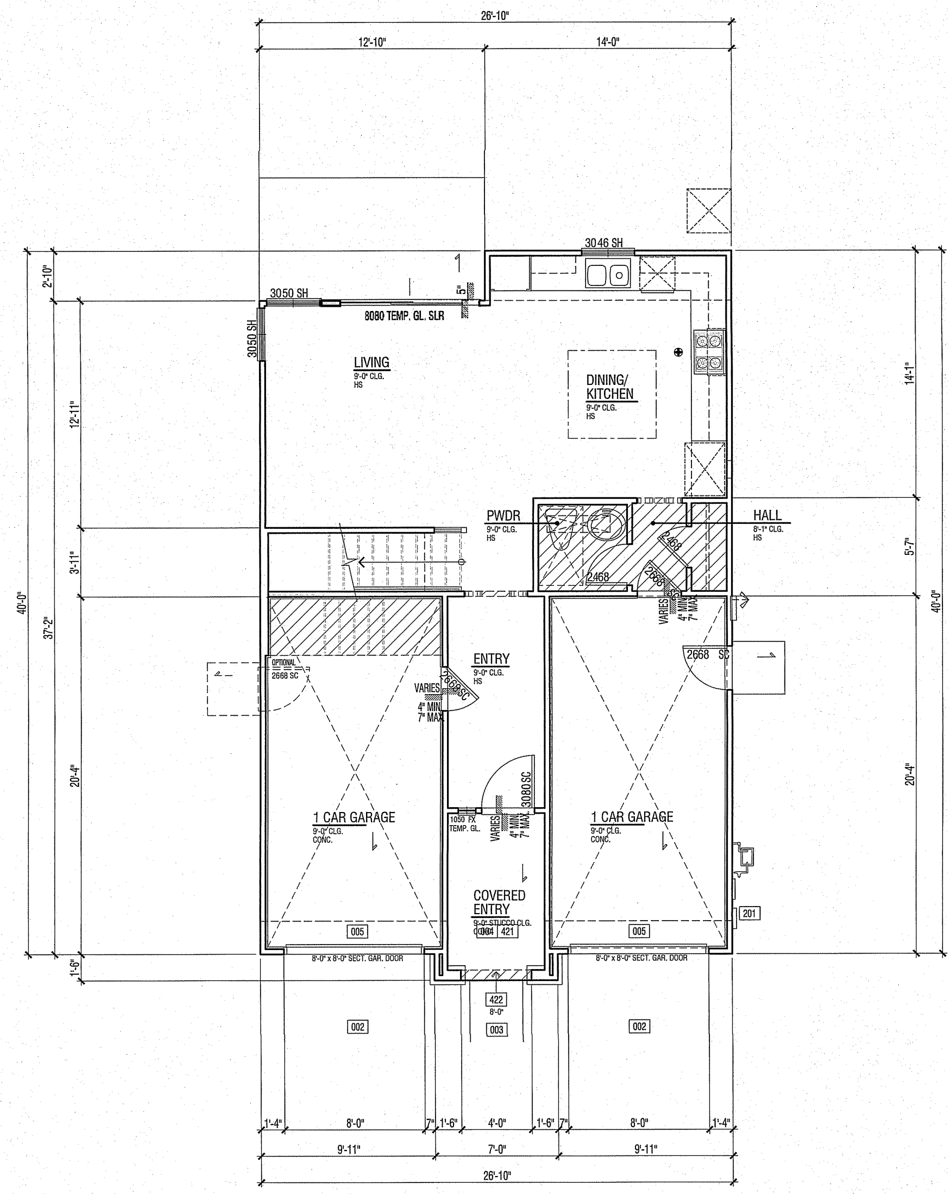
ORANGE COUNTY . LOS ANGELES . BAY AREA

WILSON HOMES

TRACT NUMBER: 6168
PROJECT TYPE



UPPER FLOOR PLAN



LOWER FLOOR PLAN

ADDENDA FLOOR PLAN NOTES

NOTE: SHADED WALLS INDICATE AREAS THAT ARE DIFFERENT THAN THE BASE FLOOR PLAN

NOTE: REFER TO CIVIL AND LANDSCAPE DRAWINGS BY OTHERS FOR ALL DRIVEWAYS AND SIDEWALK LOCATIONS.

REFER TO BASE PLAN SHEET A1.1 FOR ADDITIONAL NOTES AND DIMENSIONS.

A
D A1.9 B
C
INTERIOR ELEVATION KEY

PLAN 1413
CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

REVISIONS

NO.	DATE	DESCRIPTION
	10-25-18	AS-BUILT PLAN

City of Clovis - Planning and Development Services - Building Division
16SPN
NOV 28 2018
Subject To Field Approval, Laws, Codes, and Ordinances
Approved With Noted Corrections

AS-BUILT PLAN

PLAN
1413B

FLOOR AREA TABLE	PLAN 1413B
LOWER FLOOR PLAN	566 SQ. FT.
UPPER FLOOR PLAN	847 SQ. FT.
TOTAL	1413 SQ. FT.
2 GARAGES	426 SQ. FT.
COVERED ENTRY/PORCH	52 SQ. FT.

NOTE: SQUARE FOOTAGE MAY VARY DUE TO METHOD OF CALCULATION

SCALE: 1/4" = 1'- 0"

PROJECT MANAGER :	MM
DESIGNER :	AM
DRAWN BY :	-
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	04-25-18
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2018077
CAD FILE NAME :	A105

DATE:	SHEET:
04-25-18	A1.5

2018077 - FIRST BUILDING DEPARTMENT SUBMITTAL - 04-25-18

FLOOR PLAN KEY NOTES

Name	NOTE
002	CONCRETE DRIVE (BY OTHERS)
003	CONCRETE WALK (BY OTHERS)
004	CONCRETE PORCH SLAB (BY OTHERS) SLOPE 1/4" PER FOOT MINIMUM IN DIRECTION INDICATED
005	CONCRETE GARAGE SLAB - SLOPE 1/8" PER FOOT MINIMUM IN DIRECTION INDICATED
421	STUCCO CEILING: HEIGHT PER PLAN
422	STUCCO SOFFIT: HEIGHT PER PLAN

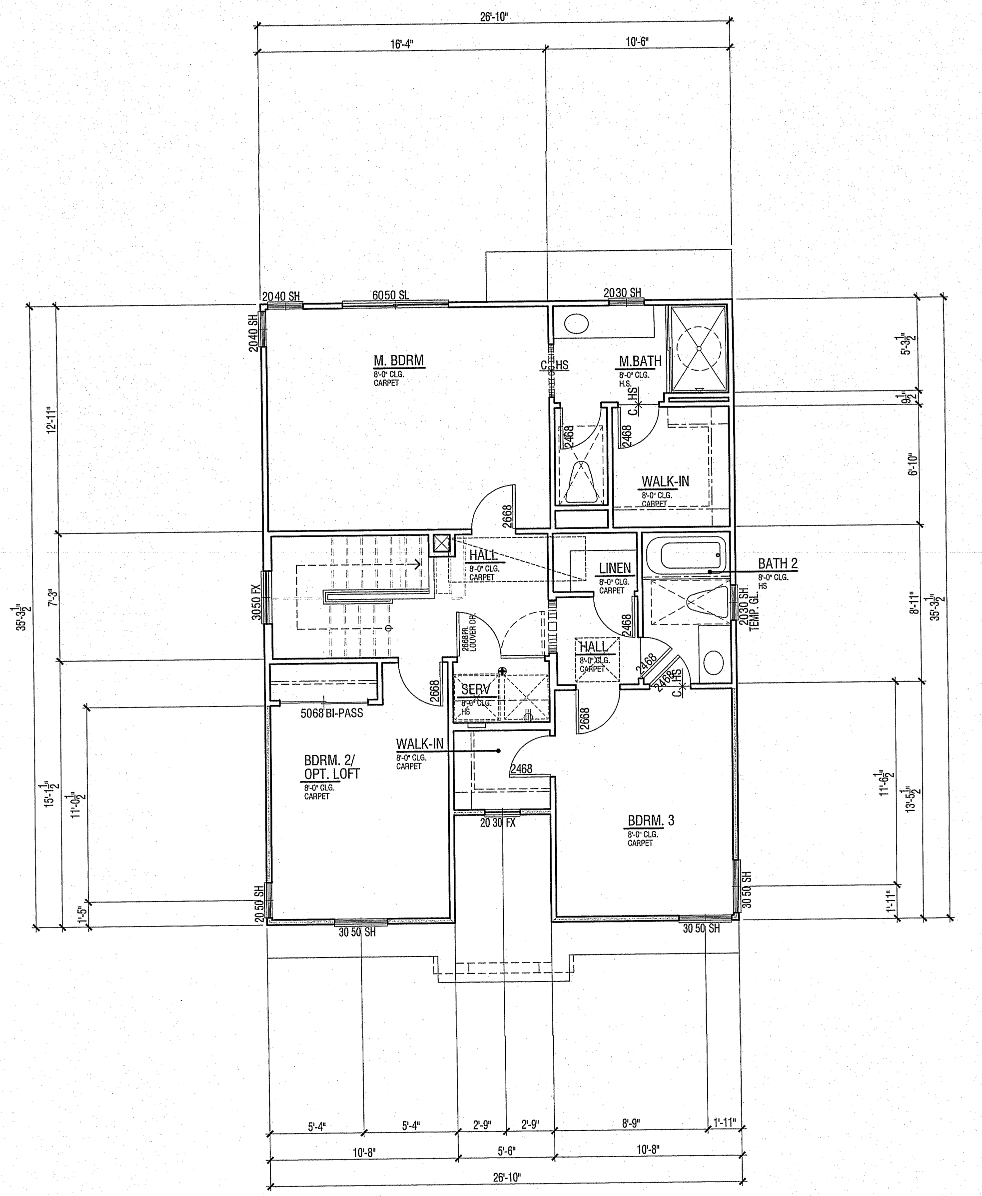
ARCHITECTS . PLANNERS . DESIGNERS

WHA.

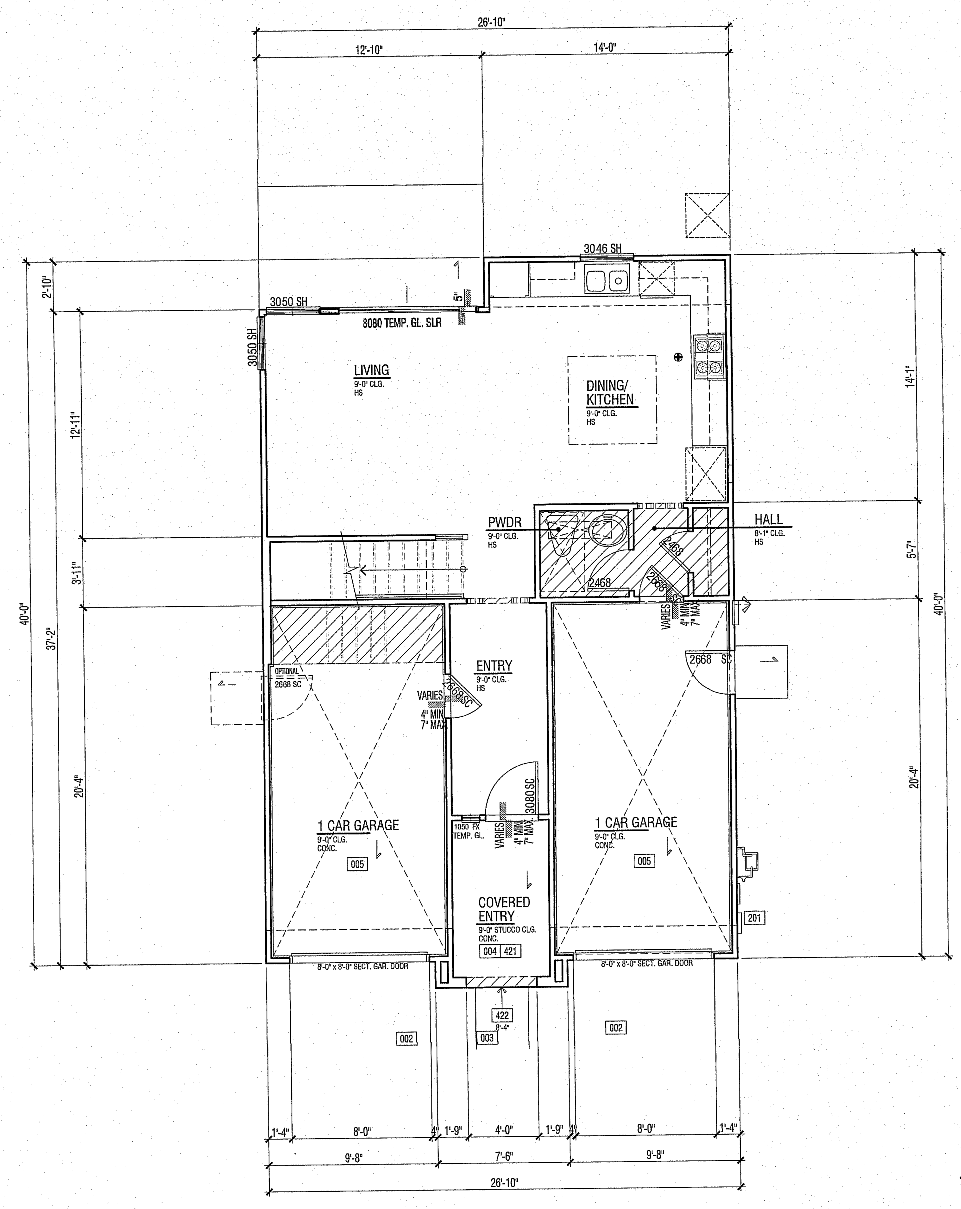
ORANGE COUNTY . LOS ANGELES . BAY AREA

WILSON HOMES

TRACT NUMBER: 6168
PROJECT TYPE



UPPER FLOOR PLAN



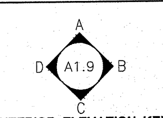
LOWER FLOOR PLAN

ADDENDA FLOOR PLAN NOTES

NOTE: SHADED WALLS INDICATE AREAS THAT ARE DIFFERENT THAN THE BASE FLOOR PLAN

NOTE: REFER TO CIVIL AND LANDSCAPE DRAWINGS BY OTHERS FOR ALL DRIVEWAYS AND SIDEWALK LOCATIONS.

REFER TO BASE PLAN SHEET A1.1 FOR ADDITIONAL NOTES AND DIMENSIONS.



INTERIOR ELEVATION KEY

FLOOR AREA TABLE	PLAN 1413C
LOWER FLOOR PLAN	566 SQ. FT.
UPPER FLOOR PLAN	847 SQ. FT.
TOTAL	1413 SQ. FT.
2 GARAGES	426 SQ. FT.
COVERED ENTRY/PORCH	52 SQ. FT.

NOTE: SQUARE FOOTAGE MAY VARY DUE TO METHOD OF CALCULATION

SCALE: 1/4" = 1'- 0"

1028

PLAN 1413
CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

DO NOT SCALE PLANS

REVISIONS

NO.	DATE	DESCRIPTION
	10-25-18	AS-BUILT PLAN

City of Clovis - Planning and Development Services - Building Division
16SPN
NOV 28 2018

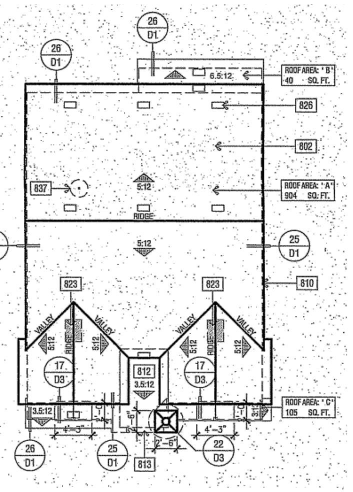
AS-BUILT PLAN

PLAN
1413C

PROJECT MANAGER :	MM
DESIGNER :	AM
DRAWN BY :	-
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	04-25-18
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2018077
CAD FILE NAME :	A107

DATE: 04-25-18
SHEET: A1.7

2018077 - FIRST BUILDING DEPARTMENT SUBMITTAL - 04-25-18



ROOF PLAN

SCALE: 1/8" = 1'-0"

ELEVATION REFERENCE:	A	ELEVATION STYLE:	CONTEMPORARY SPANISH		
ROOF MATERIAL	STANDARD ROOF DETAIL U.N.O.	FASCIA - U.N.O.	BARGE - U.N.O.	OVERHANG DIM. - U.N.O.: EAVE	RAKE
CONCRETE 'S' TILE "EAGLE ROOFING" ICC# ESR-1900	1/D1	2X6	NONE	1'-0"	TIGHT

ROOF PLAN NOTES

NOTE: MANDATORY REQUIREMENTS FOR SOLAR READY BUILDINGS PER CEnC SECTION 110.10.

1. SEE GENERAL NOTES FOR ROOF NOTES.
2. SPARK ARRESTORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
3. ATTIC ACCESS PER CRC SECTION R807.
4. PROVIDE ATTIC & SOFFIT VENTILATION PER CRC SECTION R806. PER CRC SECTION R806.2, THE MINIMUM NET FREE VENTILATING AREA SHALL BE 1/150 OF THE AREA OF THE VENTED SPACE. EXCEPTION: THE MINIMUM NET FREE VENTILATION AREA SHALL BE 1/300 OF THE VENTED SPACE PROVIDED ONE OR MORE OF THE FOLLOWING CONDITIONS ARE MET:
   - IN CLIMATE ZONES 14 AND 16, A CLASS I OR II VAPOR RETARDER IS INSTALLED ON THE WARM-IN-WINTER SIDE OF THE CEILING.
   - NOT LESS THAN 40 PERCENT AND NOT MORE THAN 50 PERCENT OF THE REQUIRED VENTILATING AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE ATTIC OR RAFTER SPACE. UPPER VENTILATORS SHALL BE LOCATED NO MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE, MEASURED VERTICALLY, WITH THE BALANCE OF THE REQUIRED VENTILATION PROVIDED BY EAVE OR CORNICE VENTS. WHERE THE LOCATION OF WALL OR ROOF FRAMING MEMBERS CONFLICTS WITH THE INSTALLATION OF UPPER VENTILATORS, INSTALLATION MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE SHALL BE PERMITTED.

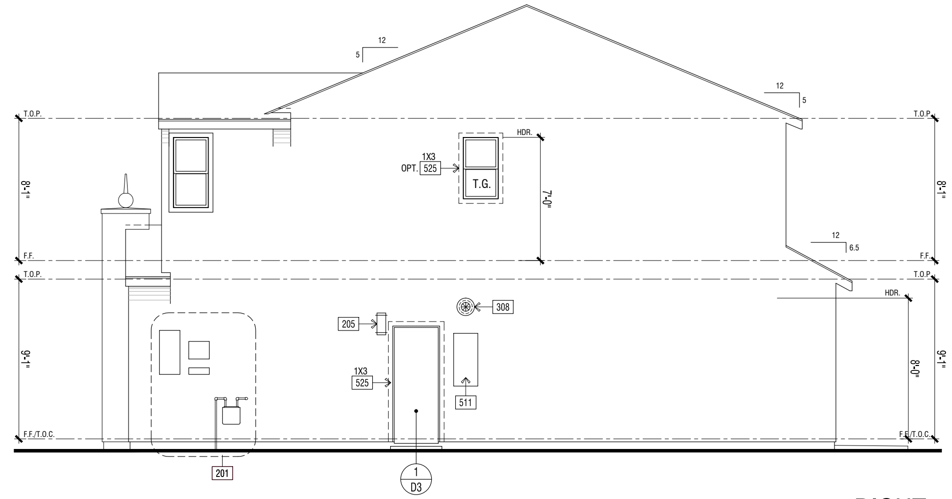
ROOF PLAN KEY NOTES

Name	NOTE
802	ROOFING - CONCRETE - LOW PROFILE "S" TILE BY EAGLE ROOFING ICC# ESR 1900
810	LINE OF WALL BELOW
812	STUCCO CEILING
813	STUCCO SOFFIT
826	ROOF VENT - O'HAGIN "XL SERIES" CLOAKED VENT (ICC # NER-9650A)
837	PROVIDE 1" CONDUIT FROM THE ELECTRIC PANEL TO LOCATION IN ATTIC FOR FUTURE SOLAR INSTALLATION.
839	MIN. 22"X30" OPENING IN CALIFORNIA ROOF FRAMING CONDITIONS FOR ATTIC ACCESS AND CROSS VENTILATION - CONTRACTOR TO VERIFY AIRFLOW TO ALL ATTIC AREAS

ROOF ATTIC AREA	A	904	SQ. FT.	CALCULATION FACTOR:			1/300	
		130176	SQ. IN					
MIN. VENTILATION REQUIRED:	TOTAL	434	SQ. IN	TOTAL PROVIDED:	585		SQ. IN	
MIN. VENTILATION REQUIRED:	HIGH	217	SQ. IN	TOTAL HIGH PROVID	293		SQ. IN	
MIN. VENTILATION REQUIRED:	LOW	217	SQ. IN	TOTAL LOW PROVIDI	293		SQ. IN	
HIGH VENTILATION METHOD	SIZE	FREE AREA		QUANTITY		FREE VENT AREA		
CLOAKED VENT - CONC.S-TILE	-	98	SQ. IN	X	3	293	SQ. IN	
				TOTAL PROVIDED:		293	SQ. IN	
LOW VENTILATION METHOD	SIZE	FREE AREA		QUANTITY		FREE VENT AREA		
CLOAKED VENT - CONC.S-TILE	-	98	SQ. IN	X	3	293	SQ. IN	
				TOTAL PROVIDED:		293	SQ. IN	

ROOF ATTIC AREA	B	40	SQ. FT.	CALCULATION FACTOR:			1/300	
		5760	SQ. IN					
MIN. VENTILATION REQUIRED:	TOTAL	19	SQ. IN	TOTAL PROVIDED:	195		SQ. IN	
MIN. VENTILATION REQUIRED:	HIGH	10	SQ. IN	TOTAL HIGH PROVID	98		SQ. IN	
MIN. VENTILATION REQUIRED:	LOW	10	SQ. IN	TOTAL LOW PROVIDI	98		SQ. IN	
HIGH VENTILATION METHOD	SIZE	FREE AREA		QUANTITY		FREE VENT AREA		
CLOAKED VENT - CONC.S-TILE	-	98	SQ. IN	X	1	98	SQ. IN	
				TOTAL PROVIDED:		98	SQ. IN	
LOW VENTILATION METHOD	SIZE	FREE AREA		QUANTITY		FREE VENT AREA		
CLOAKED VENT - CONC.S-TILE	-	98	SQ. IN	X	1	98	SQ. IN	
				TOTAL PROVIDED:		98	SQ. IN	

ROOF ATTIC AREA	C	105	SQ. FT.	CALCULATION FACTOR:			1/300	
		15120	SQ. IN					
MIN. VENTILATION REQUIRED:	TOTAL	50	SQ. IN	TOTAL PROVIDED:	195		SQ. IN	
MIN. VENTILATION REQUIRED:	HIGH	25	SQ. IN	TOTAL HIGH PROVID	98		SQ. IN	
MIN. VENTILATION REQUIRED:	LOW	25	SQ. IN	TOTAL LOW PROVIDI	98		SQ. IN	
HIGH VENTILATION METHOD	SIZE	FREE AREA		QUANTITY		FREE VENT AREA		
CLOAKED VENT - CONC.S-TILE	-	98	SQ. IN	X	1	98	SQ. IN	
				TOTAL PROVIDED:		98	SQ. IN	
LOW VENTILATION METHOD	SIZE	FREE AREA		QUANTITY		FREE VENT AREA		
CLOAKED VENT - CONC.S-TILE	-	98	SQ. IN	X	1	98	SQ. IN	
				TOTAL PROVIDED:		98	SQ. IN	



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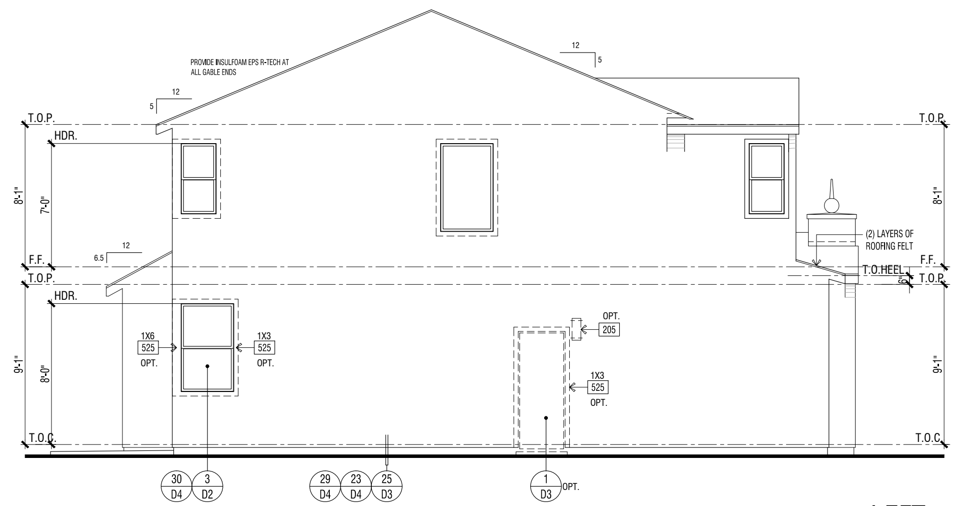

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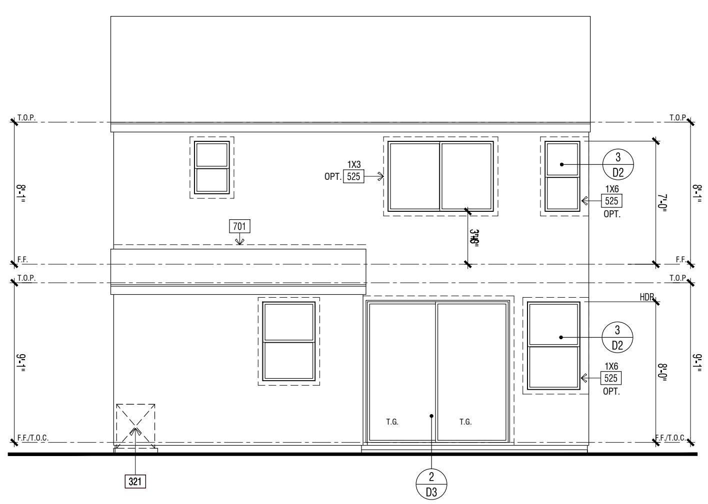

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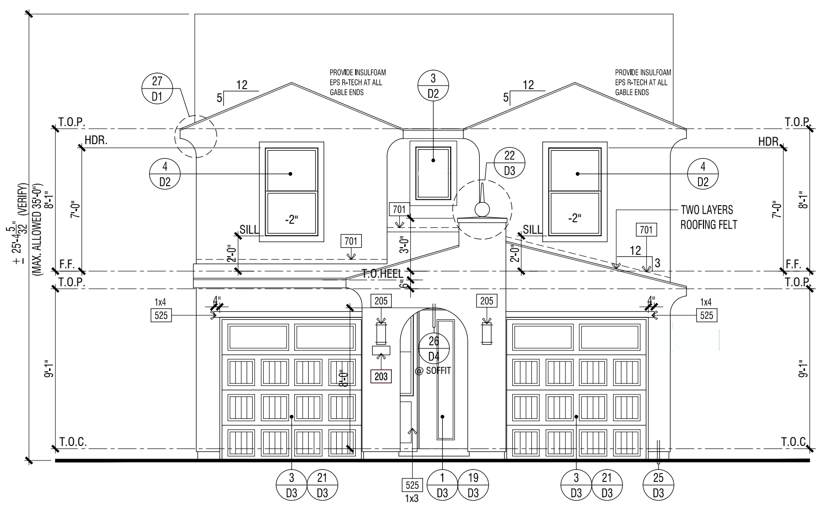


FRONT

FINISHED GRADE VARIES. SEE CIVIL ENGINEERS PLANS FOR FINAL GRADE AND SITE DRAINAGE.

ELEVATION KEY NOTES

Name	NOTE
201	UTILITY EQUIPMENT AND SERVICE PANELS - VERIFY LOCATION
203	ADDRESS PANEL. 6" MIN. HIGH BUILDING ADDRESS CHARACTERS PLACED IN SUCH A POSITION TO BE PLAINLY VISIBLE FROM THE STREET.
205	ACCENT EXTERIOR WALL LIGHT
308	TANKLESS WATER HEATER TERMINATION CAP - INSTALL PER MFR. INSTRUCTIONS (CO-AXIAL VENT INTAKE & EXHAUST DIRECTLY FROM OUTSIDE)
321	AIR CONDITIONING CONDENSER LOCATION
511	RECESS BOX FOR TANKLESS WATER HEATER - INSTALL PER MFR. INSTRUCTIONS
516	DECORATIVE FOAM ACCENT - SEE DETAIL
521	STUCCO - INSTALL PER MANUFACTURER'S LISTING BY: OMEGA DIAMOND WALL ONE COAT SYSTEM ICC-ES ESR-1194
525	STUCCO OVER RIGID FOAM TRIM - FOAM SHAPE PER ELEVATION
650B	FIBER CEMENT LAP SIDING - 5/16" THICK 'HARDIPLANK' (OR EQUIVALENT. FINISH: SELECT CEDARMILL. EXPOSURE: 6" (INSTALLATION PER MANUFACTURER'S INSTRUCTIONS)
674	DECORATIVE METAL WINDOW SHADE
701	G.I. FLASHING
762	ROOFING - CONCRETE - 'S' TILE BY EAGLE ROOFING ICC# ESR 1900

ANY OPERABLE WINDOW WITH A SILL THAT IS LOCATED LESS THAN 24" ABOVE FINISHED FLOOR AND MORE THAN 72" ABOVE FINISHED GRADE OR OTHER SURFACE BELOW AT THE EXTERIOR, MUST BE PROTECTED BY A GUARD OR, HAVE A FIXED GLASS. THE GUARD MAY NOT HAVE OPENINGS THAT A SPHERE 4" IN DIAMETER CAN PASS THROUGH. 2016 CBC 1405.13.2

(2) LAYERS OF GRADE "D" BUILDING PAPER IS REQUIRED TO BE INSTALLED OVER WOOD SHEATHING 2016 CRC R703.7.3

ARCHITECTS . PLANNERS . DESIGNERS

WHA.

ORANGE COUNTY . LOS ANGELES . BAY AREA

WILSON HOMES

TRACT NUMBER: 6168
PROJECT TYPE

PLAN 1413
CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

REVISIONS

NO.	DATE	DESCRIPTION

City of Clovis - Planning and Development Services - Building Division
16SPN
NOV 2 8 2018
Subject To Field Approval, Laws, Codes, and Ordinances
Approved With Noted Corrections

City of Clovis - Planning and Development Services - Building Division
16SPN
JUL 1 9 2018
Subject To Field Approval, Laws, Codes, and Ordinances
Approved With Noted Corrections

ELEVATIONS
PLAN
1413A

PROJECT MANAGER :	MM
DESIGNER :	AM
DRAWN BY :	-
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	04-25-18
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2018077
CAD FILE NAME :	A104

DATE: 04-25-18

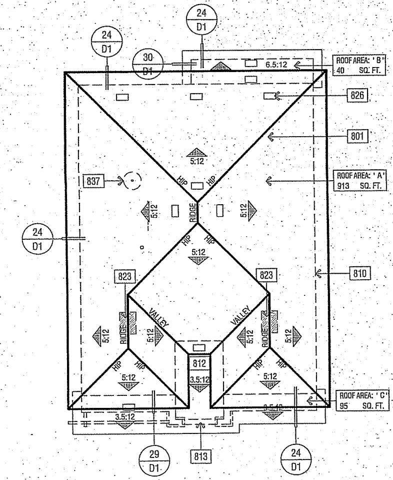
SHEET: A1.4

2018077 - FIRST BUILDING DEPARTMENT SUBMITTAL - 04-25-18

SCALE: 1/4" = 1'-0"

ARCHITECTS . PLANNERS . DESIGNERS
WHA.
ORANGE COUNTY . LOS ANGELES . BAY AREA

WILSON HOMES



ROOF PLAN

SCALE: 1/8" = 1'-0"

ELEVATION REFERENCE: B		ELEVATION STYLE: MODERN			
ROOF MATERIAL	STANDARD ROOF DETAIL U.N.O.	FASCIA - U.N.O.	BARGE - U.N.O.	OVERHANG DIM: - U.N.O. EAVE	RAKE
CONCRETE 'FLAT' TILE "EAGLE ROOFING" ICC# ESR-1900	1 / D1.1	2X6	2X6	1'-6"	1'-0"

ROOF PLAN NOTES

NOTE: MANDATORY REQUIREMENTS FOR SOLAR READY BUILDINGS PER CEnC SECTION 110.10.

1. SEE GENERAL NOTES FOR ROOF NOTES.
2. SPARK ARRESTORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
3. ATTIC ACCESS PER CRC SECTION R807.
4. PROVIDE ATTIC & SOFFIT VENTILATION PER CRC SECTION R806. PER CRC SECTION R806.2, THE MINIMUM NET FREE 4. VENTILATING AREA SHALL BE 1/150 OF THE AREA OF THE VENTED SPACE. EXCEPTION: THE MINIMUM NET FREE VENTILATION AREA SHALL BE 1/300 OF THE VENTED SPACE PROVIDED ONE OR MORE OF THE FOLLOWING CONDITIONS ARE MET:
   - IN CLIMATE ZONES 14 AND 16, A CLASS I OR II VAPOR RETARDER IS INSTALLED ON THE WARM-IN-WINTER SIDE OF THE CEILING.
   - NOT LESS THAN 40 PERCENT AND NOT MORE THAN 50 PERCENT OF THE REQUIRED VENTILATING AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE ATTIC OR RAFTER SPACE. UPPER VENTILATORS SHALL BE LOCATED NO MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE, MEASURED VERTICALLY, WITH THE BALANCE OF THE REQUIRED VENTILATION PROVIDED BY EAVE OR CORNICE VENTS. WHERE THE LOCATION OF WALL OR ROOF FRAMING MEMBERS CONFLICTS WITH THE INSTALLATION OF UPPER VENTILATORS, INSTALLATION MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE SHALL BE PERMITTED.

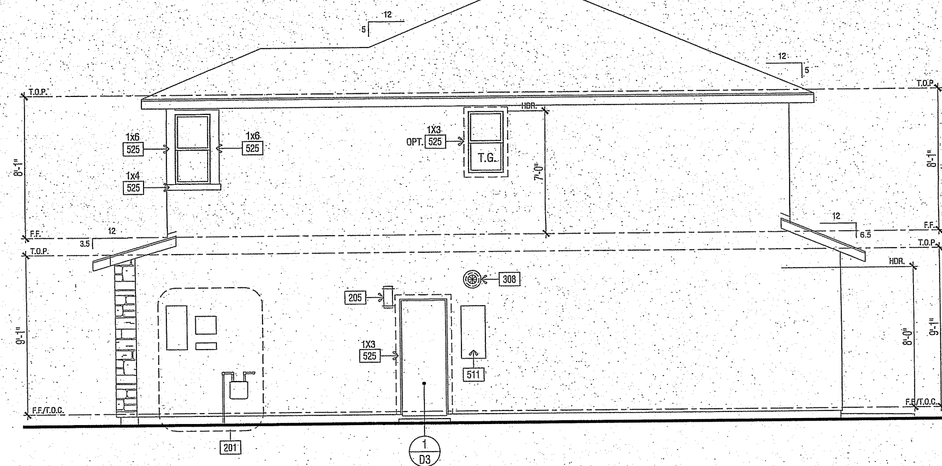
ROOF PLAN KEY NOTES

Name	NOTE
801	CLASS 'A' ROOFING - CONCRETE - 'FLAT' TILE BY EAGLE ROOFING ICC# ESR 1900
810	LINE OF WALL BELOW
812	STUCCO CEILING
813	STUCCO SOFFIT
826	ROOF VENT - O'HAGIN "XL SERIES" CLOAKED VENT (ICC # NER-9650A)
837	PROVIDE 1" CONDUIT FROM THE ELECTRIC PANEL TO LOCATION IN ATTIC FOR FUTURE SOLAR INSTALLATION.
839	MIN. 22"X30" OPENING IN CALIFORNIA ROOF FRAMING CONDITIONS FOR ATTIC ACCESS AND CROSS VENTILATION - CONTRACTOR TO VERIFY AIRFLOW TO ALL ATTIC AREAS

ROOF ATTIC AREA	A	913	SQ. FT.	CALCULATION FACTOR:		1/300
		131472	SQ. IN			
MIN. VENTILATION REQUIRED:	TOTAL	438	SQ. IN	TOTAL PROVIDED:	593	SQ. IN
MIN. VENTILATION REQUIRED:	HIGH	219	SQ. IN	TOTAL HIGH PROVID	296	SQ. IN
MIN. VENTILATION REQUIRED:	LOW	142	SQ. IN	TOTAL LOW PROVIDI	296	SQ. IN
HIGH VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA	
CLOAKED VENT - CONC. FLAT TILE	-	99	SQ. IN X	3	296	SQ. IN
				TOTAL PROVIDED:	296	SQ. IN
LOW VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA	
CLOAKED VENT - CONC. FLAT TILE	-	99	SQ. IN X	3	296	SQ. IN
				TOTAL PROVIDED:	296	SQ. IN

ROOF ATTIC AREA	B	40	SQ. FT.	CALCULATION FACTOR:		1/300
		5760	SQ. IN			
MIN. VENTILATION REQUIRED:	TOTAL	19	SQ. IN	TOTAL PROVIDED:	198	SQ. IN
MIN. VENTILATION REQUIRED:	HIGH	10	SQ. IN	TOTAL HIGH PROVID	99	SQ. IN
MIN. VENTILATION REQUIRED:	LOW	4	SQ. IN	TOTAL LOW PROVIDI	99	SQ. IN
HIGH VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA	
CLOAKED VENT - CONC. FLAT TILE	-	99	SQ. IN X	1	99	SQ. IN
				TOTAL PROVIDED:	99	SQ. IN
LOW VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA	
CLOAKED VENT - CONC. FLAT TILE	-	99	SQ. IN X	1	99	SQ. IN
				TOTAL PROVIDED:	99	SQ. IN

ROOF ATTIC AREA	C	95	SQ. FT.	CALCULATION FACTOR:		1/300
		13680	SQ. IN			
MIN. VENTILATION REQUIRED:	TOTAL	46	SQ. IN	TOTAL PROVIDED:	198	SQ. IN
MIN. VENTILATION REQUIRED:	HIGH	23	SQ. IN	TOTAL HIGH PROVID	99	SQ. IN
MIN. VENTILATION REQUIRED:	LOW	9	SQ. IN	TOTAL LOW PROVIDI	99	SQ. IN
HIGH VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA	
CLOAKED VENT - CONC. FLAT TILE	-	99	SQ. IN X	1	99	SQ. IN
				TOTAL PROVIDED:	99	SQ. IN
LOW VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA	
CLOAKED VENT - CONC. FLAT TILE	-	99	SQ. IN X	1	99	SQ. IN
				TOTAL PROVIDED:	99	SQ. IN



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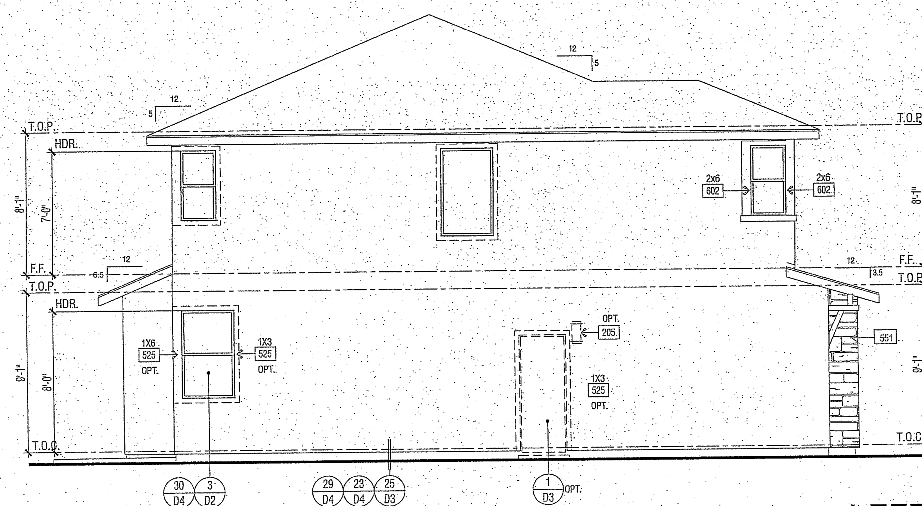

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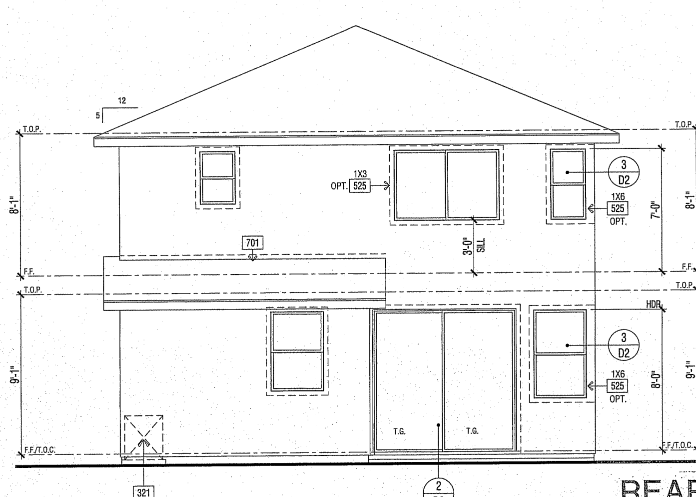

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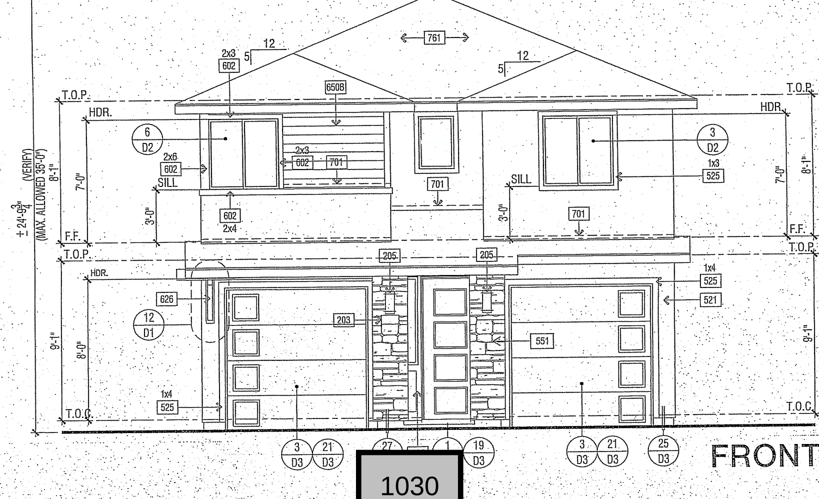


FRONT

SCALE: 1/4" = 1'-0"

FINISHED GRADE VARIES. SEE CIVIL ENGINEERS PLANS FOR FINAL GRADE AND SITE DRAINAGE.

ELEVATION KEY NOTES

Name	NOTE
201	UTILITY EQUIPMENT AND SERVICE PANELS - VERIFY LOCATION
203	ADDRESS PANEL. 6" MIN. HIGH BUILDING ADDRESS CHARACTERS PLACED IN SUCH A POSITION TO BE PLAINLY VISIBLE FROM THE STREET.
205	ACCENT EXTERIOR WALL LIGHT
308	TANKLESS WATER HEATER TERMINATION CAP - INSTALL PER MFR. INSTRUCTIONS (CO-AXIAL VENT INTAKE & EXHAUST DIRECTLY FROM OUTSIDE)
511	RECESS BOX FOR TANKLESS WATER HEATER - INSTALL PER MFR. INSTRUCTIONS
521	STUCCO - INSTALL PER MANUFACTURER'S LISTING BY: OMEGA DIAMOND WALL ONE COAT SYSTEM ICC-ES ESR-1194
525	STUCCO OVER RIGID FOAM TRIM - FOAM SHAPE PER ELEVATION
551	MANUFACTURED ADHERED STUCCO STONE VENEER - INSTALL PER MANUFACTURER'S INSTRUCTIONS" BY EL DORADO STONE PRODUCTS - TER# 1312-01
602	WOOD TRIM(S) - SIZE PER ELEVATION
626	OUTLOOKER -KNEE BRACE ASSEMBLY - (SIZE AND SHAPE PER DETAIL)
650B	FIBER CEMENT LAP SIDING - 5/16" THICK 'HARDIPLANK' (OR EQUIVALENT. FINISH: SELECT CEDARMILL. EXPOSURE: 6" (INSTALLATION PER MANUFACTURER'S INSTRUCTIONS)
701	G.I. FLASHING
761	ROOFING - CONCRETE - FLAT TILE BY EAGLE ROOFING ICC# ESR 1900

ANY OPERABLE WINDOW WITH A SILL THAT IS LOCATED LESS THAN 24" ABOVE FINISHED FLOOR AND MORE THAN 72" ABOVE FINISHED GRADE OR OTHER SURFACE BELOW AT THE EXTERIOR, MUST BE PROTECTED BY A GUARD OR, HAVE A FIXED GLASS. THE GUARD MAY NOT HAVE OPENINGS THAT A SPHERE 4" IN DIAMETER CAN PASS THROUGH. 2016 CBC 1405.13.2

(2) LAYERS OF GRADE "D" BUILDING PAPER IS REQUIRED TO BE INSTALLED OVER WOOD SHEATHING 2016 CRC. R703.7.3

TRACT NUMBER: 6168
PROJECT TYPE

PLAN 1413
CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

REVISIONS

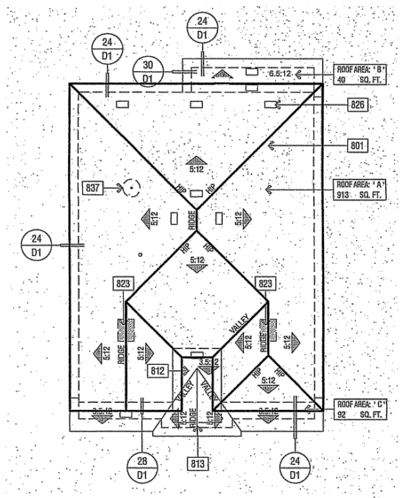
NO.	DATE	DESCRIPTION

ELEVATIONS
PLAN
1413B

PROJECT MANAGER :	MM
DESIGNER :	AM
DRAWN BY :	-
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	04-25-18
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2018077
CAD FILE NAME :	A106

DATE: 04-25-18
SHEET: A1.6

2018077 - FIRST BUILDING DEPARTMENT SUBMITTAL - 04-25-18



ROOF PLAN

SCALE: 1/8" = 1'-0"

ELEVATION REFERENCE:	C	ELEVATION STYLE:	PROGRESSIVE NAPA		
ROOF MATERIAL	STANDARD ROOF DETAIL U.N.O.	FASCIA U.N.O.	BARGE U.N.O.	OVERHANG DIM. - U.N.O. EAVE	RAKE
CONCRETE 'FLAT' TILE "EAGLE ROOFING" ICC# ESR-1900	1/D1.1	2X6	2X6	1'-0"	1'-0"

ROOF PLAN NOTES

NOTE: MANDATORY REQUIREMENTS FOR SOLAR READY BUILDINGS PER CEnC SECTION 110.10.

1. SEE GENERAL NOTES FOR ROOF NOTES.
2. SPARK ARRESTORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
3. ATTIC ACCESS PER CRC SECTION R807.
4. PROVIDE ATTIC & SOFFIT VENTILATION PER CRC SECTION R806. PER CRC SECTION R806.2, THE MINIMUM NET FREE 4. VENTILATING AREA SHALL BE 1/150 OF THE AREA OF THE VENTED SPACE. EXCEPTION: THE MINIMUM NET FREE VENTILATION AREA SHALL BE 1/300 OF THE VENTED SPACE PROVIDED ONE OR MORE OF THE FOLLOWING CONDITIONS ARE MET:
   - IN CLIMATE ZONES 14 AND 16, A CLASS I OR II VAPOR RETARDER IS INSTALLED ON THE WARM-IN-WINTER SIDE OF THE CEILING.
   - NOT LESS THAN 40 PERCENT AND NOT MORE THAN 50 PERCENT OF THE REQUIRED VENTILATING AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE ATTIC OR RAFTER SPACE. UPPER VENTILATORS SHALL BE LOCATED NO MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE, MEASURED VERTICALLY, WITH THE BALANCE OF THE REQUIRED VENTILATION PROVIDED BY EAVE OR CORNICE VENTS. WHERE THE LOCATION OF WALL OR ROOF FRAMING MEMBERS CONFLICTS WITH THE INSTALLATION OF UPPER VENTILATORS, INSTALLATION MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE SHALL BE PERMITTED.

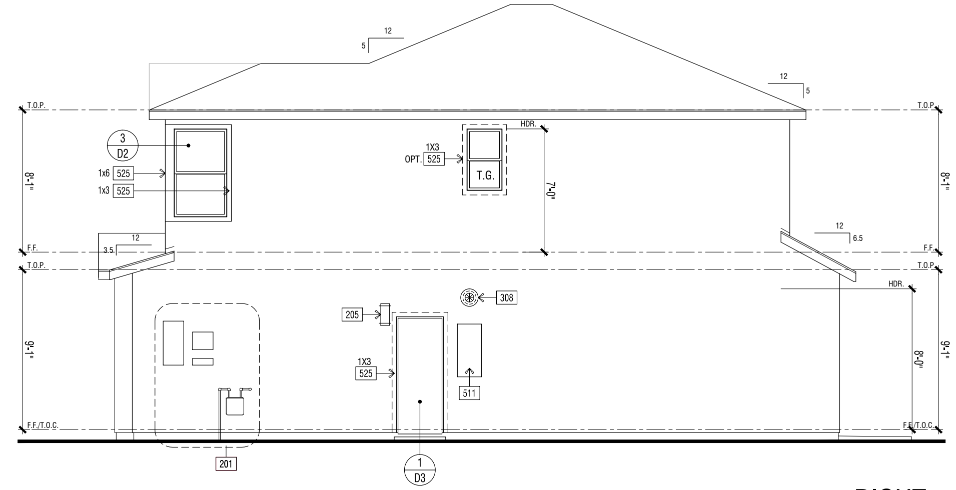
ROOF PLAN KEY NOTES

Name	NOTE
801	CLASS 'A' ROOFING - CONCRETE - 'FLAT' TILE BY EAGLE ROOFING ICC# ESR 1900
810	LINE OF WALL BELOW
812	STUCCO CEILING
813	STUCCO SOFFIT
826	ROOF VENT - O'HAGIN "XL SERIES" CLOAKED VENT (ICC # NER-9650A)
837	PROVIDE 1" CONDUIT FROM THE ELECTRIC PANEL TO LOCATION IN ATTIC FOR FUTURE SOLAR INSTALLATION.
839	MIN. 22"X30" OPENING IN CALIFORNIA ROOF FRAMING CONDITIONS FOR ATTIC ACCESS AND CROSS VENTILATION - CONTRACTOR TO VERIFY AIRFLOW TO ALL ATTIC AREAS

ROOF ATTIC AREA	A	913 SQ. FT.		CALCULATION FACTOR:		1/300
		131472 SQ. IN.				
MIN. VENTILATION REQUIRED:	TOTAL	438 SQ. IN.		TOTAL PROVIDED:	593	SQ. IN.
MIN. VENTILATION REQUIRED:	HIGH	219 SQ. IN.		TOTAL HIGH PROVID	296	SQ. IN.
MIN. VENTILATION REQUIRED:	LOW	142 SQ. IN.		TOTAL LOW PROVIDI	296	SQ. IN.
HIGH VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA	
CLOAKED VENT - CONC.FLAT TILE	-	99 SQ. IN.	X	3	296	SQ. IN.
				TOTAL PROVIDED:	296	SQ. IN.
LOW VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA	
CLOAKED VENT - CONC.FLAT TILE	-	99 SQ. IN.	X	3	296	SQ. IN.
				TOTAL PROVIDED:	296	SQ. IN.

ROOF ATTIC AREA	B	40 SQ. FT.		CALCULATION FACTOR:		1/300
		5760 SQ. IN.				
MIN. VENTILATION REQUIRED:	TOTAL	19 SQ. IN.		TOTAL PROVIDED:	198	SQ. IN.
MIN. VENTILATION REQUIRED:	HIGH	10 SQ. IN.		TOTAL HIGH PROVID	99	SQ. IN.
MIN. VENTILATION REQUIRED:	LOW	4 SQ. IN.		TOTAL LOW PROVIDI	99	SQ. IN.
HIGH VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA	
CLOAKED VENT - CONC.FLAT TILE	-	99 SQ. IN.	X	1	99	SQ. IN.
				TOTAL PROVIDED:	99	SQ. IN.
LOW VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA	
CLOAKED VENT - CONC.FLAT TILE	-	99 SQ. IN.	X	1	99	SQ. IN.
				TOTAL PROVIDED:	99	SQ. IN.

ROOF ATTIC AREA	C	92 SQ. FT.		CALCULATION FACTOR:		1/300
		13248 SQ. IN.				
MIN. VENTILATION REQUIRED:	TOTAL	44 SQ. IN.		TOTAL PROVIDED:	198	SQ. IN.
MIN. VENTILATION REQUIRED:	HIGH	22 SQ. IN.		TOTAL HIGH PROVID	99	SQ. IN.
MIN. VENTILATION REQUIRED:	LOW	9 SQ. IN.		TOTAL LOW PROVIDI	99	SQ. IN.
HIGH VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA	
CLOAKED VENT - CONC.FLAT TILE	-	99 SQ. IN.	X	1	99	SQ. IN.
				TOTAL PROVIDED:	99	SQ. IN.
LOW VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA	
CLOAKED VENT - CONC.FLAT TILE	-	99 SQ. IN.	X	1	99	SQ. IN.
				TOTAL PROVIDED:	99	SQ. IN.



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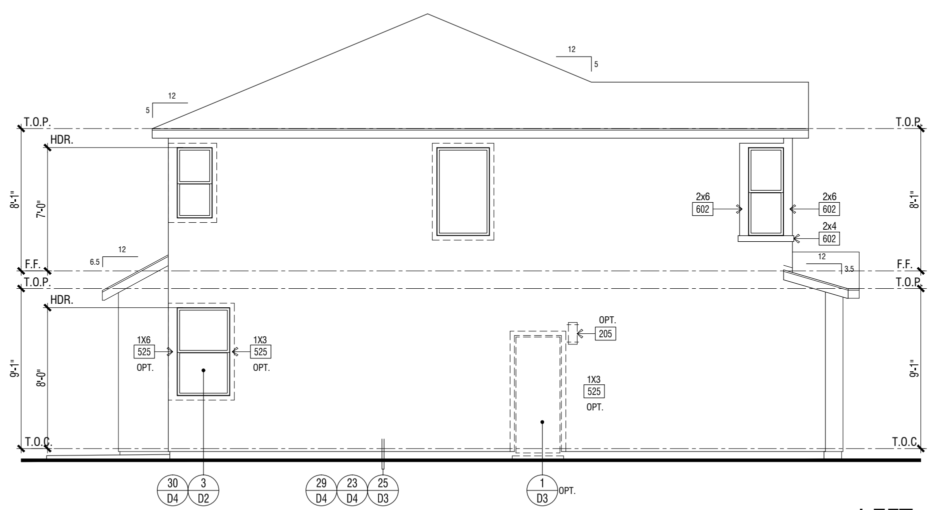

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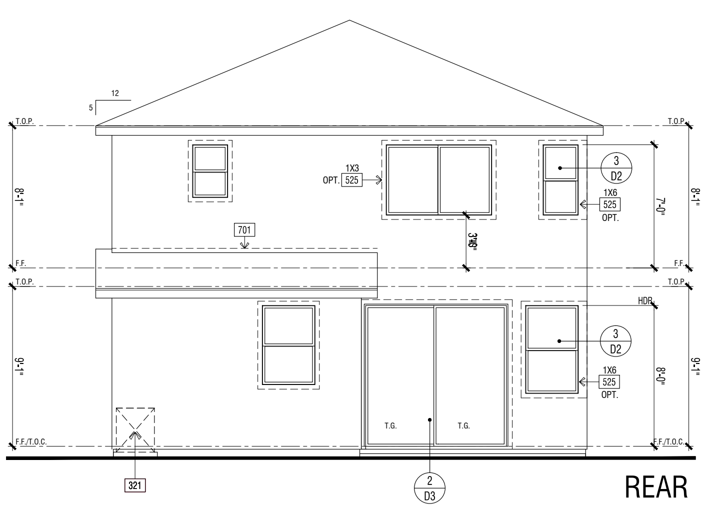
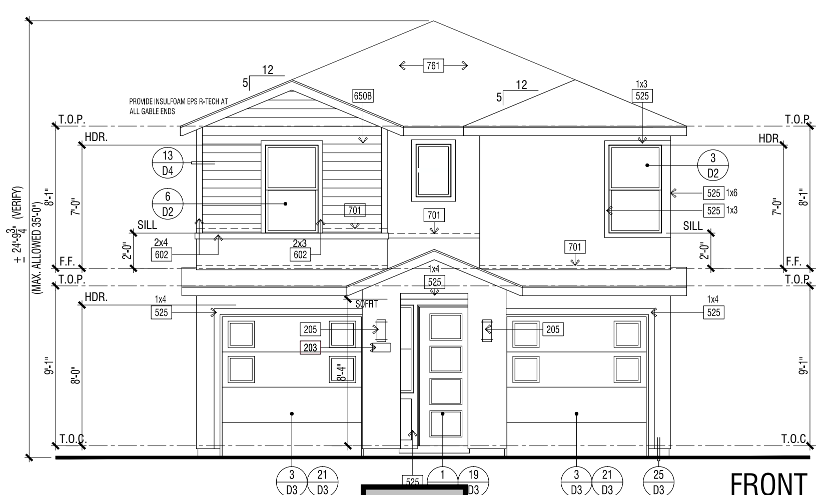


REAR



FRONT

SCALE: 1/4" = 1'-0"

FINISHED GRADE VARIES. SEE CIVIL ENGINEERS PLANS FOR FINAL GRADE AND SITE DRAINAGE.

ELEVATION KEY NOTES

Name	NOTE
201	UTILITY EQUIPMENT AND SERVICE PANELS - VERIFY LOCATION
203	ADDRESS PANEL. 6" MIN. HIGH BUILDING ADDRESS CHARACTERS PLACED IN SUCH A POSITION TO BE PLAINLY VISIBLE FROM THE STREET.
205	ACCENT EXTERIOR WALL LIGHT
308	TANKLESS WATER HEATER TERMINATION CAP - INSTALL PER MFR. INSTRUCTIONS (CO-AXIAL VENT INTAKE & EXHAUST DIRECTLY FROM OUTSIDE)
321	AIR CONDITIONING CONDENSER LOCATION
511	RECESS BOX FOR TANKLESS WATER HEATER - INSTALL PER MFR. INSTRUCTIONS
515	STUCCO NICHE. SIZE PER ELEVATION - SLOPE SILL ¼" PER FT. MINIMUM.
521	STUCCO - INSTALL PER MANUFACTURER'S LISTING BY: OMEGA DIAMOND WALL ONE COAT SYSTEM ICC-ES ESR-1194
525	STUCCO OVER RIGID FOAM TRIM - FOAM SHAPE PER ELEVATION
592	OVERHEAD SHUTTER - SIZE AND STYLE PER ELEVATION
602	WOOD TRIM(S) - SIZE PER ELEVATION
650B	FIBER CEMENT LAP SIDING - 5/16" THICK 'HARDIPLANK' (OR EQUIVALENT. FINISH: SELECT CEDARMILL. EXPOSURE: 6" (INSTALLATION PER MANUFACTURER'S INSTRUCTIONS)
701	G.I. FLASHING
761	ROOFING - CONCRETE - FLAT TILE BY EAGLE ROOFING ICC# ESR 1900

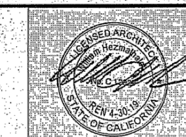
ANY OPERABLE WINDOW WITH A SILL THAT IS LOCATED LESS THAN 24" ABOVE FINISHED FLOOR AND MORE THAN 72" ABOVE FINISHED GRADE OR OTHER SURFACE BELOW AT THE EXTERIOR, MUST BE PROTECTED BY A GUARD OR, HAVE A FIXED GLASS. THE GUARD MAY NOT HAVE OPENINGS THAT A SPHERE 4" IN DIAMETER CAN PASS THROUGH. 2016 CBC 1405.13.2

(2) LAYERS OF GRADE 'D' BUILDING PAPER IS REQUIRED TO BE INSTALLED OVER WOOD SHEATHING 2016 CRC R703.7.3

ARCHITECTS . PLANNERS . DESIGNERS

WHA.

ORANGE COUNTY . LOS ANGELES . BAY AREA



WILSON HOMES

TRACT NUMBER: 6168
PROJECT TYPE

PLAN 1413
CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

REVISIONS

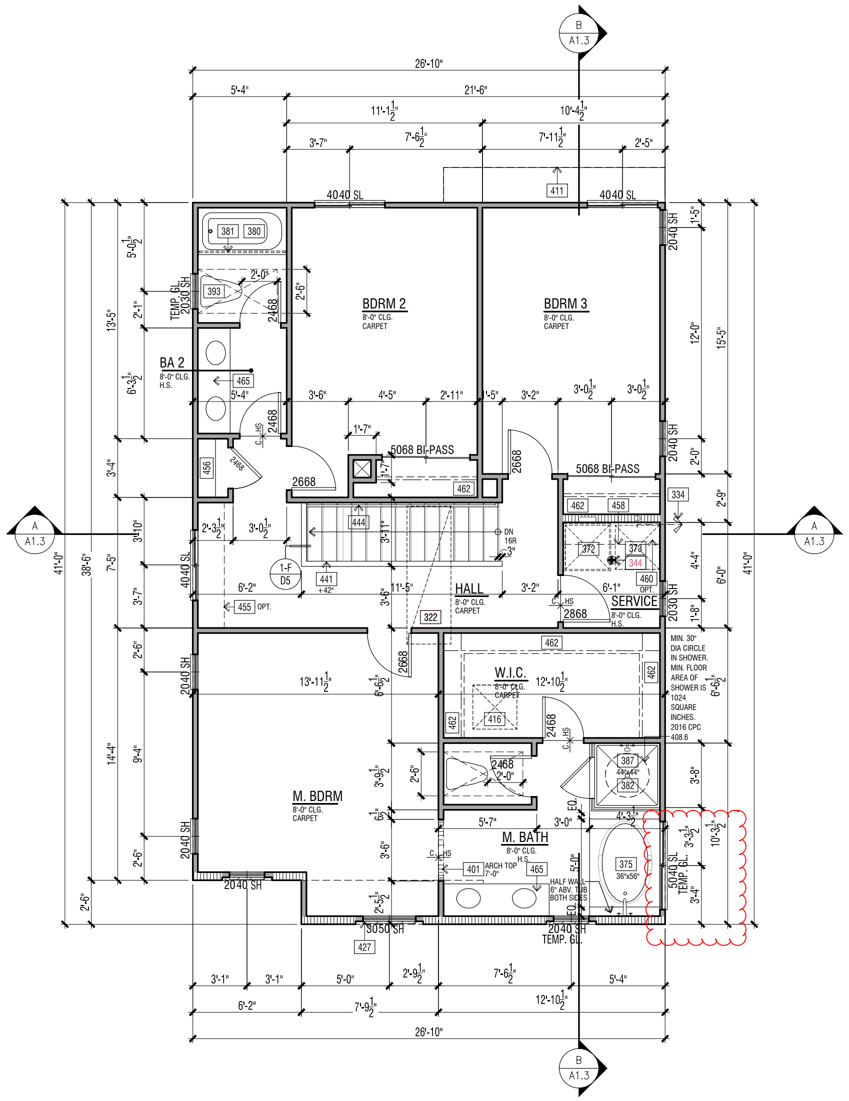
NO.	DATE	DESCRIPTION

ELEVATIONS
PLAN
1413C

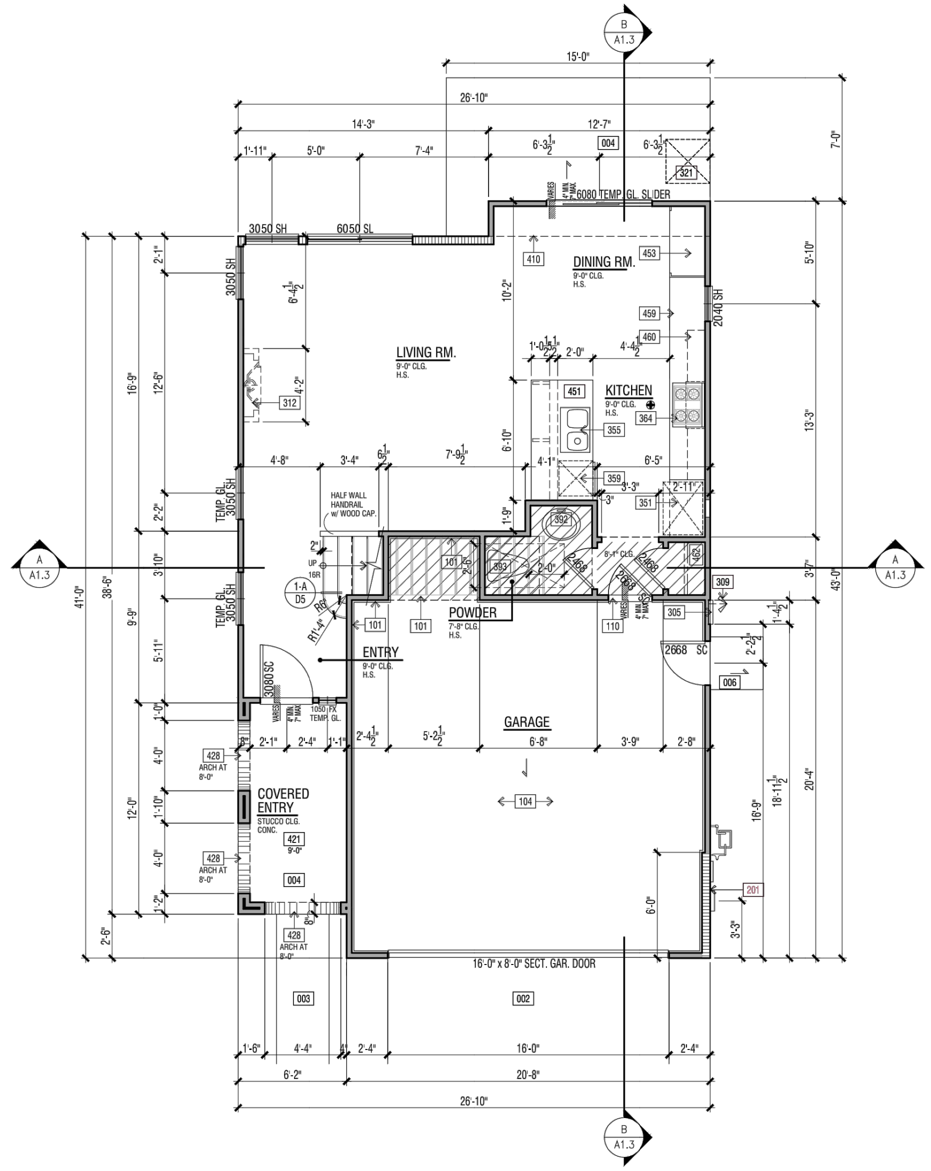
PROJECT MANAGER :	MM
DESIGNER :	AM
DRAWN BY :	
REVIEWED BY :	
1ST BLDG. DEPT. SUBMITTAL :	04-25-18
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2018077
CAD FILE NAME :	A108

DATE:	SHEET:
04-25-18	A1.8

2018077 - FIRST BUILDING DEPARTMENT SUBMITTAL - 04-25-18



UPPER FLOOR PLAN



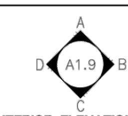
LOWER FLOOR PLAN

FLOOR PLAN KEY NOTES

Name	NOTE
001	CONCRETE SLAB (SEE STRUCTURAL DRAWINGS)
002	CONCRETE DRIVE (BY OTHERS)
003	CONCRETE WALK (BY OTHERS)
004	CONCRETE PORCH SLAB (BY OTHERS) SLOPE 1/4" PER FOOT MINIMUM IN DIRECTION INDICATED
005	CONCRETE GARAGE SLAB - SLOPE 1/8" PER FOOT MINIMUM IN DIRECTION INDICATED
006	CONCRETE STOOP - 36" DEEP AND 2" WIDER THAN THE DOOR OPENING - SLOPE 1/4" PER FOOT MINIMUM TO DRAIN IN DIRECTION INDICATED
010	CONCRETE PATIO (BY OTHERS)
101	GARAGE AND/OR CARPORT SHALL BE SEPARATED FROM THE RESIDENCE AND ITS ATTIC BY MEANS OF A MIN. 1/2" GYP. BD., OR EQUIVALENT, APPLIED TO THE GARAGE SIDE PER CRC SECTION R302.6.
102	ENCLOSED ACCESSIBLE SPACE UNDER STAIRS SHALL HAVE WALLS, UNDER STAIR SURFACE AND ANY SOFFITS PROTECTED ON THE ENCLOSED SIDE WITH 1/2" GYPSUM BOARD PER CRC SECTION R302.7.
104	GARAGE AND/OR CARPORT WITH HABITABLE ROOMS ABOVE SHALL BE SEPARATED FROM THE RESIDENCE BY A MIN. 5/8" TYPE 'X' GYP. BD., OR EQ. STRUCTURE(S) SUPPORTING THE FLR./CLG. ASSEMBLY USED FOR SEPARATION SHALL BE A MIN. 1/2" GYP. BD., OR EQ. PER CRC SEC. R302.6.
110	PROVIDE SOLID WOOD DOOR, OR SOLID OR HONEYCOMB CORE STEEL DOORS, NOT LESS THAN 1-3/8" THICK, OR 20 MINUTE FIRE RATED DOOR. DOORS SHALL BE SELF CLOSING AND SELF LATCHING PER CRC SECTION R302.5.1.
201	UTILITY EQUIPMENT AND SERVICE PANELS - VERIFY LOCATION
305	TANKLESS WATER HEATER - MODEL RINNAI (R75LS) - INSTALL PER MANUFACTURER'S INSTRUCTIONS
309	TEMPERATURE AND PRESSURE RELIEF VALVE. DISCHARGE LINE TO THE OUTSIDE OUTSIDE PER CPC SECTION 608.5
312	METAL FIREPLACE (GAS APPLIANCE) - HEIGHT PER PLAN - INSTALL PER MANUFACTURER'S INSTRUCTIONS. BY HEATILATOR MODEL# ND4842 ANSI Z21.88-2002
321	AIR CONDITIONING CONDENSER LOCATION
322	FORCED AIR UNIT (FAU) ATTIC INSALLATION
334	4" DIA. G.I. DRYER VENT WITH APPROVED LINT TRAP - VENT TO OUTSIDE
336	5" DIA. G.I. DRYER VENT WITH APPROVED LINT TRAP - VENT THROUGH ROOF
342	RETURN AIR GRILL - SEE MECHANICAL
344	WHOLE HOUSE EXHAUST FAN PER 2010 CEC. REFER TO ATTACHED "SUMMARY OF THE 2010 ENERGY CODE ASHRAE 62.2 REQUIREMENTS"
351	REFRIGERATOR SPACE WITH RECESSED COLD WATER BOX
355	SINK WITH GARBAGE DISPOSER
357	UTILITY SINK
359	DISHWASHER - ENERGY STAR
364	30" COOKTOP & EXHAUST HOOD WITH FAN AND LIGHT. EXHAUST VENT TO OUTSIDE
367	30" OVEN
369	30" OVER THE COUNTER MICROWAVE OVEN/HOOD COMBO
372	WASHER SPACE WITH RECESSED WATER BOX AND DBL. WIDE SMITTY PAN
373	DRYER SPACE
375	DROP IN TUB - 36" X 56"
380	TUB/ SHOWER - 36"X60" MODEL 2603DT - GELCOAT SURFACE - BY AQUATIC
381	CURTAIN ROD
382	SHATTERPROOF SHOWER DOOR/ ENCLOSURE
383	TUB ACCESS PANEL
386	SHOWER - PREFABRICATED STALL - 36"x60"X76" MODEL 1603DTS - GELCOAT SURFACE - BY AQUATIC
387	SHOWER - LASCO MODEL# 1603DTS
390	SHOWER SEAT - SLOPE ½" MINIMUM TO DRAIN
392	PEDESTAL SINK
393	TOILET - PROVIDE MINIMUM 24" X 30" CLEAR FLOOR AREA IN FRONT OF TOILET
397	SOAP SHELF
401	INTERIOR SOFFIT(S)/ DROPPED CEILING(S): HEIGHT PER PLAN
410	LINE OF FLOOR ABOVE
411	LINE OF FLOOR BELOW
412	OPEN TO ABOVE
413	OPEN TO BELOW
416	30"x30" ATTIC ACCESS - DIMENSIONS ARE CLEAR -ALL ATTIC ACCESS OPRNINGS ARE GASKETED TO PREVENT AIR LOSS. 2016 CEC 150.0(a) 2
417	22"X30" 1-HOUR ATTIC ACCESS-DIMENSIONS CLEAR
421	STUCCO CEILING: HEIGHT PER PLAN
422	STUCCO SOFFIT: HEIGHT PER PLAN
427	STUCCO SOFFIT OVER WATERPROOFED STUCCO SHELF - SLOPE FRAMING FOR DRAINAGE (1/4" PER FOOT MINIMUM)
428	ARCHED STUCCO SOFFIT - HEIGHT PER ELEVATION
441	GYP. BD. SHELF/LOW WALL - WIDTH AND HEIGHT PER PLAN
442	2X PONY WALL - SIZE PER PLAN
444	+34"- +38" HANDRAIL (SEE DETAIL 1G/D5)
445	+42" GUARD (SEE DETAIL 1F/D5)
451	KITCHEN ISLAND - PROVIDE APPROVED UNDERGROUND CONDUIT FOR ELECTRIC SERVICE TO ISLAND
453	PANTRY WITH WIRE SHELVING
454	DESK
455	LINEN
456	LINEN (UPPER & LOWER)
457	LINEN (LOW ONLY)
458	WIRE SHELF
459	BASE CABINET
460	UPPER CABINET
462	WIRE SHELF AND POLE
464	WIRE SHELF (OR SHELVES)
465	VANITY

FLOOR PLAN NOTES

1. ATTICS: ACCESS PER CRC R807, DRAFTSTOPS PER CRC R302.12 AND VENTILATION PER R806.
2. EMERGENCY ESCAPE AND RESCUE OPENINGS PER CRC R310. MEANS OF EGRESS PER CRC R311.
3. GLAZING PER CRC R303.1 & R308
4. FACTORY-BUILT FIREPLACES AND CHIMNEYS PER CRC R1004, R1005, R1006 CGBSC SECTION 4.503 & CEnC SECTION 150.0(e).
5. COMBUSTION AIR TO FORCED AIR UNIT PER CMC CHAPTER 7.
6. COMBUSTION AIR TO WATER HEATER PER CPC SECTION 507.0.
7. ENVIRONMENTAL AIR DUCTS PER CMC SECTION 504.
8. MECHANICAL EQUIPMENT LOCATION AND PROTECTION AGAINST DAMAGE PER CMC 305 & 308.
9. MANDATORY REQUIREMENTS FOR APPLIANCES PER CEnC SECTION 110.1.
10. A SHEETROCK NAILING INSPECTION IS REQUIRED. 2016 CRC R109.1.4.2 & CBC 110.3.5



INTERIOR ELEVATION KEY

FLOOR AREA TABLE	PLAN 1648A
LOWER FLOOR PLAN	599 SQ. FT.
UPPER FLOOR PLAN	1,049 SQ. FT.
TOTAL	1,648 SQ. FT.
GARAGE	437 SQ. FT.
COVERED ENTRY/PORCH	74 SQ. FT.

SCALE: 1/4" = 1'- 0"

ARCHITECTS . PLANNERS . DESIGNERS

WHA.

ORANGE COUNTY . LOS ANGELES . BAY AREA

WILSON HOMES

TRACT NUMBER: 6168
PROJECT TYPE

PLAN 1648
CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

REVISIONS

NO.	DATE	DESCRIPTION
1	7-25-18	BLDG. DEPT. REVS.
	10-16-18	AS-BUILT PLAN
	02/26/2019	AS-BUILT PLAN

AS-BUILT PLAN
02/26/2019

PROJECT MANAGER :	MM
DESIGNER :	AM
DRAWN BY :	-
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	04-25-18
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2018077
CAD FILE NAME :	A101

DATE:	SHEET:
07-25-18	A1.1

2018077 - 07-25-18

FLOOR PLAN KEY NOTES

Name	NOTE
002	CONCRETE DRIVE (BY OTHERS)
003	CONCRETE WALK (BY OTHERS)
004	CONCRETE PORCH SLAB (BY OTHERS) SLOPE 1/4" PER FOOT MINIMUM IN DIRECTION INDICATED
005	CONCRETE GARAGE SLAB - SLOPE 1/8" PER FOOT MINIMUM IN DIRECTION INDICATED
421	STUCCO CEILING: HEIGHT PER PLAN
422	STUCCO SOFFIT: HEIGHT PER PLAN
551	MANUFACTURED ADHERED STUCCO STONE VENEER - INSTALL PER MANUFACTURER'S INSTRUCTIONS. BY 'EL DORADO STONE' ICC-ES ER-3568

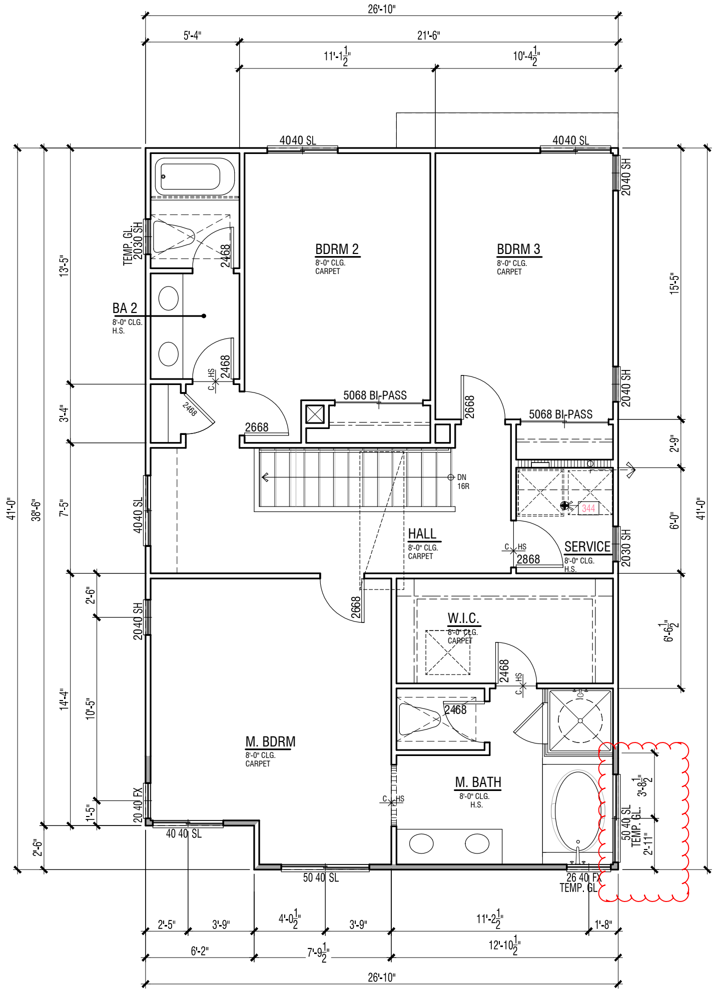
ARCHITECTS . PLANNERS . DESIGNERS

WHA.

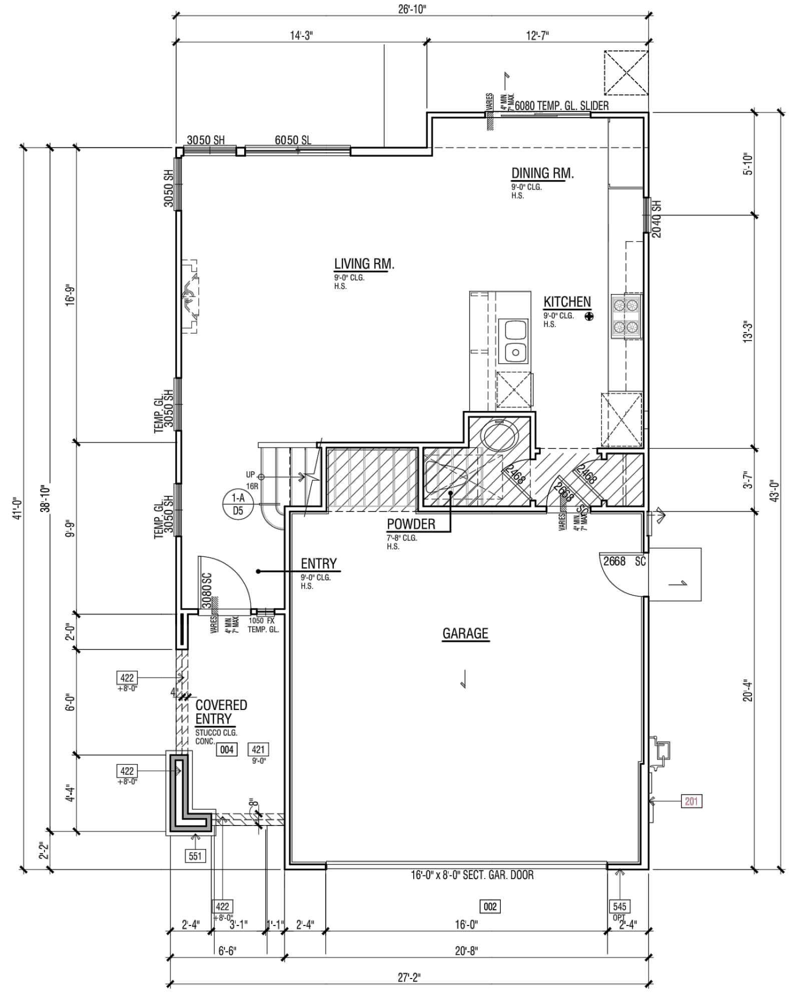
ORANGE COUNTY . LOS ANGELES . BAY AREA

WILSON HOMES

TRACT NUMBER: 6168
PROJECT TYPE



UPPER FLOOR PLAN



LOWER FLOOR PLAN

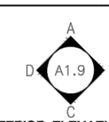
1033

ADDENDA FLOOR PLAN NOTES

NOTE: SHADED WALLS INDICATE AREAS THAT ARE DIFFERENT THAN THE BASE FLOOR PLAN

NOTE: REFER TO CIVIL AND LANDSCAPE DRAWINGS BY OTHERS FOR ALL DRIVEWAYS AND SIDEWALK LOCATIONS.

REFER TO BASE PLAN SHEET A1.1 FOR ADDITIONAL NOTES AND DIMENSIONS.



INTERIOR ELEVATION KEY

FLOOR AREA TABLE	PLAN 1648B	
LOWER FLOOR PLAN	599	SQ. FT.
UPPER FLOOR PLAN	1,049	SQ. FT.
TOTAL	1,648	SQ. FT.
GARAGE	437	SQ. FT.
COVERED ENTRY/PORCH	74	SQ. FT.

SCALE: 1/4" = 1'- 0"

PLAN 1648
CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

REVISIONS

NO.	DATE	DESCRIPTION
1	7-25-18	BLDG. DEPT. REVS.
	10-16-18	AS-BUILT PLAN
	02/26/2019	AS-BUILT PLAN

FLOOR PLAN 1648B

AS-BUILT PLAN
02/26/2019

PROJECT MANAGER :	MM
DESIGNER :	AM
DRAWN BY :	-
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	04-25-18
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2018077
CAD FILE NAME :	A105

DATE:	SHEET:
07-25-18	A1.5

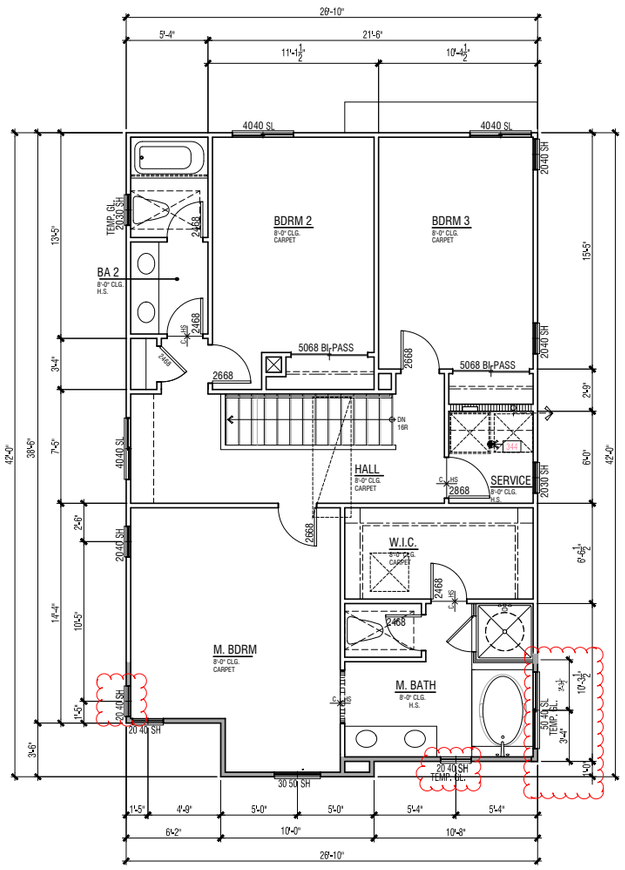
2018077 - 07-25-18

FLOOR PLAN KEY NOTES	
Name	NOTE
002	CONCRETE DRIVE (BY OTHERS)
003	CONCRETE WALK (BY OTHERS)
004	CONCRETE PORCH SLAB (BY OTHERS) SLOPE 1/4" PER FOOT MINIMUM IN DIRECTION INDICATED
005	CONCRETE GARAGE SLAB - SLOPE 1/2" PER FOOT MINIMUM IN DIRECTION INDICATED
421	STUCCO CEILING: HEIGHT PER PLAN
428	ARCHED STUCCO SOFFIT: HEIGHT PER PLAN

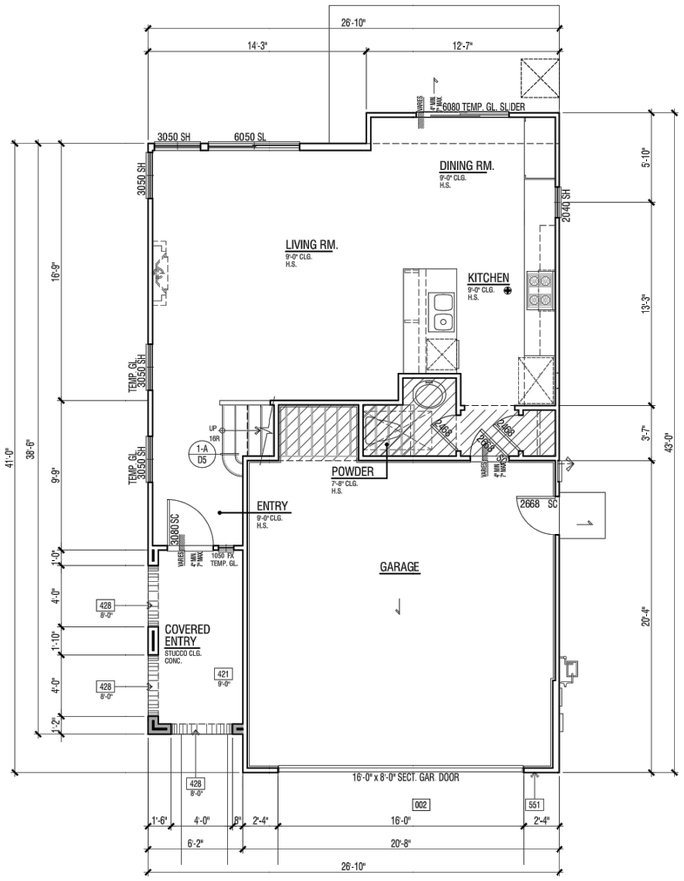
ARCHITECTS . PLANNERS . DESIGNERS

WHA.

ORANGE COUNTY . LOS ANGELES . BAY AREA



UPPER FLOOR PLAN



LOWER FLOOR PLAN

1034

ADDENDA FLOOR PLAN NOTES
NOTE: SHADED WALLS INDICATE AREAS THAT ARE DIFFERENT THAN THE BASE FLOOR PLAN
NOTE: REFER TO CIVIL AND LANDSCAPE DRAWINGS BY OTHERS FOR ALL DRIVEWAYS AND SIDEWALK LOCATIONS.
REFER TO BASE PLAN SHEET A1.1 FOR ADDITIONAL NOTES AND DIMENSIONS.

INTERIOR ELEVATION KEY

FLOOR AREA TABLE	PLAN 1648C
LOWER FLOOR PLAN	599 SQ. FT.
UPPER FLOOR PLAN	1,057 SQ. FT.
TOTAL	1,656 SQ. FT.
GARAGE	437 SQ. FT.
COVERED ENTRY/PORCH	74 SQ. FT.

SCALE: 1/4" = 1'- 0"

TRACT NUMBER: 6168
PROJECT TYPE

PLAN 1648

CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

REVISIONS

NO.	DATE	DESCRIPTION
	10-16-18	AS-BUILT PLAN

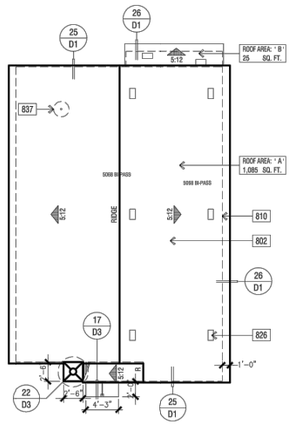
FLOOR PLAN 1648C

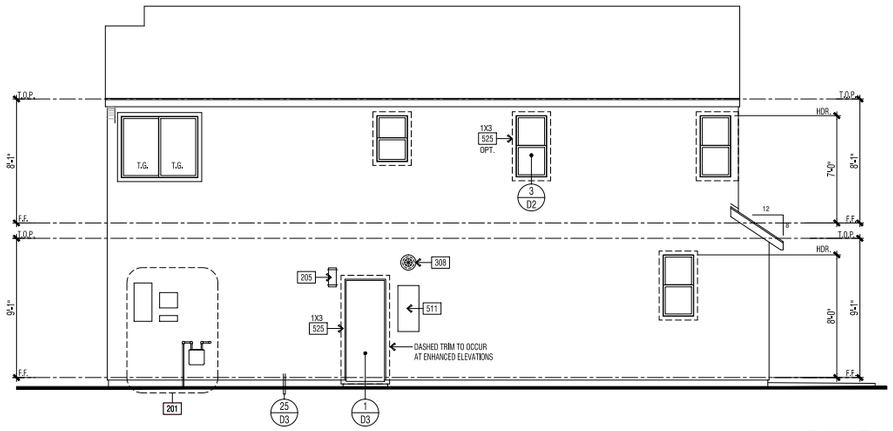
AS-BUILT PLAN

PROJECT MANAGER :	MM
DESIGNER :	AM
DRAWN BY :	-
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	04-25-18
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2018077
CAD FILE NAME :	A107

DATE: 07-25-18 | SHEET: A1.7

2018077 - 07-25-18





RIGHT

FINISHED GRADE VARIES. SEE CIVIL ENGINEERS PLANS FOR FINAL GRADE AND SITE DRAINAGE.

ELEVATION KEY NOTES

Name	NOTE
201	UTILITY EQUIPMENT AND SERVICE PANELS - VERIFY LOCATION
203	ADDRESS PANEL. 6" MIN. HIGH BUILDING ADDRESS CHARACTERS PLACED IN SUCH A POSITION TO BE PLAINLY VISIBLE FROM THE STREET.
205	ACCENT EXTERIOR WALL LIGHT
308	TANKLESS WATER HEATER TERMINATION CAP - INSTALL PER MFR. INSTRUCTIONS (CO-AXIAL VENT INTAKE & EXHAUST DIRECTLY FROM OUTSIDE)
321	AIR CONDITIONING CONDENSER LOCATION
511	RECESS BOX FOR TANKLESS WATER HEATER - INSTALL PER MFR. INSTRUCTIONS
516	DECORATIVE FOAM ACCENT - SEE DETAIL 22/D3 - ICC ESR 1566
521	STUCCO - INSTALL PER MANUFACTURER'S LISTING BY: OMEGA DIAMOND WALL ONE COAT SYSTEM ICC-ES ESR-1194
525	STUCCO OVER RIGID FOAM TRIM - FOAM SHAPE PER ELEVATION
602	WOOD TRIM(S) - SIZE PER ELEVATION
602B	FIBER CEMENT LAP SIDING - 5/16" THICK 'HARDIPLANK' (OR EQUIVALENT. FINISH: SELECT CEDARMILL. EXPOSURE: 6" (INSTALLATION PER MANUFACTURER'S INSTRUCTIONS) ICC-ES NER-405
674	DECORATIVE METAL WINDOW SHADE
701	G.I. FLASHING
762	CLASS 'A' ROOFING - CONCRETE - 'S' TILE - BY EAGLE ROOFING ICC# ESR 1900

ANY OPERABLE WINDOW WITH A SILL THAT IS LOCATED LESS THAN 24" ABOVE FINISHED FLOOR AND MORE THAN 72" ABOVE FINISHED GRADE OR OTHER SURFACE BELOW AT THE EXTERIOR, MUST BE PROTECTED BY A GUARD OR, HAVE A FIXED GLASS, THE GUARD MAY NOT HAVE OPENINGS THAT A SPHERE 4" IN DIAMETER CAN PASS THROUGH. 2016 CBC 1405.13.2

(2) LAYERS OF GRADE 'D' PAPER IS REQUIRED TO BE INSTALLED OVER WOOD SHEATHING 2016 CRC R703.7.3

ARCHITECTS . PLANNERS . DESIGNERS

WHA.

ORANGE COUNTY . LOS ANGELES . BAY AREA

WILSON HOMES

TRACT NUMBER: 6168
PROJECT TYPE

ROOF PLAN

SCALE: 1/8" = 1'-0"

ELEVATION REFERENCE:	A	ELEVATION STYLE:	CONTEMPORARY SPANISH			
ROOF MATERIAL	STANDARD ROOF DETAIL U.N.O.	FASCIA - U.N.O.	BARGE - U.N.O.	OVERHANG DIM. - U.N.O. EAVE	RAKE
CONCRETE ' S ' TILE *EAGLE ROOFING* ICC# ESR-1900	1 D1	2X6	NONE	1'-0"	TIGHT

ROOF PLAN NOTES

NOTE: MANDATORY REQUIREMENTS FOR SOLAR READY BUILDINGS PER CEnC SECTION 110.10.

1. SEE GENERAL NOTES FOR ROOF NOTES.
2. SPARK ARRESTORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
3. ATTIC ACCESS PER CRC SECTION R807.
4. PROVIDE ATTIC & SOFFIT VENTILATION PER CRC SECTION R806. PER CRC SECTION R806.2, THE MINIMUM NET FREE VENTILATING AREA SHALL BE 1/150 OF THE AREA OF THE VENTED SPACE. EXCEPTION: THE MINIMUM NET FREE VENTILATION AREA SHALL BE 1/300 OF THE VENTED SPACE PROVIDED ONE OR MORE OF THE FOLLOWING CONDITIONS ARE MET:
   - IN CLIMATE ZONES 14 AND 16, A CLASS I OR II VAPOR RETARDER IS INSTALLED ON THE WARM-IN-WINTER SIDE OF THE CEILING.
   - NOT LESS THAN 40 PERCENT AND NOT MORE THAN 50 PERCENT OF THE REQUIRED VENTILATING AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE ATTIC OR RAFTER SPACE. UPPER VENTILATORS SHALL BE LOCATED NO MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE, MEASURED VERTICALLY, WITH THE BALANCE OF THE REQUIRED VENTILATION PROVIDED BY EAVE OR CORNICE VENTS. WHERE THE LOCATION OF WALL OR ROOF FRAMING MEMBERS CONFLICTS WITH THE INSTALLATION OF UPPER VENTILATORS, INSTALLATION MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE SHALL BE PERMITTED.

ROOF PLAN KEY NOTES

Name	NOTE
802	ROOFING - CONCRETE - LOW PROFILE 'S' TILE BY EAGLE ROOFING ICC# ESR 1900
810	LINE OF WALL BELOW
826	ROOF VENT - OHAGIN "XL SERIES" CLOAKED VENT (ICC # NER-9650A)
839	MIN. 22"X30" OPENING IN CALIFORNIA ROOF FRAMING CONDITIONS FOR ATTIC ACCESS AND CROSS VENTILATION - CONTRACTOR TO VERIFY AIRFLOW TO ALL ATTIC AREAS

ROOF ATTIC AREA	A	1085	SQ. FT.	CALCULATION FACTOR:	1/300
		156240	SQ. IN		
MIN. VENTILATION REQUIRED:	TOTAL	521	SQ. IN	TOTAL PROVIDED:	585 SQ. IN
MIN. VENTILATION REQUIRED:	HIGH	260	SQ. IN	TOTAL HIGH PROVID	293 SQ. IN
MIN. VENTILATION REQUIRED:	LOW	260	SQ. IN	TOTAL LOW PROVIDI	293 SQ. IN

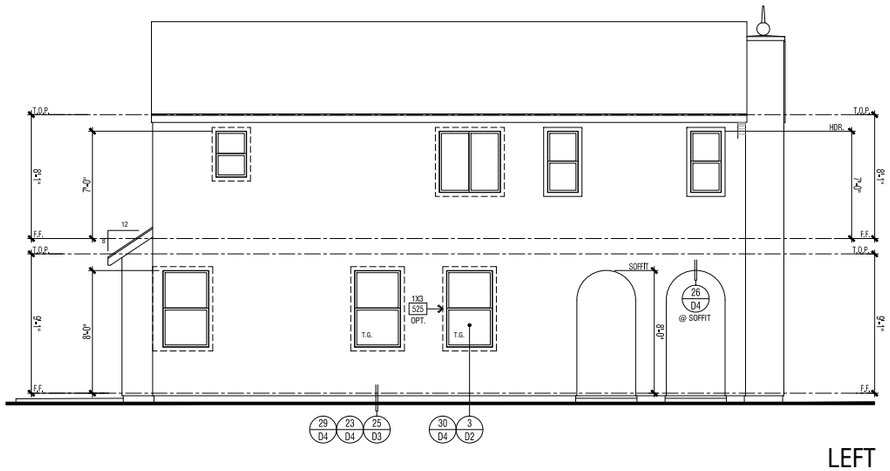
HIGH VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA
CLOAKED VENT - CONC.S-TILE	4"	98	SQ. IN	X 3	293 SQ. IN
				TOTAL PROVIDED:	293 SQ. IN

LOW VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA
CLOAKED VENT - CONC.S-TILE	4"	98	SQ. IN	X 3	293 SQ. IN
				TOTAL PROVIDED:	293 SQ. IN

ROOF ATTIC AREA	B	25	SQ. FT.	CALCULATION FACTOR:	1/300
		3600	SQ. IN		
MIN. VENTILATION REQUIRED:	TOTAL	12	SQ. IN	TOTAL PROVIDED:	195 SQ. IN
MIN. VENTILATION REQUIRED:	HIGH	6	SQ. IN	TOTAL HIGH PROVID	98 SQ. IN
MIN. VENTILATION REQUIRED:	LOW	6	SQ. IN	TOTAL LOW PROVIDI	98 SQ. IN

HIGH VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA
CLOAKED VENT - CONC.S-TILE	4"	98	SQ. IN	X 1	98 SQ. IN
				TOTAL PROVIDED:	98 SQ. IN

LOW VENTILATION METHOD	SIZE	FREE AREA		QUANTITY	FREE VENT AREA
CLOAKED VENT - CONC.S-TILE	4"	98	SQ. IN	X 1	98 SQ. IN
				TOTAL PROVIDED:	98 SQ. IN



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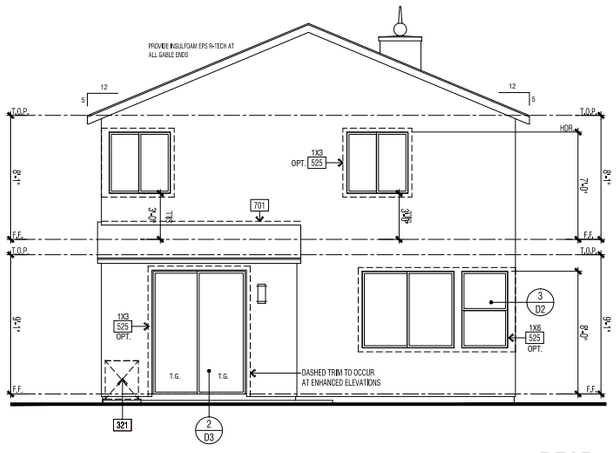

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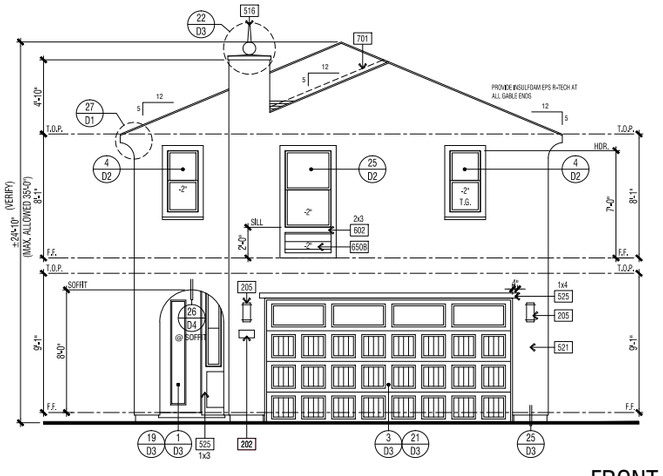


FRONT

1035

SCALE: 1/4" = 1'-0"

PLAN 1648

CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

REVISIONS

NO.	DATE	DESCRIPTION
1	7-25-18	BLDG. DEPT. REVS.
	02/26/2019	AS-BUILT PLAN

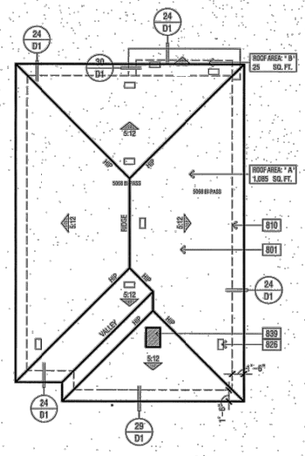
ELEVATION 1648A

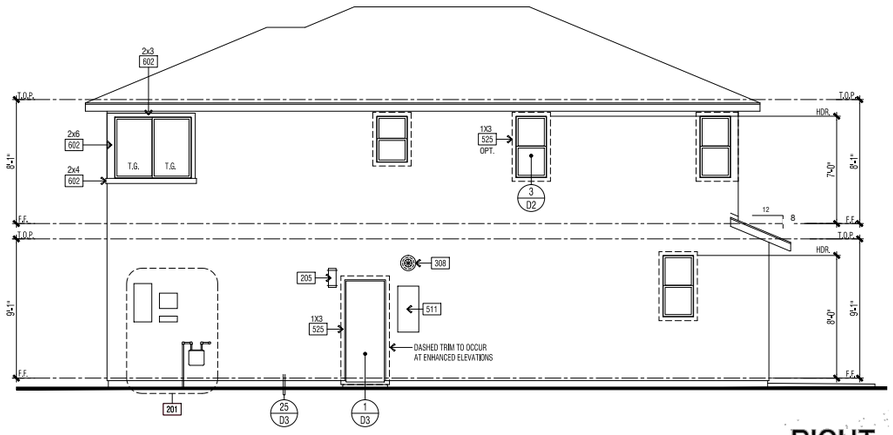
PROJECT MANAGER :	MM
DESIGNER :	AM
DRAWN BY :	-
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	04-25-18
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2018077
CAD FILE NAME :	A104

DATE: 07-25-18

SHEET: A1.4

2018077 - 07-25-18





RIGHT

FINISHED GRADE VARIES. SEE CIVIL ENGINEERS PLANS FOR FINAL GRADE AND SITE DRAINAGE.

ELEVATION KEY NOTES

Name	NOTE
201	UTILITY EQUIPMENT AND SERVICE PANELS - VERIFY LOCATION
205	ADDRESS PANEL. 6" MIN. HIGH BUILDING ADDRESS CHARACTERS PLACED IN SUCH A POSITION TO BE PLAINLY VISIBLE FROM THE STREET.
205	ACCENT EXTERIOR WALL LIGHT
308	TANKLESS WATER HEATER TERMINATION CAP - INSTALL PER MFR. INSTRUCTIONS (CO-ANAL VENT INTAKE & EXHAUST DIRECTLY FROM OUTSIDE)
511	RECESS BOX FOR TANKLESS WATER HEATER - INSTALL PER MFR. INSTRUCTIONS
521	STUCCO - INSTALL PER MANUFACTURER'S LISTING BY: OMEGA DIAMOND WALL ONE COAT SYSTEM ICC-ES ESR-1104
525	STUCCO OVER RIGID FOAM TRIM - FOAM SHAPE PER ELEVATION
551	MANUFACTURED ADHERED STUCCO STONE VENEER - INSTALL PER MANUFACTURER'S INSTRUCTIONS. BY "EL DORADO STONE" ICC-ES ER-3558
602	WOOD TRIM/D - SIZE PER ELEVATION
6508	FIBER CEMENT LAP SIDING - 5/16" THICK "HARDIPLANK" (OR EQUIVALENT. FINISH: SELECT CEDARMILL. EXPOSURE: 8" (INSTALLATION PER MANUFACTURER'S INSTRUCTIONS) ICC-ES NER-405
701	G.I. FLASHING.
761	ROOFING - CONCRETE - FLAT TILE BY EAGLE ROOFING ICC# ESR 1900

ANY OPERABLE WINDOW WITH A SILL THAT IS LOCATED LESS THAN 24" ABOVE FINISHED FLOOR AND MORE THAN 72" ABOVE FINISHED GRADE OR OTHER SURFACE BELOW AT THE EXTERIOR, MUST BE PROTECTED BY A GUARD OR, HAVE A FIXED GLASS. THE GUARD MAY NOT HAVE OPENINGS THAT A SPHERE 4" IN DIAMETER CAN PASS THROUGH. 2016 CBC 1405.13.2

(2) LAYERS OF GRADE 'D' PAPER IS REQUIRED TO BE INSTALLED OVER WOOD SHEATHING 2016 CRC R703.7.3

ARCHITECTS . PLANNERS . DESIGNERS
WHA.
ORANGE COUNTY . LOS ANGELES . BAY AREA

LICENSED ARCHITECT William Hezmalhalch — 4-30-19 — STATE OF CALIFORNIA

WILSON HOMES

TRACT NUMBER: 6168
PROJECT TYPE

ROOF PLAN

SCALE: 1/8" = 1'-0"

ELEVATION REFERENCE:	B	ELEVATION STYLE:	MODERN			
ROOF MATERIAL	STANDARD ROOF DETAIL U.N.O.	FASCIA - U.N.O.	BARGE - U.N.O.	OVERHANG DIM. - U.N.O. - EAVE	- RAKE
CONCRETE 'FLAT' TILE "EAGLE ROOFING" ICC# ESR-1900	1 D1.1	2X6	2X6	1'-6"	1'-0"

ROOF PLAN NOTES

NOTE: MANDATORY REQUIREMENTS FOR SOLAR READY BUILDINGS PER CEnC SECTION 110.10.

1. SEE GENERAL NOTES FOR ROOF NOTES.
2. SPARK ARRESTORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
3. ATTIC ACCESS PER CRC SECTION R807.
4. PROVIDE ATTIC & SOFFIT VENTILATION PER CRC SECTION R806. PER CRC SECTION R806.2, THE MINIMUM NET FREE 4. VENTILATING AREA SHALL BE 1/150 OF THE AREA OF THE VENTED SPACE. EXCEPTION: THE MINIMUM NET FREE VENTILATION AREA SHALL BE 1/300 OF THE VENTED SPACE PROVIDED ONE OR MORE OF THE FOLLOWING CONDITIONS ARE MET:
   - IN CLIMATE ZONES 14 AND 16, A CLASS I OR II VAPOR RETARDER IS INSTALLED ON THE WARM-IN-WINTER SIDE OF THE CEILING.
   - NOT LESS THAN 40 PERCENT AND NOT MORE THAN 50 PERCENT OF THE REQUIRED VENTILATING AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE ATTIC OR RAFTER SPACE. UPPER VENTILATORS SHALL BE LOCATED NO MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE, MEASURED VERTICALLY, WITH THE BALANCE OF THE REQUIRED VENTILATION PROVIDED BY EAVE OR CORNICE VENTS. WHERE THE LOCATION OF WALL OR ROOF FRAMING MEMBERS CONFLICTS WITH THE INSTALLATION OF UPPER VENTILATORS, INSTALLATION MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE SHALL BE PERMITTED.

ROOF PLAN KEY NOTES

Name	NOTE
801	ROOFING - CONCRETE - "FLAT" TILE BY EAGLE ROOFING ICC# ESR 1900
810	LINE OF WALL BELOW
812	STUCCO CEILING
814	WOOD SOFFIT
826	ROOF VENT - O'HAGIN "XL SERIES" CLOAKED VENT (ICC # NER-585OA)
839	MIN. 22"X30" OPENING IN CALIFORNIA ROOF FRAMING CONDITIONS FOR ATTIC ACCESS AND CROSS VENTILATION - CONTRACTOR TO VERIFY AIRFLOW TO ALL ATTIC AREAS

ROOF ATTIC AREA	A	1085 SQ. FT. / 156240 SQ. IN	CALCULATION FACTOR:	1/300
MIN. VENTILATION REQUIRED:	TOTAL	521 SQ. IN	TOTAL PROVIDED:	593 SQ. IN
MIN. VENTILATION REQUIRED:	HIGH	260 SQ. IN	TOTAL HIGH PROVID	296 SQ. IN
MIN. VENTILATION REQUIRED:	LOW	225 SQ. IN	TOTAL LOW PROVID	296 SQ. IN

HIGH VENTILATION METHOD	SIZE	FREE AREA		QUANTITY		FREE VENT AREA
CLOAKED VENT - CONC.FLAT TILE -		99	SQ. IN X	3		296 SQ. IN
				TOTAL PROVIDED:		296 SQ. IN

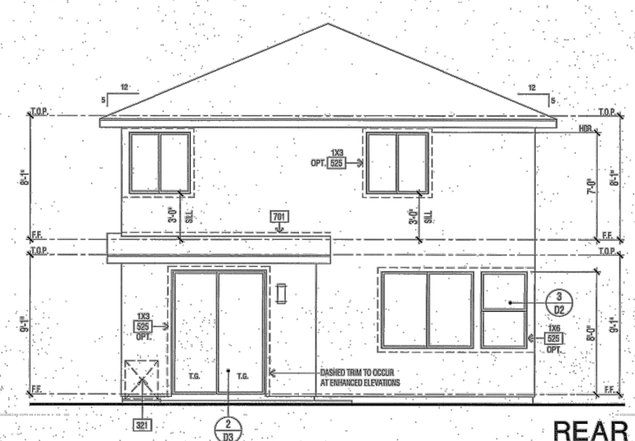
LOW VENTILATION METHOD	SIZE	FREE AREA		QUANTITY		FREE VENT AREA
CLOAKED VENT - CONC.FLAT TILE -		99	SQ. IN X	3		296 SQ. IN
				TOTAL PROVIDED:		296 SQ. IN

ROOF ATTIC AREA	B	25 SQ. FT. / 3600 SQ. IN	CALCULATION FACTOR:	1/300
MIN. VENTILATION REQUIRED:	TOTAL	12 SQ. IN	TOTAL PROVIDED:	198 SQ. IN
MIN. VENTILATION REQUIRED:	HIGH	6 SQ. IN	TOTAL HIGH PROVID	99 SQ. IN
MIN. VENTILATION REQUIRED:	LOW	2 SQ. IN	TOTAL LOW PROVID	99 SQ. IN

HIGH VENTILATION METHOD	SIZE	FREE AREA		QUANTITY		FREE VENT AREA
CLOAKED VENT - CONC.FLAT TILE -		99	SQ. IN X	1		99 SQ. IN
				TOTAL PROVIDED:		99 SQ. IN

LOW VENTILATION METHOD	SIZE	FREE AREA		QUANTITY		FREE VENT AREA
CLOAKED VENT - CONC.FLAT TILE -		99	SQ. IN X	1		99 SQ. IN
				TOTAL PROVIDED:		99 SQ. IN

LEFT



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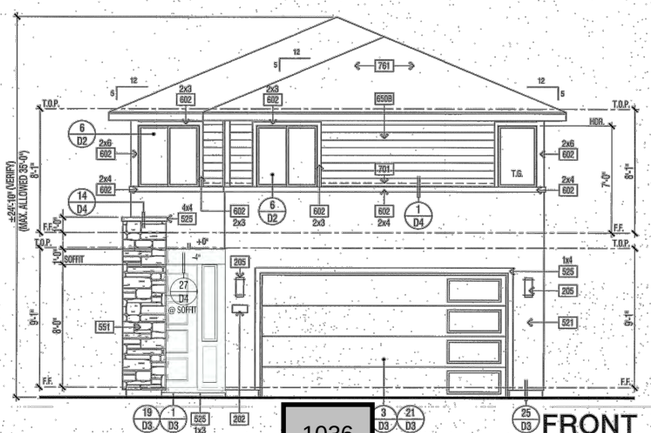


FRONT

1036

SCALE: 1/4" = 1'-0"

PLAN 1648
CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

ELEVATION 1648B

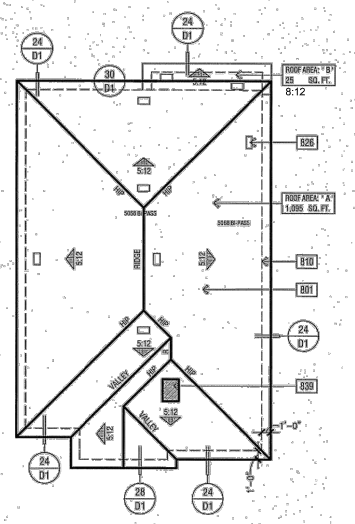
REVISIONS

NO.	DATE	DESCRIPTION
1	7-25-18	BLDG. DEPT. REVS.

City of Clovis - Planning and Development Services - Building Division - Approved Subject to Compliance with Applicable Codes, and Conditions Noted, With Noted Corrections 16SPN JUL 26 2018

PROJECT MANAGER:	MM
DESIGNER:	AM
DRAWN BY:	-
REVIEWED BY:	-
1ST BLDG. DEPT. SUBMITTAL:	04-25-18
ISSUED FOR CONSTRUCTION:	-
JOB NUMBER:	2018077
CAD FILE NAME:	A1.6
DATE:	07-25-18
SHEET:	A1.6

2018077 - 07-25-18



ROOF PLAN

SCALE: 1/8" = 1'-0"

ELEVATION REFERENCE: C		ELEVATION STYLE: PROGRESSIVE NAPA			
ROOF MATERIAL	STANDARD ROOF DETAIL U.N.O.	FASCIA - U.N.O.	BARGE - U.N.O.	OVERHANG DIM. - U.N.O. EAVE	RAKE
CONCRETE 'FLAT' TILE "EAGLE ROOFING" ICC# ESR-1900	1/D1.1	2X6	2X6	1'-0"	1'-0"

ROOF PLAN NOTES

NOTE: MANDATORY REQUIREMENTS FOR SOLAR READY BUILDINGS PER CEnC SECTION 110.10.

1. SEE GENERAL NOTES FOR ROOF NOTES.
2. SPARK ARRESTORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
3. ATTIC ACCESS PER CRC SECTION R807.
4. PROVIDE ATTIC & SOFFIT VENTILATION PER CRC SECTION R806. PER CRC SECTION R806.2, THE MINIMUM NET FREE 4. VENTILATING AREA SHALL BE 1/150 OF THE AREA OF THE VENTED SPACE. EXCEPTION: THE MINIMUM NET FREE VENTILATION AREA SHALL BE 1/300 OF THE VENTED SPACE PROVIDED ONE OR MORE OF THE FOLLOWING CONDITIONS ARE MET:
   - IN CLIMATE ZONES 14 AND 16, A CLASS I OR II VAPOR RETARDER IS INSTALLED ON THE WARM-IN-WINTER SIDE OF THE CEILING.
   - NOT LESS THAN 40 PERCENT AND NOT MORE THAN 50 PERCENT OF THE REQUIRED VENTILATING AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE ATTIC OR RAFTER SPACE. UPPER VENTILATORS SHALL BE LOCATED NO MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE, MEASURED VERTICALLY, WITH THE BALANCE OF THE REQUIRED VENTILATION PROVIDED BY EAVE OR CORNICE VENTS. WHERE THE LOCATION OF WALL OR ROOF FRAMING MEMBERS CONFLICTS WITH THE INSTALLATION OF UPPER VENTILATORS, INSTALLATION MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE SHALL BE PERMITTED.

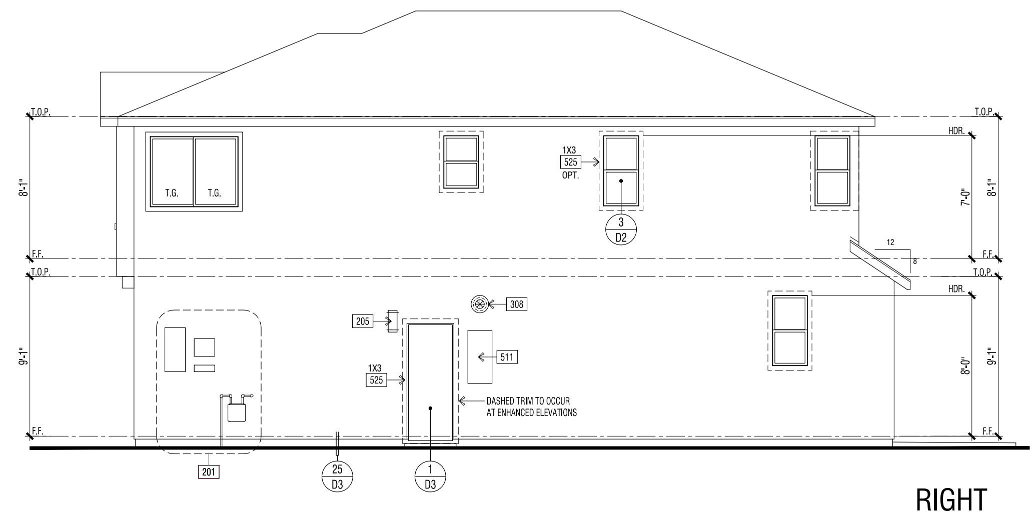
ROOF PLAN KEY NOTES

Name	NOTE
801	ROOFING - CONCRETE - "FLAT" TILE BY EAGLE ROOFING ICC# ESR 1900
810	LINE OF WALL BELOW
812	STUCCO CEILING
813	STUCCO SOFFIT
826	ROOF VENT - O'HAGIN "XL SERIES" CLOAKED VENT (ICC # NER-9650A)
839	MIN. 22"X30" OPENING IN CALIFORNIA ROOF FRAMING CONDITIONS FOR ATTIC ACCESS AND CROSS VENTILATION - CONTRACTOR TO VERIFY AIRFLOW TO ALL ATTIC AREAS

ATTIC VENTILATION CALCULATIONS — PLAN 3C

ROOF ATTIC AREA	A	1095	SQ. FT.	CALCULATION FACTOR:			1/300
		157680	SQ. IN				
MIN. VENTILATION REQUIRED:	TOTAL	520	SQ. IN	TOTAL PROVIDED:		594	SQ. IN
MIN. VENTILATION REQUIRED:	HIGH	260	SQ. IN	TOTAL HIGH PROVI		297	SQ. IN
MIN. VENTILATION REQUIRED:	LOW	260	SQ. IN	TOTAL LOW PROVI		297	SQ. IN
HIGH VENTILATION METHOD	SIZE	FREE AREA		QUANTITY		FREE VENT AREA	
CLOAKED VENT - CONC. FLAT TILE	-	99	SQ. IN X	3		297	SQ. IN
				TOTAL PROVIDED:		297	SQ. IN
LOW VENTILATION METHOD	SIZE	FREE AREA		QUANTITY		FREE VENT AREA	
CLOAKED VENT - CONC. FLAT TILE	-	99	SQ. IN X	3		297	SQ. IN
				TOTAL PROVIDED:		297	SQ. IN

ROOF ATTIC AREA	B	25	SQ. FT.	CALCULATION FACTOR:			1/300
		3600	SQ. IN				
MIN. VENTILATION REQUIRED:	TOTAL	12	SQ. IN	TOTAL PROVIDED:		198	SQ. IN
MIN. VENTILATION REQUIRED:	HIGH	6	SQ. IN	TOTAL HIGH PROVID		99	SQ. IN
MIN. VENTILATION REQUIRED:	LOW	2	SQ. IN	TOTAL LOW PROVIDI		99	SQ. IN
HIGH VENTILATION METHOD	SIZE	FREE AREA		QUANTITY		FREE VENT AREA	
CLOAKED VENT - CONC.FLAT TILE	-	99	SQ. IN X	1		99	SQ. IN
				TOTAL PROVIDED:		99	SQ. IN
LOW VENTILATION METHOD	SIZE	FREE AREA		QUANTITY		FREE VENT AREA	
CLOAKED VENT - CONC.FLAT TILE	-	99	SQ. IN X	1		99	SQ. IN
				TOTAL PROVIDED:		99	SQ. IN



RIGHT

FINISHED GRADE VARIES. SEE CIVIL ENGINEERS PLANS FOR FINAL GRADE AND SITE DRAINAGE.

ELEVATION KEY NOTES

Name	NOTE
201	UTILITY EQUIPMENT AND SERVICE PANELS - VERIFY LOCATION
203	ADDRESS PANEL. 6" MIN. HIGH BUILDING ADDRESS CHARACTERS PLACED IN SUCH A POSITION TO BE PLAINLY VISIBLE FROM THE STREET.
205	ACCENT EXTERIOR WALL LIGHT
308	TANKLESS WATER HEATER TERMINATION CAP - INSTALL PER MFR. INSTRUCTIONS (CO-AXIAL VENT INTAKE & EXHAUST DIRECTLY FROM OUTSIDE)
321	AIR CONDITIONING CONDENSER LOCATION
511	RECESS BOX FOR TANKLESS WATER HEATER - INSTALL PER MFR. INSTRUCTIONS
515	STUCCO NICHE. SIZE PER ELEVATION - SLOPE SILL 1/4" PER FT. MINIMUM
521	STUCCO - INSTALL PER MANUFACTURER'S LISTING BY: OMEGA DIAMOND WALL ONE COAT SYSTEM ICC-ES ESR-1194
525	STUCCO OVER RIGID FOAM TRIM - FOAM SHAPE PER ELEVATION
592	AWNING BY "FYPON" - SIZE AND STYLE PER ELEVATION
602	WOOD TRIM(S) - SIZE PER ELEVATION
650B	FIBER CEMENT LAP SIDING - 5/16" THICK 'HARDIPLANK' (OR EQUIVALENT. FINISH: SELECT CEDARMILL. EXPOSURE: 6" (INSTALLATION PER MANUFACTURER'S INSTRUCTIONS) ICC-ES NER-405
701	G.I. FLASHING
761	ROOFING - CONCRETE - FLAT TILE BY EAGLE ROOFING ICC# ESR 1900

ANY OPERABLE WINDOW WITH A SILL THAT IS LOCATED LESS THAN 24" ABOVE FINISHED FLOOR AND MORE THAN 72" ABOVE FINISHED GRADE OR OTHER SURFACE BELOW AT THE EXTERIOR, MUST BE PROTECTED BY A GUARD OR, HAVE A FIXED GLASS. THE GUARD MAY NOT HAVE OPENINGS THAT A SPHERE 4" IN DIAMETER CAN PASS THROUGH. 2016 CBC 1405.13.2

(2) LAYERS OF GRADE 'D' PAPER IS REQUIRED TO BE INSTALLED OVER WOOD SHEATHING 2016 CRC R703.7.3

ARCHITECTS . PLANNERS . DESIGNERS

WHA.

ORANGE COUNTY . LOS ANGELES . BAY AREA

WILSON HOMES

TRACT NUMBER: 6168
PROJECT TYPE

LEFT

PLAN 1648
CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

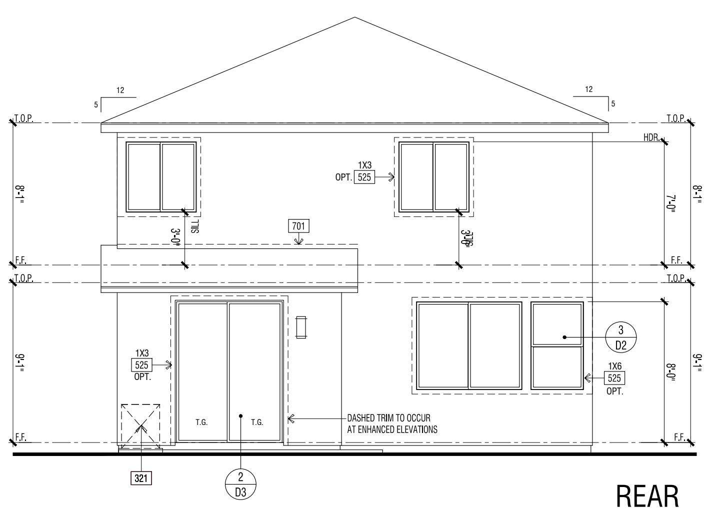
ELEVATION 1648C

DO NOT SCALE PLANS

REVISIONS

NO.	DATE	DESCRIPTION
1	7-25-18	BLDG. DEPT. REVS.

City of Clovis - Planning and Development Services - Building Division
16SPN
JUL 26 2018



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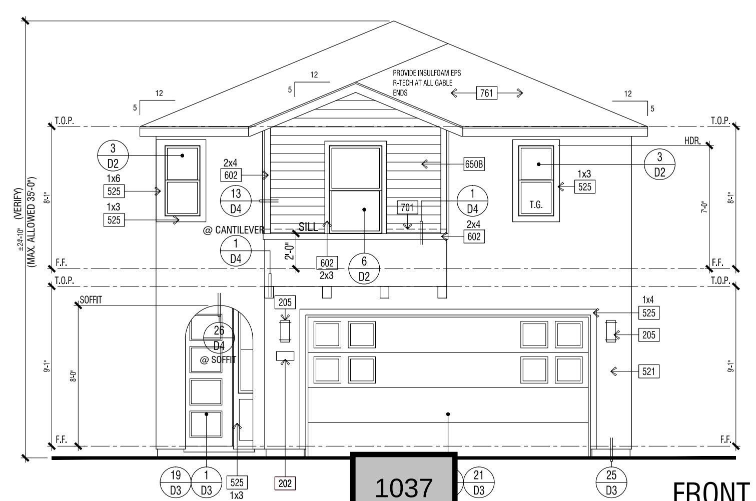


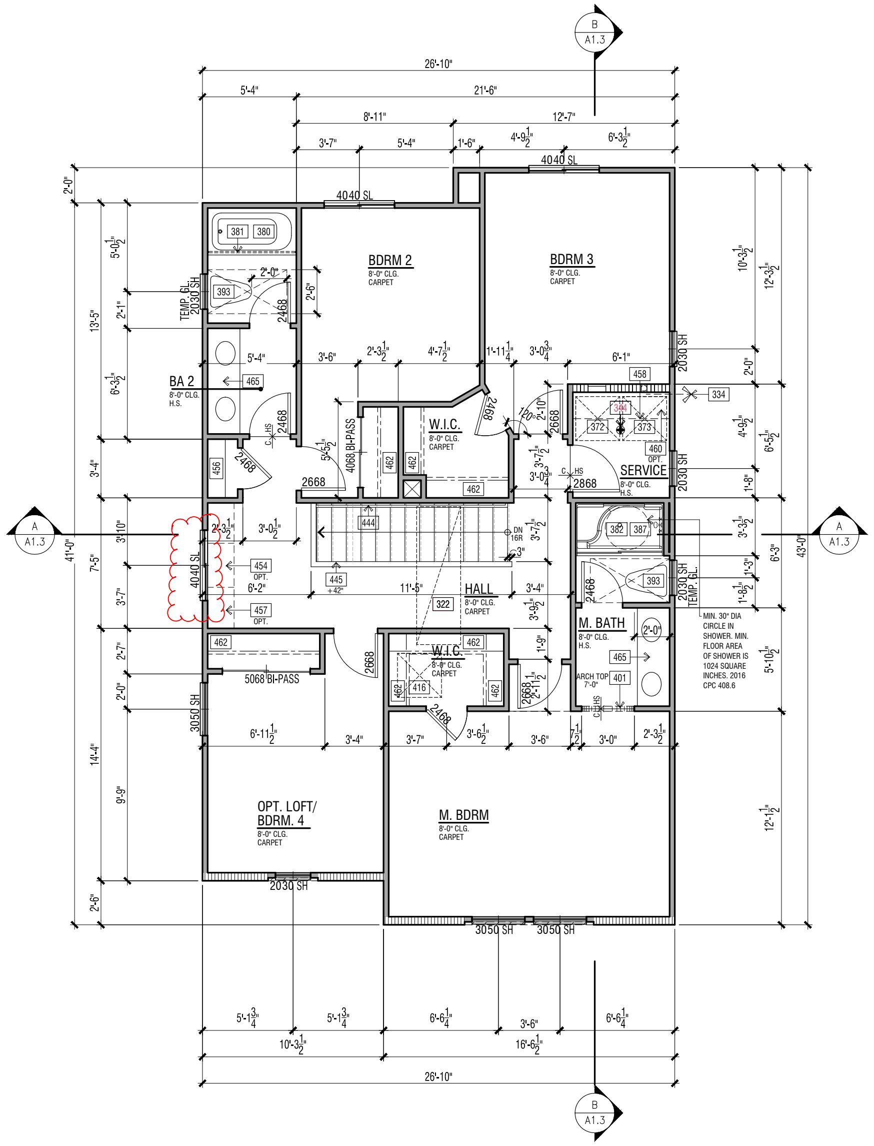
FRONT

PROJECT MANAGER :	MM
DESIGNER :	AM
DRAWN BY :	-
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	04-25-18
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2018077
CAD FILE NAME :	A108

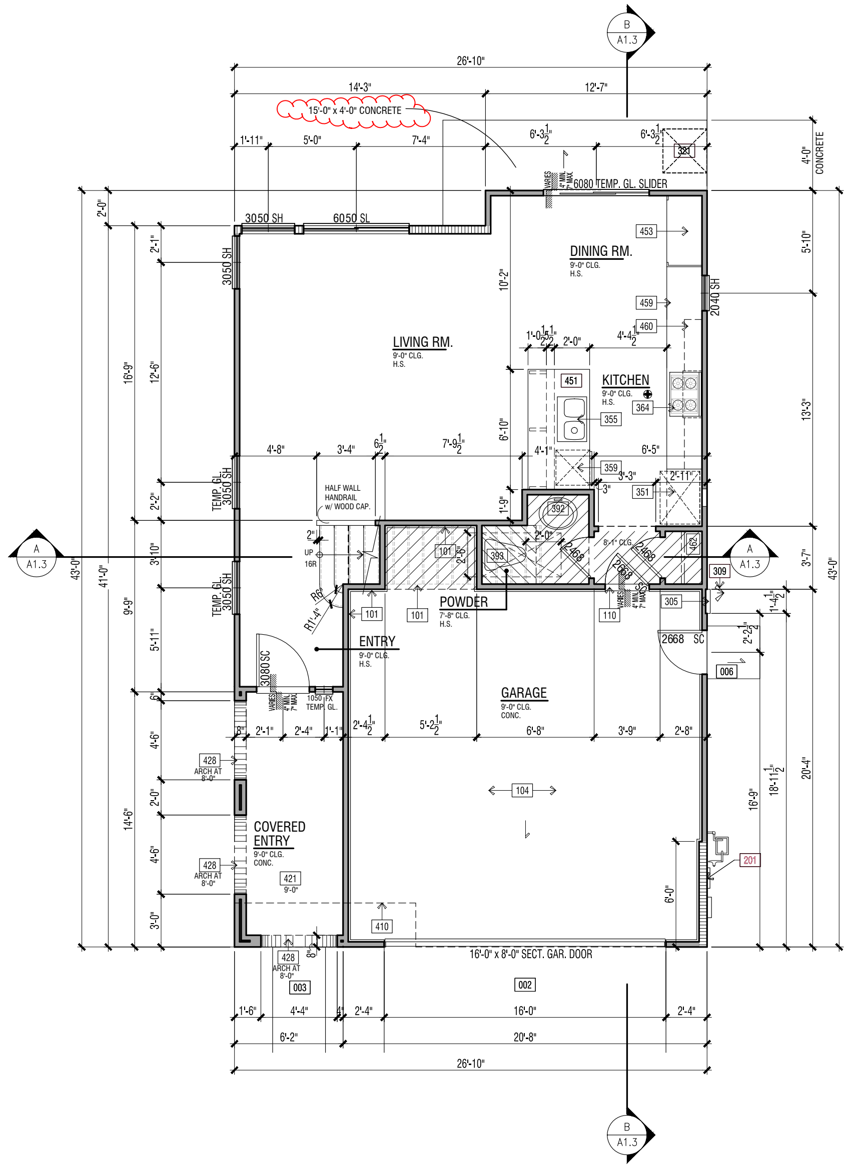
DATE: 07-25-18 | SHEET: A1.8

2018077 - 07-25-18

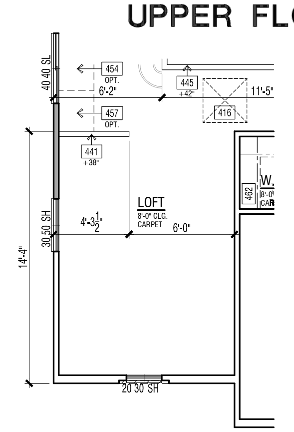
SCALE: 1/4" = 1'-0"



UPPER FLOOR PLAN



LOWER FLOOR PLAN



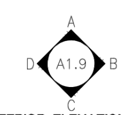
OPT. LOFT

FLOOR PLAN KEY NOTES

Name	NOTE
001	CONCRETE SLAB (SEE STRUCTURAL DRAWINGS)
002	CONCRETE DRIVE (BY OTHERS)
003	CONCRETE WALK (BY OTHERS)
004	CONCRETE PORCH SLAB (BY OTHERS) SLOPE 1/4" PER FOOT MINIMUM IN DIRECTION INDICATED
005	CONCRETE GARAGE SLAB - SLOPE 1/8" PER FOOT MINIMUM IN DIRECTION INDICATED
006	CONCRETE STOOP - 36" DEEP AND 2" WIDER THAN THE DOOR OPENING - SLOPE 1/4" PER FOOT MINIMUM TO DRAIN IN DIRECTION INDICATED
010	CONCRETE PATIO (BY OTHERS)
101	GARAGE AND/OR CARPORT SHALL BE SEPARATED FROM THE RESIDENCE AND ITS ATTIC BY MEANS OF A MIN. 1/2" GYP. BD., OR EQUIVALENT, APPLIED TO THE GARAGE SIDE PER CRC SECTION R302.6.
102	ENCLOSED ACCESSIBLE SPACE UNDER STAIRS SHALL HAVE WALLS, UNDER STAIR SURFACE AND ANY SOFFITS PROTECTED ON THE ENCLOSED SIDE WITH 1/2" GYPSUM BOARD PER CRC SECTION R302.7.
104	GARAGE AND/OR CARPORT WITH HABITABLE ROOMS ABOVE SHALL BE SEPARATED FROM THE RESIDENCE BY A MIN. 5/8" TYPE 'X' GYP. BD., OR EQ. STRUCTURE(S) SUPPORTING THE FLR./CLG. ASSEMBLY USED FOR SEPARATION SHALL BE A MIN. 1/2" GYP. BD., OR EQ. PER CRC SEC. R302.6.
110	PROVIDE SOLID WOOD DOOR, OR SOLID OR HONEYCOMB CORE STEEL DOORS, NOT LESS THAN 1-3/8" THICK, OR 20 MINUTE FIRE RATED DOOR. DOORS SHALL BE SELF CLOSING AND SELF LATCHING PER CRC SECTION R302.5.1.
201	UTILITY EQUIPMENT AND SERVICE PANELS - VERIFY LOCATION
305	TANKLESS WATER HEATER - MODEL RINNAI (R75LS) - INSTALL PER MANUFACTURER'S INSTRUCTIONS
309	TEMPERATURE AND PRESSURE RELIEF VALVE. DISCHARGE LINE TO THE OUTSIDE OUTSIDE PER CPC SECTION 608.5
312	METAL FIREPLACE (GAS APPLIANCE) - HEIGHT PER PLAN - INSTALL PER MANUFACTURER'S INSTRUCTIONS. BY HEATILATOR MODEL# ND4842 ANSI Z21.88-2002
321	AIR CONDITIONING CONDENSER LOCATION
322	FORCED AIR UNIT (FAU) ATTIC INSALLATION
334	4" DIA. G.I. DRYER VENT WITH APPROVED LINT TRAP - VENT TO OUTSIDE
336	5" DIA. G.I. DRYER VENT WITH APPROVED LINT TRAP - VENT THROUGH ROOF
342	RETURN AIR GRILL - SEE MECHANICAL
344	WHOLE HOUSE EXHAUST FAN PER 2016 CEC. REFER TO ATTACHED "SUMMARY OF THE 2010 ENERGY CODE ASHRAE 62.2 REQUIREMENTS"
351	REFRIGERATOR SPACE WITH RECESSED COLD WATER BOX
355	SINK WITH GARBAGE DISPOSER
357	UTILITY SINK
359	DISHWASHER - ENERGY STAR
364	30" COOKTOP & EXHAUST HOOD WITH FAN AND LIGHT. EXHAUST VENT TO OUTSIDE
367	30" OVEN
372	WASHER SPACE WITH RECESSED WATER BOX AND DBL. WIDE SMITTY PAN
373	DRYER SPACE
380	TUB/ SHOWER - 32"X60" MODEL 2603DT - GELCOAT SURFACE - BY AQUATIC
381	CURTAIN ROD
382	SHATTERPROOF SHOWER DOOR/ ENCLOSURE
383	TUB ACCESS PANEL
387	SHOWER - LASCO MODEL# 1603DTS
390	SHOWER SEAT - SLOPE $\frac{1}{4}$" MINIMUM TO DRAIN
392	PEDESTAL SINK
393	TOILET - PROVIDE MINIMUM 24" X 30" CLEAR FLOOR AREA IN FRONT OF TOILET
401	INTERIOR SOFFIT(S)/ DROPPED CEILING(S): HEIGHT PER PLAN
410	LINE OF FLOOR ABOVE
411	LINE OF FLOOR BELOW
412	OPEN TO ABOVE
413	OPEN TO BELOW
416	30"x30" ATTIC ACCESS - DIMENSIONS ARE CLEAR - PER CEnC 150.0(a)1, ATTIC ACCESS DOORS SHALL HAVE PERMANENTLY ATTACHED INSULATION USING ADHESIVE OR MECHANICAL FASTENERS AND THE ATTIC ACCESS SHALL BE GASKETED TO PREVENT AIR LEAKAGE
417	22"X30" 1-HOUR ATTIC ACCESS-DIMENSIONS CLEAR
421	STUCCO CEILING: HEIGHT PER PLAN
422	STUCCO SOFFIT: HEIGHT PER PLAN
427	STUCCO SOFFIT OVER WATERPROOFED STUCCO SHELF - SLOPE FRAMING FOR DRAINAGE (1/4" PER FOOT MINIMUM)
428	ARCHED STUCCO SOFFIT - HEIGHT PER ELEVATION
441	GYP. BD. SHELF/LOW WALL - WIDTH AND HEIGHT PER PLAN
442	2X PONY WALL - SIZE PER PLAN
444	+34"- +38" HANDRAIL (SEE DETAIL 1G/D5)
445	+42" GUARD (SEE DETAIL 1F/D5)
451	KITCHEN ISLAND - PROVIDE APPROVED UNDERGROUND CONDUIT FOR ELECTRIC SERVICE TO ISLAND
453	PANTRY WITH WIRE SHELVING
454	DESK
455	LINEN
456	LINEN (UPPER & LOWER)
457	LINEN (LOW ONLY)
458	WIRE SHELF
459	BASE CABINET
460	UPPER CABINET
462	WIRE SHELF AND POLE
464	WIRE SHELF (OR SHELVES)
465	VANITY

FLOOR PLAN NOTES

1. ATTICS: ACCESS PER CRC R807, DRAFTSTOPS PER CRC R302.12 AND VENTILATION PER R806.
2. EMERGENCY ESCAPE AND RESCUE OPENINGS PER CRC R310. MEANS OF EGRESS PER CRC R311.
3. GLAZING PER CRC R303.1 & R308
4. FACTORY-BUILT FIREPLACES AND CHIMNEYS PER CRC R1004, R1005, R1006 CGBSC SECTION 4.503 & CEnC SECTION 150.0(e).
5. COMBUSTION AIR TO FORCED AIR UNIT PER CMC CHAPTER 7.
6. COMBUSTION AIR TO WATER HEATER PER CPC SECTION 507.0.
7. ENVIRONMENTAL AIR DUCTS PER CMC SECTION 504.
8. MECHANICAL EQUIPMENT LOCATION AND PROTECTION AGAINST DAMAGE PER CMC 305 & 308.
9. MANDATORY REQUIREMENTS FOR APPLIANCES PER CEnC SECTION 110.1.
10. A SHEETROCK NAILING INSPECTION IS REQUIRED. 2016 CRC R109.1.4.2 & CBC 110.3.5



INTERIOR ELEVATION KEY

FLOOR AREA TABLE	PLAN 1660A
LOWER FLOOR PLAN	599 SQ. FT.
UPPER FLOOR PLAN	1,061 SQ. FT.
TOTAL	1,660 SQ. FT.
GARAGE	437 SQ. FT.
COVERED ENTRY/PORCH	90 SQ. FT.

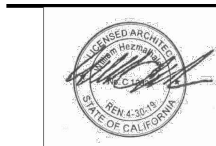
SCALE: 1/4" = 1'- 0"

1038

ARCHITECTS . PLANNERS . DESIGNERS

WHA.

ORANGE COUNTY . LOS ANGELES . BAY AREA



WILSON HOMES

TRACT NUMBER: 6168
PROJECT TYPE

PLAN 1660
CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

REVISIONS

NO.	DATE	DESCRIPTION
1	8-03-18	BLDG. DEPT. REVS.
	10-16-18	AS-BUILT PLAN

AS-BUILT PLAN

PLAN 1660A

PROJECT MANAGER :	MM
DESIGNER :	AM
DRAWN BY :	-
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	04-25-18
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2018077
CAD FILE NAME :	A101

DATE: 08-03-18

SHEET: A1.1

2018077 - 08-03-18

FLOOR PLAN KEY NOTES	
Name	NOTE
002	CONCRETE DRIVE (BY OTHERS)
003	CONCRETE WALK (BY OTHERS)
004	CONCRETE PORCH SLAB (BY OTHERS) SLOPE 1/4" PER FOOT MINIMUM IN DIRECTION INDICATED
005	CONCRETE GARAGE SLAB - SLOPE ¼" PER FOOT MINIMUM IN DIRECTION INDICATED
421	STUCCO CEILING: HEIGHT PER PLAN
422	STUCCO SOFFIT: HEIGHT PER PLAN
551	MANUFACTURED ADHERED STUCCO STONE VENEER - INSTALL PER MANUFACTURER'S INSTRUCTIONS. BY 'EL DORADO STONE' ICC-ES ER-3568

ARCHITECTS . PLANNERS . DESIGNERS

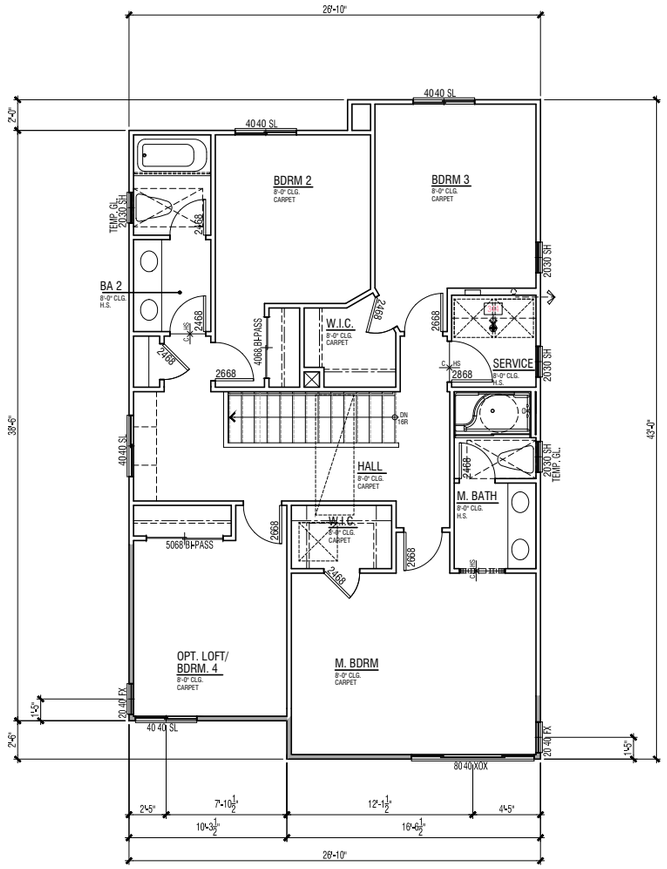
WHA.

ORANGE COUNTY . LOS ANGELES . BAY AREA

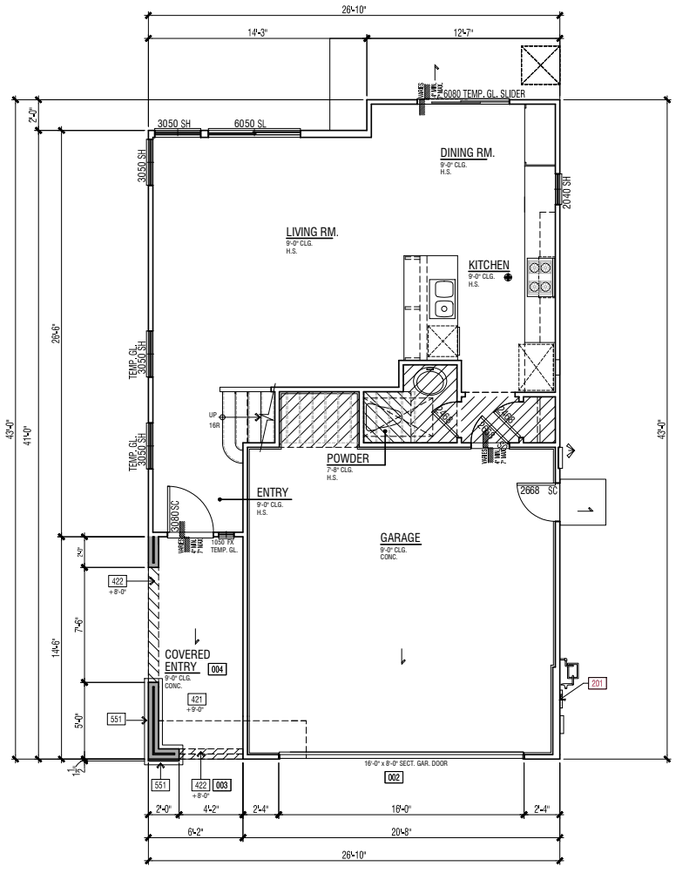
LICENSED ARCHITECT — WILLIAM HEZMALHALCH — REN 4-30-19 — STATE OF CALIFORNIA

WILSON HOMES

TRACT NUMBER: 6168
PROJECT TYPE



UPPER FLOOR PLAN



LOWER FLOOR PLAN

1039

ADDENDA FLOOR PLAN NOTES
NOTE: SHADED WALLS INDICATE AREAS THAT ARE DIFFERENT THAN THE BASE FLOOR PLAN
NOTE: REFER TO CIVIL AND LANDSCAPE DRAWINGS BY OTHERS FOR ALL DRIVEWAYS AND SIDEWALK LOCATIONS.
REFER TO BASE PLAN SHEET A1.1 FOR ADDITIONAL NOTES AND DIMENSIONS.

INTERIOR ELEVATION KEY

FLOOR AREA TABLE	PLAN 1660B
LOWER FLOOR PLAN	599 SQ. FT.
UPPER FLOOR PLAN	1,061 SQ. FT.
TOTAL	1,660 SQ. FT.
GARAGE	437 SQ. FT.
COVERED ENTRY/PORCH	90 SQ. FT.

SCALE: 1/4" = 1'- 0"

PLAN 1660
CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

REVISIONS

NO.	DATE	DESCRIPTION
	10-16-18	AS-BUILT PLAN

AS-BUILT PLAN

PLAN
1660B

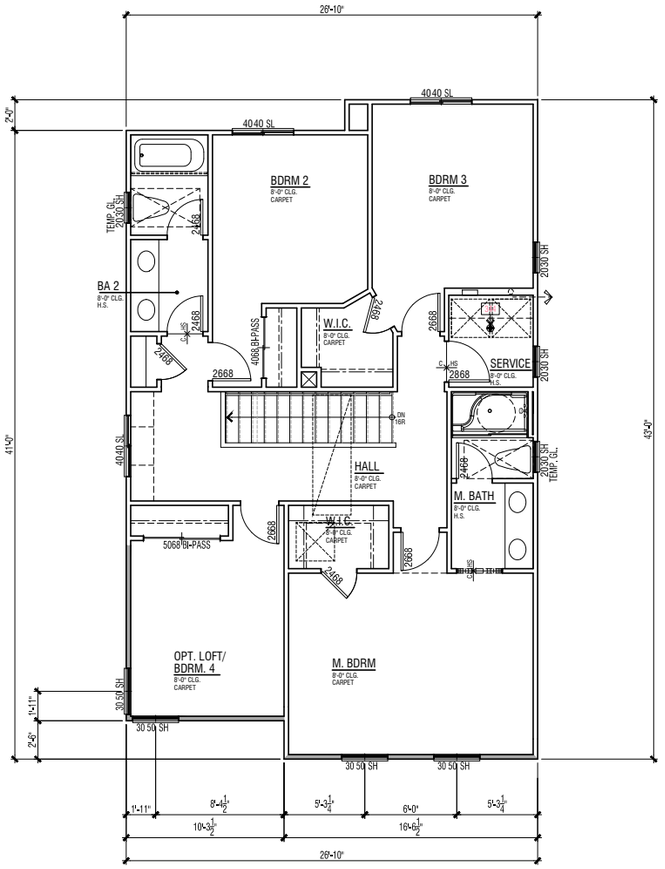
PROJECT MANAGER :	MM
DESIGNER :	AM
DRAWN BY :	-
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	04-25-18
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2018077
CAD FILE NAME :	A105

DATE: 08-03-18

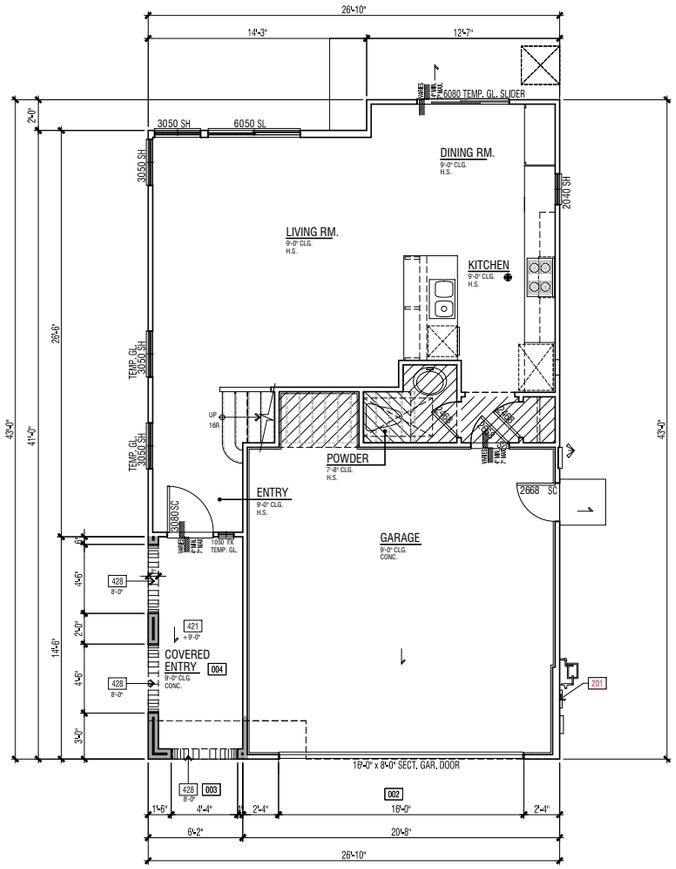
SHEET: A1.5

2018077 - 08-03-18

FLOOR PLAN KEY NOTES	
Name	NOTE
002	CONCRETE DRIVE (BY OTHERS)
003	CONCRETE WALK (BY OTHERS)
004	CONCRETE PORCH SLAB (BY OTHERS) SLOPE 1/4" PER FOOT MINIMUM IN DIRECTION INDICATED
005	CONCRETE GARAGE SLAB - SLOPE ¼" PER FOOT MINIMUM IN DIRECTION INDICATED
421	STUCCO CEILING: HEIGHT PER PLAN
428	ARCHED STUCCO SOFFIT: HEIGHT PER PLAN



UPPER FLOOR PLAN



LOWER FLOOR PLAN

1040

ADDENDA FLOOR PLAN NOTES

NOTE: SHADED WALLS INDICATE AREAS THAT ARE DIFFERENT THAN THE BASE FLOOR PLAN

NOTE: REFER TO CIVIL AND LANDSCAPE DRAWINGS BY OTHERS FOR ALL DRIVEWAYS AND SIDEWALK LOCATIONS.

REFER TO BASE PLAN SHEET A1.1 FOR ADDITIONAL NOTES AND DIMENSIONS.

A
D A1.9 B
C

INTERIOR ELEVATION KEY

FLOOR AREA TABLE	PLAN 1660C
LOWER FLOOR PLAN	599 SQ. FT.
UPPER FLOOR PLAN	1,061 SQ. FT.
TOTAL	1,660 SQ. FT.
GARAGE	437 SQ. FT.
COVERED ENTRY/PORCH	90 SQ. FT.

SCALE: 1/4" = 1'- 0"

ARCHITECTS . PLANNERS . DESIGNERS

WHA.

ORANGE COUNTY . LOS ANGELES . BAY AREA

WILSON HOMES

TRACT NUMBER: 6168
PROJECT TYPE

PLAN 1660
CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

REVISIONS

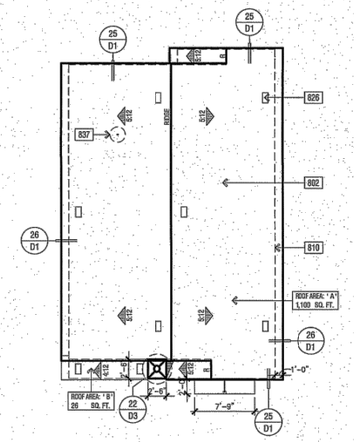
NO.	DATE	DESCRIPTION
	10-16-18	AS-BUILT PLAN

AS-BUILT PLAN

PLAN
1660C

PROJECT MANAGER :	MM
DESIGNER :	AM
DRAWN BY :	-
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	04-25-18
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2018077
CAD FILE NAME :	A107
DATE: 08-03-18	SHEET: A1.7

2018077 - 08-03-18



ROOF PLAN

SCALE: 1/8" = 1'-0"

ELEVATION REFERENCE:	A	ELEVATION STYLE:	CONTEMPORARY SPANISH			
ROOF MATERIAL	STANDARD ROOF DETAIL U.N.O.	FASCIA - U.N.O.	BARGE - U.N.O.	OVERHANG DIM. - U.N.O. EAVE	RAKE
CONCRETE ' S ' TILE *EAGLE ROOFING* ICC# ESR-1900	1 D1	2X6	NONE	1'-0"	TIGHT

ROOF PLAN NOTES

NOTE: MANDATORY REQUIREMENTS FOR SOLAR READY BUILDINGS PER CEnC SECTION 110.10.

1. SEE GENERAL NOTES FOR ROOF NOTES.
2. SPARK ARRESTORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
3. ATTIC ACCESS PER CRC SECTION R807.
4. PROVIDE ATTIC & SOFFIT VENTILATION PER CRC SECTION R806. PER CRC SECTION R806.2, THE MINIMUM NET FREE VENTILATING AREA SHALL BE 1/150 OF THE AREA OF THE VENTED SPACE. EXCEPTION: THE MINIMUM NET FREE VENTILATION AREA SHALL BE 1/300 OF THE VENTED SPACE PROVIDED ONE OR MORE OF THE FOLLOWING CONDITIONS ARE MET:
   - IN CLIMATE ZONES 14 AND 16, A CLASS I OR II VAPOR RETARDER IS INSTALLED ON THE WARM-IN-WINTER SIDE OF THE CEILING.
   - NOT LESS THAN 40 PERCENT AND NOT MORE THAN 50 PERCENT OF THE REQUIRED VENTILATING AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE ATTIC OR RAFTER SPACE. UPPER VENTILATORS SHALL BE LOCATED NO MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE, MEASURED VERTICALLY, WITH THE BALANCE OF THE REQUIRED VENTILATION PROVIDED BY EAVE OR CORNICE VENTS. WHERE THE LOCATION OF WALL OR ROOF FRAMING MEMBERS CONFLICTS WITH THE INSTALLATION OF UPPER VENTILATORS, INSTALLATION MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE SHALL BE PERMITTED.

ROOF PLAN KEY NOTES

Name	NOTE
802	ROOFING - CONCRETE - LOW PROFILE "S" TILE BY EAGLE ROOFING ICC# ESR 1900
810	LINE OF WALL BELOW
812	STUCCO CEILING
813	STUCCO SOFFIT
826	ROOF VENT - O'HAGIN "XL SERIES" CLOAKED VENT (ICC # NER-9650A)
837	PROVIDE 1" CONDUIT FROM THE ELECTRIC PANEL TO LOCATION IN ATTIC FOR FUTURE SOLAR INSTALLATION.
839	MIN. 22"X30" OPENING IN CALIFORNIA ROOF FRAMING CONDITIONS FOR ATTIC ACCESS AND CROSS VENTILATION - CONTRACTOR TO VERIFY AIRFLOW TO ALL ATTIC AREAS

ROOF ATTIC AREA	A	1100	SQ. FT.	CALCULATION FACTOR:	1/300
		158400	SQ. IN		
MIN. VENTILATION REQUIRED:	TOTAL	528	SQ. IN	TOTAL PROVIDED:	585 SQ. IN
MIN. VENTILATION REQUIRED:	HIGH	264	SQ. IN	TOTAL HIGH PROVID	293 SQ. IN
MIN. VENTILATION REQUIRED:	LOW	264	SQ. IN	TOTAL LOW PROVID	293 SQ. IN

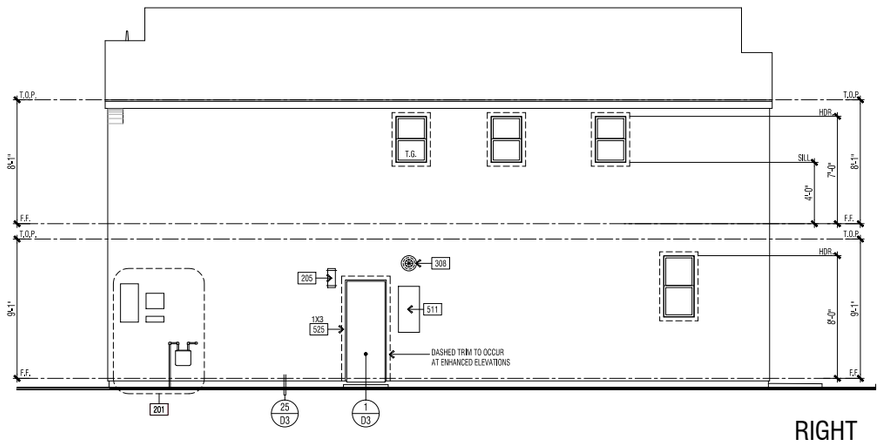
HIGH VENTILATION METHOD	SIZE	FREE AREA			QUANTITY		FREE VENT AREA	
CLOAKED VENT - CONC.S-TILE	-	98	SQ. IN	X	3	=	293	SQ. IN
					TOTAL PROVIDED:		293	SQ. IN

LOW VENTILATION METHOD	SIZE	FREE AREA			QUANTITY		FREE VENT AREA	
CLOAKED VENT - CONC.S-TILE	-	98	SQ. IN	X	3	=	293	SQ. IN
					TOTAL PROVIDED:		293	SQ. IN

ROOF ATTIC AREA	B	26	SQ. FT.	CALCULATION FACTOR:	1/300
		3744	SQ. IN		
MIN. VENTILATION REQUIRED:	TOTAL	12	SQ. IN	TOTAL PROVIDED:	196 SQ. IN
MIN. VENTILATION REQUIRED:	HIGH	6	SQ. IN	TOTAL HIGH PROVI	98 SQ. IN
MIN. VENTILATION REQUIRED:	LOW	6	SQ. IN	TOTAL LOW PROVI	98 SQ. IN

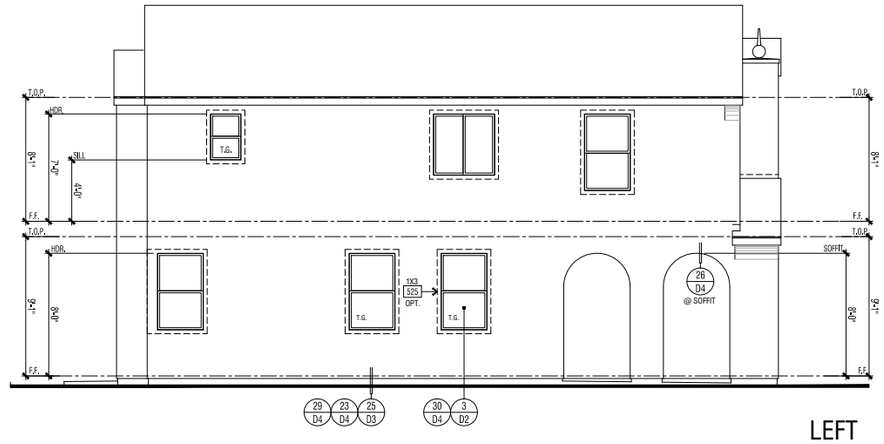
HIGH VENTILATION METHOD	SIZE	FREE AREA			QUANTITY		FREE VENT AREA	
CLOAKED VENT - CONC.S-TILE	-	98	SQ. IN	X	1	=	98	SQ. IN
					TOTAL PROVIDED:		98	SQ. IN

LOW VENTILATION METHOD	SIZE	FREE AREA			QUANTITY		FREE VENT AREA	
CLOAKED VENT - CONC.S-TILE	-	98	SQ. IN	X	1	=	98	SQ. IN
					TOTAL PROVIDED:		98	SQ. IN

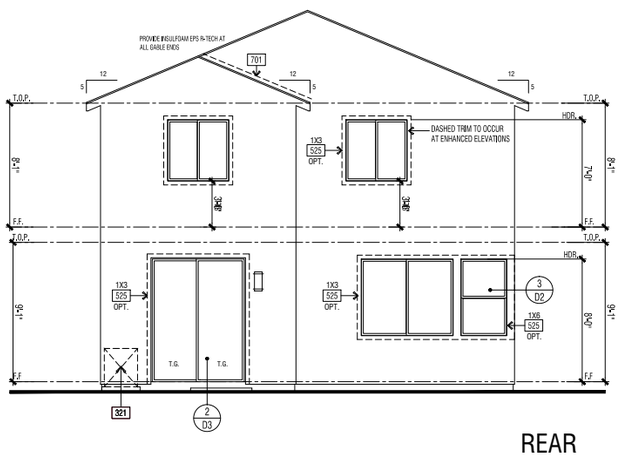


RIGHT

FINISHED GRADE VARIES. SEE CIVIL ENGINEERS PLANS FOR FINAL GRADE AND SITE DRAINAGE.	
ELEVATION KEY NOTES	
Name	NOTE
201	UTILITY EQUIPMENT AND SERVICE PANELS - VERIFY LOCATION
203	ADDRESS PANEL. 6" MIN. HIGH BUILDING ADDRESS CHARACTERS PLACED IN SUCH A POSITION TO BE PLAINLY VISIBLE FROM THE STREET.
205	ACCENT EXTERIOR WALL LIGHT
308	TANKLESS WATER HEATER TERMINATION CAP - INSTALL PER MFR. INSTRUCTIONS (CO-AXIAL VENT INTAKE & EXHAUST DIRECTLY FROM OUTSIDE)
321	AIR CONDITIONING CONDENSER LOCATION
511	RECESS BOX FOR TANKLESS WATER HEATER - INSTALL PER MFG. INSTRUCTIONS
516	DECORATIVE FOAM ACCENT - SEE DETAIL 22/D3 - ICC ESR 1999
521	STUCCO - INSTALL PER MANUFACTURER'S LISTING BY: OMEGA DIAMOND WALL ONE COAT SYSTEM ICC-ES ESR-1194
525	STUCCO OVER RIGID FOAM TRIM - FOAM SHAPE PER ELEVATION
650B	FIBER CEMENT LAP SIDING - 5/16" THICK "HARDIPLANK" (OR EQUIVALENT. FINISH: SELECT CEDARMILL. EXPOSURE: 8" (INSTALLATION PER MANUFACTURER'S INSTRUCTIONS) **ICC-ES NER-405**
674	DECORATIVE METAL WINDOW SHADE
701	G.I. FLASHING
702	ROOFING - CONCRETE - 'S' TILE BY EAGLE ROOFING ICC# ESR 1900
	ANY OPENABLE WINDOW WITH A SILL THAT IS LOCATED LESS THAN 24" ABOVE FINISHED FLOOR AND MORE THAN 72" ABOVE FINISHED GRADE OR OTHER SURFACE BELOW AT THE EXTERIOR, MUST BE PROTECTED BY A GUARD OR, HAVE A FIXED GLASS. THE GUARD MAY NOT HAVE OPENINGS THAT A SPHERE 4" IN DIAMETER CAN PASS THROUGH. 2016 CBC 1405.13.2
	(2) LAYERS OF GRADE 'D' PAPER IS REQUIRED TO BE INSTALLED OVER WOOD SHEATHING 2016 CRC R703.7.3



LEFT



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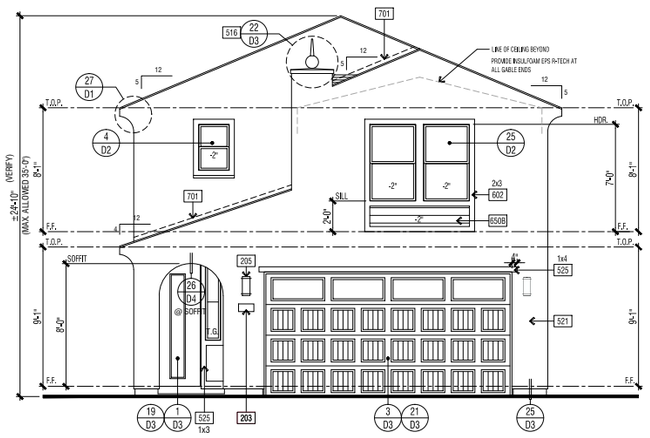


FRONT

1041

ARCHITECTS . PLANNERS . DESIGNERS

WHA.

ORANGE COUNTY . LOS ANGELES . BAY AREA

LICENSED ARCHITECT Hezmalhalch REN 4-30-19 STATE OF CALIFORNIA

WILSON HOMES

TRACT NUMBER: 6168
PROJECT TYPE

PLAN 1660

CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

REVISIONS

NO.	DATE	DESCRIPTION
1	8-03-18	BLDG. DEPT. REVS.

ELEVATIONS PLAN 1660A

PROJECT MANAGER :	MM
DESIGNER :	AM
DRAWN BY :	-
REVIEWED BY :	-
1ST BLDG. DEPT. SUBMITTAL :	04-25-18
ISSUED FOR CONSTRUCTION :	-
JOB NUMBER :	2018077
CAD FILE NAME :	A104

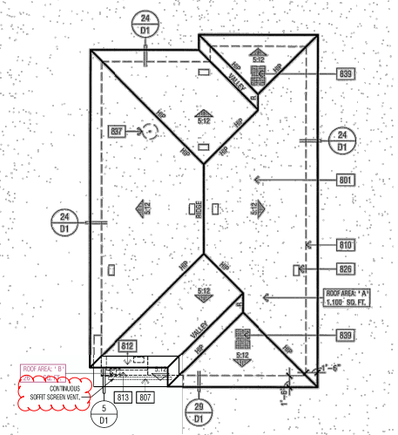
DATE: 08-03-18

SHEET: A1.4

2018077 - 08-03-18

City of Clovis - Planning and Development Services - Building Division - Approved with Noted Corrections - Subject to Field Inspection, Laws, Codes and Ordinances - 16SPN - AUG 07 2018

SCALE: 1/4" = 1'-0"



ROOF PLAN

SCALE: 1/8" = 1'-0"

ELEVATION REFERENCE: B	ELEVATION STYLE: MODERN				
ROOF MATERIAL	STANDARD ROOF DETAIL U.N.O.	FASCIA - U.N.O.	RAKE/GABLE - U.N.O.	OVERHANG DIM. - U.N.O. EAVE	RAKE
CONCRETE 'FLAT' TILE *EAGLE ROOFING* ICC# ESR-1900	1 D1.1	2X6	2X6	1'-6"	1'-0"

ROOF PLAN NOTES

NOTE: MANDATORY REQUIREMENTS FOR SOLAR READY BUILDINGS PER CEnC SECTION 110.10.

1. SEE GENERAL NOTES FOR ROOF NOTES.
2. SPARK ARRESTORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.
3. ATTIC ACCESS PER CRC SECTION R807.
4. PROVIDE ATTIC & SOFFIT VENTILATION PER CRC SECTION R806. PER CRC SECTION R806.2, THE MINIMUM NET FREE 4. VENTILATING AREA SHALL BE 1/150 OF THE AREA OF THE VENTED SPACE. EXCEPTION: THE MINIMUM NET FREE VENTILATION AREA SHALL BE 1/300 OF THE VENTED SPACE PROVIDED ONE OR MORE OF THE FOLLOWING CONDITIONS ARE MET:
   - IN CLIMATE ZONES 14 AND 16, A CLASS I OR II VAPOR RETARDER IS INSTALLED ON THE WARM-IN-WINTER SIDE OF THE CEILING.
   - NOT LESS THAN 40 PERCENT AND NOT MORE THAN 50 PERCENT OF THE REQUIRED VENTILATING AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE ATTIC OR RAFTER SPACE. UPPER VENTILATORS SHALL BE LOCATED NO MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE, MEASURED VERTICALLY, WITH THE BALANCE OF THE REQUIRED VENTILATION PROVIDED BY EAVE OR CORNICE VENTS. WHERE THE LOCATION OF WALL OR ROOF FRAMING MEMBERS CONFLICTS WITH THE INSTALLATION OF UPPER VENTILATORS, INSTALLATION MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE SHALL BE PERMITTED.

ROOF PLAN KEY NOTES

Name	NOTE
801	ROOFING - CONCRETE - "FLAT" TILE BY EAGLE ROOFING ICC# ESR 1900
807	ROOFING - METAL BY CUSTOM BILT METALS - ASTM A792
810	LINE OF WALL BELOW
812	STUCCO CEILING
813	STUCCO SOFFIT
837	PROVIDE 1" CONDUIT FROM THE ELECTRIC PANEL TO LOCATION IN ATTIC FOR FUTURE SOLAR INSTALLATION.
839	MIN. 22"X30" OPENING IN CALIFORNIA ROOF FRAMING CONDITIONS FOR ATTIC ACCESS AND CROSS VENTILATION - CONTRACTOR TO VERIFY AIRFLOW TO ALL ATTIC AREAS
926	ROOF VENT - OHAGIN "XL SERIES" CLOAKED VENT (ICC # NER-S650A)

ROOF ATTIC AREA	A	1100 SQ. FT.	CALCULATION FACTOR:	1/300
		158400 SQ. IN		
MIN. VENTILATION REQUIRED:	TOTAL	528 SQ. IN	TOTAL PROVIDED:	593 SQ. IN
MIN. VENTILATION REQUIRED:	HIGH	264 SQ. IN	TOTAL HIGH PROVID	295 SQ. IN
MIN. VENTILATION REQUIRED:	LOW	232 SQ. IN	TOTAL LOW PROVID	295 SQ. IN

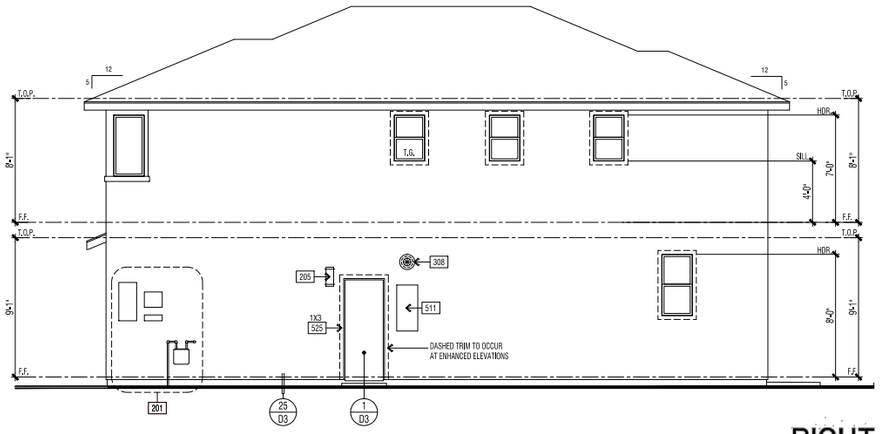
HIGH VENTILATION METHOD	SIZE	FREE AREA		QUANTITY		FREE VENT AREA
CLOAKED VENT - CONC. FLAT TILE -		99	SQ. IN X	3	=	296 SQ. IN
				TOTAL PROVIDED:		296 SQ. IN

LOW VENTILATION METHOD	SIZE	FREE AREA		QUANTITY		FREE VENT AREA
CLOAKED VENT - CONC. FLAT TILE -		99	SQ. IN X	3	=	296 SQ. IN
				TOTAL PROVIDED:		296 SQ. IN

ROOF ATTIC AREA	B	26 SQ. FT.	CALCULATION FACTOR:	1/300
		3744 SQ. IN		
MIN. VENTILATION REQUIRED:	TOTAL	12 SQ. IN	TOTAL PROVIDED:	193 SQ. IN
MIN. VENTILATION REQUIRED:	HIGH	6 SQ. IN	TOTAL HIGH PROVI	99 SQ. IN
MIN. VENTILATION REQUIRED:	LOW	6 SQ. IN	TOTAL LOW PROVI	99 SQ. IN

HIGH VENTILATION METHOD	SIZE	FREE AREA		QUANTITY		FREE VENT AREA
CLOAKED VENT - CONC. FLAT TILE -		99	SQ. IN X	1	=	99 SQ. IN
				TOTAL PROVIDED:		99 SQ. IN

LOW VENTILATION METHOD	SIZE	FREE AREA		QUANTITY		FREE VENT AREA
CLOAKED VENT - CONC. FLAT TILE -		99	SQ. IN X	1	=	99 SQ. IN
				TOTAL PROVIDED:		99 SQ. IN



RIGHT

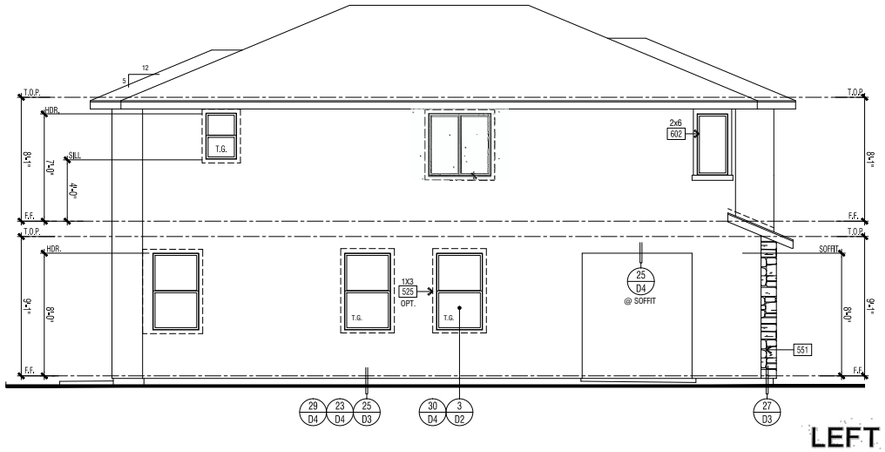
FINISHED GRADE VARIES. SEE CIVIL ENGINEERS PLANS FOR FINAL GRADE AND SITE DRAINAGE.

ELEVATION KEY NOTES

Name	NOTE
201	UTILITY EQUIPMENT AND SERVICE PANELS - VERIFY LOCATION
203	ADDRESS PANEL. 6" MIN. HIGH BUILDING ADDRESS CHARACTERS PLACED IN SUCH A POSITION TO BE PLAINLY VISIBLE FROM THE STREET.
205	ACCENT EXTERIOR WALL LIGHT
308	TANKLESS WATER HEATER TERMINATION CAP - INSTALL PER MFR. INSTRUCTIONS (CO-AXIAL VENT INTAKE & EXHAUST DIRECTLY FROM OUTSIDE)
521	STUCCO - INSTALL PER MANUFACTURER'S LISTING BY: OMEGA DIAMOND WALL ONE COAT SYSTEM ICC-ES ESR-1196
511	RECESS BOX FOR TANKLESS WATER HEATER - INSTALL PER MFR. INSTRUCTIONS
525	STUCCO OVER RIGID FOAM TRIM - FOAM SHAPE PER ELEVATION
551	MANUFACTURED ADHERED STUCCO STONE VENEER - INSTALL PER MANUFACTURER'S INSTRUCTIONS. BY EL DORADO STONE ICC-ES ER-3588
602	WOOD TRIM(S) - SIZE PER ELEVATION
650B	FIBER CEMENT LAP SIDING - 5/16" THICK 'HARDIPLANK' (OR EQUIVALENT, FINISH: SELECT CEDARMILL, EXPOSURE: 6" (INSTALLATION PER MANUFACTURERS INSTRUCTIONS) ICC-ES NER-405
701	5/4 TRIM BOARD
761	ROOFING - CONCRETE - FLAT TILE BY EAGLE ROOFING ICC# ESR 1900
770	ROOFING - METAL BY CUSTOM BILT METALS - ASTM A792

ANY OPERABLE WINDOW WITH A SILL THAT IS LOCATED LESS THAN 24" ABOVE FINISHED FLOOR AND MORE THAN 72" ABOVE FINISHED GRADE OR OTHER SURFACE BELOW AT THE EXTERIOR, MUST BE PROTECTED BY A GUARD OR, HAVE A FIXED GLASS. THE GUARD MAY NOT HAVE OPENINGS THAT A SPHERE 4" IN DIAMETER CAN PASS THROUGH. 2016 CBC 1405.13.2

(2) LAYERS OF GRADE 'D' PAPER IS REQUIRED TO BE INSTALLED OVER WOOD SHEATHING 2016 CRC R703.7.3



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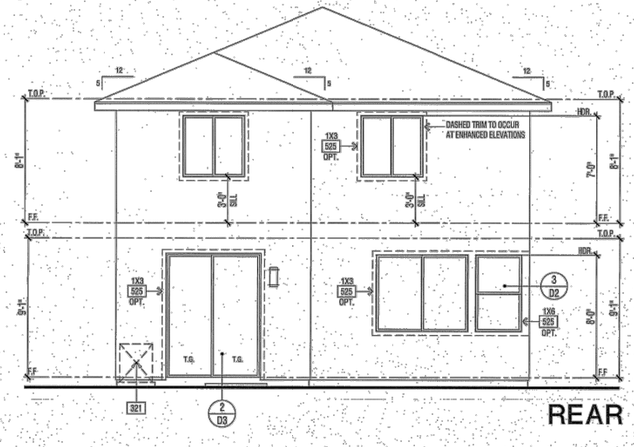

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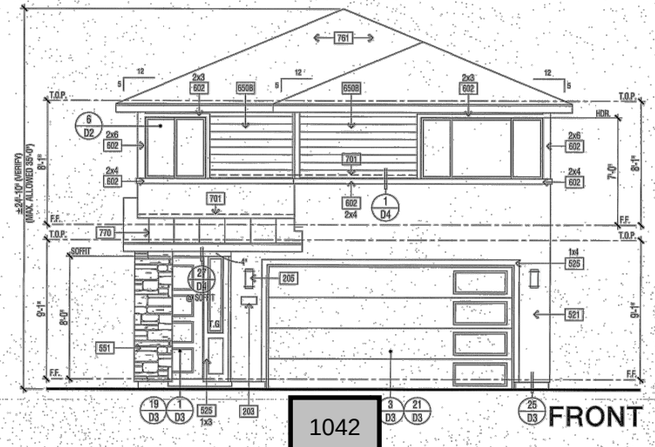


FRONT

SCALE: 1/4" = 1'-0"

1042

ARCHITECTS . PLANNERS . DESIGNERS
WHA.
ORANGE COUNTY . LOS ANGELES . BAY AREA

LICENSED ARCHITECT
William Hezmalhalch
REN 4-30-19
STATE OF CALIFORNIA

WILSON HOMES

TRACT NUMBER:
PROJECT TYPE

PLAN 1660
CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

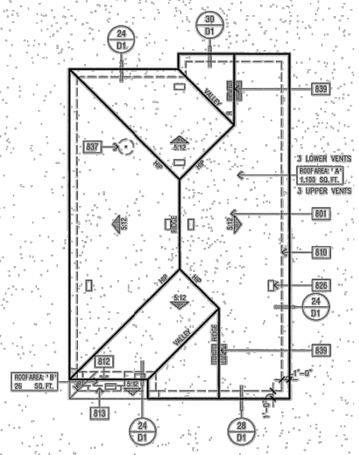
REVISIONS

NO.	DATE	DESCRIPTION
1	8-03-18	BLDG. DEPT. REVS.

ELEVATIONS
PLAN
1660B

PROJECT MANAGER:	MM
DESIGNER:	AM
DRAWN BY:	-
REVIEWED BY:	-
1ST BLDG. DEPT. SUBMITTAL:	04-25-18
ISSUED FOR CONSTRUCTION:	-
JOB NUMBER:	2018077
CAD FILE NAME:	A105
DATE:	08-03-18
SHEET:	A1.6

2018077 - 08-03-18



ROOF PLAN

SCALE: 1/8" = 1'-0"

ELEVATION REFERENCE: C	ELEVATION STYLE: PROGRESSIVE NAPA				
ROOF MATERIAL	STANDARD ROOF DETAIL U.N.O.	FASCIA U.N.O.	BARGE U.N.O.	OVERHANG DIM. - U.N.O. EAVE	RAKE
CONCRETE 'FLAT' TILE *EAGLE ROOFING? ICC# ESR-1900	1 / D1.1	2X6	2X6	1'-0"	1'-0"

ROOF PLAN NOTES

NOTE: MANDATORY REQUIREMENTS FOR SOLAR READY BUILDINGS PER CEnC SECTION 110.10.

1. SEE GENERAL NOTES FOR ROOF NOTES.
2. SPARK ARRESTORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.
3. ATTIC ACCESS PER CRC SECTION R807.
4. PROVIDE ATTIC & SOFFIT VENTILATION PER CRC SECTION R806. PER CRC SECTION R806.2, THE MINIMUM NET FREE 4. VENTILATING AREA SHALL BE 1/150 OF THE AREA OF THE VENTED SPACE. EXCEPTION: THE MINIMUM NET FREE VENTILATION AREA SHALL BE 1/300 OF THE VENTED SPACE PROVIDED ONE OR MORE OF THE FOLLOWING CONDITIONS ARE MET:
   - IN CLIMATE ZONES 14 AND 16, A CLASS I OR II VAPOR RETARDER IS INSTALLED ON THE WARM-IN-WINTER SIDE OF THE CEILING;
   - NOT LESS THAN 40 PERCENT AND NOT MORE THAN 50 PERCENT OF THE REQUIRED VENTILATING AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE ATTIC OR RAFTER SPACE. UPPER VENTILATORS SHALL BE LOCATED NO MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE, MEASURED VERTICALLY, WITH THE BALANCE OF THE REQUIRED VENTILATION PROVIDED BY EAVE OR CORNICE VENTS. WHERE THE LOCATION OF WALL OR ROOF FRAMING MEMBERS CONFLICTS WITH THE INSTALLATION OF UPPER VENTILATORS, INSTALLATION MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE SHALL BE PERMITTED.

ROOF PLAN KEY NOTES

Name	NOTE
801	ROOFING - CONCRETE - "FLAT" TILE BY EAGLE ROOFING ICC# ESR 1900
810	LINE OF WALL BELOW
812	STUCCO CEILING
813	STUCCO SOFFIT
826	ROOF VENT - O'HAGIN "XL SERIES" CLOAKED VENT (ICC # NER-9850A)
837	PROVIDE 1" CONDUIT FROM THE ELECTRIC PANEL TO LOCATION IN ATTIC FOR FUTURE SOLAR INSTALLATION.
839	MIN. 22"X30" OPENING IN CALIFORNIA ROOF FRAMING CONDITIONS FOR ATTIC ACCESS AND CROSS VENTILATION - CONTRACTOR TO VERIFY AIRFLOW TO ALL ATTIC AREAS

ROOF ATTIC AREA	A	1100 SQ. FT. / 158400 SQ. IN	CALCULATION FACTOR:	1/300
MIN. VENTILATION REQUIRED:	TOTAL	528 SQ. IN	TOTAL PROVIDED:	593 SQ. IN
MIN. VENTILATION REQUIRED:	HIGH	264 SQ. IN	TOTAL HIGH PROVIDED:	296 SQ. IN
MIN. VENTILATION REQUIRED:	LOW	232 SQ. IN	TOTAL LOW PROVIDED:	296 SQ. IN

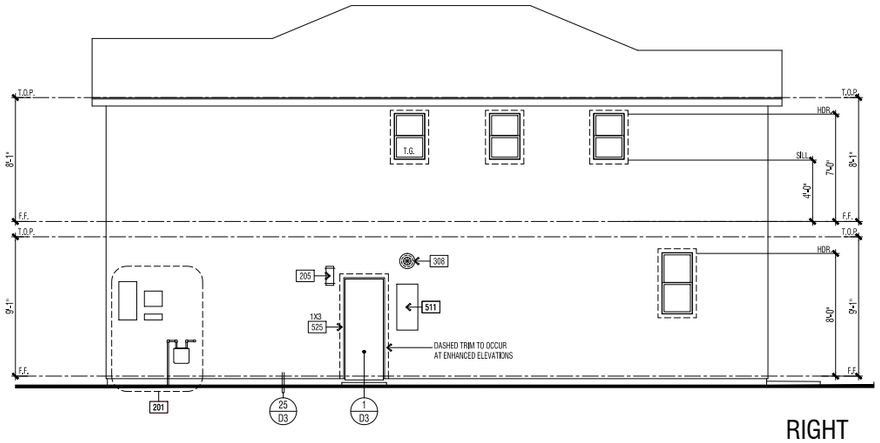
HIGH VENTILATION METHOD	SIZE	FREE AREA		QUANTITY		FREE VENT AREA
CLOAKED VENT - CONC. FLAT TILE -	-	99	SQ. IN X	3	=	296 SQ. IN
				TOTAL PROVIDED:		296 SQ. IN

LOW VENTILATION METHOD	SIZE	FREE AREA		QUANTITY		FREE VENT AREA
CLOAKED VENT - CONC. FLAT TILE -	-	99	SQ. IN X	3	=	296 SQ. IN
				TOTAL PROVIDED:		296 SQ. IN

ROOF ATTIC AREA	B	26 SQ. FT. / 3744 SQ. IN	CALCULATION FACTOR:	1/300
MIN. VENTILATION REQUIRED:	TOTAL	12 SQ. IN	TOTAL PROVIDED:	198 SQ. IN
MIN. VENTILATION REQUIRED:	HIGH	6 SQ. IN	TOTAL HIGH PROVIDED:	99 SQ. IN
MIN. VENTILATION REQUIRED:	LOW	6 SQ. IN	TOTAL LOW PROVIDED:	99 SQ. IN

HIGH VENTILATION METHOD	SIZE	FREE AREA		QUANTITY		FREE VENT AREA
CLOAKED VENT - CONC. FLAT TILE -	-	99	SQ. IN X	1	=	99 SQ. IN
				TOTAL PROVIDED:		99 SQ. IN

LOW VENTILATION METHOD	SIZE	FREE AREA		QUANTITY		FREE VENT AREA
CLOAKED VENT - CONC. FLAT TILE -	-	99	SQ. IN X	1	=	99 SQ. IN
				TOTAL PROVIDED:		99 SQ. IN

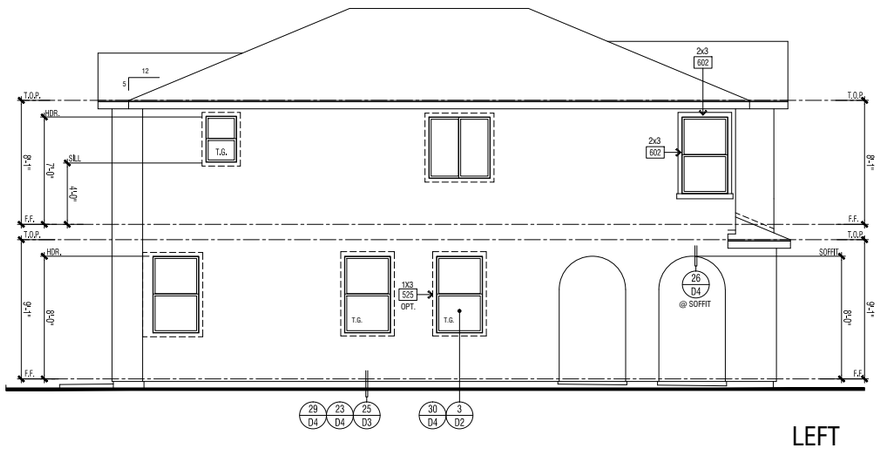


RIGHT

FINISHED GRADE VARIES. SEE CIVIL ENGINEERS PLANS FOR FINAL GRADE AND SITE DRAINAGE.

ELEVATION KEY NOTES

Name	NOTE
201	UTILITY EQUIPMENT AND SERVICE PANELS - VERIFY LOCATION.
203	ADDRESS PANEL. 6" MIN. HIGH BUILDING ADDRESS CHARACTERS PLACED IN SUCH A POSITION TO BE PLAINLY VISIBLE FROM THE STREET.
205	ACCENT EXTERIOR WALL LIGHT.
308	TANKLESS WATER HEATER TERMINATION CAP - INSTALL PER MFR. INSTRUCTIONS (CO-AXIAL VENT INTAKE & EXHAUST DIRECTLY FROM OUTSIDE)
321	AIR CONDITIONING CONDENSER LOCATION
511	RECESS BOX FOR TANKLESS WATER HEATER - INSTALL PER MFR. INSTRUCTIONS
515	STUCCO NICHE. SIZE PER ELEVATION - SLOPE SILL ¼" PER FT. MINIMUM.
521	STUCCO - INSTALL PER MANUFACTURERS LISTING BY: OMEGA DIAMOND WALL ONE COAT SYSTEM ICC-ES ESR-1194.
525	STUCCO OVER RIGID FOAM TRIM - FOAM SHAPE PER ELEVATION
592	OVERHEAD AWNING - SIZE AND STYLE PER ELEVATION
602	WOOD TRIM(S) - SIZE PER ELEVATION
6505	FIBER CEMENT LAP SIDING - 5/16" THICK "HARDIPLANK" (OR EQUIVALENT, FINISH: SELECT (CEDARMILL, EXPOSURE: 6" (INSTALLATION PER MANUFACTURERS INSTRUCTIONS) ICC-ES NER-405
701	B.U. FLASHING
761	ROOFING - CONCRETE - FLAT TILE BY EAGLE ROOFING ICC# ESR 1900
	ANY OPERABLE WINDOW WITH A SILL THAT IS LOCATED LESS THAN 24" ABOVE FINISHED FLOOR AND MORE THAN 72" ABOVE FINISHED GRADE OR OTHER SURFACE BELOW AT THE EXTERIOR, MUST BE PROTECTED BY A GUARD OR, HAVE A FIXED GLASS. THE GUARD MAY NOT HAVE OPENINGS THAT A SPHERE 4" IN DIAMETER CAN PASS THROUGH. 2016 CBC 1405.13.2
	(2) LAYERS OF GRADE 'D' PAPER IS REQUIRED TO BE INSTALLED OVER WOOD SHEATHING 2016 CRC R703.7.3



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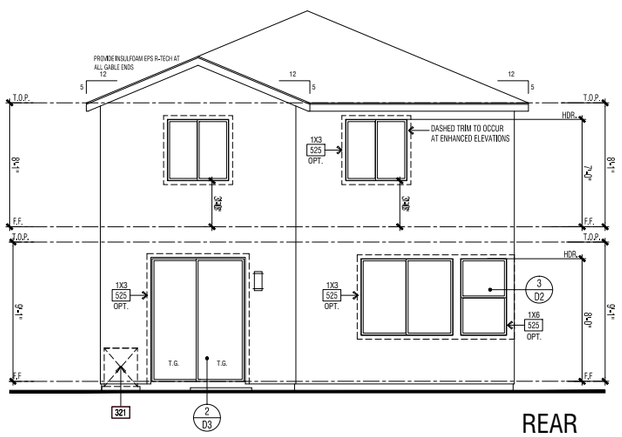

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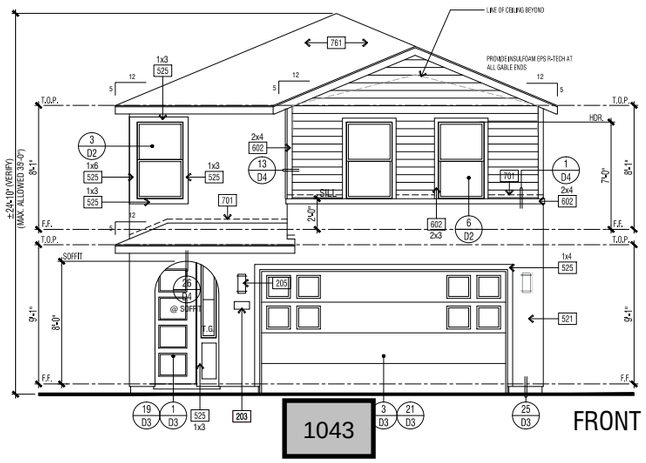

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FRONT

SCALE: 1/4" = 1'-0"

ARCHITECTS . PLANNERS . DESIGNERS
WHA.
ORANGE COUNTY . LOS ANGELES . BAY AREA
LICENSED ARCHITECT William Hezmalhalch
REN 4-30-19
STATE OF CALIFORNIA
WILSON HOMES

TRACT NUMBER: 6168
PROJECT TYPE

PLAN 1660

CLOVIS, CALIFORNIA

WILSON HOMES
FRESNO, CALIFORNIA

REVISIONS

NO.	DATE	DESCRIPTION
A	8-03-18	BLDG. DEPT. REVS.

ELEVATIONS
PLAN
1660C

PROJECT MANAGER:	MM
DESIGNER:	AM
DRAWN BY:	-
REVIEWED BY:	-
1ST BLDG. DEPT. SUBMITTAL:	04-25-18
ISSUED FOR CONSTRUCTION:	-
JOB NUMBER:	2018077
CAD FILE NAME:	A1C8
DATE:	SHEET:
08-03-18	A1.8

08-03-18

2018077 -

AGENDA ITEM NO.3

CITY of CLOVIS

REPORT TO THE PLANNING COMMISSION

TO: Clovis Planning Commission

FROM: Planning and Development Services

DATE: May 28, 2020

SUBJECT: Consider Approval - Res. 20-___, General Plan Consistency Finding for the Proposed 2020-2021 Community Investment Program

Staff: Thad Avery, Supervising Civil Engineer
Recommendation: Approve

ATTACHMENTS:
1. Proposed 2020-2021 Community Investment Program
2. Draft Resolution

CONFLICT OF INTEREST
None

RECOMMENDATION
Staff recommends adoption of Resolution 20-___, finding the City of Clovis proposed 2020-2021 Community Investment Program, inclusive of the Five-Year Community Investment Program, in conformance with the General Plan and relevant Specific Plans of the City of Clovis.

EXECUTIVE SUMMARY
The City of Clovis Planning Commission must find that the 2020-2021 Community Investment Program is in conformance with the Clovis General Plan and relevant Specific Plans before the Clovis City Council can proceed with adoption of the Program budget. The proposed 2020-2021 Community Investment Program represents capital projects in the program areas of Government Facilities, Sewer, Parks, Streets, Water, Community Sanitation and Community Development. Subject to approval, various project components including design, right-of-way acquisition, and/or construction will be completed during the 2020-2021 fiscal budget year.

BACKGROUND
Section 65401 of the Government Code calls for the Planning Commission's review and consideration of an annual Capital Improvement Program. The City of Clovis refers to its Capital Improvement Program as the Community Investment Program. The purpose of this provision is to have the Planning Commission review the Community Investment Program and make a specific finding that it is in conformance with the General Plan and relevant Specific Plans. The

projects included in the proposed 2020-2021 Community Investment Program are included with **Attachment 1**.

PROPOSAL AND ANALYSIS

The proposed 2020-2021 Community Investment Program provides for approximately $58,926,000 dollars in improvements. Some of the more noteworthy projects are:

- Continued American with Disabilities Act (ADA) improvements throughout the City of Clovis.
- Continued design and construction of the trail system within the Clovis area.
- Design and development of the Landmark Square site, including a new transit building.
- Design and construction of Fire Station 6 in the Southeast area.
- Design and construction of Shaw Avenue widening from DeWolf to McCall Avenues.
- Design and Construction of Herndon Avenue from Temperance to DeWolf Avenues.
- Design of Loma Vista Village Green Park.
- Design and construction of asphalt overlays and roadway rehabilitation for arterial, collector and local neighborhood streets.
- Continue securing water for current climate conditions and future development in accordance with the General Plan.
- Continued assistance in the repair and rehabilitation of affordable housing.

The projects that are proposed in the 2020-2021 Community Investment Program have been identified in consultation with, and support from, the various City Department Heads, their representatives, and other applicable staff. This collaborative process has assisted in formulating a program that provides a selection of specific projects that are necessary for public service, utility, and/or safety purposes and are consistent with City goals.

General Plan Conformity

If a project identified in the proposed Community Investment Program (CIP) will implement or generally support attainment of a Clovis General Plan or specific plan goal or policy, staff recommends that a finding of conformance be made. Where the linkage between the General Plan and a CIP Project is less direct, a finding of conformance is recommended to the extent that no conflicts are identified and the project will not obstruct attainment of General Plan goals and policies. If adopted policies do not support a project, or the project prevents attainment of an adopted policy, a conformity determination should not be made.

A screening level analysis was completed for each CIP project against the goals and policies of the General Plan and applicable specific plans. No conflicts were identified between any proposed project and any goal or policy of the General Plan or applicable specific plan. In general, capital projects identified in the CIP are consistent with the General Plan's intent to

provide a comprehensive circulation system; reliable and cost effective infrastructure, utilities, and public services; and to support enhanced transit, walkability and recreational opportunities.

The Commission's finding that the proposed CIP conforms with the General Plan does not necessarily mean that the Commission endorses any individual project in any particular form. Individual capital projects must undergo design and environmental review processes and receive approval prior to being carried out. As projects proceed from concept to final design and construction, modifications are commonly made. Where the General Plan points to specific features that affect design, these features will be incorporated. The City Council will continue to have full discretion in deciding to move forward with CIP projects.

FISCAL IMPACT

The proposed 2020-2021 Community Investment Program budget is estimated at $58,926,000 and is balanced with matching revenue sources. The proposed expenditures and revenues are listed as follows.

Expenditures	
General Services	$6,520,000
Sewer Developer/Enterprise	$8,037,000
Parks	$1,540,000
Streets	$32,935,000
Water Developer/Enterprise	$7,119,000
Community Sanitation	$250,000
Housing and Community Development	$2,525,000
Total:	$58,926,000

Revenue	
Fund Balance	$16,842,400
Revenue from Agencies	$22,796,700
Developer Capital Fees	$15,440,900
Enterprise Revenues	$2,839,900
Long-Term Financing	$856,100
Total:	$58,926,000

REASON FOR RECOMMENDATION

1. In compliance with the Government Code (65401), the Planning Commission must review the Capital Improvement Program (referred to in this report as the Community Investment Program) for consistency with the City's General Plan and applicable Specific Plans.

2. The projects included in the Community Investment Program serve to implement the General Plan and are consistent with its goals and policies. No conflicts with the General Plan or any relevant Specific Plan have been identified.

2. Staff believes the Community Investment Program submitted to the Planning Commission is a realistic program that can be accomplished in the 2020-2021 budget year.

3. The project priorities have been established based on a collaborative staff assessment and in accordance with past Council directives and decisions.

ACTIONS FOLLOWING APPROVAL

The proposed 2020-2021 Community Investment Program and Five-Year Community Investment Program will be submitted to the City of Clovis Council at the next available hearing date for adoption into the 2020-2021 budget.

Prepared by: Thad Avery, Supervising Civil Engineer/CIP Manager

Reviewed by: _____

Dave Merchen
City Planner

COMMUNITY INVESTMENT PROGRAM
BUDGET SUMMARY

The 2020 - 2021 Community Investment Program represents a major portion of the total recommended budget and is devoted to improvements to the physical infrastructure that supports and sustains continued community development.

Some of the more noteworthy proposed projects in the 2020 - 2021 Community Investment Program are:

- Ongoing American with Disabilities Act (ADA) improvements throughout the City of Clovis.
- Design and development of the Landmark Square site including the new Transit Station.
- Design and construction of a Fire Station in the southeast area.
- Design and construction of Shaw Avenue widening from DeWolf to McCall Avenues.
- Design and construction of Herndon Avenue widening from Temperance to DeWolf Avenues.
- Design of Nees Avenue widening from Minnewawa to Clovis Avenues.
- Design of Loma Vista Village Green Park
- Design and construction of asphalt overlays and roadway rehabilitation for arterial, collector and local neighborhood streets.
- Continue securing water for current climate conditions and future development in accordance with the General Plan.
- Continued assistance in the repair and rehabilitation of affordable housing.

The projects included in the proposed 2020 - 2021 budget are summarized on the following pages. The prior and future year expenditures are shown only for those specific projects that are phased over multiple years. Prior and future year expenditures for nonspecific, recurring projects, such as miscellaneous extensions and preventative maintenance are not typically shown. The projects included in the 2020 - 2021 budget may increase or decrease the burden to the current operating budgets depending on the project. Each section summary includes an explanation of the impact to the operating budget. The Five-Year Community Investment Program follows the budget summary.

ATTACHMENT 1

The capital projects for the General Government Services Facilities Program are comprised of acquisition and development of new facilities, improvements to existing facilities, and maintenance of existing improvements required by City departments to enable them to adequately carry out their mission.

The major projects proposed for 2020 - 2021 are:

- Design and development of the Landmark Square Campus.
- Design and construction of a new Transit Station.
- Rehabilitation of existing City facilities for compliancy with ADA.
- Upgrades and repairs to Fire Station Facilities.
- Design and construction of Fire Station 6 in the Southeast area.

The proposed government facilities projects increase in square footage will increase the cost of general services and other departmental operations by approximately 25%.

AGENDA ITEM NO.3

SUMMARY

2020 - 2021 COMMUNITY INVESTMENT PROGRAM

GENERAL GOVERNMENT FACILITIES

General Government Facilities: *Section 90000*	PRIOR YEARS	BUDGET YEAR	FUTURE YEARS
Public Safety Services			
Fire Station 6	7,973,000	2,300,000	0
Fire Station Exhaust Systems	0	135,000	50,000
Public Services and Utilities			
Capital Assessment	0	300,000	0
Recreation Facilities Improvements	195,000	5,000	2,010,000
Transit Station	1,520,000	3,600,000	0
Fiber Optic Installation to Fire Station 6	0	165,000	0
Fiber Security/Fiber Optics	35,000	15,000	558,000
TOTAL	9,723,000	6,520,000	2,618,000

Budget Year Revenues:	
General Fund	6,520,000
TOTAL	6,520,000

The Sewer Capital Projects - Enterprise budget includes projects that will repair and/or replace existing sanitary sewer mains that are severely deteriorated or are not adequately sized for the flows now being experienced. These sewer mains present continual maintenance problems.

The Sewer Capital Projects - Developer budget includes the debt service payments for the 2013 Wastewater Revenue Bond, the 2015 Wastewater Revenue Bond, and the 2017 Sewer Revenue Bond which is the previous 2007 Sewer Revenue Bond for the Sewage Treatment and Water Reuse Facility (ST-WRF) and related components that has been refinanced. Also included in this budget are improvements associated with the Recycled Water System and construction of sewer projects driven by new development.

The sewer capital projects planned for 2020 - 2021 include:

- Design and reconstruction of sanitary sewer mains in various streets.
- Work on the Sewer and Recycled Water Master Plans.

The sewer main improvement projects for 2020 - 2021 are intended to repair the existing mains that have the highest maintenance or service call frequency. It is expected that repairing these mains will result in a reduction in the time spent by City maintenance personnel, thereby reducing the maintenance cost to the sewer enterprise operation.

AGENDA ITEM NO.3

SUMMARY

2020 - 2021 COMMUNITY INVESTMENT PROGRAM

SEWER PROJECTS

Sewer Capital Projects - Enterprise:	PRIOR YEARS	BUDGET YEAR	FUTURE YEARS
Section 91000			
Miscellaneous Sewer Replacement	0	485,000	0
Sewer Facility Improvements	56,000	50,000	0
	56,000	535,000	0
Subtotal			
Sewer Capital Projects - Developer:			
Extensions			
Miscellaneous Extensions	0	50,000	200,000
Master Planning			
Wastewater Master Plan	25,000	25,000	100,000
Recycled Water System Improvements			
Recycled Water Mains	370,000	400,000	0
Sewer System Improvements			
Sewer Mains	0	850,000	0
Debt Services			
Bond Handling Charges	372,000	277,000	200,000
2013 Wastewater Revenue Bond	1,016,200	1,015,000	11,220,000
2015 Wastewater Revenue Bond	1,050,500	1,050,000	29,534,000
2017 Wastewater Revenue Bond	3,835,500	3,835,000	71,142,000
Subtotal	6,719,200	7,502,000	115,396,000
TOTAL	6,775,200	8,037,000	115,396,000

Budget Year Revenues:	
Sewer Enterprise	535,000
Major Sewer Fees	7,492,000
Sewer Connections	10,000
TOTAL	8,037,000

The Park program consists of master planning, design and construction of park improvements. Community park improvements are funded by development fees and state grants when available. Neighborhood parks are installed by development. Park development fees are paid by all new developments constructed within the City of Clovis.

Major projects planned for 2020 - 2021 include:

- Acquire property for the development of future parks and trails designated in the General Plan.
- Continued development of and/or updating Master Plans for City Parks.
- Continued preliminary Master Planning for a Regional park in the Northeast.
- Design of a pedestrian bridge over State Route 168 at the Enterprise Canal.
- Design of the Loma Vista Village Green in the Southeast.

The addition of the proposed improvements to the Park's inventory will increase the annual maintenance and operations budget. Maintenance of acquired land for future parks and the construction of a newly paved trail will have a minimal effect initially on the annual operational costs to Parks and the General Fund account. Upon the build out of these facilities, funding should be increased to meet the additional burden placed on the maintenance and operations budget. The proposed 2020 - 2021 Parks maintenance and operational budget is balanced to meet the level of service expected by the Community.

This year's budgeted projects will continue to make major contributions to the development of park facilities throughout the City.

AGENDA ITEM NO.3

SUMMARY

2020 - 2021 COMMUNITY INVESTMENT PROGRAM

PARK IMPROVEMENT PROJECTS

Park Improvements: *Section 93000*	PRIOR YEARS	BUDGET YEAR	FUTURE YEARS
Park Improvements			
Park Property Acquisition	0	1,000,000	4,000,000
Miscellaneous Park Improvements	291,000	520,000	400,000
Trail System Survey	20,000	20,000	80,000
TOTAL	311,000	1,540,000	4,480,000

Budget Year Revenues:	
Measure "C" Extension	306,700
Park Fees	1,233,300
TOTAL	1,540,000

Street Improvement Projects are funded by state and federal gas taxes, state and local sales taxes, major street development fees, Community Development Block Grants, and reimbursements from other agencies for work completed in their jurisdictions. Funding for street projects is also provided by federal transportation grants.

Traffic signal installations are partially determined by a traffic signal priority list. The highest priority projects are based on traffic volumes, accidents, pedestrian numbers, vehicle speeds, and congestion.

Not all of the street programs that are ranked high on a priority list are placed in the current year budget. Many of these facilities are tied to funding sources or to other programs that are required to occur prior to, or concurrently with, the needed street improvement (such as underground improvement installation, new development and right of way purchase constraints).

Project priorities and street locations were determined using the Pavement Management System (PMS). Arterial, collector and local street reaches throughout the City were given a Pavement Condition Index (PCI) rating. The PMS was then used to develop a long term maintenance solution using the designated PCI values. Technical and Management teams evaluated the PMS recommendations to validate project necessity. Many of the recommended projects were shifted to later years due to funding constraints in the street improvement account.

Major projects planned for 2020 - 2021 include:

- Improvements of City owned public right of way for compliancy with the American with Disabilities Act (ADA).
- Sealing and rejuvenation programs of the various street surfaces to increase longevity and reduce deterioration.
- Continued installation of pedestrian and bicycle improvements at various locations.
- Design and reconstruction of local streets.
- Construction of traffic signal improvements at various intersections.
- Reconstruction and street widening of various streets to improve safety and traffic flow. These streets have been identified as part of the City's Pavement Management System (PMS).

This budget provides for an aggressive schedule of street repair, overlay and reconstruction. Street overlay projects as identified in this year's budget and five-year plan have provisional estimated costs for construction. Some of the projects may not be of acceptable condition for overlaying and may be considered for street reconstruction. Estimated funding for these projects will be re-evaluated as street reconstruction is more costly than a street overlay. This may have an impact on the delivery of projects that have been identified in the Community Investment Program for street improvements.

Staff continues to investigate alternative construction methods for street rehabilitation to reduce project expenditures. The alternative construction methods will be administered through pilot projects in which a rigorous inspection program will be used to evaluate project success. The success factors include projects costs, pavement condition, pavement resilience and pavement longevity.

With the reconstruction of some of the proposed streets, new paved lanes may be added to the street maintenance inventory. However, those same projects will be designed with a minimum twenty-year life expectancy and may involve reconstructing older, lower standard streets. Overall, the impact on the street maintenance fund is expected to be nominally reduced.

SUMMARY

2020 - 2021 COMMUNITY INVESTMENT PROGRAM

STREET IMPROVEMENT PROJECTS

Street Improvements:	PRIOR YEAR	BUDGET YEAR	FUTURE YEARS
Section 95000 Reimbursement			
Miscellaneous Street Widening	50,000	320,000	1,000,000
Preventative Maintenance			
Slurry & Crack Seals	1,231,000	690,000	2,660,000
Bridge and Stream Crossings			
Leonard/Enterprise Canal Bridge	173,000	0	1,805,000
Pedestrian Facilities			
Bicycle, Pedestrian and Handicap Facilities	349,000	467,000	860,000
ADA Survey and Projects	127,000	100,000	910,000
Traffic Signal/Intersection Improvements			
Miscellaneous Intersection Improvements	385,000	1,053,000	0
Armstrong/Nees Traffic Signal	0	110,000	535,000
Shepherd/Peach Traffic Signal	0	115,000	535,000
Reconstruction, Overlay and Widening Projects			
Miscellaneous Repairs & Alleys	421,000	380,000	860,000
Armstrong Avenue Improvements	1,105,000	900,000	2,435,000
Barstow Avenue Improvements	0	65,000	1,500,000
Bullard Avenue Improvements	86,000	750,000	608,000
Clovis Avenue Improvements	0	100,000	1,490,000
Fowler Avenue Improvements	0	75,000	2,170,000
Gettysburg Avenue Improvements	45,000	1,050,000	630,000
Herndon Avenue Improvements	6,585,000	1,500,000	1,336,000
Loma Vista Avenue Improvements	0	1,500,000	0
Minnewawa Avenue Improvements	1,241,000	600,000	3,727,000
Nees Avenue Improvements	150,000	2,400,000	2,370,000
Shaw Avenue Improvements	2,994,000	18,615,000	2,790,000
Villa Avenue Improvements	40,000	1,020,000	1,215,000
Local Streets and ADA Ramps	1,415,000	1,125,000	4,500,000
TOTAL	16,397,000	32,935,000	33,936,000

Budget Year Revenues:	
HUTA funding including SB1	7,456,000
Developer Funding	5,341,000
Measure "C" Extension	17,297,000
Federal/State/Other Agency Grants	2,841,000
TOTAL	32,935,000

The proposed Water Capital Projects budget for 2020 - 2021 contains projects that will improve the water distribution system. Projects are also scheduled to improve water quality by the addition of treatment facilities at existing wells and increase the reliability of the water supply by the addition of auxiliary power generators.

The Water Capital Projects - Developer budget includes the debt service payments for the Water Revenue Bond. Projects include installation of well facilities, well site development and surface water treatment plant enhancements. Also included is reimbursement for developer constructed projects serving new areas of the community.

Major projects planned for 2020 - 2021 include:

- Investment for Water Development.
- Construction of new water mains, install/replace water services, and make new connections to improve the City's water distribution system at various locations throughout the City.
- Partial reimbursement for construction of the 24" water transmission main in Nees Avenue.
- Construction and improvements at various well sites.
- Continued examination and development for new well sites throughout the City of Clovis.
- Design for an additional storage tank at the Surface Water Treatment Plant.
- Acquisition of property for future water storage reservoirs in the northeast area.
- Construction of granular activated carbon treatment facilities for removal of 1,2,3-Trichloropropane (TCP) from groundwater wells.

The projects included in the proposed budget are necessary in order to maintain adequate service, accommodate continued growth, and comply with state and federal regulations. These projects further enhance the overall supply and distribution system.

The new facilities proposed in the 2020 - 2021 programs are anticipated to impact the water enterprise operation budget. The impacts consist of the increased load on human resources, energy costs, and material costs, which are anticipated to be approximately $50,000 in the first year of operation.

SUMMARY

2020 - 2021 COMMUNITY INVESTMENT PROGRAM

WATER PROJECTS

Water Capital Projects - Enterprise Fund:	PRIOR YEARS	BUDGET YEAR	FUTURE YEARS
Section 96000			
Water Mains			
Various Water Main Replacement	193,000	175,000	100,000
Surface Water Treatment Plant Improvements			
SWTP Pretreatment	25,000	1,500,000	0
SWTP Service Pumps	0	1,200,000	0
Well Site Improvements			
Well 35	35,000	505,000	797,400
Subtotal	253,000	3,380,000	897,400
Water Capital Projects - Developer:			
Section 97000			
Extensions			
Miscellaneous Extensions	50,000	50,000	200,000
Surface Water Treatment Plant Improvements			
Expansion	100,000	100,000	30,000,000
Nees Transmission Main	200,000	400,000	0
Northeast SWTP	0	100,000	47,500,000
Water Storage Facilities			
Water Revenue Bond - Debt Service	3,045,300	3,029,000	21,126,000
Water Well Improvements			
Various Well Site Development	60,000	60,000	1,758,700
Subtotal	3,455,300	3,739,000	100,584,700
TOTAL	3,708,300	7,119,000	101,482,100

Budget Year Revenues:

Water Enterprise	3,380,000
Water Major Facilities	3,729,000
Water Connections	10,000
TOTAL	7,119,000

The capital projects for the Community Sanitation Program consist of improvements to the existing landfill site as mandated by state law, and expansion of the landfill.

The projects proposed for 2020 - 2021 are:

- Improvements to access to the landfill site.

The new projects proposed in the 2020 - 2021 programs are not anticipated to impact the Community Sanitation operation budget.

AGENDA ITEM NO.3

SUMMARY

2020 - 2021 COMMUNITY INVESTMENT PROGRAM

COMMUNITY SANITATION PROJECTS

Community Sanitation Improvements: *Section 99500*	PRIOR YEARS	BUDGET YEAR	FUTURE YEARS
Community Sanitation Improvements	3,900,000	250,000	17,775,000
TOTAL	3,900,000	250,000	17,775,000

Budget Year Revenues:

Community Sanitation Enterprise Fund	250,000
TOTAL	250,000

The Housing and Community Development budget consists of projects related to self-help and low to moderate income home building.

Major expenses for 2020 - 2021 include:

- Assistance in the repair and rehabilitation of affordable housing.
- Assist Low-Moderate income families with first home purchase.

The Agency continues to focus resources on owner-occupied single-family housing projects for housing rehabilitation and new construction through the Low and Moderate Income Housing Program. These projects will have no operational cost impacts.

AGENDA ITEM NO.3

SUMMARY

2020 - 2021 COMMUNITY INVESTMENT PROGRAM

HOUSING & COMMUNITY DEVELOPMENT

Housing and Community Development: *Section 42750/49210*	PRIOR YEARS	BUDGET YEAR	FUTURE YEARS
Home Repair Loans	0	125,000	320,000
Home Improvement Grants	170,000	250,000	600,000
First Time Homebuyer Loans	200,000	800,000	400,000
Affordable Housing Project	300,000	1,350,000	600,000
TOTAL	870,000	2,525,000	1,920,000

Budget Year Revenues	
Federal/State/Other Agency Grants	1,175,000
Housing Successor Agency Fund Balance	1,350,000
TOTAL	2,525,000

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FIVE-YEAR COMMUNITY INVESTMENT PROGRAM

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FIVE-YEAR COMMUNITY INVESTMENT PROGRAM

The Five-Year Community Investment Program represents an effort to identify major capital needs and schedule projects consistent with community priorities and available funding. The Capital Program will continue to provide major investments into the community within the identified funding. Most of the funding for these projects will come from grants, development fees and tax revenues. The implementation of the parks and open space master plan is contingent on obtaining new funding sources.

Major projects include:

- Design and development of the Landmark Square site, including a new transit building.
- Design, construction and replacement of water mains and wells to serve the current capacity and new development.
- Design and construction of a Fire Station in the Southeast area.
- Site acquisition in the Southeast and Northwest areas for future City parks.
- Continuing design, construction and maintenance of the trail system within the Clovis area.
- Assisting the Community in the development, repair and rehabilitation of affordable housing.
- Continued improvement to the City's infrastructure including street reconstruction and sewer and water collection/distribution facilities.
- Street Projects:
    - Shaw Avenue Widening from DeWolf to McCall.
    - Herndon Avenue Widening form Temperance to DeWolf
    - Nees Avenue Widening from Minnewawa to Clovis
    - Design and construction of various traffic signals throughout the City.
    - Construction of bike lanes on various streets throughout the City.

Implementation of the Five-Year Community Investment Program will require new sources of financing. Several important projects are identified in the Government Facilities, Streets and Water Programs for which there is no assured funding. Without increased participation by local, state and federal governments and agencies, accomplishment of these projects will be delayed.

A summary of revenue and expenditures for the Five-Year Program is presented on the facing page, followed by individual project sheets with greater detail on scope and financing.

SUMMARY OF FIVE-YEAR COMMUNITY INVESTMENT PROGRAM

Projects	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025 or Later
General Services	6,520,000	1,975,000	1,350,000	8,340,000	32,978,000
Sewer	8,037,000	7,534,000	6,296,000	6,026,000	191,056,000
Parks	1,540,000	7,520,000	1,575,000	1,260,000	19,100,000
Streets	32,935,000	12,730,000	5,731,000	6,220,000	26,506,000
Water	7,119,000	18,697,000	38,069,000	7,358,400	183,394,600
Community Sanitation	250,000	0	75,000	0	17,680,000
Housing and Community Development	2,525,000	480,000	480,000	480,000	480,000
TOTAL	58,926,000	48,936,000	53,576,000	29,684,400	471,194,600
Sources of Funding					
Fund Balance	16,842,400	14,715,000	75,000	3,989,000	17,331,000
Revenue from Agencies	22,796,700	9,660,000	2,241,000	1,643,000	2,981,000
Developer Capital Fees	15,440,900	13,165,000	7,687,000	9,409,000	14,825,000
Enterprise Revenues	2,839,900	2,130,000	6,540,000	2,130,000	1,830,000
Long-Term Financing	150,000	0	0	0	0
Property Sale Proceeds	0	0	0	0	0
*Unfunded	856,100	9,266,000	37,033,000	12,513,400	434,227,600
TOTAL	58,926,000	48,936,000	53,576,000	29,684,400	471,194,600

*Unfunded projects in future years will require adjustments in rates and changes, or savings in prior year projects.

90000 ACCT	PROJECT LOCATION	2020-21	2021-22	2022-23	2023-24	2024-25 or Later	DESCRIPTION
	PUBLIC SAFETY SERVICES						
71057	**Facilities Administration Master Plan**					80,000 d	Master plan for relocation of Fire Administration headquarters. (General Fund)
71096	**Clovis Explorers/Youth Leadership** Facility Improvements					5,000 d 75,000 c	Building improvements for the Clovis PD Explorer/Youth Leadership facility. (General Fund)
71075	**Fire Station 2 Minnewawa, S/O Shaw** Rebuild Fire Station				600,000 d 7,000,000 c 150,000 s		Demolish and rebuild or refurbish fire station to meet new construction standards. (General Fund)
71435	**Fire Station 6 Southeast Area** Leonard/Loma Vista	2,300,000 c					Design and construction of a new fire station in the southeast area. (General Fund)
71440	**Fire Station 7 Northwest Area**				500,000 a	700,000 d 9,000,000 c 150,000 f	Design and construction of a new fire station in the northwest area. Adjacent to a major street. (Developer Fees)
71463	**Fire Station Exhaust Systems** Fire Station 2, 3, 4, & 5	15,000 d 120,000 c	50,000 c				Replace diesel exhaust systems at the fire stations as required by state and federal regulations. (General Fund)
71341	**Downtown Special Event Street Bollards** Phase II		40,000 d 600,000 c				Install removable bollards at downtown intersections for public safety during downtown events. Phase II: Pollasky from Fifth to Ninth. (General Fund)

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GENERAL GOVERNMENT FACILITIES

90000 ACCT	PROJECT LOCATION	2020-21	2021-22	2022-23	2023-24	2024-25 or Later	DESCRIPTION
	Fire / Police Training Site						
	Shade Structures		20,000 d 105,000 c				Install three 20'x30' metal shade structures on site. (General Fund)
	Onsite Roads		25,000 d 75,000 c				Construct 30' wide x 150' long street east of training center and 30' wide pavement north to the north. (General Fund)
	Gate on north end					15,000 d 40,000 c	Install automatic rolling gate to access easement on the north property line. (General Fund)
	Police/Fire Headquarters						
71437	Security Fencing					5,000 d 55,000 c	Install 2 feet (additional height) of wrought iron fencing to existing police and fire administration yard for security purposes. (General Fund)
71453	Public Safety Facility Flooring Repair		5,000 d 20,000 c				Replace flooring in EOC and Fire side hallways of the facility with stained concrete. (General Fund)
	Police/Fire Headquarters						
71456	Gym Patio Cover					20,000 d 115,000 c	Install permanent cover over the outdoor area next to the gym to expand the exercise area. Approximately 30'x100'. (General Fund)

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90000 ACCT	PROJECT LOCATION	2020-21	2021-22	2022-23	2023-24	2024-25 or Later	DESCRIPTION
	Interview Room Remodel					20,000 d 35,000 c	Convert two existing small interview rooms into one large one. (General Fund)
	Atrium Water Feature Replacement					10,000 d 20,000 c	Replace water feature located in the atrium with a low maintenance rock wall. (General Fund)
	Property Room Expansion					200,000 d 1,500,000 c	Expand the current storage space within current building for property and evidence. (General Fund)
	Police Substation						
	Loma Vista Location					350,000 a 200,000 d 1,500,000 c	Building near Fire Station 6 that would house an alternate dispatch site, community room, and briefing room. (General Fund)
	Heritage Grove Location					450,000 a 350,000 d 2,500,000 c	Building near Fire Station 7 that would house an alternate dispatch site, community room, and briefing room. (General Fund)
71380	**Shooting Range**						
	Locate Site					10,000 d 250,000 a	Conduct a feasibility study for a shooting range and acquire land. (General Fund)
	Site Development Phase I Phase II					175,000 d 1,150,000 c 2,900,000 c	Develop site for shooting range. Phase I: pistol range, Phase II: Civil improvements, shotgun and rifle ranges. (General Fund)

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90000 ACCT	PROJECT LOCATION	2020-21	2021-22	2022-23	2023-24	2024-25 or Later	DESCRIPTION
	Animal Services					450,000 d	Replace current facility at 908 Villa to meet
	Replace 908 Villa Facility					5,000,000 c	the increased needs of animal control. (General Fund)
	Villa Yard Reorganization						
	Police Storage Facilities					120,000 d	Construct facilities for impounding and
						1,200,000 c	storage of evidence including an area for the Community Service Work Program. (General Fund)
	PUBLIC SERVICES AND UTILITIES						
71464	**Capital Assessment**						Assess the Capital needs and maintenance
	General Government Facilities	300,000 d					required for all general government facilities (General Fund)
71359	**Civic Center Expansion**						Acquisition of State courthouse for office
	Acquire State Facility		250,000 a				expansion and demolition of the building. (General Fund)
71232	**Civic Center Hydronic**						Replace hot and cold underground supply
	Waterline Replacement		410,000 c				returns from PDS building to Council Chambers and Library. (General Fund)
	Civic Center Plaza						
71361	Landscape/Irrigation					35,000 d	Develop master plan, design and install
	Replacement					250,000 c	replacement irrigation and landscaping for
	Phase Approach						the Civic Center including the Courthouse, Senior Center, PDS, City Hall and Library. (General Fund)

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GENERAL GOVERNMENT FACILITIES

90000 ACCT	PROJECT LOCATION	2020-21	2021-22	2022-23	2023-24	2024-25 or Later	DESCRIPTION
71362	Bollard Replacement Phase Approach					25,000 d 120,000 c	Remove/replace all existing pedestrian light bollards w/higher density & efficiency for night security. (General Fund)
71392	ADA Improvements Phase Approach					35,000 d 200,000 c	Address ADA compliancy standards in the Civic Center campus. (General Fund)
71363	Tree Planter Rehabilitation Parking Lot					5,000 d 70,000 c	Rehabilitate parking lot tree planters between the library and I.S. building. (General Fund)
	Corporation Yard Parking Improvement					1,300,000 a 150,000 d	Improvements to Public Utilities parking facilities. (Sewer, Water, and Refuse Fund)
71417	Yard lighting, safety and security			70,000 c			Improve the lighting for the transit bus area for safety and security purposes. (Proposition 1B funded)
71397	**ADA Master Planning**		20,000			20,000	Continue ADA Master Plan compliance and upgrades. (General Fund)
	Landmark Square						
71325	Build New Senior Center & Onsite Improvements						Build new Senior Center & Construct Civic Center North site improvements. (General Fund and Library Fee)

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GENERAL GOVERNMENT FACILITIES

90000 ACCT	PROJECT LOCATION	2020-21	2021-22	2022-23	2023-24	2024-25 or Later	DESCRIPTION
	Transit Station						
71428	Construct New Facility at Landmark Square	3,600,000 c					Construct new Transit Station facility on the Landmark Square Site (General Fund and Prop 1B Funding)
	Landscape Improvements						
	Willow - Shaw to Ashlan &			35,000 d			Install landscape and irrigation in the
	Ashlan - Willow to Winery			315,000 c			median island. (Contingent on CalFire Grant)
	Park Maintenance						
	Sierra Bicentennial Park Sunnyside and Sierra						
75031	Accessibility Improvements				5,000 d		ADA Master Plan Improvements.
					70,000 c		(Contingent on CDBG Grant)
	Play Field Improvements					35,000 d	Remove and replace existing infield soil
						250,000 c	with suitable material for maintenance and use. Install drainage for field area. (General Fund)
75030	Play Field and Lighting					30,000 d	Construct a baseball/soccer field and install
						750,000 c	sports lighting. (Contingent upon a future grant and General Fund)
	Parking Lot Lighting					15,000 d	Install additional lights to improve security.
						60,000 c	(Contingent upon a future grant and General Fund)
	Upgrade Existing Sports Field			20,000 d			Replace the existing sports field lights with
	Lighting			170,000 c			LED lights to lower maintenance costs. (General Fund)

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GENERAL GOVERNMENT FACILITIES

90000 ACCT	PROJECT LOCATION	2020-21	2021-22	2022-23	2023-24	2024-25 or Later	DESCRIPTION
	Sierra Bicentennial Park						
	Sunnyside and Sierra						
	Stadium Lighting					15,000 d 80,000 c	Install additional lighting to existing poles to increase visibility on the playing field. (General Fund)
	Multi-purpose Pad Replacement					25,000 d 250,000 c	Replace the basketball multi-purpose pad which is deteriorating (General Fund)
	Dog Park		20,000 d 100,000 c	55,000 c			Complete the construction of the existing temporary dog park to a permanent facility. (General Fund)
	Volleyball Court		25,000 d 110,000 c				Install one additional sand volleyball court to facilitate tournament play. (General Fund)
	Rotary Park						Replace the existing sports field lights with
	Upgrade Existing Sports Field			55,000 d			LED lights to lower maintenance costs.
	Lighting			615,000 c			(General Fund)
	Kiwanis Park						
	Tenth and DeWitt						Remove and replace irrigation system and
75540	Irrigation and Lighting					5,000 d 35,000 c	install security lighting. (Community Donations)
	Temperance/Gettysburg					15,000 d	Remove and replace existing landscape
	Northwest Corner-Greenbelt					125,000 c	and irrigation of greenbelt. (Contingent Upon Funding)

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90000 ACCT	PROJECT LOCATION	2020-21	2021-22	2022-23	2023-24	2024-25 or Later	DESCRIPTION
	Fiber Optics/Communications						
71408	Citywide Public Safety Fiber Optics System		10,000 d 75,000 c			10,000 d 100,000 c	Installation of fiber and hubs for Public Safety connection throughout the City. (General Fund)
71465	Fiber Optic Installation to Fire Station 6	15,000 d 150,000 c					Installation of conduit and fiber to get a city connection to the Fire Station 6 site. (General Fund & Developer fees)
71450	Miscellaneous Fiber Optic Installation	10,000 c	10,000 c	10,000 c	10,000 c	10,000 c	Miscellaneous fiber optic repair and installation. (General Fund)
71401	Fiber Documentation	10,000 c	5,000 c	5,000 c	5,000 c	5,000 c	Develop and implement a fiber labeling and documentation system for new and existing fiber optic lines. (General Fund)
	Fire station No.2 to Letterman Park Water Tower					15,000 d 86,000 c	Upgrade existing limitation of fiber system for camera's and City network. (Contingent Upon Funding)
	Shaw Avenue - Clovis to Fowler Clovis Avenue - Shaw to Fourth					19,000 d 183,000 c	Current system is limited due to all lines being used, a link is needed to Sierra Vista Mall's cameras for public safety. (Contingent Upon Funding)
	TOTAL- GENERAL GOVERNMENT FACILITIES	**6,520,000**	**1,975,000**	**1,350,000**	**8,340,000**	**32,978,000**	

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SEWER CAPITAL PROJECTS - ENTERPRISE FUND

91000 ACCT	PROJECT LOCATION	2020-21		2021-22	2022-23	2023-24	2024-25 or Later	DESCRIPTION
	SEWER FACLITY IMPROVEMENTS							
72632	**Sewer Main Replacement**	55,000	d					Replace existing sections of sewer main to improve the performance of the pipe and reduce maintenance issues.
	Clovis/Pollasky Alley	430,000	c					
	Stanford/Robinwood							
	Lavern/Gibson							
	Holland/Paula							
72629	**Lift Station #3**							Upgrade lift station electrical and controls at the Gettysburg and Phillip Lift Station.
	Upgrade	50,000	c					
	TOTAL - SEWER CAPITAL PROJECTS - ENTERPRISE	**535,000**		**0**	**0**	**0**	**0**	

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SEWER CAPITAL PROJECTS - DEVELOPER

92000 ACCT	PROJECT LOCATION	2020-21	2021-22	2022-23	2023-24	2024-25 or Later	DESCRIPTION
	EXTENSIONS						
72010	**Miscellaneous Extensions**	50,000 c	50,000 c	50,000 c	50,000 c	50,000 c	Install sewer mains and laterals at various locations.
	MASTER PLANNING						
	Wastewater Collection System						
73200	Master Plan	25,000 d	25,000 d	25,000 d	25,000 d	25,000 d	Master planning for the conveyance of wastewater and required facilities for new General Plan update. (Development & GPA Consultant Fees)
	SEWAGE TREATMENT - WATER REUSE FACILITY						
	Sewage Treatment - Water Reuse Facility						
	Phase 2					1,500,000 d 22,000,000 c	Increase plant capacity from 2.84 MGD to 5.68 MGD. (Development Fees)
	Phase 3					2,500,000 d 32,500,000 c	Increase plant capacity from 5.68 MGD to 8.34 MGD. (Development Fees)
	Clovis Sewage Treatment - Water Reuse Facility - Offsite Improvements						
73205	Shepherd Pump Station		1,500,000 a				Pump Station located at Willow/Shepherd.
	with Force Main					1,500,000 d 18,250,000 c	Force main in Shepherd from Willow to DeWolf. Needed to serve the Northwest. (Development Fees)
	DeWolf Trunk Sewer					1,300,000 d 6,800,000 c	Sewer in DeWolf from Owen's Mountain to Bullard. Needed to serve the Northwest. (Development Fees)

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SEWER CAPITAL PROJECTS - DEVELOPER

92000 ACCT	PROJECT LOCATION	2020-21	2021-22	2022-23	2023-24	2024-25 or Later	DESCRIPTION
	RECYCLED WATER SYSTEM IMPROVEMENTS						
	Pump Station No. 1 Shepherd/Dry Creek					100,000 d 450,000 c	Construct pump station to help serve the northwest area. (Development Fees)
73225	**Pump Station No. 3** DeWolf/Owens Mountain					40,000 d 450,000 c	Construct pump station at DeWolf Avenue and Owens Mountain Parkway. (Development Fees)
	Recycled Water Mains						
73376	**Shaw Avenue** E/O DeWolf	400,000 c					Install master planned recycled water main with street project. (Development Fees)
	Shepherd Avenue Willow to Temperance					300,000 d 3,000,000 c	Install master planned recycled water main in Shepherd Avenue to serve the northwest area. (Development Fees)
	Sunnyside Avenue Shepherd to Marion Basin					200,000 d 1,800,000 c	Install master planned recycled water main in Sunnyside Avenue for basin discharge. (Development Fees)
	State Route 168 Temperance to Shepherd					300,000 d 3,000,000 c	Install master planned recycled water main. (Development Fees)

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SEWER CAPITAL PROJECTS - DEVELOPER

92000 ACCT	PROJECT LOCATION	2020-21	2021-22	2022-23	2023-24	2024-25 or Later	DESCRIPTION
	SEWER SYSTEM IMPROVEMENTS						
	Wastewater Pump Station Herndon/Clovis					100,000 d 266,000 c	Partial construction of pump station and related connection to sewer main. (Development Fees)
	SEWER MAINS						
	Nees Avenue Dry Creek to Sunnyside			20,000 d 250,000 c			Install new 8 inch PVC main with wyes to serve properties on the south side of Nees.
73377	**Nees Avenue** Minnewawa to Clovis	300,000 c					Install master planned sewer main in conjunction with street widening project. (Development Fees)
	Heritage Avenue E/O Temperance					15,000 d 180,000 c	Install new 8 inch PVC sewer main and services. (Reimbursement from property owners)
	Enterprise Avenue W/O Locan					15,000 d 180,000 c	Install new 8 inch PVC sewer main and services. (Reimbursement from property owners)
72141	**Shaw Avenue** DeWolf to McCall	550,000 c					Install master planned sewer main in conjunction with street widening project. (Development Fees)

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SEWER CAPITAL PROJECTS - DEVELOPER

92000 ACCT	PROJECT LOCATION	2020-21	2021-22	2022-23	2023-24	2024-25 or Later	DESCRIPTION
	DEBT SERVICES						
67201 67898 63390	**Bond Handling Charges**	277,000	50,000	50,000	50,000	50,000	Handling Charges.
	2013 Wastewater Revenue Bonds						
67750	**Principal**	555,000	585,000	615,000	645,000	7,155,000	Debt Service Principal.
67850	**Interest**	460,000	434,000	404,000	373,000	1,009,000	Debt Service Interest.
	2015 Wastewater Revenue Bonds						
67757	**Principal**	170,000	175,000	180,000	190,000	20,260,000	Debt Service Principal.
67857	**Interest**	880,000	874,000	866,000	856,000	6,133,000	Debt Service Interest.
	2017 Wastewater Revenue Bonds						
67775	**Principal**	1,485,000	1,560,000	1,635,000	1,720,000	41,475,000	Debt Service Principal.
67875	**Interest**	2,350,000	2,281,000	2,201,000	2,117,000	18,153,000	Debt Service Interest.
	TOTAL - SEWER CAPITAL PROJECTS - DEVELOPER	**7,502,000**	**7,534,000**	**6,296,000**	**6,026,000**	**191,056,000**	

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PARK IMPROVEMENTS

93000 ACCT	PROJECT LOCATION	2020-21	2021-22	2022-23	2023-24	2024-25 or Later	DESCRIPTION
75600	**Park Property Acquisition**	1,000,000 a	1,000,000 a	1,000,000 a	1,000,000 a	1,000,000 a	Acquire property for the future development of City park sites and trails. (Development Fees)
75015 63390	**Misc. Park Improvements**	520,000 c	100,000 c	100,000 c	100,000 c	100,000 c	City participation in miscellaneous projects and unforeseen expenses that are development related.
	COMMUNITY PARKS (15 acres or greater)						
	Sierra Bicentennial Park Sunnyside and Sierra						
	Sports Field Area Modifications					25,000 d 160,000 c	Modification and improvement of existing sports field per Master Plan. (Contingent Upon Funding)
	Sierra and Temperance						
	Security Lighting, Landscaping Irrigation, Hardscape, Structures					60,000 d 500,000 c	Continued site grading and installation of turf, trees, irrigation, security lighting, hardscape and structures. (Contingent upon Grant Funding and Community Contributions)
76071	Playlot					65,000 c	Construct playlot with play equipment. (Development Fees)
	Amphitheater					40,000 d 300,000 c	Construct cover over stage. (Contingent upon Grant Funding and FMFCD Participation)

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PARK IMPROVEMENTS

93000 ACCT	PROJECT LOCATION	2020-21	2021-22	2022-23	2023-24	2024-25 or Later	DESCRIPTION
75635	**Loma Vista Village Green**						
			6,000,000 c				Construct the Village Green park site per the Master Plan (Development Fees)
	Regional Park						
	Northeast area						
75065	Master Plan					25,000 d	Continue development of master plan for a City of Clovis regional park site. (Development Fees)
	Sports Complex					65,000 d	Develop facilities, including lighting, for
	Located within Regional Park					1,250,000 a	soccer fields and baseball diamonds.
						1,000,000 c	(Contingent Upon Funding)
	AREA PARKS						
	(3 to 20 acres)						
	Railroad Park						
	Peach and Alluvial						
	Workout Station			15,000 d			Install a fitness workout station.
				45,000 c			(Contingent Upon Funding)
	BASIN PARKS						
	Basin 1E						
	Ashlan and Gould Canal						
75122	Landscaping and Play Fields					40,000 d	Construction of baseball and soccer
						450,000 c	facilities, irrigation, trees, and turf. (Development Fees and FMFCD Participation)

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PARK IMPROVEMENTS

93000 ACCT	PROJECT LOCATION	2020-21	2021-22	2022-23	2023-24	2024-25 or Later	DESCRIPTION
	Basin 1E						
	Ashlan and Gould Canal						
75123	Recreation Facilities					17,000 d 114,000 c	Install recreation fields, parking lot ramps. (Development Fees and FMFCD Participation)
75124	Restroom				15,000 d 125,000 c		Construct restroom. (Contingent upon Grant Funding)
75125	Field "Sports" Lighting					25,000 d 208,000 c	Construct sports lighting.(Contingent upon Grant Funding)
	TRAILS						
75591	**Trail System Survey**	20,000 d	20,000 d	20,000 d	20,000 d	20,000 d	Bike and pedestrian survey and counting data for Clovis trail system. (Measure C Funded)
75592	**Trail Counter Display**		50,000 c				Install bike and pedestrian counting display on the Clovis trail system. (Measure C Funded)
	Clovis Old Town Trail						
71415	Restroom		40,000 d 200,000 c				Construct a handicap unisex restroom adjacent to Fire Station 3 for trail users to alleviate use of Station restrooms. (Contingent on a Clovis Community Foundation Grant and Development Fees)
	Dry Creek Trail						
	Willow to Old Town Trail					83,000 d 455,000 a 828,000 c	Complete unfinished portion of trail. (Contingent upon Grant Funding)

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PARK IMPROVEMENTS

93000 ACCT	PROJECT LOCATION	2020-21	2021-22	2022-23	2023-24	2024-25 or Later	DESCRIPTION
	Dry Creek Trail Lighting						
	Minnewawa to			25,000 d			Install lighting along trail.
	Cottonwood Park			215,000 c			(Contingent Upon Funding)
	Dry Creek/Enterprise Canal						
	Trail Connection		25,000 d				Construct connection between the two
	west of Fowler		85,000 c				existing trails west of Fowler.
							(Measure C Funded)
	Enterprise Canal Trail			35,000 d			Complete unfinished portion of the trail on
	east of Sunnyside			120,000 c			the bank of the canal. Contingent on an
							agreement with Fresno Irrigation District.
							(Measure C Funded)
	Gould Canal Trail						
75580	Fowler to DeWolf					250,000 a	Purchase property for the future
							development of the Gould Canal Trail.
							(Development Fees)
	Sierra Gateway						
	Regional Trail						
	Shepherd to DeWolf						
75630	Phase II					20,000 d	Install trail lighting.
						750,000 c	(Contingent upon Grant Funding)
	SR168/Enterprise Canal						
	Pedestrian Bridge						
74980	Phase III -						Construct pedestrian bridge over SR168
	Construction					250,000 a	east of Temperance along the Enterprise
						11,000,000 c	Canal Trail. (Contingent upon Funding)
	TOTAL - PARKS	**1,540,000**	**7,520,000**	**1,575,000**	**1,260,000**	**19,100,000**	

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STREET IMPROVEMENTS

95000 ACCT	PROJECT LOCATION	2020-21	2021-22	2022-23	2023-24	2024-25 or Later	DESCRIPTION
	REIMBURSEMENTS						
74010	**Misc. Street Widening**	250,000 c	250,000 c	250,000 c	250,000 c	250,000 c	City participation in miscellaneous projects and provisions for unforeseen expenses. (HUTA Funded)
74587	**Horizontal Control System**	70,000 c					Establish City Coordinate System in the northeast section of the city sphere. (HUTA Funded)
	PREVENTATIVE MAINTENANCE						
74020	**Slurry Seals and Pavement Rejuvenation**	40,000 d 460,000 c	40,000 d 470,000 c	40,000 d 480,000 c	40,000 d 490,000 c	40,000 d 500,000 c	Asphalt/sand slurry sealing and pavement rejuvenation of various City streets. Locations prioritized on a yearly basis using Pavement Management System. (Measure C Funded)
74561	**Trail Pavement Maintenance**	10,000 d 120,000 c	10,000 d 70,000 c	10,000 d 70,000 c	10,000 d 70,000 c	10,000 d 70,000 c	Asphalt/sand slurry sealing and pavement rejuvenation of the City Trails. Locations prioritized on a yearly basis using Pavement Management System. (Measure C Funded)
74971	**Pavement Maintenance Crack Seal**	10,000 d 50,000 c	10,000 d 50,000 c	10,000 d 50,000 c	10,000 d 50,000 c	10,000 d 50,000 c	Crack sealing of various city streets. Locations prioritized on a yearly basis using Pavement Management System. (HUTA Funded)
	BRIDGE AND STREAM CROSSINGS						
74529	**Leonard/Enterprise Canal**		1,800,000 c				Replace and widen bridge section at Leonard and Enterprise Canal. (HBRR Grant Funded)

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STREET IMPROVEMENTS

95000 ACCT	PROJECT LOCATION	2020-21	2021-22	2022-23	2023-24	2024-25 or Later	DESCRIPTION
74559	**Bridge Maintenance Plan**				5,000 d		Establish Plan for Bridge Maintenance. (HBRR Grant Funded)
	RESEARCH AND TECHNOLOGY PARK						
	Phase 2 **Alluvial, E/O Armstrong**					372,000 a 25,000 d 3,082,000 c	Westerly extension of Phase 1 improvements along Alluvial Avenue, including Armstrong Avenue. (Street Fee Reimbursement)
	PEDESTRIAN / BICYCLE FACILITIES						
74110	**Bicycle and Pedestrian Facilities**	57,000 c	55,000 c	55,000 c	55,000 c	55,000 c	Construct pedestrian and bicycle facilities at various locations. (LTF Article 3 Funding)
74210	**Misc. Concrete Improvements**	10,000 d 200,000 c	10,000 d 100,000 c	10,000 d 100,000 c	10,000 d 100,000 c	10,000 d 100,000 c	Curb, gutter, sidewalk improvements and repairs at various locations. Includes ADA compliance. (HUTA Funded)
74211	**ADA Survey**	50,000 d	50,000 d	50,000 d	50,000 d	50,000 d	Citywide survey of City facilities located within the City's public right-of-way. (HUTA Funded)
74886	**Misc. Wheelchair Ramps** Various Locations	50,000 c	150,000 c	150,000 c	150,000 c	150,000 c	Install wheelchair accessible (ADA) ramps at various locations. (CDBG & Measure C ADA Funding)
74016	**ADA Transit** Various Locations			15,000 d 95,000 c			Improve existing Bus Stop locations to meet ADA compliance. (LCTOP Funded)

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95000 ACCT	PROJECT LOCATION	2020-21	2021-22	2022-23	2023-24	2024-25 or Later	DESCRIPTION
	PEDESTRIAN / BICYCLE FACILITIES						
74102	**Misc. Sidewalk Improvements**						Install sidewalk for ADA compliance
	Northeast area of Gettysburg and Peach	200,000 c					and accessibility concerns. (CDBG funded)
	Santa Ana Sidewalk Repair		15,000 d				Replace sidewalk for ADA compliance
	Peach to Villa		75,000 c				and accessibility concerns. (Contingent on CDBG funding)
	Villa Avenue Sidewalk Repair			20,000 d			Replace sidewalk for ADA compliance
	Gettysburg to Santa Ana			90,000 c			and accessibility concerns. (Contingent on CDBG funding)
	LANDSCAPING IMPROVEMENTS						
74023	**LMD Landscape Improvements**						Modify soil and re-landscape to improve the
	Sunnyside - Fwy. 168 to Alluvial					5,000 d	current median and outside travel lane
	Alluvial - Clovis to Sunnyside					75,000 c	areas. (LMD Funded)
74866	**Landscape Maintenance District - Area 2**						
	Fowler Landscaping					19,000 d	Evaluate existing landscaping, design and
	Gettysburg to Ashlan					188,000 c	install new landscaping and irrigation. (General Government Services Fund and LMD Reserves)
74024	**Shaw Avenue Improvements**						Modify soil and re-landscape to improve the
	Willow - Clovis					25,000 d	current median and outside travel lane
						115,000 c	areas. (LMD Funded)

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95000 ACCT	PROJECT LOCATION	2020-21	2021-22	2022-23	2023-24	2024-25 or Later	DESCRIPTION
	LANDSCAPING IMPROVEMENTS						
74564	**LMD - Benefit Zone 1 & 3**						
	Clovis Center Median					5,000 d	Remove and replace existing landscape
	Sierra to Herndon					75,000 c	and irrigation. (LMD Reserves)
	TRAFFIC SIGNAL/INTERSECTION IMPROVEMENTS						
74585	**Armstrong/Nees**	75,000 d					Install traffic signal.
	Traffic Signal	35,000 a					(CMAQ Grant Funded)
			535,000 c				
74584	**Shepherd/Peach**	75,000 d					Install traffic signal.
	Traffic Signal	40,000 a	535,000 c				(CMAQ Grant Funded)
74973	**Video Vehicle Detection Replacement**	740,000 c					Replace the remaining video detection at various intersections with a magnetic detection systems. (HUTA Funded)
74972	**Pedestrian Push Button Upgrades**	313,000 c					Install pedestrian push systems and pedestrian countdown modules at twenty-nine intersections throughout the city (HSIP Grant Funded)
	Peach/Herndon Quad Intersection					250,000 c	Completion of improvements to facilitate the quadrant intersection design and operation. (Street Fee Reimbursement)
	Willow/Herndon Quad Intersection					750,000 c	Completion of improvements to facilitate the quadrant intersection design and operation. (Street Fee Reimbursement)

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STREET IMPROVEMENTS

95000 ACCT	PROJECT LOCATION	2020-21	2021-22	2022-23	2023-24	2024-25 or Later	DESCRIPTION
	RECONSTRUCTION AND WIDENING PROJECTS						
74215	**Miscellaneous Repairs**	125,000 c	125,000 c	125,000 c	125,000 c	125,000 c	Perform miscellaneous repairs at various locations. (HUTA Funded)
	Alley Improvements						
74586	**Alleys - Pollasky to DeWitt**	70,000 d					Alley reconstruction at three locations.
	Dennis/Mitchel		360,000 c				(Contingent on CDBG Funding)
	Dennis/Beverly						
	Beverly/San Jose						
74101	**Gettysburg/Norwich**						Alley reconstruction.
	Villa to Gettysburg	185,000 c					(Contingent on CDBG funding)
	Armstrong Avenue Improvements						
	Ashlan to Gould Canal					25,000 d	Overlay street.
						150,000 c	(Contingent upon Funding)
	Shaw to Gettysburg					65,000 d	Reconstruct/overlay street.
						565,000 c	(Contingent upon Funding)
	Shaw to Barstow					50,000 d	Overlay street.
						625,000 c	(Contingent upon Funding)
74981	**Tollhouse to Sierra**						Reconstruct/overlay street.
		900,000 c					(SB1 Funded)

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STREET IMPROVEMENTS

95000 ACCT	PROJECT LOCATION	2020-21	2021-22	2022-23	2023-24	2024-25 or Later	DESCRIPTION
	Armstrong Avenue Improvements						
	Herndon to Alluvial			60,000 d			Reconstruct/overlay street.
					350,000 c		(Contingent upon HUTA Funding)
	Alluvial to Nees		65,000 d				Reconstruct/overlay street.
				480,000 c			(Contingent upon Measure C Funding)
	Ashlan Avenue Improvements						
74554	**Willow to Peach**					125,000 d	Reconstruct/overlay street.
						1,365,000 c	(Contingent upon Funding)
	Temperance to Locan					70,000 d	Overlay street.
						720,000 c	(Contingent upon Funding)
	Barstow Avenue Improvements						
	Fowler to Armstrong					35,000 d	Overlay street.
						310,000 c	(Contingent upon Funding)
74999	**Minnewawa to Clovis**	65,000 d					Reconstruct/overlay street.
			515,000 c				(STBG Grant Funded)
	Helm Canal E/O Peach					90,000 d	Remove constriction at the Dry Creek
						550,000 c	crossing and the hump at the Helm Canal crossing. Coordinate with sewer project. (Contingent upon Funding)
	Bullard Avenue Improvements						
74979	**Armstrong to Temperance**						Reconstruct/overlay street.
		750,000 c					(SB1 Funded)

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STREET IMPROVEMENTS

95000 ACCT	PROJECT LOCATION	2020-21	2021-22	2022-23	2023-24	2024-25 or Later	DESCRIPTION
	Bullard Avenue Improvements						
	Villa to Minnewawa					33,000 d 325,000 c	Overlay street. (Contingent upon Funding)
74151	**Minnewawa to DeWitt**				250,000 c		Restripe and modify the connection to the couplet. (Contingent upon Funding)
	Clovis Avenue Improvements						
74583	**Nees to Alluvial**	100,000 d	940,000 c				Reconstruct/overlay street. (STBG Grant Funded)
	Shepherd to Teague		35,000 d	230,000 c			Overlay street. (Contingent upon SB1 Funding)
	Sierra to Fifth				35,000 d 250,000 c		Overlay street. (Contingent upon HUTA Funding)
	DeWolf Avenue Improvements						
	Bullard to Barstow					35,000 d 200,000 c	Overlay street. (Contingent upon Funding)
	Fifth Street Improvements						
	Woodworth to Clovis					25,000 d 120,000 c	Overlay street. (Contingent upon Funding)
	Fowler Avenue Improvements						
74997	**Alluvial to Nees**	75,000 d	1,075,000 c				Reconstruct/overlay street. (STBG Grant Funded)

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STREET IMPROVEMENTS

95000 ACCT	PROJECT LOCATION	2020-21	2021-22	2022-23	2023-24	2024-25 or Later	DESCRIPTION
	Fowler Avenue Improvements						
	Ashlan to City Limits		65,000 d				Reconstruct/overlay street.
				675,000 c			(Contingent upon SB1 Funding)
	Alluvial to Herndon					35,000 d	Overlay street.
						320,000 c	(Contingent upon Funding)
	Gettysburg Avenue Improvements						
	Temperance to Armstrong					60,000 d	Reconstruct/overlay street.
						570,000 c	(Contingent upon Funding)
74977	**Sierra Vista Pkwy to Clovis**						Reconstruct/overlay street.
		1,050,000 c					(SB1 Funded)
	Herndon Avenue Improvements						
	Armstrong to Temperance				55,000 d		Overlay street.
					490,000 c		(Contingent upon Funding)
74184	**Temperance to DeWolf**						Widen, install dual lefts, traffic signal,
		1,500,000 c					sidewalk and other improvements.
							(Regional Measure C Funded)
	Villa to Clovis		65,000 d				Overlay street.
				726,000 c			(Contingent upon SB1 Funding)
	Locan Avenue Improvements						
	Bullard to Barstow					30,000 d	Overlay street.
						335,000 c	(Contingent upon Funding)

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STREET IMPROVEMENTS

95000 ACCT	PROJECT LOCATION	2020-21	2021-22	2022-23	2023-24	2024-25 or Later	DESCRIPTION
	Locan Avenue Improvements						
	Shaw to Barstow					30,000 d 320,000 c	Overlay street. (Contingent upon Funding)
	Loma Vista Avenue Improvements						
74591	**West of Leonard**	1,500,000 c					Street Construction for access to Fire Station 6. (Developer Funded)
	Minnewawa Avenue Improvements						
74059	**Alluvial to Herndon**	600,000 a	1,900,000 c				Reconstruct and Widening. (RSTP Grant Funded)
	S/O Herndon					15,000 d 42,000 c	Reconstruct street. (Contingent upon Funding)
	Nees to Teague					70,000 d 840,000 c	Reconstruct/overlay street. (Contingent upon Funding)
	Barstow to Bullard					60,000 d 565,000 c	Reconstruct/overlay street. (Contingent upon Funding)
	Gettysburg to Ashlan					35,000 d 200,000 c	Reconstruct/overlay street. (Contingent upon Funding)
	Nees Avenue Improvements						
74508	**Minnewawa to Clovis**	500,000 a 1,900,000 c					Reconstruction and Widening (RSTP Grant Funded)
74509	**Temperance to Locan**			120,000 d	500,000 a 1,750,000 c		Street Widening. (Contingent upon Funding)

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STREET IMPROVEMENTS

95000 ACCT	PROJECT LOCATION	2020-21	2021-22	2022-23	2023-24	2024-25 or Later	DESCRIPTION
	Peach Avenue Improvements						
	Shepherd to Teague					45,000 d 440,000 c	Overlay street. (Contingent upon Funding)
	Teague to Nees					35,000 d 290,000 c	Overlay street. (Contingent upon Funding)
74729	**Ashlan to Dakota**					55,000 d 515,000 c	Reconstruct/overlay street. (Contingent upon Funding)
	Pollasky Avenue Improvements						
	Third to Sierra					25,000 d 210,000 c	Overlay street. (Contingent upon Funding)
	Shaw Avenue Improvements						
74582	**Sunnyside to Fowler**	115,000 d	1,110,000 c				Reconstruct/overlay street. (STBG Funded)
74844	**Armstrong to Temperance**					70,000 d 890,000 c	Reconstruct/overlay street. (Contingent upon Measure C Funding)
	Temperance to Locan					45,000 d 440,000 c	Overlay street. (Contingent upon Funding)
	Peach to Villa					35,000 d 200,000 c	Overlay street. (Contingent upon Funding)

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95000 ACCT	PROJECT LOCATION	2020-21	2021-22	2022-23	2023-24	2024-25 or Later	DESCRIPTION
	Shaw Avenue Improvements						
74057	**DeWolf to McCall**	18,500,000 c					Construct 6-lane divided expressway, traffic signal, curb and gutter, and other improvements. (Regional Measure C Funded)
	Sierra Avenue Improvements						
	Willow to Peach		35,000 d	340,000 c			Overlay street. (Contingent upon Measure C Funding)
	Villa to Clovis					75,000 d 1,050,000 c	Reconstruct/overlay street. (Contingent upon Funding)
	Sunnyside Avenue Improvements						
	Nees to Alluvial					70,000 d 935,000 c	Reconstruct/overlay street. (Contingent upon Funding)
	Fifth to Barstow					100,000 d 1,340,000 c	Reconstruct street. (Contingent upon Funding)
	Teague Avenue Improvements						
	Minnewawa to Clovis					35,000 d 305,000 c	Overlay street. (Contingent upon Funding)

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STREET IMPROVEMENTS

95000 ACCT	PROJECT LOCATION	2020-21	2021-22	2022-23	2023-24	2024-25 or Later	DESCRIPTION
	Temperance Avenue Improvements						
	Bullard to Barstow					40,000 d 320,000 c	Overlay street. (Contingent upon Funding)
	Alluvial to Herndon					60,000 d 535,000 c	Reconstruct/overlay street. (Contingent upon Funding)
	Third Street Improvements						
74286	**Clovis to Tollhouse**					25,000 d 400,000 c	Replace curb & gutter. Coordinate with installation of water main. (Contingent upon Funding)
	Tollhouse Improvements						
	Herndon to Temperance					25,000 d 150,000 c	Overlay street. (Contingent upon Funding)
	Fowler to Armstrong					35,000 d 260,000 c	Overlay street. (Contingent upon Funding)
	Sunnyside to Fowler					35,000 d 375,000 c	Overlay street. (Contingent upon Funding)
	Villa Avenue Improvements						
74998	**Bullard to Barstow**	70,000 d	1,020,000 c				Reconstruct/overlay street. (STBG Grant Funded)
74132	**Shaw to Barstow**	950,000 c					Reconstruct/overlay street. (STBG Grant Funded)
	Gettysburg to Swift					25,000 d 170,000 c	Overlay street. (Contingent upon Funding)

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STREET IMPROVEMENTS

95000 ACCT	PROJECT LOCATION	2020-21	2021-22	2022-23	2023-24	2024-25 or Later	DESCRIPTION
	Willow Avenue Improvements						
	Sierra to Herndon					35,000 d 270,000 c	Reconstruct/overlay street. (Contingent upon Funding)
	Sierra to Bullard		35,000 d	170,000 c			Overlay street. (Contingent upon HUTA Funding)
	Bullard to Barstow		35,000 d	185,000 c			Overlay street. (Contingent upon HUTA Funding)
	Local Streets						
74995	**Local Street Improvements** Various Streets Cape Seal Program Rehabilitation Program	50,000 d 750,000 c	50,000 d 750,000 c	50,000 d 750,000 c	50,000 d 750,000 c	50,000 d 750,000 c	Overlay various streets in local neighborhoods as programmed through the Pavement Management System (PMS) - per separate document.
74567	**ADA Ramps for Local Street Improvements**	25,000 d 300,000 c	25,000 d 300,000 c	25,000 d 300,000 c	25,000 d 300,000 c	25,000 d 300,000 c	Improve access ramps at the same locations as the local street Improvement project to satisfy ADA requirements.
	TOTAL - STREET IMPROVEMENTS	**32,935,000**	**12,730,000**	**5,731,000**	**6,220,000**	**26,506,000**	

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WATER CAPITAL PROJECTS - ENTERPRISE FUND

96000 ACCT	PROJECT LOCATION	2020-21	2021-22	2022-23	2023-24	2024-25 or Later	DESCRIPTION
76010	**Various Water Main Replacement**	25,000	25,000	25,000	25,000	25,000	Replace water mains within the City that need to be upsized, relocated, or replaced.
	WATER MAINS						
	Clovis Avenue			30,000 d			Install 12 inch main in accordance with the
	Gettysburg to Donner			85,000 c			Water Master Plan.
77504	**Santa Ana Avenue**	150,000 c					
	Clovis Intersection						Install 12 inch main across the intersection.
76509	**Sierra Avenue**						Replace 12 inch main in the current
	DeWitt to SR168					140,000 c	alignment.
	Tarpey Service Area			30,000 d			Install new meter and additional water
	Meter & Redundancy			130,000 c			mains for redundancy
	SURFACE WATER SUPPLY						
	Rotary Park						
	Pump, Motor, Electrical and					25,000 d	Install pump, motor, electrical facilities and
	Piping					225,000 c	purple piping to provide surface water for park irrigation from Dry Creek.
76615	**Railroad Park (Peach/Alluvial)**						
	Pump, Motor, Electrical and					30,000 d	Extend purple piping from Cottonwood to
	Piping					350,000 c	Peach/Alluvial Park.
	Cottonwood Park & Dry Creek Trail						Install pump, motor, electrical facilities and
	Pump, Motor, Electrical and					25,000 d	purple piping to provide surface water for
	Piping					225,000 c	irrigation from Basin 7C at Alluvial and Clovis Avenues.

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WATER CAPITAL PROJECTS - ENTERPRISE FUND

96000 ACCT	PROJECT LOCATION	2020-21	2021-22	2022-23	2023-24	2024-25 or Later	DESCRIPTION
	SURFACE WATER TREATMENT PLANT IMPROVEMENTS						
77503	**SWTP High Service Pumps VFD**	1,200,000 c					Install a variable frequency drive on the high service pumps to stabilize pressure fluctuations on the water system.
77528	**SWTP Pretreatment**	1,500,000 c					Add pretreatment to existing facilities to maximize surface water allocation during winter months.
77531	**SWTP Process Addition**		1,500,000 c				Add ozone treatment process to minimize the positive bacti and alleviate taste and odor concerns.
	WELL SITE IMPROVEMENTS						
77572	**Well 14 - Peach N/O Sierra**		45,000 d				Install GAC facilities.
	GAC		550,000 c				(DBCP Settlement Fund)
	Well Panel Upgrades						Upgrade electrical panels at well sites due
77516	Wells 8A, 23, 25		40,000 d				Upgrade electrical panels at well sites due
			660,000 c				to deterioration of well functionality.
	WELL REPLACEMENT						
77650	**Well 6 Replacement Willow/Barstow Avenues**						
	Drill and Develop				50,000 a		
					25,000 d		Acquire property, drill and develop well.
					400,000 c		
	Pump and Motor				25,000 d		Install pump and motor.
					500,000 c		

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WATER CAPITAL PROJECTS - ENTERPRISE FUND

96000 ACCT	PROJECT LOCATION	2020-21	2021-22	2022-23	2023-24	2024-25 or Later	DESCRIPTION
	Chlorination Facilities				15,000 d 155,000 c		Install chlorination facilities.
	Well 35 - DeWitt/Santa Ana						
77600	Drill and Develop	470,000 c					Drill and develop well.
77600	Pump and Motor	20,000 d	500,000 c				Install pump and motor, water main and site improvements.
77600	Chlorination	15,000 d	155,000 c				Install chlorination facilities.
77600	Auxiliary Power				20,000 d 122,400 c		Install auxiliary power.
	Well T9 Gettysburg/Minnewawa						
	Drill and Develop			50,000 a 25,000 d 350,000 c			Acquire property, drill and develop well.
	Pump and Motor			25,000 d 500,000 c			Install pump and motor.
	Chlorination Facilities			15,000 d 155,000 c			Install chlorination facilities.
	Various Well Replacement					45,000 d 730,000 c	Replacement of various wells within the City to maintain water production.
	TOTAL - WATER CAPITAL PROJECTS - ENTERPRISE	**3,380,000**	**3,475,000**	**1,420,000**	**1,337,400**	**1,820,000**	

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WATER CAPITAL PROJECTS - DEVELOPER

97000 ACCT	PROJECT LOCATION	2020-21	2021-22	2022-23	2023-24	2024-25 or Later		DESCRIPTION
	EXTENSIONS							
76010	**Miscellaneous Extensions**	50,000	50,000	50,000	50,000	50,000		Install water mains and services at various locations.
76184	**Nees Tie-in**							
	Clovis to 500' East					50,000	c	Connect existing 12 inch water main in Nees and install fire hydrant, check valve and air release valves.
	WATER MAINS							
	Barstow Avenue					8,000	d	Upgrade to 12 inch main including valves
	Peach to Minnewawa					125,000	c	in accordance with the Water Master Plan.
76635	**Villa Avenue**					7,500	d	Install 12 inch main in accordance with the
	Barstow to Ninth					75,000	c	Water Master Plan.
	Heritage Avenue					15,000	d	Install 8 inch water main and services.
	E/O Temperance					160,000	c	(Reimbursement from property owners)
	Enterprise Avenue					15,000	d	Install 8 inch water main and services.
	W/O Locan					160,000	c	(Reimbursement from property owners)
	Saginaw Avenue					15,000	d	Install 8 inch water main and services.
	W/O DeWolf					159,000	c	(Reimbursement from property owners)
	Raw Water Main					700,000	d	Install 42 inch raw water main between the
	Southeast SWTP to the					14,300,000	c	treatment plants.
	Northeast SWTP							

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WATER CAPITAL PROJECTS - DEVELOPER

97000 ACCT	PROJECT LOCATION	2020-21	2021-22	2022-23	2023-24	2024-25 or Later	DESCRIPTION
	WATER STORAGE FACILITIES						
	2013 Water Revenue Bond Debt Service						
67751	**Principal**	2,050,000	2,155,000	2,265,000	2,385,000	10,750,000	Debt Service Principal.
67201	**Bond Handling Charges**	20,000	10,000	10,000	10,000	10,000	Handling Charges
67851	**Interest & Handling Charges**	959,000	857,000	749,000	636,000	1,289,000	Debt Service Interest.
	Water Storage Reservoir #2					25,000 d	Install a 500 GPM pump station to boost
	Villa N/O Barstow					450,000 c	water pressure during peak hour demands. Install 18 inch water main in Villa to Bullard Avenue per Water Master
	Water Storage Reservoir #7					1,000,000 d	Construct a 7 million gallon water storage
	Northeast SWTP					15,000,000 c	tank at the Northeast SWTP.
	Water Storage Reservoir #8					2,000,000 a	Acquire property and construct a 3 million
	Friant-Kern Canal					1,000,000 d	gallon water storage tank by the Friant-
						7,500,000 c	Kern Canal.
78045	**Water Storage Reservoir #9**		2,600,000 a				Acquire property and construct a 7 million
	Near Peach & Perrin					1,400,000 d	gallon water storage tank in the northwest
						17,000,000 c	village area.
	Water Storage Reservoir #10					800,000 d	Construct a 3.5 million gallon water
	Near Behymer/Clovis					10,000,000 c	storage tank in the northwest village area.
77725	**Water Development**		1,500,000	1,500,000	1,500,000	25,500,000	Secure water to serve areas within the City of Clovis General Plan.

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WATER CAPITAL PROJECTS - DEVELOPER

97000 ACCT	PROJECT LOCATION	2020-21	2021-22	2022-23	2023-24	2024-25 or Later	DESCRIPTION
	WATER STORAGE FACILITIES						
	Recharge Basin Northwest Area					8,000,000 a 500,000 d 4,500,000 c	Acquire property and construct a 40 acre recharge basin in the Northwest area.
	Recharge Basin CSUF Property					300,000 d 1,200,000 c	Construct a 40 acre recharge basin on existing CSUF property.
	SURFACE WATER TREATMENT PLANT IMPROVEMENTS						
77531	**SWTP Process Addition**		500,000 c				Add ozone treatment process to minimize the positive bacti and alleviate taste and odor concerns.
77538	**Nees Transmission Main** Locan to DeWolf	400,000 c					Install 24 inch main from Locan to Harlan Ranch. Reimbursement in accordance with the approved Reimbursable Agreement. Remaining reimbursement is $400,000.
77529	**SWTP Expansion**	100,000 d		30,000,000 c			Expand capacity of plant from 22.5 MGD to 45 MGD. Project needs to be established in the Urban Water
77532	**Water Storage Reservoir #6** Additional Reservoir at SE-SWTP		7,500,000 c				Install an additional 3.5 million gallon water storage tank at the treatment plant.
77536	**Northeast SWTP**	100,000 d				2,500,000 d 45,000,000 c	Construct a 20 MGD surface water treatment plant in the northeast area of the city sphere. Per the City water masterplan.

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WATER CAPITAL PROJECTS - DEVELOPER

97000 ACCT	PROJECT LOCATION	2020-21	2021-22	2022-23	2023-24	2024-25 or Later	DESCRIPTION
	WELL IMPROVEMENTS						
77605	**Landscape Improvements** Well 29, 31, 36, 38, 42 and Reservoir 4					125,000 c	Install water service, backflow devices, irrigation valves and landscaping at Reservoir 4, Well 29, 31, 36, 38 and 42.
77670	**Well 36 - Nees E/O Willow** Auxiliary Power					75,000 c	Install auxiliary power.
77680	**Well 39 - Willow/Magill**						
	Pump and Motor			35,000 d 450,000 c			Install pump and motor, water main and site improvements.
	Chlorination			15,000 d 155,000 c			Install chlorination facilities.
	Well 44 - Willow/Yeargin						
	Drill and Develop			200,000 a 35,000 d 450,000 c			Drill and develop well.
	Pump and Motor				25,000 d 500,000 c		Install pump and motor, water main and site improvements.
	Chlorination				15,000 d 155,000 c		Install chlorination facilities.
	Auxiliary Power					20,000 d 122,400 c	Install auxiliary power.

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WATER CAPITAL PROJECTS - DEVELOPER

97000 ACCT	PROJECT LOCATION	2020-21	2021-22	2022-23	2023-24	2024-25 or Later	DESCRIPTION
	WELL IMPROVEMENTS						
77600	**Well 45 - Minnewawa/Christopher**						
	Drill and Develop			200,000 a 35,000 d 450,000 c			Drill and develop well.
	Pump and Motor				25,000 d 500,000 c		Install pump and motor, water main and site improvements.
	Chlorination Facilities				15,000 d 155,000 c		Install chlorination facilities.
	Auxiliary Power					20,000 d 122,400 c	Install auxiliary power.
	Well 46 - Clovis/Shepherd					150,000 a	Complete well development including Drill,
	Well & site development					150,000 d 1,850,000 c	site development, pump & motor, chlorination facilities, & auxiliary power
	Well 47 - Sunnyside/Christopher					150,000 a	Complete well development including Drill,
	Well & site development					150,000 d 1,850,000 c	site development, pump & motor, chlorination facilities, & auxiliary power
	Southeast Area Well					150,000 a	Complete well development including Drill,
	Well & site development					150,000 d 1,850,000 c	site development, pump & motor, chlorination facilities, & auxiliary power
	Well at Armstrong/SR 168					150,000 a	Complete well development including Drill,
	Well & site development					150,000 d 1,850,000 c	site development, pump & motor, chlorination facilities, & auxiliary power

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WATER CAPITAL PROJECTS - DEVELOPER

97000 ACCT	PROJECT LOCATION	2020-21	2021-22	2022-23	2023-24	2024-25 or Later	DESCRIPTION
	Various Well Site Development						
77090	1. Test Hole	20,000 d	15,000 d	15,000 d	15,000 d	20,000 d	Drill test hole.
		40,000 c	35,000 c	35,000 c	35,000 c	45,000 c	
77090	2. Land Banking					130,000 a	Land acquisition of acceptable sites.
77090	3. Well Construction					20,000 d	Construct well.
77090						500,000 c	
77090	4. Construct Chlorination					13,500 d	Construct chlorination unit and building.
77090	Facilities					60,000 c	
77090	5. Auxiliary Power					15,400 d	Install generator.
77090						122,400 c	
	TOTAL - WATER CAPITAL PROJECTS - DEVELOPER	**3,739,000**	**15,222,000**	**36,649,000**	**6,021,000**	**181,574,600**	

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COMMUNITY SANITATION IMPROVEMENTS - ENTERPRISE FUND

99500 ACCT	PROJECT LOCATION	2020-21	2021-22	2022-23	2023-24	2024-25 or Later	DESCRIPTION
81130	**Clovis Landfill** Corrective Action Program					150,000 c	Construction of monitoring equipment, evaluation of groundwater extraction pumps, gas extraction pumps, and water filtration system. (Refuse Enterprise Fund)
81180	**Landfill Wireless Link**					5,000 d 20,000 c	Install wireless communication from City network capable of receiving/transmitting phone, fax and internet services. (Refuse Enterprise Fund)
81120	**Landfill Site Acquisition**					20,000 a	Purchase remnant parcel to avoid private development in close proximity to vicinity of landfill. (Refuse Enterprise Fund)
81125	**Landfill Left Turn Lane** Entrance Northeast Bound on Auberry Road at Landfill Entrance	150,000 c					Widen street for left turn lane eastbound with storage for solid waste trucks. (Refuse Enterprise Fund)
	Landfill Access Road Pave Bridge Access Road			10,000 d 65,000 c			Pave access road with asphalt concrete from bridge approach to landfill property line. (Refuse Enterprise Fund)

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COMMUNITY SANITATION IMPROVEMENTS - ENTERPRISE FUND

99500 ACCT	PROJECT LOCATION	2020-21	2021-22	2022-23	2023-24	2024-25 or Later	DESCRIPTION
81211	**Landfill Solar**	100,000 d					Install solar panels on landfill buffer area. (Refuse Enterprise Fund)
	Landfill Security System					15,000 d	Install chain link fence, interior lighting and
	Install Chain Link Fence, Interior Lighting and Video					185,000 c	video to prevent unauthorized entry and protect equipment and facilities from vandalism. (Refuse Enterprise Fund)
81205	**Landfill Transfer Station**						Acquire land and build green waste
	Green Waste					50,000 d	transfer station.
						250,000 c	(Refuse Enterprise Fund)
81200	**Villa Corporation Yard**					5,000 d	Develop short and long range Master Plans
	Master Plan					80,000 c	for the ongoing use of the corporation yard and make grading and drainage improvements. (Refuse Enterprise Fund)
81147	**Clovis Landfill Liner**						
	Liner System (Stage II)					300,000 d	Landfill expansion as needed for City
						5,000,000 c	growth. Expansion estimated to occur in 2025 - 2026. (Refuse Enterprise Funds)
	Liner System (Stage III)					100,000 d	Landfill expansion as needed for City
						1,000,000 c	growth. Expansion estimated to occur in 2043 - 2044. (Refuse Enterprise Funds)

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COMMUNITY SANITATION IMPROVEMENTS - ENTERPRISE FUND

99500 ACCT	PROJECT LOCATION	2020-21	2021-22	2022-23	2023-24	2024-25 or Later		DESCRIPTION
	Clovis Landfill Closure					300,000 7,200,000	d c	Place impermeable cover over entire landfill, complete drainage system, and install gas vents. Estimate closure to occur in 2050. (Landfill Closure/Post Closure Reserve)
	Clovis Landfill Post Closure					3,000,000	c	30-year post closure monitoring and maintenance. Estimate post closure to occur in 2050. (Landfill Closure/Post Closure Reserve)
	TOTAL - REFUSE	**250,000**	**0**	**75,000**	**0**	**17,680,000**		

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HOUSING & COMMUNITY DEVELOPMENT

42750/49210 ACCT	PROJECT LOCATION	2020-21		2021-22	2022-23	2023-24	2024-25 or Later	DESCRIPTION
80100	**Home Repair Loans/Grants**	125,000	c	80,000	80,000	80,000	80,000	Agency participation in the repair and rehabilitation of affordable housing. Replace substandard mobile homes for low income senior citizens in the mobile home parks. (CalHome)
80101	**First Time Home Buyer Loans**	800,000	c	100,000	100,000	100,000	100,000	Assist low to moderate income families with first home purchase. (HOME Grant)
80105	**Home Improvement Grants**	250,000	c	150,000	150,000	150,000	150,000	Home improvement and repair grants. (CDBG/Housing Successor Funding)
80170	**Affordable Housing Project**	1,350,000	c	150,000	150,000	150,000	150,000	Gap financing for development of affordable housing. (Housing Successor Funding)
	TOTAL - HOUSING AND COMMUNITY DEVELOPMENT	**2,525,000**		**480,000**	**480,000**	**480,000**	**480,000**	

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See glossary at the end of this section for an explanation of acronyms and abbreviations.

COMMUNITY INVESTMENT PROGRAM
GLOSSARY OF TERMS, ACRONYMS, & ABBREVIATIONS

a	Property Acquisition
c	Construction
d	Design
f	Development Fees
s	Construction Supervision
u	Underground Service Alert
n/o	North of
s/o	South of
e/o	East of
w/o	West of
ADA	Americans with Disabilities Act. A federal act requiring accessibility for the disabled to all facilities.
ATP	Active Transportation Plan
BTA	Bicycle Transportation Account
CalFire	California Department of Forestry and Fire Protection
CalHome	A program to enable low and very-low income households to become or remain homeowners.
CDBG	Community Development Block Grant. A source of federal funding for improvements in low income or blighted areas.
CIP	Community Investment Program
CHIP	Clovis Housing Improvement Program
CMAQ	Congestion Mitigation and Air Quality Program. A federal source of funding under "SAFETEA-LU" for projects that reduce air pollution emissions caused by transportation activities through increased efficiency of transportation systems.
CSUF	California State University Fresno
CUSD	Clovis Unified School District
DBCP	Dibromochloropropane Pesticide used in the past by farmers for Nematodes. Has now been found in the groundwater.
FID	Fresno Irrigation District
FMFCD	Fresno Metropolitan Flood Control District
GAC	Granular Activated Carbon. Large (20,000 gallon ±) vessels filled with Granular Activated Carbon for removal of DBCP.
GPA	General Plan Amendment
GPM	Gallons per Minute
Hardscape	Landscaping such as patios, sidewalks, and paths.
HSIP	Highway Safety Improvement Program
HBRR	Highway Bridge Rehabilitation and Repair. A federal funding source for repair and replacement of bridges.
HOPE	Housing Opportunities through Education
HOME	Federal block grant to state and local governments designed to create affordable housing for low-income households.

COMMUNITY INVESTMENT PROGRAM
GLOSSARY OF TERMS, ACRONYMS, & ABBREVIATIONS, CONT.

HUTA	Highway Users Tax Account (2010)
LCTOP	Low Carbon Transit Operations Program. A state source of funding under Senate Bill 862 to provide operating and capital assistance for transit agencies.
LMD	Landscape Maintenance District
LTF	Local Transportation Fund. A state funding source for street and transit projects- Article 3 is for bicycle and pedestrian facilities, Article 8 is for street construction.
Measure C	In 2007, Fresno County voters passed a half-cent sales tax extension for twenty years to improve the County's and all cities within the County's overall transportation systems.
MGD	Million Gallons per Day
NFPA	National Fire Protection Association
PCI	Pavement Condition Index
PD	Police Department
PDS	Planning and Development Services Department
PMS	Pavement Management System. A computer-based pavement management and inventory system, which helps staff, identify street project priorities.
PVC	Polyvinyl Chloride. A pipe material used for sewer and water main construction.
RDA	Redevelopment Agency
R&T Park	Research and Technology Park
RSTP	Regional Surface Transportation Program
SB1	Senate Bill 1 – The Road Repair and Accountability Act (2017)
SR	State Route
STBG	Surface Transportation Block Grant
STP	Surface Transportation Program. A federal source of funding under "SAFETEA-LU" for street construction and reconstruction activities.
Streetscape	The visual elements of a street that defines its character, such as building façade, landscaping, sidewalks, street furniture, signs, lighting, etc.
ST-WRF	Sewage Treatment and Water Reuse Facility
SWTP	Surface Water Treatment Plant
TCP	1,2,3-Trichloropropane is an exclusively man-made chlorinated hydrocarbon commonly used as an industrial solvent, cleaner, degreaser, and in two commonly used soil fumigants used in California to manage nematodes. Contamination of TCP occurred in drinking water wells and is on the State of California's list of chemicals known to cause cancer.
TE	Transportation Enhancement Activity. A federal source of funding under "SAFETEA-LU" for enhancement of transportation facilities through beautification or restoration of historic facilities.
UGOH	Underground Overhead. The undergrounding of overhead facilities such as electric, phone and cable.
VCP	Vitrified Clay Pipe. A pipe material used for sewer main construction.

DRAFT
CLOVIS PLANNING COMMISSION
RESOLUTION NO. 20-__

A RESOLUTION OF THE CLOVIS PLANNING COMMISSION FINDING THE CITY OF CLOVIS PROPOSED 2020-2021 COMMUNITY INVESTMENT PROGRAM AND THE FIVE YEAR COMMUNITY INVESTMENT PROGRAM CONSISTENT WITH THE GENERAL PLAN AND RELEVANT SPECIFIC PLANS OF THE CITY OF CLOVIS

WHEREAS, Section 65401 of the Government Code calls for the Planning Commission's review of the annual Capital Improvement Program which the City of Clovis refers to as its Community Investment Program; and

WHEREAS, the Planning Commission reviewed the City of Clovis proposed 2020-2021 Community Investment Program and the Five Year Community Investment Program (CIP) at its May 28, 2020 meeting to review and report on the conformity of the CIP with the adopted General Plan and applicable specific plans; and

WHEREAS, the Planning Commission determined that no conflicts had been identified between any proposed project in the CIP and any goal or policy of the General Plan or applicable specific plan and, therefore, a conformity finding should be made.

NOW, THEREFORE, BE IT RESOLVED that the Clovis Planning Commission does find that the proposed 2020-2021 Community Investment Program and the Five Year Community Investment Program are consistent with the General Plan and relevant Specific Plans of the City of Clovis.

* * * * * * * * *

The foregoing resolution was adopted by the Clovis Planning Commission at its regular meeting on May 28, 2020, upon a motion by Commissioner _____, seconded by Commissioner _____, and passed by the following vote, to wit:

AYES: Commissioners ____, Chairperson
NOES:
ABSENT:
ABSTAIN:

PLANNING COMMISSION RESOLUTION NO. 20-__
DATE: May 28, 2020

_____
Amy Hatcher, Chairperson

ATTEST: _____
Dwight Kroll, AICP, Secretary

ATTACHMENT 2