



**Regular Meeting Agenda
Planning Commission**

LIAM DOWNEY - CHAIR

PAUL LAKE - VICE-CHAIR

MOHAMMAD HABIB - PLANNING COMMISSIONER

MALISHA KUMAR - PLANNING COMMISSIONER

JAMES WILSON - PLANNING COMMISSIONER

JOSEPH MUELLER - PLANNING COMMISSIONER

WAYNE TANDA - PLANNING COMMISSIONER

Tuesday, September 10, 2024 7:00 PM

**Council Chamber Building
17555 Peak Avenue, Morgan Hill, CA 95037**

MEETING PARTICIPATION

Morgan Hill Planning Commission meetings are held in person. The community may attend in person or via Zoom (video/teleconference). The meetings are also live-streamed on the City's website, Facebook page, and Channel 17.

Those wishing to participate in the meetings remotely must register in advance at <https://bit.ly/PlanningCommissionMtg>. Additionally, Zoom participants must be running the latest version or will be required to update to the latest version before being able to join the meeting remotely.

Remote participation is also available by calling (669) 900-9128 and entering webinar id: 862 0324 6251#. Dial *9 to raise your hand, and be called upon to speak for up to 3 minutes. Dial *6 to unmute.

As a courtesy, and technology permitting, for members who attend online, the City cannot guarantee that the public's access to online technology will be uninterrupted, and technical difficulties may occur from time to time. Unless required by the Ralph M. Brown Act, the meeting will continue despite technical difficulties for participants using the online option.

PUBLIC COMMENT

Public comment may be offered verbally at the meeting or in writing before the meeting.

Those attending remotely may only offer public comment for items on the agenda in any of these four categories:

- Consent Calendar
- Other Business
- Public Hearings

Public comment will be heard from those attending in person first with the submission of a speaker card. Once that is complete, we will move to those on Zoom that have their hand raised. Following public comment from Zoom, we will close the public comment period for that item.

Remote public comment for items not on the agenda will not be accepted.

Written public comment may be submitted to the Planning Office:

- In person at the Planning Commission Meeting;
- Via email to pcpubliccomment@morganhill.ca.gov; or
- Hand delivered or mailed to the Planning Division at 17575 Peak Avenue, Morgan Hill, CA 95037

Please email your comments to the Planning Office no later than 3:00 p.m. on Monday (the day before the Planning Commission meeting) so that your comments can be submitted to the members of the Planning Commission with sufficient time to review them. You may continue to provide written comments up to noon on Tuesday (the day of the meeting), although Planning Commissioners may not have sufficient time to review them before the meeting. Public comments submitted to the Planning Division after noon (12:00 p.m.) the day of the meeting will be provided to the Planning Commission as time allows.

Written comments WILL NOT be read aloud during the Planning Commission Meeting. Please note that written comments are posted on the City's website. It is recommended that you do not include any personal information that you do not want to be posted on the web. Please be advised that communications directed to the Planning Commission are public records and are subject to disclosure pursuant to the California Public Records Act and Brown Act unless exempt from disclosure under the applicable law. Communications will NOT be edited for redactions and will be printed/posted as submitted.

AMERICANS WITH DISABILITIES ACT (ADA)

In compliance with the Americans with Disabilities Act, if you are a disabled person and you need a disability-related modification or accommodation to participate in this meeting, please contact the Planning Office at (408) 310-4709 or by email at planning@morganhill.ca.gov. Requests must be made as early as possible and at least two full business days before the start of the meeting.

CALL TO ORDER

ROLL CALL ATTENDANCE

DECLARATION OF POSTING

Pursuant to Government Code Section 54954.2

PLEDGE OF ALLEGIANCE

PUBLIC COMMENT

Members of the public are entitled to address the Planning Commission concerning any item within the Morgan Hill Planning Commission's subject matter jurisdiction. Public comments are limited to no more than three minutes. Except for certain specific exceptions, the Commission is prohibited from discussing or taking action on any item not appearing on the posted agenda. (See additional noticing at the end of this agenda)

ORDERS OF THE DAY

CONSENT AGENDA

1. JUNE 25, 2024 MEETING MINUTES

Recommendation:

1. Accept the June 25, 2024 Meeting Minutes.

2. AUGUST 27, 2024 MEETING MINUTES

Recommendation:

1. Accept the August 27, 2024 Meeting Minutes.

PUBLIC HEARINGS

3. SD2022-0003/SR2022-0023/EA2022-0013: W. DUNNE - ROBERTSON (BORELLO ORCHARDS): REQUEST FOR A TENTATIVE SUBDIVISION MAP AND DESIGN PERMIT FOR A SINGLE-FAMILY ATTACHED DEVELOPMENT CONSISTING OF 10 TOWNHOME-STYLE DUETS LOCATED ON THE SOUTHWEST QUADRANT OF WEST DUNNE AVENUE AND VIEWCREST LANE (APN 767-12-060).

Recommendation:

1. Open/close public hearing.
2. Adopt a Resolution approving a Tentative Subdivision Map and Design Permit for the development of a single-family attached residential project consisting of 10 townhome-style duets.

4. **SD2023-0003/EA2023-0008: E. DUNNE – SERENE HILLS: REQUEST FOR A TENTATIVE SUBDIVISION MAP OF AN EXISTING 8.37 ACRE-SITE FOR THE DEVELOPMENT OF SEVEN LOTS TO CONSTRUCT SEVEN DETACHED SINGLE-FAMILY RESIDENCES. THE PROPERTIES, IDENTIFIED BY ASSESSOR PARCEL NUMBERS 728-02-002 AND 728-02-003, ARE LOCATED ON 2275 EAST DUNNE AVENUE, NORTH OF SADDLEBACK DRIVE; (SERENE HILLS, LLC., APPLICANT). CEQA: MITIGATED NEGATIVE DECLARATION.**

Recommendation:

1. Open/close public hearing; and
2. Adopt a Resolution approving a Mitigated Negative Declaration and a Tentative Subdivision Map for the future development of a single-family detached residential project consisting of 7 custom lots.

DIRECTOR'S REPORT/ANNOUNCEMENTS

ADJOURNMENT

NOTICE

Any documents produced by the City and distributed to the majority of the Planning Commission less than 72 hours prior to an open meeting, will be made available for public inspection at the front counter at City Hall located at 17575 Peak Avenue, Morgan Hill, CA, 95037 and at the Morgan Hill Public Library located at 660 West Main Avenue, Morgan Hill, California, 95037 during normal business hours. (Pursuant to Government Code 54957.5)

PUBLIC COMMENT

Members of the Public are entitled to directly address the Planning Commission concerning any item that is described in the notice of this meeting, before or during consideration of that item. If you wish to address the Planning Commission on any issue that is on this agenda, please complete a speaker request card located in the foyer of the Council Chambers and deliver it to the Minutes Clerk prior to discussion of the item. You are not required to give your name on the speaker card in order to speak to the Planning Commission, but it is very helpful. When you are called, proceed to the podium

and the Chair will recognize you. If you wish to address the Planning Commission on any other item of interest to the public, you may do so during the public comment portion of the meeting following the same procedure described above. Please limit your comments to three (3) minutes or less.

Please submit written correspondence to the Minutes Clerk, who will distribute correspondence to the Planning Commission.

Persons interested in proposing an item for the Planning Commission agenda should contact a member of the Commission who may plan an item on the agenda for a future Commission meeting. Should your comments require Planning's action, your request may be placed on the next appropriate agenda. Planning Commission discussion or action may not be taken until your item appears on an agenda. This procedure is in compliance with the California Public Meeting Law (Brown Act) Government Code §54950.

City Council Policies and Procedures (CP 03-01) outlines the procedure for the conduct of public hearings. Notice is given, pursuant to Government Code Section 65009, that any challenge of Public Hearing Agenda items in court, may be limited to raising only those issues raised by you or on your behalf at the Public Hearing described in this notice, or in written correspondence delivered to the Commission at, or prior to the Public Hearing on these matters.

The time within which judicial review must be sought of the action by the Commission, which acted upon any matter appearing on this agenda is governed by the provisions of Section 1094.6 of the California Code of Civil Procedure.

For a copy of Commission Policies and Procedures CP 97-01, please contact the City Clerk's office (408) 779-7259, (408) 779-3117 (fax) or by email cityclerk@morganhill.ca.gov.



Meeting Minutes
Planning Commission

WAYNE TANDA - CHAIR
LIAM DOWNEY - VICE-CHAIR
MOHAMMAD HABIB - PLANNING COMMISSIONER
PAUL LAKE - PLANNING COMMISSIONER
MALISHA KUMAR - PLANNING COMMISSIONER
JAMES WILSON - PLANNING COMMISSIONER
JOSEPH MUELLER - PLANNING COMMISSIONER

Tuesday, June 25, 2024 7:00 PM

Council Chambers
17555 Peak Avenue, Morgan Hill, CA 95037

CALL TO ORDER

Chair Tanda Called the meeting to order at 7:00 p.m.

ROLL CALL ATTENDANCE

Minutes Clerk Luna called the attendance at 7:00 p.m.

PRESENT	Wayne Tanda, Liam Downey, Paul Lake, Mohammad Habib, Malisha Kumar, James Wilson, Joseph Mueller
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DECLARATION OF POSTING

Minutes Clerk Luna declared the posting of the Agenda at 7:01 p.m.

PLEDGE OF ALLEGIANCE

Planning Commissioner Habib led the Pledge of Allegiance at 7:02 p.m.

PUBLIC COMMENT

Chair Tanda opened the public comment period at 7:02 p.m. Hearing no requests to speak, the public comment period was closed.

ORDERS OF THE DAY

There were no changes made.

CONSENT AGENDA

MOTION:

Accept the April 23, 2024 Meeting Minutes.

RESULT:	Passed
MOVER:	Vice-Chair Downey
SECONDER:	Planning Commissioner Lake
AYES:	Vice-Chair Downey, Planning Commissioner Lake, Planning Commissioner, Habib, Planning Commissioner Kumar, Planning Commissioner Wilson, Planning Commissioner Mueller
NAYS:	None
ABSTAIN:	Chair Tanda
ABSENT:	None

1. APRIL 23, 2024 MEETING MINUTES

Recommendation:

1. Accept Meeting Minutes

PUBLIC HEARINGS

None

OTHER BUSINESS

2. SELECTION OF PLANNING COMMISSION CHAIRPERSON AND VICE-CHAIR

Recommendation:

1. Planning Commission to select a Chairperson and Vice-Chair

Development Director Jennifer Carman presented the item at 7:05 p.m.

MOTION:

Appoint Planning Commissioner Downey to serve as Chair and appoint Planning Commissioner Lake to serve as Vice-Chair.

RESULT:	Passed
MOVER:	Planning Commissioner Mueller
SECONDER:	Chair Tanda
AYES:	Chair Tanda, Vice-Chair Downey, Planning Commissioner Lake, Planning Commissioner Habib, Planning Commissioner Kumar, Planning Commissioner Wilson, Planning Commissioner Mueller
NAYS:	None
ABSTAIN:	None
ABSENT:	None

3. **REVIEW OF AB1033 AND RECENT IMPLEMENTATION ACTIONS IN OTHER CITIES**

Recommendation:

1. Review and provide feedback.

Development Services Director Jennifer Carman gave the presentation at 7:06 p.m.

MOTION:

No action taken. The Planning Commission reviewed the item and provided feedback.

4. **ELEVATE MORGAN HILL ECONOMIC MOBILITY PROJECT PRESENTATION**

Recommendation:

1. Receive presentation.

Assistant City Manager for Community Development Edith Ramirez gave a presentation at 7:35 p.m.

Chair Tanda opened the public comment period at 8:23 p.m. The following individuals addressed the Planning Commission:

- Jaime Vasquez
- Doug Muirhead

Hearing no further requests to speak, the public comment was closed.

MOTION:

No action was taken. The Planning Commission received the presentation.

DIRECTOR'S REPORT/ANNOUNCEMENTS

Development Service Director Jennifer Carman made an announcement at 8:32 p.m.

ADJOURNMENT

There being no further business to discuss, Chair Tanda adjourned the meeting at 8:35 p.m.



**Meeting Minutes
Planning Commission**

LIAM DOWNEY - CHAIR
PAUL LAKE - VICE-CHAIR
MOHAMMAD HABIB - PLANNING COMMISSIONER
MALISHA KUMAR - PLANNING COMMISSIONER
JAMES WILSON - PLANNING COMMISSIONER
JOSEPH MUELLER - PLANNING COMMISSIONER
WAYNE TANDA - PLANNING COMMISSIONER

Tuesday, August 27, 2024 7:00 PM

**Council Chambers
17555 Peak Avenue, Morgan Hill, CA 95037**

CALL TO ORDER

Chair Downey called the meeting to order at 7:00 p.m.

ROLL CALL ATTENDANCE

Minutes Clerk Luna called the attendance at 7:00 p.m.

PRESENT	Liam Downey, Paul Lake, Mohammad Habib, James Wilson, Joseph Mueller
EXCUSED	Malisha Kumar, Wayne Tanda

DECLARATION OF POSTING

Minutes Clerk Luna declared the posting of the agenda at 7:01 p.m.

PLEDGE OF ALLEGIANCE

Planning Commissioner Mueller led the Pledge of Allegiance at 7:01 p.m.

PUBLIC COMMENT

Chair Downey opened the public comment period at 7:02 p.m. Hearing no requests to speak, the public comment period was closed.

ORDERS OF THE DAY

There were no changes made.

CONSENT AGENDA

MOTION:

Accept the May 14, 2024, meeting minutes.

RESULT:	Passed
MOVER:	Planning Commissioner Mueller
SECONDER:	Vice Chair Lake
AYES:	Chair Downey, Vice-Chair Lake, Planning Commissioner Habib, Planning Commissioner Wilson, Planning Commissioner Mueller
NAYS:	None
ABSTAIN:	None
ABSENT:	Planning Commissioner Kumar, Planning Commissioner Tanda

1. MAY 14, 2024 MEETING MINUTES

Recommendation:

1. Accept Meeting Minutes

PUBLIC HEARINGS

2. GPA2024-0001: REQUEST FOR A GENERAL PLAN AMENDMENT OF THE TEXT OF THE MORGAN HILL 2035 GENERAL PLAN TO ELIMINATE THE FLOOR AREA RATIO AND MODIFY THE DENSITY RANGE FOR THE MIXED USE FLEX LAND USE DESIGNATION.

Recommendation:

1. Open/Close Public Hearing; and
2. Adopt resolution recommending City Council approval of the amendment to the text of the Morgan Hill 2035 General Plan to eliminate the Floor Area Ratio for the Mixed Use Flex land use designation.

Development Services Director Jennifer Carman presented the Staff Report at

7:06 p.m.

Chair Downey opened the Public Hearing at 7:16 p.m. The following individuals addressed the Planning Commission:

- Carlos Duran
- Oswaldo Ocegueda

Hearing no further requests to speak, the Public Hearing was closed.

MOTION:

Adopt a resolution recommending City County approval of the Amendment to the text of the Morgan Hill 2035 General Plan to eliminate the Floor Area Ratio for the Mixed Use Flex land use designation.

RESULT:	Passed
MOVER:	Planning Commissioner Mueller
SECONDER:	Vice Chair Lake
AYES:	Chair Downey, Vice-Chair Lake, Planning Commissioner Habib, Planning Commissioner Wilson, Planning Commissioner Mueller
NAYS:	None
ABSTAIN:	None
ABSENT:	Planning Commissioner Kumar, Planning Commissioner Tanda

DIRECTOR'S REPORT/ANNOUNCEMENTS

Development Services Director Jennifer Carman made an announcement at 7:32 p.m. Economic Development Director Matthew Mahood joined the conversation at 7:34 p.m.

ADJOURNMENT

There being no further business to discuss, Chair Downey adjourned the meeting at 7:51 p.m.

MINUTES PREPARED BY:
Jenna Luna, Minutes Clerk

PLANNING COMMISSION STAFF REPORT

MEETING DATE: September 10, 2024

PREPARED BY:

Joey Dinh, Associate Planner

APPROVED BY: Jennifer Carman

SD2022-0003/SR2022-0023/EA2022-0013: W. DUNNE - ROBERTSON (BORELLO ORCHARDS): REQUEST FOR A TENTATIVE SUBDIVISION MAP AND DESIGN PERMIT FOR A SINGLE-FAMILY ATTACHED DEVELOPMENT CONSISTING OF 10 TOWNHOME-STYLE DUETS LOCATED ON THE SOUTHWEST QUADRANT OF WEST DUNNE AVENUE AND VIEWCREST LANE (APN 767-12-060).

RECOMMENDATION(S)

1. Open/close public hearing.
2. Adopt a Resolution approving a Tentative Subdivision Map and Design Permit for the development of a single-family attached residential project consisting of 10 townhome-style duets.

LOCATION MAP/PROJECT INFORMATION:



1. Location: Southwest quadrant of West Dunne Avenue and Viewcrest Lane/270 W. Dunne Ave. (APN: 767-12-060)
2. Site Area: 1.03 Acres
3. General Plan: Residential Attached Low (RAL) Designation
4. Zoning: Residential Attached Low 3,500 (RAL 3,500) Designation
5. Request: Request for a Tentative Subdivision Map and Design Permit to develop 10 single family attached duet townhomes with associated improvements.

BACKGROUND:

There has not been any previous Planning Commission or City Council action on the property. The existing house on the property was constructed in 1953. Over the years, an accessory dwelling unit, detached garage, two small storage sheds, and a covered bocce ball court were added.

PROJECT DESCRIPTION:

Project Description

The West Dunne – Robertson (Borello Orchards) Residential Project is a development proposed at 270 West Dunne Avenue. The project involves the demolition of an existing single-family residence and accessory structures on a 1.03-acre parcel. Following the demolition, the project will involve the construction of 10 townhome-style single-family attached duet units and associated improvements. Each duet unit will be approximately 2,500 square feet, two stories, three bedrooms, two and a half bathrooms, a two-car attached garage with a driveway, and approximately 300 to 800 square feet of private open space. The project site will be served by private internal roadways that will provide access off of West Dunne Avenue. Each unit will have individual trash service to be serviced by Recology. The project will meet the City's Inclusionary Housing Ordinance by paying 100% Housing in-lieu fees.

The proposed project would remove 27 non-native trees that are in fair or poor condition in order to facilitate the construction of the proposed project. The project will feature new landscaping, including the planting of 47 new trees that is consistent with the City's Master Street Tree Plan and low water use shrubs, as well as private and common open spaces. Additionally, the project will implement permanent stormwater management measures, such as an underground pipe manifold infiltration system. The construction is expected to take approximately 10 months, with activities including demolition, grading, and the building of new residential units. The project is designed to meet local zoning regulations and general plan designations, and it will be served by existing public utilities and services.

Site Description

The project site for the West Dunne – Robertson Residential Project is located at 270 West Dunne Avenue in Morgan Hill, California, and encompasses a 1.03-acre rectangular parcel identified by Assessor Parcel Number (APN) 767-12-060. The site is currently developed with a variety of structures and features, including:

- **Existing Structures:** The site is occupied by a single-family dwelling, an accessory dwelling unit, a detached garage, two small storage sheds, and a covered bocce ball court.

- **Surrounding Environment:** The site is bounded on the north by West Dunne Avenue, with undeveloped land and a single-family residence beyond it. To the east, it is bordered by Viewcrest Lane, which leads to residential developments. The west and south sides of the property are adjacent to single-family residences and the Hidden Meadows Apartment condominium community, respectively.
- **Topography and Vegetation:** The project site features a slope of approximately seven percent, descending towards the southeast. The northern part of the site is developed, while the southern portion remains undeveloped. Vegetation on the site includes both non-native ruderal species and some mature trees, along with native vegetation. Specifically, the site contains trees like pines and redwood, various fruit trees, and ornamental landscaped trees. Native species such as willowherb, California poppy, California hedgenettle, and miner's lettuce are also present. The undeveloped part of the site, particularly in the southern half, appears to be annually cleared with mechanical tools.
- **Drainage:** A small drainage area runs along the southern border of the site. This area collects runoff from the site but does not connect to any discernible drainage courses or streams. Additionally, there is a shallow concrete drainage swale along Viewcrest Lane, adjacent and parallel to the eastern boundary of the site, which directs runoff southward.

Surrounding Uses

	General Plan Land Use	Zoning	Existing Use
North	Residential Attached Medium Density (RAM); Residential Attached Low Density (RAL)	Residential Attached Medium Density (RAM); Residential Attached Low Density 3,500 (RAL 3,500)	Single family residential and undeveloped land
South	RAL; Residential Detached Medium Density (RDM)	RAL 3,500; Residential Detached Medium Density 7,000 (RDM 7,000)	Hidden Meadows Apartment condominium community
East	RAL; RAM	RAL 3,500; RAM	Viewcrest Townhome Community and single-family homes
West	RAL; RDM	RAL 3,500; RDM 7,000	Single family residences

PROJECT ANALYSIS AND FINDINGS: ANALYSIS

The proposed project was analyzed with respect to conformance with: 1) Morgan Hill 2035 General Plan; 2) Zoning Ordinance; 3) Findings; and 4) California Environmental Quality Act:

1. General Plan Land Use Consistency

The site has a General Plan land use designation of Residential Attached Low Density, supporting 6-

16 dwelling units per acre. The project's proposed density of 9.71 units per acre is consistent with the allowed density in the General Plan. The project was also found to be consistent with the following General Plan policies:

Goal CNF-2 An improved, orderly, and efficient pattern of urban development.

Consistent: The proposed project would allow for the development of an in-fill site that is surrounded by existing residential uses.

Policy CNF-2.1 Orderly Development. Promote the orderly development of the City, with concentric growth and infill of existing developed areas.

Consistent: The proposed project would develop on an infill site that is surrounded by existing developed areas. The project site is surrounded by existing developed residential areas.

Goal CNF-10 A variety of housing types and densities available to all residents.

Consistent: The proposed project would add medium density single-family attached townhome-style duets to the community and City's housing supply.

Policy CNF-10.6 Density Near Infrastructure. Encourage higher residential densities at locations where convenient access and adequate infrastructure is readily available.

Consistent: The property is located on West Dunne Avenue, which has adequate utility service and infrastructure available around the project site.

Policy CNF-13.2 Density Feathering. Encourage the feathering of land use densities and intensities from high to low along Monterey Road with higher intensity land uses located adjacent to Downtown.

Consistent: The Residential Attached Low Density land use designation provides for a residential density of 6-16 dwelling units per acre. The project is proposing 9.71 units per acre. While not next to Downtown Morgan Hill, the project site is approximately 0.35 miles away from the intersection of Monterey Road and Dunne Avenue, where higher residential density is appropriate. As you move further away west from the Monterey Road and the project site, residential density lowers to Residential Attached Medium to Residential Attached Low to Residential Detached Medium densities. As you go further west along West Dunne Avenue, you start to see more traditional single family detached homes.

Policy NRE-15.6 Residential Near Transit. Encourage higher density residential and mixed use development adjacent to commercial centers and transit corridors – the land along or within walking distance of a street served by transit.

Consistent: The proposed project is a residential project approximately 0.35 miles from the Monterey Corridor, which is serviced by VTA transit bus lines 68 and 568. The nearest bus stop is approximately 0.40 miles southeast of the project site, near the intersection of Monterey Road and Dunne Avenue along the east side of Morgan Hill Plaza.

2. Zoning Ordinance Consistency

The project site is within the Residential Attached Low Density (RAL-3,500) zoning district, which permits duets, duplexes, and single-family attached dwellings. The proposed structures and uses on the site are consistent with this zoning district. The proposed project is consistent with all provisions of the Zoning Ordinance including the RAL 3,500 zoning district development standards, Alternative Medium Density Residential Development Standards, Design Permit criteria, and the Residential Design and Development Standards,

Table 1-Zoning Consistency Summary

Development Standard	Requirement	Proposed	Consister
Lot Area	3000 sq. ft.	3000-4200 sq. ft.	Yes
Lot Depth	85 ft	97 ft.	Yes
Lot Width	30 ft	30 ft	Yes
Lot Coverage	50%	40%	Yes
Height	30 ft	23 ft.	Yes
Front Setback	10 ft	20 ft.	Yes
Interior Side Setback	3 ft	4-5 ft.	Yes
Street Side Setback	6 ft	6 ft.	Yes
Rear Setback	10 ft	20 ft.	Yes
Private Open Space	300 sq ft per unit	330-1600 sq. ft. per unit	Yes
Common Open Space	175 sq ft per unit	540 sq. ft. per unit	Yes

Noise

The proposed project would generate noise primarily associated with increased traffic on nearby roadways and noise associated with on-site vehicle circulation and parking activities. As evaluated in the Modified Initial Study (Attachment 5), the traffic noise increases and on-site sources associated with the proposed project are not predicted to substantially increase noise levels to above the City's noise level thresholds as listed in the City's General Plan and Municipal Code. Construction noise would result in short-term noise level increases in the project vicinity. However, construction activities and related noise would be conditioned to occur during normal daytime hours and also include the use of noise-reducing features where appropriate. The noise impacts from the West Dunne – Robertson Residential Project are expected to be temporary during construction and minimal during operation. With adherence to city regulations and Conditions of Approval, the project will not result in significant noise impacts to the surrounding residential areas.

Traffic

The proposed project is expected to have minimal traffic impacts both during construction and operation. The construction phase will be managed to avoid significant disruptions, and the operational phase will generate a modest increase in traffic that will not adversely affect local roadways. As a result, the overall traffic impact of the project is less than significant. Construction activities will generate additional traffic, including construction vehicles, haul trucks, and workers' vehicles. However, the impact on local traffic flow is expected to be minimal because construction traffic will be spread throughout the day and most trips will occur during off-peak hours.

Operational Traffic:

- Trip Generation: Once completed, the project is expected to generate approximately 72 additional daily vehicle trips, including 6 trips during the morning peak hour and 7 trips during the afternoon peak hour. This level of traffic generation is considered low and is not expected to significantly impact the local traffic network.
- Vehicle Miles Traveled (VMT): The project's traffic generation is below the threshold for significant VMT impacts, as it would generate fewer than 110 daily trips, the screening threshold established by the Office of Planning and Research (OPR) for determining

significant transportation impacts.

- **Site Access and Circulation:** The project includes the construction of a new private driveway from West Dunne Avenue for vehicular access. Two new internal roadways will be created to facilitate circulation within the development, with emergency vehicle access and turn-around areas designed to meet city standards.

Parking and Circulation

The proposed project includes provisions to meet the needs of future residents and visitors while complying with city regulations.

- **Private Parking:** Each of the 10 townhouse-style single-family attached units will be equipped with a two-car garage, providing a total of 20 private parking spaces. These garages are intended to meet the primary parking needs of the residents.
- **Electric Vehicle (EV) Parking:** The project also includes two dedicated Electric Vehicle (EV) parking stalls.
- **Guest Parking:** While the primary parking needs are met within the garages of each unit, the project also proposed three guest parking spaces along the main drive aisle.
- **Circulation:** The internal roadway layout, designed in a T-configuration, facilitates easy access and circulation within the development, ensuring that both residents and visitors can move through the area efficiently. The design also includes adequate space for emergency vehicle turnaround.

Landscaping

The proposed project includes the planting of new trees and shrubs, both in private and common areas, to replace those removed during construction. The project incorporates water-efficient irrigation practices to manage the landscaping effectively. The plan emphasizes the use of native and drought-tolerant species, which can help reduce water usage and maintenance needs. These elements are intended to provide functional and attractive green spaces within the development while aligning with water conservation practices.

Landscaping Plan

- **Tree and Shrub Planting:** The project will involve the removal of existing trees on the site to make way for new construction. However, new trees and shrubs will be planted along the perimeter of the site, specifically adjacent to West Dunne Avenue, Viewcrest Lane, and the new private street within the development. These plantings will create a green buffer around the development and contribute to the overall landscape aesthetic.
- **Private and Common Open Spaces:** Each residential unit will feature private open space, which will include the planting of one to two trees per unit. Additionally, the project includes approximately 5,000 square feet of common area across two lots, providing shared green spaces for residents. These areas will be landscaped with a variety of plants and will serve as recreational and social spaces.

Irrigation System

- **Water-Efficient Irrigation:** The project will include a water-efficient irrigation system designed to minimize water usage while maintaining healthy and attractive landscaping. The system will incorporate features such as drip irrigation, moisture sensors, and automatic timers to ensure efficient watering practices.
- **Sustainable Practices:** The landscaping and irrigation plan aligns with sustainable practices by emphasizing the use of native and drought-tolerant plant species, which require less

water and maintenance. This approach supports the overall environmental goals of the project and helps conserve water resources.

Stormwater, Flood Control, and Water Quality

The project has been designed to mitigate potential impacts on water quality, stormwater management, and flood risks. The incorporation of stormwater control measures and compliance with local and regional regulations are intended to manage runoff effectively and reduce flood risk, ensuring that the project does not significantly impact water quality or contribute to flooding in the area.

Water Quality

- **Runoff Management:** The project includes measures to manage and treat stormwater runoff to prevent potential water quality degradation. Runoff from the site will be treated through a stormwater filter before being conveyed into an underground manifold system designed to infiltrate the water into the native soil.
- **Compliance with Regulations:** The project will comply with the California Regional Water Quality Control Board Central Coast Region requirements and the City of Morgan Hill's National Pollutant Discharge Elimination System (NPDES) Permit. Additionally, Best Management Practices (BMPs) will be implemented to minimize any potential impacts on water quality.

Stormwater Management

- **Stormwater Control Measures:** The project will employ permanent stormwater control measures, including an interconnected underground pipe manifold infiltration system. This system is designed to handle the site's runoff effectively, reducing the risk of street overland release during significant storm events.
- **Impervious Surface Area:** The project will increase the impervious surface area of the site from approximately 9,608 square feet to 28,314 square feet. Despite this increase, the stormwater management system is designed to manage the additional runoff without causing significant impacts.

Flood Impacts

- **Flood Risk Assessment:** The project site is located within the Dewitt Creek watershed, which is tributary to West Little Llagas Creek. The design of the stormwater management system ensures that the project's runoff during a 100-year storm event will be reduced from pre-project levels (from 0.65 cubic feet per second to 0.59 cubic feet per second).
- **Flood Mitigation:** The project does not propose any significant changes to the natural drainage patterns and is not expected to contribute to flooding on or off the site. The stormwater system is designed to handle a 100-year storm event without causing local flooding, ensuring that the project does not increase flood risks in the area.

Trash and Utilities

South Valley Recology will provide individual trash collection service to each unit. The City of Morgan Hill will provide water services to the project site. The project will be all electric as the project will not include natural gas infrastructure. Electricity services will be provided by Silicon Valley Clean Energy through existing Pacific Gas and Electric (PG&E) infrastructure. The project will utilize the available infrastructure to meet the energy needs of the new residential units.

a. Design Review

The following findings have been made in approving the Design Permit in accordance with Section 18.108.040 (J.) of the Morgan Hill Municipal Code:

1. The proposed project is consistent with the General Plan and any applicable specific plan, area plan, or other design policies and regulations adopted by the City Council.

Consistent: The development of the site for a 10-unit single family attached townhome-style duet residential project is consistent with the General Plan Policies, development standards, and design guidelines.

2. The proposed project complies with all applicable provisions of the zoning code and municipal code.

Consistent: The proposal is consistent with all provisions in the Zoning Code and Municipal Code.

3. The proposed project substantially complies with all applicable design standards and guidelines contained in the design review handbook.

Consistent: The project is consistent with the Design Review Handbook and the Objective design criteria.

4. The proposed project has been reviewed in compliance with the California Environmental Quality Act (CEQA).

Consistent: A Modified Initial Study pursuant to CEQA Guidelines was prepared (Attachment 5). The project qualifies for an exemption under CEQA Guidelines Section 15332, Class 32 In-Fill Development.

5. The proposed development will not be detrimental to the public health, safety, or welfare or materially injurious to the properties or improvements in the vicinity.

Consistent: The project as proposed is not expected to be detrimental to the public health, safety, or welfare to the property or improvements in the vicinity. The project will also be subject to conditions of approval contained in Exhibit A that will reduce the project's impacts to less than significant levels.

6. The proposed project complies with all applicable Design Review Criteria in 18.108.040 (H).

Consistent: The project is designed to be consistent with all provisions of the Design Review Criteria including massing and scale, architectural style, materials, articulation, and visual interest.

b. Tentative Subdivision Map

The applicant is seeking approval of a Tentative Subdivision Map to subdivide the 1.03-acre site into 12 lots. Morgan Hill Municipal Code Section 17.20.090, Tentative Subdivision Map – Approval Conditions, requires the following finding to be made by the City to adopt the Tentative Subdivision Map:

A. In approving or conditionally approving the tentative subdivision map, the planning commission shall find that the proposed subdivision, together with its provisions for its design and improvements, is consistent with applicable general or specific plans adopted by the city.

Consistent: The Tentative Subdivision Map has been designed consistent with the City's General Plan, considering neighborhood circulation patterns and providing future connections, and is consistent with the City's Zoning Ordinance. A Design Review application has also been submitted for review concurrently for this Tentative Subdivision Map. Alternatively, the Tentative Subdivision Map may be denied if any of the findings contained in Section 17.20.100 of the Municipal Code applies. The Planning Commission shall deny approval of the Tentative Subdivision Map if it makes any of the following findings:

- That the proposed map is not consistent with the applicable general and specific plans.
- That the design or improvement of the proposed subdivision is not consistent with applicable general and specific plans.
- That the site is not physically suitable for the type of development.
- That the site is not physically suitable for the proposed density of development.
- That the design of the subdivision or the proposed improvements are likely to cause substantial environmental damage or substantially and avoidably injure fish or wildlife or their habitat.
- That the design of the subdivision or the type of improvements is likely to cause serious public health problems.
- That the design of the subdivision or the type of improvements will conflict with easements, acquired by the public at large, for access through or use of, property within the proposed subdivision.

City staff is unable to make any of these findings for denial of the tentative map.

CONCLUSION:

The project has been found to be consistent with the General Plan, Zoning Code, the City's Residential Development Design and Development Standards, Subdivision Map Act, and California Environmental Quality Act. It is recommended that the Planning Commission approve the Tentative Subdivision Map and Design Permit subject to the Conditions of Approval (Exhibit B of Attachment 1).

CEQA (California Environmental Quality Act):

The project has been evaluated for potential environmental impacts, including traffic, noise, air quality, water quality, and biological resources. It has been determined that the project qualifies for a Class 32 Categorical Exemption under the California Environmental Quality Act (CEQA), indicating that it will not have significant environmental impacts and is consistent with the applicable general plan, zoning, and other regulatory requirements. A modified Initial Study (Attachment 5) pursuant to California Environmental Quality Act (CEQA) guidelines and the regulations and policies of the City of Morgan Hill was prepared to identify and analyze potential environmental impacts of the proposed project. As demonstrated throughout this analysis, the proposed project qualifies for exemption under CEQA Guidelines Section 15332, Class 32 In-Fill Development. The proposed project is not subject to any of the exceptions set forth in Section 15300.2 of the CEQA Guidelines, including the criteria set forth in Sections 15332(a) through 15532(e). The Development Services Director has concluded that the project proposed for West Dunne - Robertson residential project is categorically exempt pursuant to Section 15332 of the CEQA Guidelines for In-Fill Development.

COMMUNITY ENGAGEMENT:

A project webpage was created on the Morgan Hill website. The date and time of this meeting was publicly noticed (mailed to property owners within 300-feet of the project site and newspaper legal notice) for the minimum 10-day period and a project development sign was posted at the property location pursuant to the Planning Division requirements.

ATTACHMENTS:

1. Planning Commission Resolution
2. Civil Plan Set
3. Site and Architectural Plans
4. Landscape Plans
5. Class 32 Categorical Exemption Report (CE) Report

RESOLUTION NO. 24-09

A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF MORGAN HILL APPROVING A 12-LOT TENTATIVE SUBDIVISION MAP ON A 1.03-ACRE SITE AND A DESIGN PERMIT TO ALLOW THE DEVELOPMENT OF A 10-UNIT RESIDENTIAL PROJECT (BORELLO ORCHARDS) THAT CONSISTS OF SINGLE FAMILY ATTACHED DUETS FOR PROPERTY LOCATED ON THE SOUTHWEST CORNER OF THE INTERSECTION OF WEST DUNNE AVENUE AND VIEWCREST LANE (APN 767-12-060)

WHEREAS, on November 10, 2022, DRP Builders Inc. submitted applications for a 12-lot Tentative Subdivision Map and Design Permit to develop the Borello Orchards residential project that consists of 10 single family attached duets on an approximately 1.03-acres site (SD2022-0003/SR2022-0023: W. Dunne – Robertson (Borello Orchards); and

WHEREAS, such request was considered by the Planning Commission at their regular meeting of September 10, 2024; and

WHEREAS, the project has been reviewed in compliance with the California Environmental Quality Act (CEQA); and

WHEREAS, testimony received at a duly-noticed public hearing, along with exhibits and drawings and other materials have been considered in the review process.

NOW, THEREFORE, THE MORGAN HILL PLANNING COMMISSION DOES RESOLVE AS FOLLOWS:

SECTION 1. Recitals

The Planning Commission has considered the full record before it, which may include but not limited to such things as the staff report, public testimony, and other materials and evidence submitted or provided. Furthermore, the recitals set forth above are found to be true and correct and are incorporated herein by reference.

SECTION 2. California Environmental Quality Act Finding

Finding: A Modified Initial Study/Notice of Exemption has been prepared for the Project has been completed in compliance with CEQA Guidelines Section 15183 and consistent with state and local guidelines implementing CEQA.

As demonstrated throughout this Initial Study, the proposed project qualifies for exemption under CEQA Guidelines Section 15332, Class 32 In-Fill Development. The proposed project is not subject to any of the exceptions set forth in Section 15300.2 of the CEQA Guidelines including the criteria set forth in Sections 15332(a) through 15532(e). In addition, the checklist portion of this Modified Initial Study demonstrates that the proposed project would not result in a significant impact that is peculiar to the project or the project site. The Development Services Director has concluded that the project proposed for W. Dunne – Robertson (Borello Orchards) is categorically exempt pursuant to Section 15332 of the CEQA Guidelines for In-Fill Development.

SECTION 3. Tentative Subdivision Map Finding

Finding: The Planning Commission finds that the proposed subdivision, together with its provisions for its design and improvements, is consistent with applicable general or specific plans adopted by the city.

The Tentative Subdivision Map entitled “270 W. Dunne Avenue” submitted by MH Engineering dated January 2024, attached as Exhibit A has been designed consistent with the City’s General Plan, considering neighborhood circulation patterns and providing future connections.

SECTION 4. Design Permit Findings

Finding: The project is consistent with the Zoning Ordinance, and General Plan.

The development of the site for a 10-unit single family attached townhome-style duet residential project is consistent with the General Plan Policies, development standards and design guidelines. The proposal is consistent with all provisions in the Zoning Code and Municipal Code.

Finding: The Design Review has been found consistent with the criteria for Design Review permit approval contained in Section 18.108.040 of the Morgan Hill Municipal Code.

The proposal is consistent with all provisions in the Zoning Code and Municipal Code.

Finding: The proposed project is in compliance with all applicable design standards and guidelines contained in the Design Review Handbook.

The project is consistent with the Design Review Handbook and the Objective design criteria.

Finding: The proposed project has been reviewed in compliance with the California Environmental Quality Act (CEQA).

A Modified Initial Study pursuant to CEQA Guidelines was prepared. The project qualifies for exemption under CEQA Guidelines Section 15332, Class 32 In-Fill Development. See section 2 above.

Finding: The proposed project development will not be detrimental to the public health, safety, or welfare or materially injurious to the properties or improvements in the vicinity.

The project as proposed is not expected to be detrimental to the public health, safety, or welfare to the property or improvements in the vicinity. The project will also be subject to conditions of approval contained in Exhibit A that will reduce the project's impacts to less than significant levels.

Finding: The proposed project complies with all Design Review criteria in subsection H of Section 18.108.040 of the Municipal Code.

The project is designed to be consistent with all provisions of the Design Review Criteria including massing and scale, architectural style, materials, articulation and visual interest.

SECTION 5. The Planning Commission approves the Tentative Subdivision Map and Design Review Permit described as SD2022-0003/SR2022-0023: W. Dunne – Robertson (Borello Orchards). The design shall be expressly conditioned in conformance with conditions incorporated herein and as attached as Exhibit "B". Minor deviations to the site review permit may be approved by the Development Services Director when consistent with the overall intent of the project.

PASSED AND ADOPTED THIS 10th DAY OF SEPTEMBER, 2024, AT A REGULAR MEETING OF THE PLANNING COMMISSION BY THE FOLLOWING VOTE:

AYES: COMMISSIONERS:

NOES: COMMISSIONERS:

ABSTAIN: COMMISSIONERS:

ABSENT: COMMISSIONERS:

ATTEST:

APPROVED:

JENNA LUNA, Deputy City Clerk

LIAM DOWNEY, Chair

A F F I D A V I T

We, _____, applicants, hereby agree to accept and abide
by the terms and conditions specified in this resolution.

By: _____

Date: _____



EXHIBIT "B"
STANDARD CONDITIONS

APPLICATION NO: SD2022-0003/SR2022-0023: W. Dunne – Robertson (Borello Orchards)

THE FOLLOWING APPROVAL REQUIREMENTS AND ANY SPECIAL CONDITIONS SHALL BE APPLIED THROUGH THE DEVELOPMENT APPROVAL PROCESS.

Legend

MHMC= Morgan Hill Municipal Code
MHARH= Morgan Hill Architectural Review Handbook
CMH= City of Morgan Hill
CFC= California Fire Code

I. PROJECT DESCRIPTION

The project includes the development of the Borello Orchards residential project that consists of 10 single family attached duets on an approximately 1.03-acre site.

The project shall comply with all requirements of related project approvals granted by the City, including all of the following:

- A. Tentative Subdivision Map SD2022-0003
- C. Design Review Permit SR2022-0023
- E. Environmental Assessment EA2022-0013

II. PROJECT CONDITIONS OF APPROVAL

This Design Permit approval is limited to the plan set date stamped September 10, 2024 on file (File Number: SR2022-0023) with the Development Services Department. The approved building plans and landscape plans must be in substantial conformance with the Design Permit plans as determined by the Development Services Director. These documents show the location and dimensions of all vehicle and pedestrian circulation ways (ingress/egress), common areas, and other easement areas.

It shall be the responsibility of the Owner to ensure that any changes or modifications to the Project or any Unit are in compliance with the original City Conditions of Approval of the Project, which are hereby incorporated herein as set forth in full.

PLANNING DIVISION

DEFENSE AND INDEMNITY

- A. As part of, and in connection, with this application to the City of Morgan Hill, Applicant agrees to defend, indemnify, and hold harmless the City of Morgan Hill,

its officers, agents, employees, officials and representatives (Indemnitees) from and against any and all claims, actions, or proceedings arising from any suit for damages or for equitable or injunctive relief which is filed against City to attack, set aside, void or annul its approval of this application or any related decision, or the adoption of any environmental documents which relates to said approval. The City shall promptly notify the Applicant of any such claim, action or proceeding and the City shall cooperate fully in the defense thereof. In the event that Applicant is required to defend Indemnitees in connection with the proceeding, Indemnitees shall retain the right to approve (a) the counsel to so defend Indemnitees; (b) all significant decisions concerning the manner in which the defense is conducted; and (c) any and all settlements, which approval shall not be unreasonably withheld. This indemnification shall include, but is not limited to, (a) all pre-tender litigation costs incurred on behalf of the City, including City's attorney's fees and all other litigation costs and expenses, including expert witnesses, required to defend against any lawsuit brought as a result of City's approval or approvals; (b) reasonable internal City administrative costs, including but not limited to staff time and expense spent on the litigation, after tender is accepted; and (c) all damages, costs, expenses, attorney fees or expert witness fees that may be awarded to the prevailing party arising out of or in connection with the approval of the application or related decision. City may, in its sole discretion, participate in the defense of such action; but such participation shall not relieve Applicant of its obligations under this condition. The undersigned hereby represents that they are the Applicant or are fully empowered by the Applicant as their agent to agree to provide the indemnification, defense and hold harmless obligations, and the signature below represents the unconditional agreement by Applicant to be bound by such conditions.

TIME LIMITS

- A. **Term:** The Design Permit approval granted pursuant to this Resolution shall remain in effect for two years to September 10, 2026. Failure to obtain building permits within this term shall result in termination of approval unless an extension of time is granted with a showing of just cause prior to expiration date. **(MHMC 18.104.210)**
- B. **Term:** The Tentative Map approval granted pursuant to this Approval Certificate shall remain in effect for two years to September 10, 2024. Failure to apply for Final Map approval with the City Engineer within this term shall result in expiration of approval unless an extension of time is granted by the Development Services Department prior to the expiration date. **(MHMC 17.20.170; 17.24.110)**

SITE DEVELOPMENT

- A. **Final Site Development Plans:** Final site development plans shall be reviewed for conformance with SR2022-0023 and in accordance with Morgan Hill Municipal Code Section 18.108.040 (Design Permit) and approved by the Development Services Department prior to issuance of a building permit. All such plans shall include:

1. Detail depicting all concrete curbs as full formed.
 2. Provision of catalogue drawings depicting the proposed parking area lighting fixtures. Exterior lighting of the building and site shall be designed so that lighting is not directed onto adjacent properties and light source is shielded from direct off-site viewing.
 3. Ramps, special parking spaces, signing and other physical features for the disabled, shall be provided throughout the site for all publicly used facilities.
 4. All mechanical equipment, including electrical and gas meters, post indicator valve, backflow prevention devices, etc., shall be architecturally screened from view or located interior to the building. All ground mounted utility appurtenances such as transformers shall not be visible from any public right-of-way and shall be adequately screened through the use or combination of concrete or masonry walls, berming, and landscaping. **(MHARH p.20, 45, 79)** For additional screening, backflow preventers shall be painted dark green, except the fire connection which shall be painted yellow.
 5. All existing on-site overhead utilities shall be placed underground in an approved conduit from the service connection at the street or at the property line to the service connection at the building.
- B. **Pedestrian Access:** The Project shall provide pedestrian walkways in compliance with ADA requirements and with Section 18.72.060.H of the Morgan Hill Municipal Code, which states the following:
1. The design of the pedestrian walkway shall be clearly visible and distinguished from parking and circulation areas through striping, contrasting paving material, or other similar method as approved by the Development Services Director.
- C. **Electric Vehicle Charging Stations:** The Project shall provide electric vehicle charging stations in compliance with Section 18.72.040.C of the Morgan Hill Municipal Code. The project is required to provide two charging stations, plus one for each additional fifty parking spaces. The developer shall provide location of each charging station prior to issuance of building permit.
- D. **Street Names:** Street names, private or otherwise, used to identify building locations shall be submitted at building permit stage to the Planning Division for approval. Proposed street names shall comply with the Street Naming Policy approved by City Council (Resolution No. 4601).

- E. **Tree Protection:** Unless tree removal has been previously approved, all trees located within 25 feet of any site disturbance shall be protected using the following minimum protection measures (these guidelines shall be included with all site development plans):
1. Mark all trees to be saved with a survey flag or ribbon. Do not nail or staple directly to the tree.
 2. Erect a temporary fence enclosing an area equal to at least the dripline of the tree (or as far from the trunk as possible). This tree protection zone shall not be used for parking, storage of building materials, or other equipment or the placement of temporary or permanent fill. Signs should be posted identifying the restriction of uses in the tree protection zone.
 3. Locate structures, grade changes, and other ground or surface disturbances (e.g. concrete pours) as far as feasible from the “dripline” area of the tree.
 4. Avoid root damage through grading, trenching, and compaction, at least within an area 1.5 times the dripline area of the tree. Where root damage cannot be avoided, roots encountered over 1 inch in diameter should be exposed approximately 12 inches beyond the area to be disturbed (towards the tree stem), by hand excavation, or with specialized hydraulic or pneumatic equipment, cut cleanly with hand pruners or power saw and immediately back-filled with soil. Avoid tearing or otherwise disturbing that portion of the roots to remain.
 5. The addition of plant or other landscaping materials shall remain outside of the dripline of all trees.
 6. All trees proposed to be removed from the project site shall be replaced at a 1:1 ratio. Replacement trees shall be consistent with the City of Morgan Hill Master Street Tree. All replacement trees shall be a minimum of 15-gallons in size. All mitigation/replacement trees shall be shown on the landscape plans and approved by the Development Services Director prior to the issuance of the building/grading permit.
 7. Any tree subject to Chapter 12.32 Restrictions On Removal Of Significant Trees of the Morgan Hill Municipal Code requires approval from the Planning Division. The applicant shall request approval prior to removing any significant trees.

BUILDING DESIGN

- A. **Roof mounted mechanical equipment:** All roof mounted mechanical equipment shall be placed within a screened roof top enclosure depicted on the elevation drawings or located below the parapet level and shall not be visible from the ground at any distance from the building. Cross section roof drawings shall be provided at the building permit stage indicating the relative height of the screen

wall or parapet. Minimum screen height or parapet depth shall be 5 feet or greater to match the height of any proposed equipment. **(MHARH p.48, 65, 87, 106)**

- B. **Building mounted lighting:** Lighting fixtures shall not project above the fascia or roofline of the building. Any ground mounted lighting projecting onto the building or site shall be subject to the review and approval of the Development Services Director. Adjustment to the lighting intensity may be required after the commencement of the use. **(MHARH p. 67, 109)**
- C. **Architectural elements:** A final site development plan shall be provided at the building permit stage for review and approval to the Development Services Director prior to issuance of a building permit.
1. All vents, gutters, downspouts, flashing, electrical conduits, etc. shall be painted to match the color of the adjacent surface or otherwise designed in harmony with the building exterior.
 2. Soffits and other architectural elements visible from view but not detailed on the plans shall be finished in a material in harmony with the exterior of the building.

PARKING, VEHICULAR ACCESS AND LANDSCAPING

- A. **Parking lot landscaping:** All landscaping within parking lots shall comply with the requirements of Chapter 18.72 (Landscaping) in addition to the standards within this section.
1. **Interior Landscaping.** All areas within a parking lot not utilized for parking spaces or access/circulation shall be landscaped.
 2. **Concrete Curbs.**
 - a. All landscape areas shall be separated from parking spaces, drive aisles and driveways by a continuous, raised concrete curb. Raised concrete curbs shall be a minimum of six inches high by four inches deep.
 - b. The city may approve alternatives to raised concrete curbs as needed to comply with any mandatory stormwater drainage standards.
 3. **Parking Space Landscaping.** A maximum of two feet at the front end of a parking space may be landscaped with low shrubs or ground cover in which a vehicle could extend over in lieu of paving surface. This landscaping may not count toward minimum required parking lot landscaped area.
 4. **Timing.** Landscaping shall be installed prior to the city's authorization to occupy any buildings served by the parking area, or prior to the final inspection for the parking lot.

- B. **Planting and irrigation working drawings:** Detailed landscape planting and irrigation working drawings shall be submitted to the Development Services Director for approval prior to issuance of building permits. Landscape plans for streets and landscape easements shall be part of the improvement plan submittal.
- C. **Lighting:** Walkways and pedestrian pathways in landscaped areas or common areas not considered building entrances or a part of parking lot areas shall be illuminated with a minimum of one (1) foot-candle to ensure safe nighttime conditions. **(MHARH p.30, 67, 108)**
 - 1. A final photometric plan shall be provided at the building permit stage for review and approval to the Development Services Director prior to issuance of a building permit.
- D. **Undeveloped site area:** The balance of a building site not developed as part of this project approval shall have landscaping installed acceptable to the Planning Division. **(MHARH p., 57, 98)**
- E. **Maintenance of landscaping:** The landscaping installed and accepted with this project shall be maintained on the site as stated within the approved plans. Any alteration or modification to the landscaping shall not be permitted unless otherwise approved by the Development Services Director.
- F. **Water Conserving Landscape Ordinance:** The landscape plans shall be in conformance with the City's Water Conserving Landscape Ordinance that was developed in accordance with California law. This Ordinance restricts landscaping turf to certain areas, specifies plant selection, requires certain types of irrigation equipment, and calls for the development of comprehensive water use calculations as an aspect of the submitted landscape plans. **(MHMC 18.64)**
- G. **Reciprocal Ingress/Egress Easements:** Prior to issuance of a certificate of occupancy, the property owner shall record an appropriate deed restriction and covenant running with the land subject to review and approval of the Development Services Director for a reciprocal ingress/egress easement along the common driveway.

SIGNS

- A. **Separate application required for sign approval:** Signs proposed for this development shall be designed in conformance with the Sign Ordinance and shall require separate application and approval by the Planning Division prior to installation of any signs.

HABITAT PLAN

- A. **Fees:** The approved project is covered pursuant to the Santa Clara Valley Habitat Plan (Habitat Plan) and subject to fees and conditions contained in the Habitat Plan.
- B. **Application Package:** Prior to issuance of a grading permit, the project shall complete and submit a Habitat Plan Application Package. All fees shall be paid prior to issuance of a grading permit. **(MHMC 18.132)**
- C. **Conditions:** Any additional conditions or mitigations required by the Habitat Plan shall be clearly stated on all plans that involve any ground disturbing activity (i.e. grading plans, improvement plans, paving plans, demolition plans or other plans for site clearing or temporary stockpile of dirt). **(MHMC 18.132)**

AIR QUALITY

- A. **Dust, Noise, Vibration and Materials Management Plan:** A management plan detailing strategies for control of noise, dust and vibration, and storage of hazardous materials during construction of the project shall be submitted for review prior issuance of a grading permit and requirements shall be included on all site development and grading plans. The intent of this condition is to minimize construction related disturbance of residents of the nearby or adjacent properties. **(MHMC 18.76)**
- 1. **Basic Construction Mitigation Measure (BCMMs) Related to Dust Suppression.** The following measures shall be implemented with the project:
 - 1. All exposed surfaces (e.g. parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
 - 2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
 - 3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
 - 4. All vehicle speeds on unpaved roads shall be limited to 15 mph.
 - 5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
 - 6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of [CCR]). Clear signage shall be provided for construction workers at all access points.

7. All construction equipment shall be maintained and properly tuned in accordance with the manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.
8. Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

BAAQMD strongly encourages projects to implement enhanced best management practices to control fugitive dust emissions:

1. All exposed surfaces shall be watered at a frequency adequate to maintain minimum soil moisture of 12 percent. Moisture content can be verified by lab samples or moisture probe.
2. All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.
3. Wind breaks (e.g., trees, fences) shall be installed on the windward side(s) of actively disturbed areas of construction. Wind breaks should have at maximum 50 percent air porosity.
4. Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established.
5. The simultaneous occurrence of excavation, grading, and ground-disturbing construction activities on the same area at any one time shall be limited. Activities shall be phased to reduce the amount of disturbed surfaces at any one time.
6. All trucks and equipment, including their tires, shall be washed off prior to leaving the site.
7. Site accesses to a distance of 100 feet from the paved road shall be treated with a 6 to 12-inch compacted layer of wood chips, mulch, or gravel.
8. Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from sites with a slope greater than one percent.
9. Minimizing the idling time of diesel-powered construction equipment to two minutes.

10. The project shall develop a plan demonstrating that the off-road equipment (more than 50 horsepower) to be used in the construction project (i.e., owned, leased, and subcontractor vehicles) would achieve a project wide fleet-average 20 percent NOX reduction and 45 percent PM reduction compared to the most recent ARB fleet average. Acceptable options for reducing emissions include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as such become available.
11. Use low VOC (i.e., ROG) coatings beyond the local requirements (i.e., Regulation 8, Rule 3: Architectural Coatings).
12. Requiring that all construction equipment, diesel trucks, and generators be equipped with Best Available Control Technology for emission reductions of NOx and PM.
13. Requiring all contractors use equipment that meets CARB's most recent certification standard for off-road heavy-duty diesel engines.

CULTURAL RESOURCES

- A. **Significant historic or archaeological materials:** A moderate potential exists for unrecorded historic-period archaeological resources to be within the project area. The developer shall enter into written contracts with an archaeologist and the Tamien Nation Tribe, and pay all fees associated with the activities required by this condition. The following policies and procedures for treatment and disposition of inadvertently discovered human remains or archaeological materials shall apply:
1. Prior to start of grading or earthmoving activity on the "first day of construction", the archaeologist and Tamien Nation Tribal Monitor shall hold a pre-construction meeting for the purposes of "cultural sensitivity training" with the general contractor and subcontractors.
 2. A Tamien Nation Tribal Monitor shall be present on-site to monitor all ground-disturbing activities and an archaeologist shall be on-call. Where historical or archaeological artifacts are found, work in areas where remains or artifacts are found will be restricted or stopped until proper protocols are met, as described below:
 - a. Work at the location of the find will halt immediately within fifty feet of the find. If an archaeologist is not present at the time of the discovery, the applicant shall contact an archaeologist for evaluation of the find to determine whether it qualifies as a unique archaeological resource as defined by this chapter;
 - b. If the find is determined not to be a Unique Archaeological Resource,

- construction can continue. The archaeologist will prepare a brief informal memo/letter in collaboration with a tribal representative that describes and assesses the significance of the resource, including a discussion of the methods used to determine significance for the find;
- c. If the find appears significant and to qualify as a unique archaeological resource, the archaeologist will determine if the resource can be avoided and will detail avoidance procedures in a formal memo/letter; and
 - d. If the resource cannot be avoided, the archaeologist in collaboration with a tribal representative shall develop within forty-eight hours an action plan to avoid or minimize impacts. The field crew shall not proceed until the action plan is approved by the Development Services Director. The action plan shall be in conformance with California Public Resources Code 21083.2.
3. The following policies and procedures for treatment and disposition of inadvertently discovered human remains or archaeological materials shall apply. If human remains are discovered, it is probable they are the remains of Native Americans,
- a. If human remains are encountered, they shall be treated with dignity and respect as due to them. Discovery of Native American remains is a very sensitive issue and serious concern. Information about such a discovery shall be held in confidence by all project personnel on a need to know basis. The rights of Native Americans to practice ceremonial observances on sites, in labs and around artifacts shall be upheld.
 - b. Remains should not be held by human hands. Surgical gloves should be worn if remains need to be handled.
 - c. Surgical mask should also be worn to prevent exposure to pathogens that may be associated with the remains.
4. In the event that known or suspected Native American remains are encountered, or significant historic or archaeological materials are discovered, ground-disturbing activities shall be immediately stopped. Examples of significant historic or archaeological materials include, but are not limited to, concentrations of historic artifacts (e.g., bottles, ceramics) or prehistoric artifacts (chipped chert or obsidian, arrow points, ground stone mortars and pestles), culturally altered ash stained midden soils associated with pre-contact Native American habitation sites, concentrations of fire-altered rock and/or burned or charred organic materials and historic structure remains such as stone lined building foundations, wells or privy

pits. Ground-disturbing project activities may continue in other areas that are outside the exclusion zone as defined below.

5. An "exclusion zone" where unauthorized equipment and personnel are not permitted shall be established (e.g., taped off) around the discovery area plus a reasonable buffer zone by the contractor foreman or authorized representative, or party who made the discovery and initiated these protocols, or if on-site at the time of discovery, by the monitoring archaeologist and tribal representative (typically twenty-five to fifty feet for single burial or archaeological find).
6. The discovery locale shall be secured (e.g., 24-hour surveillance) as directed by the City or County if considered prudent to avoid further disturbances.
7. The Contractor Foreman or authorized representative, or party who made the discovery and initiated these protocols shall be responsible for immediately contacting by telephone the parties listed below to report the find and initiate the consultation process for treatment and disposition:
 - The City of Morgan Hill Development Services Director (408) 779-7247
 - The Contractor's Point(s) of Contact
 - The Coroner of the County of Santa Clara (if human remains found) (408) 793-1900
 - The Native American Heritage Commission (NAHC) in Sacramento (916) 653-4082
 - The Amah Mutsun Tribal Band (916) 481-5785 (H) or (916) 743-5833 (C)
 - The Tamien Nation (707)295-4011 (office) and (925)336-5359 (THPO)
8. The Coroner has two working days to examine the remains after being notified of the discovery. If the remains are Native American the Coroner has 24 hours to notify the NAHC.
9. The NAHC is responsible for identifying and immediately notifying the Most Likely Descendant (MLD). (Note: NAHC policy holds that the Native American Monitor will not be designated the MLD.)
10. Within 24 hours of their notification by the NAHC, the MLD will be granted permission to inspect the discovery site if they so choose.
11. Within 24 hours of their notification by the NAHC, the MLD may recommend to the City's Development Services Director the recommended means for treating or disposing, with appropriate dignity, the human remains and any

associated grave goods. The recommendation may include the scientific removal and non-destructive or destructive analysis of human remains and items associated with Native American burials. Only those osteological analyses or DNA analyses recommended by the appropriate tribe may be considered and carried out.

12. If the MLD recommendation is rejected by the City of Morgan Hill the parties will attempt to mediate the disagreement with the NAHC. If mediation fails then the remains and all associated grave offerings shall be reburied with appropriate dignity on the property in a location not subject to further subsurface disturbance.

NOISE

- A. **Construction Hours:** The project shall comply with Chapter 8.28 of the Morgan Hill Municipal Code which prohibits construction activities between 8:00 PM and 7:00 AM, Monday through Friday, and between 6:00 PM and 9:00 AM on Saturdays. Construction activities may not occur on Sundays or federal holidays.

GENERAL

- A. **Mitigation Fee Act:** Notice is hereby given that, pursuant to the Mitigation Fee Act, the City of Morgan Hill charges certain fees (as such term is defined in Government Code Section 66000) in connection with approval of this development project for the purpose of defraying all or a portion of the cost of public facilities related to this development project (Mitigation Fee Act Fees). These fees do not include fees for processing applications for governmental regulatory actions or approvals. The Mitigation Fee Act Fees applying to this project are described below in the Engineering Conditions, section F. Notice is also hereby given that the Developer has an opportunity to protest the imposition of the Mitigation Fee Act Fees within 90 days of the approval or conditional approval of this development project and that the 90-day protest period has begun.
- B. **Covenants, Conditions and Restrictions:** The applicant shall provide a set of Covenants, Conditions and Restrictions (CC&R's), Bylaws and Articles of Incorporation, for review and approval by the Development Services Director prior to final occupancy or recordation of a final map. All such CC&Rs shall include the following:
 1. The Owners recognize that the use, modification and proper maintenance of the Common Area and public right-of-way(s)* are for the benefit of all citizens of the City of Morgan Hill (City) and that the City is an intended third party beneficiary of these covenants, conditions and restrictions and may, upon notice of hearing as set forth below, exercise the same powers of enforcement as the Association.

*Public right-of-way: Exclusive of streets dedicated to and accepted by the City of Morgan Hill.

2. The City may, by mail or personal delivery, give written notice of the breach of any maintenance obligation to the Association with a demand that such breach be remedied. If such breach is not remedied within thirty (30) days of the mailing or delivery of such notice, the City shall have standing and the right (but not the obligation) to bring a court action against the Association and Owners to enforce such provision. In addition, the City shall be entitled to recover reasonable attorneys' fees and costs incurred in such action.
 3. The Notice may also contain a date for a hearing on the matter before a City employee designated by the City (which hearing shall be held no sooner than fifteen (15) days after mailing of such notice), and if after such hearing the City determines that there has been inadequate maintenance, the City shall have the right (but not the obligation) to undertake the maintenance of the Common Area or public right-of-way in question. Any and all costs incurred by the City in so maintaining the Common Area or public right-of-way shall be a lien against all the properties included with the Project and shall be the personal responsibility of the Owners and the Association.
 4. The entire Project and all of the properties located thereon shall be subject to the conditions and restrictions of all subdivision and other Project approvals by the City, with respect to the Project. Any changes and/or modifications to the Project and/or any Unit, including but not limited to changes to the exterior of any Unit, may be subject to review and approval of the City of Morgan Hill as may be determined by review of the Project approvals by the City of Morgan Hill.
 5. This section may not be amended without the prior written consent of the Development Services Director for the City. Nothing contained in this section shall limit any other right or remedy which the City may have under its ordinances or state law.
 6. For the purposes of this section, the question of whether there has been a breach of a maintenance obligation or adequate maintenance shall be determined by the provisions of the original Declaration as first recorded with the County Recorder for Santa Clara County and by any amendment thereto, but only to the extent that such maintenance obligation or duty of maintenance is increased by such amendment.
- C. **SIGNED COPIES OF APPROVAL CERTIFICATE:** Submit two (2) signed copies of the approval certificate to the Planning Division prior to issuance of a building permit.

ENGINEERING DIVISION

A. **Grading & Drainage:**

1. At improvement plan stage, the project shall address the following:
 - a. Show the subdrainage systems for the perimeter retaining wall along the southern and eastern property boundaries and the proposed connection of the subdrainage systems to the onsite storm drainage system.
 - b. Submit the final hydraulic calculations and storm drain pipe sizing for the drainage system from the Lot 5 inlet to Private Street 'B'. The analysis of the overland release shall be evaluated up to the 100-year, 24-hour rainfall design storm event, which is 6.50". The design storm shall be based on Table 3.4 "Hydrology and Hydraulics Design Criteria for Ponding Basins" of the City's 2018 Storm Drainage System Master Plan.
 - c. The proposed storm drain inlets along the rear yards of Lots 5 thru 10 are connected in series and may be susceptible to premature overflows due to downstream system clogging. It is recommended that the storm drain pipe system for Lots 5 thru 10 be separated to reduce potential overflows along the southern property boundary.
2. The project proposes to discharge its runoff at pre-development levels up to the 100-year storm event across its shared eastern boundary with the Hidden Meadows development located at 260 W. Dunne Avenue (which includes Viewcrest Lane, a private street). The project runoff will drain into Dewitt Creek. A storm drain bubbler is also proposed to release runoff towards Viewcrest Lane with the project's drainage design to mimic the pre-development drainage pattern so as not to increase nor concentrate flows to the adjacent development.
 - a. At improvement plan/building permit stage, show a typical cross-section at the 24" wide PCC drainage release spill area at the project's shared eastern boundary with Viewcrest Lane.

B. Flood Control:

1. The project site is within the Dewitt Creek watershed, which is tributary to West Little Llagas Creek. Runoff from the site shall not be redirected to West Little Llagas Creek.
2. The project proposes to detain the project runoff up to the 100-year event to ensure the project does increase flood risks in the area.
 - a. At improvement plan/building permit stage, submit the project's final plans and reports that demonstrates runoff (volume and rate) under post-development conditions during the 2-, 10-, 25-, and 100-year 24-hour storm events do not exceed the pre-development conditions during the same storm events.

3. At improvement plan/building permit stage, the project's final plans and reports will be referred by the City to Valley Water for conformance review.

C. **Stormwater Management:**

1. The project is proposing an underground infiltration system (Underground Pipe Storage Manifold) and a Storm Filter to comply with the post-construction requirements.
 - a. At improvement plan/building permit stage, submit the final Stormwater Management Plan sheet and Stormwater Control Plan/Report.
 - b. Valley Water's Groundwater Unit reviewed and verified that the project site is within area where there is 10- to 20-ft separation to groundwater. Valley Water also found from USGS's website an existing measurement well located southwest of the subject parcel that showed a depth of 36-ft. to groundwater. Valley Water generally does not have any concerns related to the vertical clearance of the proposed infiltration device to the groundwater.
2. At improvement plan/building permit stage, the Developer/Owner shall submit for City review the proposed Covenants, Conditions & Restrictions (CC&RS) of the future HOA with language ensuring that the proposed storm drainage and post-construction stormwater facilities within the development will not be removed nor altered and the facilities will be inspected and maintained by the HOA or the property owner(s).

- D. **Street Improvements:** At improvement plan/building permit stage, the project plans shall address the potential sight distance issue at the W. Dunne Avenue and Private Street 'A' intersection/driveway approach. Also confirm the minimum sight distances comply with American Association of Highway and Transportation Officials (AASHTO), National Association of City Transportation Officials (NACTO), and/or Caltrans' street geometric design standards.

- E. **Broadband Connectivity:** Show the locations of the broadband conduit along the W. Dunne Avenue frontage, and from W. Dunne Avenue to each of the 10 residential units.

- F. **Impact Fees & Fee Increase:** The City of Morgan Hill, pursuant to MHMC Chapter 3.56, has established impact fees to finance the cost of improvements required by new development. MHMC Section 3.56.050 provides for automatic annual (January 15th) adjustment of those fees in existence utilizing the Engineering News Record Index for the preceding twelve months. The City maintains historical records on the Engineering News Record Index. These records are available for inspection during normal business hours. **(MHMC 3.56.010; 3.56.030; 3.56.050)**

1. The developer shall pay all applicable impact fees and other engineering review fees (fees other than impact fees are automatically adjusted annually on July 1st). Engineering review fees and Storm drain impact fees are due prior to Final Map approval, and the balance of the impact fees are on a pro-rata basis per unit prior to final occupancy of each unit. The fees shall be based on the Public Works Fee Schedule prepared by Land Development Engineering. The estimated total amount of impact fees and engineering review fees for this project based on the Fee Schedule currently in effect is **\$611,599**.
 2. The project will be subject to the updated Water Capacity fees, which became effective May 15, 2023. Information related to the City's impact and development fees are available on the City's Finance Department webpage at: <https://www.morganhill.ca.gov/1572/Fee-Schedules>.
- G. **Parkland Dedication/Parkland Fee In-Lieu:** This project is subject to the Parkland Dedication and Parkland Fee In-Lieu requirements (**MHMC 17.28**).
1. The developer shall pay fees, in-lieu of parkland dedication, at the time of filing of the project's final map to meet the parkland obligation. The project's parkland obligation will be calculated using the formula shown in MHMC Section 17.28.060. The estimated Parkland In-Lieu Fee is **\$210,482**.
 2. Private recreation credits, which could allow a credit of up to 40% towards the parkland obligation, could be available for private open space(s) within the subdivision that meets the standard requirements listed in MHMC Section 17.28.130.
- H. **Final or Parcel Map:** The project's tract/final map shall be approved by the City Council prior to issuance of a grading permit. (**MHMC 17.20.390; 17.24.210**)
- I. **Reciprocal Access:** Reciprocal access easements and maintenance agreements ensuring access to all parcels and joint maintenance of all common roads, drives or parking areas shall be provided by CC&R's and by deed and shall be recorded concurrent with the map, or prior to issuance of building permit where no map is involved. (**MHMC 17.20.350 H**)
- J. **Reimbursement Obligation:** Pursuant to City Ordinance 982, the subject property will have reimbursement obligation to the City for lands acquired for street purposes and streets improved should those lands/street improvements abut or be included within subject property. (**MHMC 12.02.120 B**)
- K. **Private Sanitary Sewer Maintenance Agreement:** Prior to final map approval/building permit issuance, the Owner(s) shall enter into a Private Sanitary Sewer Maintenance Agreement with the City for maintenance of all private sanitary

sewer facilities which includes the private sewer mains and sewer laterals. The Agreement shall be recorded at the County Recorder's Office prior to building final.

- L. All new water main installations (public and private) shall adhere to the separation criteria established by the California Waterworks Standards (California Code of Regulations (CCR), Title 22, Division 4, Chapter 16, Section 64572). Any proposal for alternative compliance to these requirements shall be submitted to the State Water Resources Control Board' Division of Drinking Water, pursuant to CCR, Title 22, Section 64551.100.
- M. At improvement plan stage, submit a separate set of Offsite Plans that includes the offsite Civil and Landscape sheets, and the Joint Trench Plan set. Onsite improvements shall be shown on the onsite/building permit application plans.

LAND DEVELOPMENT ENGINEERING - STANDARD CONDITIONS

I. GENERAL

- A. **Final Map:** The applicant shall have a Final Map prepared by a registered engineer (licensed prior to 01/01/1982: registration number 33,965 or lower) or licensed land surveyor delineating all parcels and easements created. There shall be concurrence in writing by PG & E, Telephone, Cable TV and any other affected agencies to all improvements and easements which are applicable to them. The number and locations of monuments shall be set as required by the City Engineer. **(MHMC 17.20.200 A; 17.20.290; 17.24.010)**
- B. **Public and Private Improvements:** The applicant shall cause the construction of all public and private improvements in accordance with the latest City Standard Drawings and Specifications. **(MHMC 12.02.090 A; 17.32.010 A)**
- C. **Improvement Plans:** The applicant shall submit as part of the improvement drawings for the project, profiles of all improvements in the subdivision and typical cross-sections of all streets and details of curbs, gutters, and sidewalks, to be accomplished to the satisfaction of the City Engineer prior to submittal of Final Map. **(MHMC Sec 17.32.060 B; 17.32.070; 17.32.080 A)**
 - 1. Improvement plans are to show water lines, sanitary sewer, storm drain system, pavement widths, curve radius, and existing utilities.
- D. **Encroachment Permit:** Obtain an encroachment permit from the City of Morgan Hill and provide guarantee covering off-site improvements. **(MHMC 12.08.040 A; 12.08.090)**
- E. **Subdivision Improvements Agreement:** Enter into a Subdivision Improvements Agreement with the City of Morgan Hill to cover required improvements. **(MHMC 12.02.150; 17.32.010 B; 17.32.160)**

II. STREET IMPROVEMENTS

- A. **Public and Private Streets:** The applicant shall cause the design and construction of all new public and private streets serving the project. The design of all new public and private streets shall be consistent with the General Plan Land Use and Circulation Element as well as the Street Standard Details as contained within the Public Works Standards Details. The construction of the streets shall be undertaken to the lines and grades and in a manner satisfactory to the City Engineer. All street improvements shall be constructed to the satisfaction of the City Engineer. The timing of the improvements will be determined by the City. **(MHMC 12.02.010; 12.02.090; 17.32.060 B; CMH General Plan; CMH Design Standards and Standard Details for Construction)**
- B. **Installation and Dedication of Streets:** The project shall install and dedicate street improvements including, but not limited to, curb and gutter, sidewalk, compaction, street paving, oiling, storm drainage facilities, sewer and water, fire protection, undergrounding of utilities and street lighting in conformance with City of Morgan Hill requirements. **(MHMC 12.02.010; 12.02.50; 12.02.080; 12.02.100; 17.28.010; 17.32.060)**
- C. **Right-of-way Dedication:** The project shall dedicate a total of three feet of public right-of-way in fee on W. Dunne Avenue. **(MHMC 12.02.010; 12.02.50; 12.02.080; 12.02.90; 12.02.100; 17.28.010)**
- D. **Underground Existing Utilities:** All existing overhead utilities adjacent to any site boundary or along any street frontage of the site shall be placed underground in accordance with City standards and affected utility company guidelines. **(MHMC 12.02.090 B; 17.32.020 E.1)**
- E. **Street Trees:** The proposed street trees shall comply with the street tree species and spacing listed under the applicable zone in the Master Street Tree List of the City's Master Street Tree Plan and as approved by the City Engineer.

III. SANITARY SEWER SYSTEM

- A. **Design of Sewer Improvements:** The applicant shall cause to be undertaken the design and construction of sanitary sewer improvements including, but not limited to installation of sewer line extension on the proposed public street(s) or private street(s)/drive aisle(s). The sanitary collection system shall include, but not be limited to manholes with manhole frames and covers, cleanouts, wye-branches and laterals, and separate sewer taps to each lot. These are to be installed by the developer. **(MHMC 13.20.355; 17.32.020 C; CMH Sewer System Master Plan; CMH Design Standards and Standard Details for Construction)**

- B. **Sewer Connection:** All existing and future sewer lines shall be tied into the City's system and existing septic systems shall be abandoned in accordance with City requirements. **(MHMC 13.24.060; 17.32.20 C)**

IV. STORM DRAIN SYSTEM

- A. **Storm Drainage Study:** A complete storm drainage study of the proposed development must be submitted showing amount of run-off, and existing and proposed drainage structure capacities. This study shall be subject to review and approval by the City Engineer. All needed improvements will be made by the applicant. No overloading of the existing system will be permitted. **(MHMC 17.32.020 B; 17.32.090; CMH Design Standards and Standard Details for Construction)**
- B. **Storm Drainage Design:** The applicant shall cause the design and construction to be undertaken for a storm drainage collection system shown on the Tentative Map/Design Review plans. All storm drain improvements shall be constructed to the satisfaction of the City Engineer. **(MHMC 17.32.020 A & B)**
- C. **Storm Drainage Capacity:** Collection system shall be designed to be capable of handling a 10-year storm without local flooding. On-site detention facilities shall be designed to a 25-year storm capacity. Streets shall be designed to carry 100-year storm. Items of construction shall include, but not be limited to installation of storm line extension on proposed public street(s), surface and subsurface storm drain facilities, manholes with manhole frames and covers, catch basins and laterals. Note: the project may be required to **retain** stormwater runoff as part of resolution R3-2013-0032 prior to releasing discharge rates at pre-development flows. **(MHMC 17.32.020 B; 18.74.440; CMH Design Standards and Standard Details for Construction; CMH Storm Drainage System Master Plan)**
- D. **Storm Drainage General Requirements:** Prior to issuance of a grading permit, the applicant shall complete the following to the satisfaction of the City Engineer.
1. Storm drain calculations to determine detention/retention pond sizing and operations.
 2. Plan describing how material excavated during construction will be controlled to prevent this material from entering the storm drain system.
 3. Water Pollution Control Drawings (WPCD) for Sediment and Erosion Control.
- (CMH Design Standards and Standard Details for Construction)**
- E. **NPDES Construction Activity General Permit/SWPPP Requirements:** As required by the State Water Resources Control Board (SWRCB) Order No. 2009-0009-DWQ, construction activity resulting in a land disturbance of one (1) acre or more of soil, or whose projects are part of a larger common plan of development that in total disturbs more than one (1) acre, are required to obtain coverage under

the National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000002 for Discharges of Storm Water Associated with Construction Activity (General Permit). To be permitted with the SWRCB under the General Permit, owners must file a complete Notice of Intent (NOI) ONLINE at: <http://smarts.waterboards.ca.gov/smarts/faces/SwSmartsLogin.jsp> and develop a Storm Water Pollution Prevention Plan (SWPPP) Manual in accordance with the General Permit. The SWPPP Manual shall follow the CASQA SWPPP template/format at <https://www.casqa.org/store/products/tabid/154/p-167-construction-handbookportal-initial-subscription.aspx> and shall be approved by Public Works Engineering. A Waste Discharger Identification (WDID) number to be issued to the construction site after the SWRCB receives and verifies the submitted ONLINE NOI information. The WDID number and approved SWPPP Manual shall be provided to Public Works and the Building Department prior to any approval of grading activities (**SWRCB NPDES General Permit CAS000002**).

F. NPDES General Permit Site SWPPP Inspections and Compliance (if applicable):

1. ALL project onsite and offsite construction activity shall have the site inspected by a **qualified third party SWPPP Inspector (QSD or QSP or RCE)**.
2. SWPPP Inspections shall occur weekly during the rainy season (September 15th thru May 1st).
3. SWPPP Inspections shall occur bi-weekly during the non-rainy season.
4. 48 hours prior to and following a forecasted rain event, SWPPP Inspections shall occur in addition to those of items 2 or 3 above.
5. Per each of the inspection conditions 2, 3, or 4, SWPPP inspection reports, and when applicable, Rain Event Action Plans (REAPS) shall be e-mailed to: sw.construction@morganhill.ca.gov no later than 12:00 PM each Monday for the previous week's inspections with a brief statement whether the site is in compliance or non-compliant.
6. Prior to rain events, BMPs not in compliance will need to be corrected immediately.
7. Illicit discharges per the NPDES General Permit, non-compliance of tracking control, and inlet protection within the public right-of-way shall be addressed immediately.
8. Other non-compliance issues need to be addressed within a 24-hour period.
9. Non-compliance issues which have been corrected shall be verified by NPDES SWPPP Inspector by a follow-up inspection.
10. BMP maintenance/inspections shall include tree protection, if applicable.

V. WATER SYSTEM

- A. Domestic Water System:** The applicant shall cause the design and construction to be undertaken of a domestic water system to the satisfaction of the City Engineer. The water system improvements shall be constructed within public easements or street rights-of-way to the satisfaction of the City Engineer and

dedicated to the City. **(MHMC 17.32.020 A & D; CMH Design Standards and Standard Details for Construction; CMH Water System Master Plan)**

- B. **Water Well Abandonment:** Abandonment of any existing water well shall be in conformance with Santa Clara Valley Water District (SCVWD) Ordinance 90-1. Location and disposition to be shown on the plan. Well(s) shall be properly registered with the SCVWD and either be maintained or abandoned in accordance with SCVWD standards.
- C. **Water Meters:** Provide separate water services and meters for each unit. These are to be installed by developer. **(MHMC 17.32.020 D)**

VI. OTHER CONDITIONS

- A. **Easement Dedications:** The owner shall dedicate all necessary utility easements. **(MHMC 12.02.080 D; 17.28.010 A)**
- B. **Undergrounding New Utilities:** The applicant shall cause the design and construction required to underground all electric, gas, Cable TV and communication lines within the development. Such design and construction shall be to the satisfaction of the affected utilities and the City Engineer. **(MHMC 17.32.020 E.1)**
- C. **Landscaping and Irrigation Systems:** Landscaping and irrigation systems serving common areas that are required to be installed in the public right-of-way on the perimeter of this project shall be continuously maintained by the property owner or designated maintenance entity.
- D. **Final Landscape Plans:** Final landscape plans shall be submitted with and included as part of the improvement plans for the project. **(MHMC 17.08.090)**
- E. **Pre-construction Meeting:** Prior to the approval of any Building Permit for grading activity, the developer shall schedule a pre-construction meeting with the Public Works Inspection Division with the following project team members:
 - 1. Civil Engineer of record
 - 2. Geotechnical Engineer of record
 - 3. Third Party QSD/QSP SWPPP Inspector
 - 4. General Contractor
 - 5. Sub-Contractors
- F. **As-Built Submittal Standards:** The developer shall submit digital as-builts of the project's Final Map, Grading Plan, and Improvement Plans which adhere to the City's updated GIS/CAD Developer Submittal Standards.

VII. NPDES STORMWATER MANAGEMENT DEVELOPMENT STANDARDS

- A. **Stormwater Post Construction Requirements (PCRs):** Project shall comply with the California Regional Water Quality Control Board Central Coast Region Resolution No. R3-2013-0032 as documented by the **Stormwater Management Guidance Manual for Low Impact Development and Post-Construction Requirements** (developed from Resolution No. R-2013-0032 Attachment 1 and 2 at: http://www.waterboards.ca.gov/centralcoast/water_issues/programs/stormwater/docs/lid/lid_hydromod_charette_index.shtml). A copy of the Guidance Manual can be obtained from the City's Land Development Engineering webpage. Project shall provide Stormwater Runoff Management Plan, Stormwater Control Plan and Checklist, and applicable calculations per the Guidance Manual. Project shall meet the applicable Post-Construction Requirements:
1. Performance Requirement 1: Site Design and Runoff Reduction
 2. Performance Requirement 2: Water Quality Treatment
 3. Performance Requirement 3: Runoff Retention
 4. Performance Requirement 4: Peak Management
- B. **Peak Storm Water Runoff Discharge Rates:** Post-development peak storm water runoff discharge rates shall not exceed the estimated pre-development rate for developments where the increased peak storm water discharge rate will result in increased potential for downstream erosion. Note: the project may be required to **retain** stormwater runoff as part of resolution R3-2013-0032 prior to releasing discharge rates at pre-development flows.
- C. **Storm Drain System Stenciling and Signage:** All storm drain inlets and catch basins within the project area must be stenciled with prohibitive language (such as: "NO DUMPING – DRAINS TO CREEK") and/or graphical icons to discourage illegal dumping. Signs and prohibitive language and/or graphical icons, which prohibit illegal dumping, must be posted at public access points along channels and creeks within the project area. Legibility of stencils and signs must be maintained.
- D. **Design Standards for Structural or Treatment Control BMPs:** The post-construction treatment control BMPs shall incorporate, at a minimum, either a volumetric or flow- based treatment control design standard, or both, as identified below to mitigate (infiltrate, filter or treat) storm water runoff:
1. Volumetric Treatment Control BMP
 - a. The 85th percentile 24-hour runoff event determined as the maximized capture storm water volume for the area, from the formula recommended in Urban Runoff Quality Management, WEF Manual of Practice No. 23/ASCE Manual of Practice No. 87, (1998); or
 - b. The volume of annual runoff based on unit basin storage water quality volume, to achieve 80 percent or more volume treatment by the method recommended in California Stormwater Best Management Practices Handbook – Industrial/ Commercial, (2003); or

- c. The volume of runoff produced from a historical-record based reference 24-hour rainfall criterion for “treatment” that achieves approximately the same reduction in pollutant loads achieved by the 85th percentile 24-hour runoff event.
 2. Flow Based Treatment Control BMP
 - a. The flow of runoff produced from a rain event equal to at least two times the 85th percentile hourly rainfall intensity for the area; or
 - b. The flow of runoff produced from a rain event that will result in treatment of the same portion of runoff as treated using volumetric standards above.
- E. **Inlets and Riser Pipes for Underground Stormwater Infiltration and Storage Facilities:** Underground stormwater infiltration and storage facilities shall include adequate inlets and/or risers for visual inspection, maintenance and as flush ports.
- F. **Stormwater Runoff Management Plan (SWRMP):** The Stormwater Runoff Management Plan shall include sufficient information to evaluate the environmental characteristics of affected areas, the potential impacts of the proposed development on water resources, and the effectiveness and acceptability of measures (post construction BMPs) proposed for managing stormwater runoff.
 1. The Stormwater Runoff Management Plan shall be prepared under the direction of a professional civil engineer registered in the State of California. The responsible professional civil engineer shall stamp and sign the approved Stormwater Runoff Management Plan.
 2. The developer shall provide a signed certification from the civil engineer responsible for preparing the Stormwater Runoff Management Plan that all stormwater best management practices have been designed to meet the requirements.
- G. **Stormwater BMP Operation, Maintenance, and Replacement Responsibility**
 1. Prior to building final, the property owner shall submit a signed certification (with signature, date & license number/seal) certifying that all post-construction stormwater management/BMP facilities shown on the as-built drawings were inspected by the civil engineer (or by a qualified third party stormwater inspector hired by the permittee/owner) and have been constructed in accordance with the approved plans and specifications.
 2. All on-site stormwater management facilities shall be operated and maintained in good condition and promptly repaired/replaced by the property owner(s), an owners' or homeowners' association or other legal entity approved by the City.
 3. Any repairs or restoration/replacement and maintenance shall be in accordance with City-approved plans.

4. The property owner(s) shall develop a maintenance schedule for the life of any stormwater management facility and shall describe the maintenance to be completed, the time period for completion, and who shall perform the maintenance. This maintenance schedule shall be included with the approved Stormwater Runoff Management Plan.
- H. **Stormwater BMP Operation and Maintenance Agreement (SWBOMA):** Prior to the issuance of any building permit requiring stormwater management BMPs, the owner(s) of the site shall enter into a formal written Stormwater BMP Operation and Maintenance Agreement with the City. The City shall record this agreement, against the property or properties involved, with the County of Santa Clara and it shall be binding on all subsequent owners of land served by the storm water management BMPs. The City standard Stormwater BMP Operation and Maintenance Agreement will be provided by Land Development Engineering at building permit/improvement plan stage.
- I. **Stormwater BMP Inspection Responsibility**
1. The property owner(s) shall be responsible for having all stormwater management facilities inspected for condition and function by a **certified Qualified Stormwater Practitioner (QSP)**.
 2. Unless otherwise required by the City Engineer or designee, stormwater facility inspections shall be done at least twice per year (April 15th and September 15th) by the QSP. Written records shall be kept of all inspections and shall include, at minimum, the following information:
 - a. Site address;
 - b. Date and time of inspection;
 - c. Name of the person conducting the inspection;
 - d. List of stormwater facilities inspected;
 - e. Condition of each stormwater facility inspected;
 - f. Description of any needed maintenance or repairs; and
 - g. As applicable, the need for site re-inspection.
 3. Upon completion of each inspection, an inspection report shall be submitted to Environmental Services.
- J. **Records of Maintenance and Inspection Activities:** On or before April 15th and September 15th of each year, the party responsible for the operation and maintenance of on-site stormwater management facilities under the BMP Operation and Maintenance Agreement shall provide the City Engineer or designee with records of all inspections, maintenance and repairs.
- K. **Annual Certification of SWRMP:** On or before September 30th of each year, a Registered Civil Engineer (RCE) shall provide written certification that the project's stormwater quality design standards are properly maintained and functioning as required by the SWRMP.

BUILDING DIVISION

- A. Project shall be designed to comply with the current edition of the California Codes of Regulations as amended by the Morgan Hill Municipal Code Title 15. (New 2022 edition of the California Building Standards Code will be effective January 1, 2023. The building permit application submitted on or after this date must comply with new codes and the updated Morgan Hill Municipal Code.)
- B. Construction Waste management form would be required during the Building permit application. <https://www.morgan-hill.ca.gov/DocumentCenter/View/21377/Construction-Waste-Management-Plan?bidId=>
- C. Project shall comply with the Morgan Hill Municipal Code (MHMC) including but not limited to:
- MHMC 15.65 Sustainable Building Regulations. Recommend a qualified sustainable building professional to review this requirement:
https://library.municode.com/ca/morgan_hill/codes/code_of_ordinances?nodeId=TIT15BUCO_CH15.65SUBURE
 - MHMC 15.40 Building Security
https://library.municode.com/ca/morgan_hill/codes/code_of_ordinances?nodeId=TIT15BUCO_CH15.40BUSE
 - MHMC 15.38 Wage Theft Preventions. Submit a signed form for review.
<https://www.morgan-hill.ca.gov/DocumentCenter/View/41519/Wage-Theft-Prev-Ack-of-Responsibility>
 - MHMC 18.148 Water Conservation. See Environmental Programs review comments.
https://library.municode.com/ca/morgan_hill/codes/code_of_ordinances?nodeId=TIT18ZO_DIVIIDECO_CH18.148WACO
 - MHMC 15.63 Prohibition of Natural Gas Infrastructure in New Buildings. Add a note on the cover sheet that there is no gas infrastructure provided to this site.
https://library.municode.com/ca/morgan_hill/codes/code_of_ordinances?nodeId=TIT15BUCO_CH15.38WATHPR
- D. An acoustical analysis report shall be submitted with the building permit documents showing interior and exterior noise mitigations for compliance to the MHMC, California Building Code and CALGreen Code.
- E. Solar panels will be required per CEC.

- F. A separate Building permit will be required for demolition of existing structures.
- G. All onsite grading and improvements are required to be permitted and inspected by the Building Department.

FIRE DIVISION

- A. Project shall meet The City Of Morgan Hill's Fire Prevention Division Standard Details and Specifications: <https://www.morgan-hill.ca.gov/DocumentCenter/View/10668/Fire-Details-and-Specs?bidId=>
- B. No street parking will be allowed on site with proposed road widths.

HOUSING DIVISION

- A. Pursuant to the City's Inclusionary Housing Ordinance (Morgan Hill Municipal Code Title 14, Chapter 14.04), developers of residential projects in the City are required to either construct a specified percentage of affordable housing units on-site within the project or comply with the Inclusionary Housing Ordinance by satisfying an alternative means of compliance as set forth in Section 14.04.070 of the Ordinance. City Manager or his or her designee has determined that for this residential project, a housing in lieu housing fee may be paid in-lieu of building inclusionary units. The in-lieu housing fee for "ownership" residential projects outside of downtown for which there is a fifteen-percent inclusionary housing requirement is twenty three dollars and four cents per habitable square foot of the residential building area of market-rate housing. In-lieu fees shall be paid prior to issuance of building permits for the market-rate units in this residential project. If building permits are issued for only part of a residential project, the fee amount shall be based only on the number of units then permitted. Developer must execute an Inclusionary Housing Fee Agreement before Final Map recordation. The Inclusionary Housing Fee Agreement shall provide that the applicant shall be required to reimburse the city for its attorneys' fees incurred in connection with the preparation of the Inclusionary Housing Fee Agreement. Please contact the Housing Department for calculation of final housing in-lieu fee based on project habitable square footage listed on SB330 Submittal Title Sheet – A0.1, dated March 7, 2023, to begin draft copy of Inclusionary Housing Fee Agreement.

ENVIRONMENTAL SERVICES

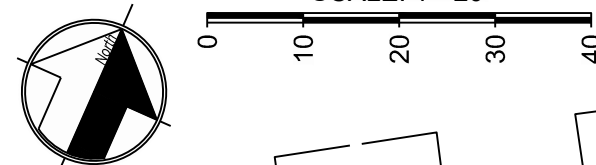
- A. Please completely fill out and submit the attached Checklist **and** submit the associated supporting documents (*listed below*) in your resubmittal. (MH MuniCode 180.148 and 18.64). The attached Checklist is utilized for the review process of the proposed plans. If any items from the Checklist are missing or not addressed, **it cannot be approved**.
 - a. Landscape Design Plans

- b. Irrigation Plans
 - c. Soil Management Report/Survey
 - d. Grading Design/Survey
 - e. Hydrozone Map
 - f. Water Budget Calculation
- B. Remove the checklist that is on page L1.0. This document is only applicable to projects that are not going through the design review process and are less than 2,500 sf of landscaping.
- C. Add a Landscaping Cover Sheet (L0) includes the following information:
 - 1. Project Information including – date, projects applicant, project address, **total landscape area (SF)**, project type, water supply type, and local water purveyor.
 - 2. Add note to state if any of the slopes on the property are greater than 25%. If none, state that there are no slopes greater than 25%.
 - 3. Add a note that states “After installation of landscaping on property, I agree to have an irrigation audit, landscape audit, irrigation schedule, and maintenance schedule conducted by a Certified Irrigation Auditor and submit it to the City for final project sign off” and have this statement signed by the owner/developer.
 - 4. Add a note that states “The developer will submit receipts and/or invoices for all compost and mulch purchases to Environmental Services Division after final construction” and have this statement signed by the owner/developer.
- D. Plant selection must comply with the following plant water requirements according to Municipal Code section 18.64.060 A.1:
 - 1. All plants and trees shall be categorized as **low or very low water use** in the Central Coast as defined by the water use classification of landscape species (WUCOLS) database.
 - 2. Remove/replace the following plant species:
 - a. Prunus Oakame (Okame Cherry) – moderate water use
 - b. Hardenbergia Violacea (Happy Wanderer) – moderate water use
- E. If mass grading is planned to be conducted for this project, please add a note stating that a **soil report** will be submitted post construction. If mass grading is not going to be done, please submit the soil report upon resubmittal.
- F. Please add a note in plans that specify that mulch cover is 3 inches thick. Mulch that is organic recycled or post-consumer shall take precedence. Types of mulch **not** allowed include: bark, gorilla hair, shredded cedar, or virgin materials.

- G. Please add a note in plans that specify compost at a rate of a minimum of four cubic yards per one thousand square feet of permeable area shall be incorporated to a depth of six inches into the soil.
- H. Project Shall address Morgan Hill Municipal Code (MHMC) 18.148 – Water Conservation and MHMC 18.64 Landscaping and utilize provided checklist.

A circular professional seal for Harinder Singla, a Licensed Land Surveyor in the State of California. The seal features the text "LICENSED LAND SURVEYOR" at the top, "HARINDER SINGLA" in the center, and "STATE OF CALIFORNIA" at the bottom. The number "No. 8347" is also present in the center.

EVAE	EMERGENCY VEHICULAR ACCESS EASEMENT
PIEE	PRIVATE INGRESS & EGRESS EASEMENT
PUE	PRIVATE UTILITY EASEMENT
PSDE	PRIVATE STORM DRAINAGE EASEMENT
PSE	PUBLIC SERVICE EASEMENT



1. Tentative Map
2. Site Topographic Map
3. Preliminary Grading & Drainage Plan
4. Preliminary Grading Sections
5. Preliminary Storm Water Management Plan
6. Preliminary Utility Plan

DATE:	Jan 2024
SCALE:	1"=20'
DRAWN BY:	RS
CHECKED BY:	HS

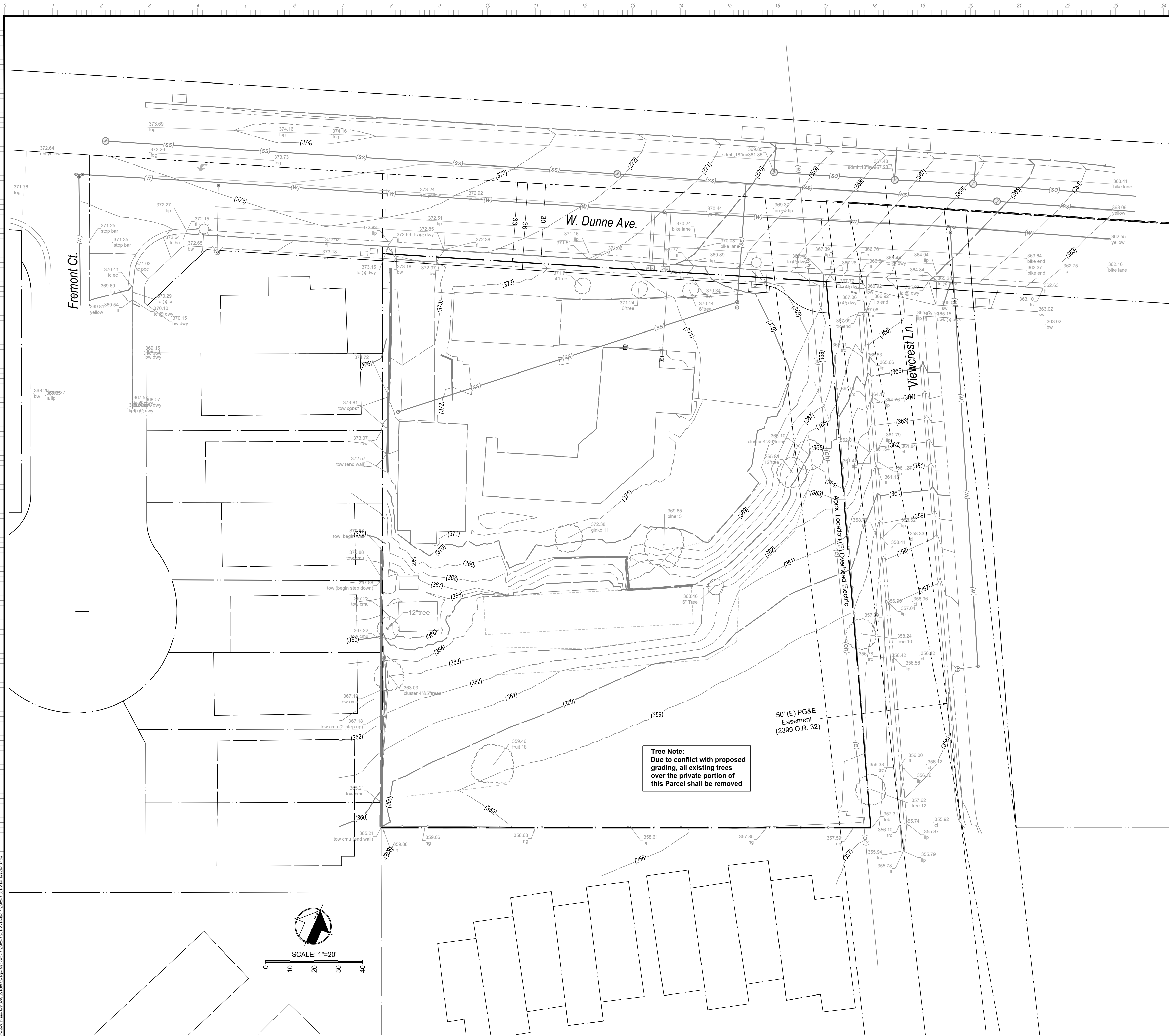
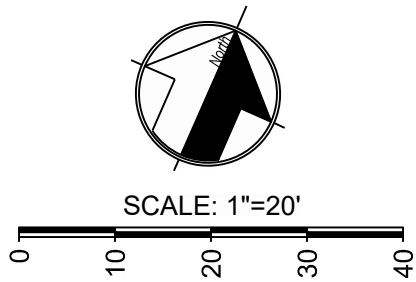
Benchmark: Valley Water BM002 (NAVD88) Elev. 342.80
Bench mark brass disk (N1870161 E6226277) is located on top of curb at the NW corner of Monterey Road and W. Dunne Avenue intersection.

LEGEND		
PROPOSED	EXISTING	DESCRIPTION
		PROPERTY LINE
		CENTER LINE
		CURB AND GUTTER
		DRIVEWAY APPROACH
		STORM DRAIN
		SANITARY SEWER
		WATER MAIN
		Fire Service
		Private Storm Drain
		Private Sewer
		Private Water
		GAS
		ELECTRIC OVERHEAD
		TELEPHONE
		FENCE, TYPE AS SHOWN
		STREET BARRICADE (A-32)
		BENCH MARK
		MONUMENT, TYPE AS SHOWN (A-31)
		REVISION
		SECTION - DETAIL
		SLOPE
		SWALE
		STORM DRAIN MANHOLE (SD-1)
		CURB INLET (SD-5)
		DROP INLET (SD-4)
		STORM JUNCTION BOX
		SANITARY SEWER MANHOLE (S-4)
		SANITARY SEWER LATERAL (S-2)
		SEWER CLEAN OUT (S-1)
		WATER SERVICE (W-1)
		FIRE HYDRANT (W-14)
		BLOW OFF VALVE (W-20) / AIR RELIEF VALVE
		WATER GATE VALVE (W-12)
		ELECTRICAL SERVICE
		PUBLIC STREET LIGHT (E-2)
		PRIVATE STREET LIGHT
		DOUBLE DETECTOR CHECK VALVE ASSEMBLY

ABBREVIATIONS:			
AC	ASPHALT CONCRETE	GV	GATE VALVE
BC	BEGINNING OF CURVE	HP	HIGH POINT
BFE	BASE FLOOD ELEVATION	INV.	INVERT
BLDG	BUILDING	JP	JOINT POLE
BVC	BEG. VERTICAL CURVE	LP	LOW POINT
BW	BACK OF SIDEWALK	MAX.	MAXIMUM
CB	CATCH BASIN	MIN.	MINIMUM
CI	CURB INLET	NG	NATURAL GROUND
CL	CENTERLINE	PB	PULL BOX
CL DW	CENTERLINE OF DRIVEWAY	P	PROPERTY LINE
CMP	CORRUGATED METAL PIPE	P.S.E.	PUBLIC SERVICE EASEMENT
CO	CLEAN OUT	P.S.D.E.	PRIVATE STORM DRAIN EASEMENT
DI	DROP INLET	PVI	POINT OF VERTICAL INTERSECTION
D.I.P.	DUCTILE IRON PIPE	RCP	REINFORCED CONCRETE PIPE
DWY	DRIVEWAY	R/W	RIGHT OF WAY
EC	END OF CURVE	SDMH	STORM DRAIN MANHOLE
EG	EXISTING GRADE	SS	SANITARY SEWER
ELCT	ELECTROLIER	SLT	SLOTTED DRAIN
EP	EDGE OF PAVEMENT	SSMH	SANITARY SEWER MANHOLE
ER	END OF RETURN	STD.	STANDARD
EVC	END VERTICAL CURVE	SW	SIDEWALK
EX, EXST.	EXISTING	TBM	TEMPORARY BENCH MARK
FF	FINISH FLOOR	TC	TOP OF CURB
FG	FINISH GRADE	TW	TOP OF WALL
FH	FIRE HYDRANT	TYP.	TYPICAL
FL	FLOW LINE	VF	FIBER OPTIC BOX
GB	GRADE BREAK	WM	WATER METER
		WV	WATER VALVE

Tree Note:
Due to conflict with proposed grading, all existing trees over the private portion of this Parcel shall be removed

50' (E) PG&E Easement (2399 O.R. 32)



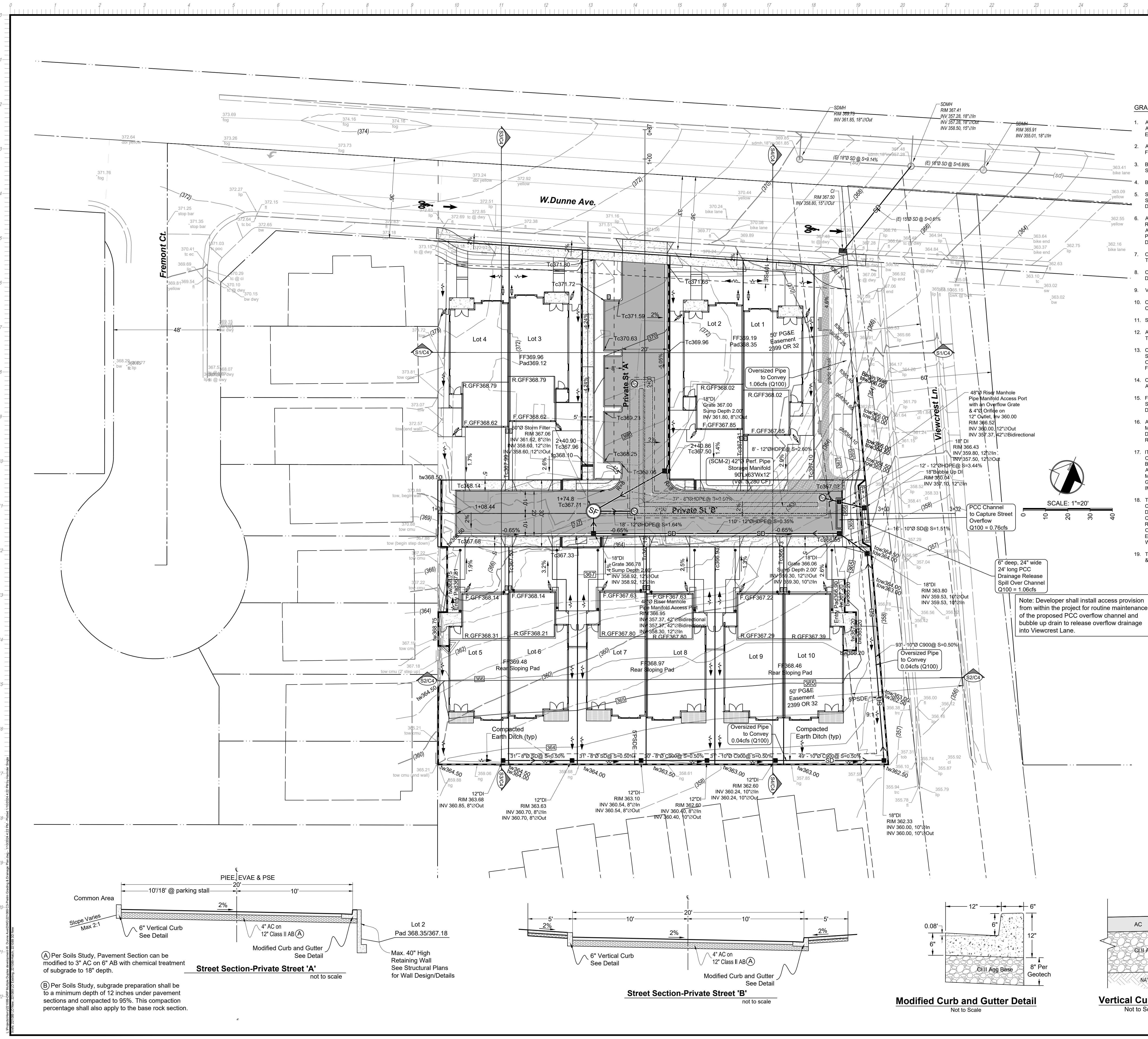
MH engineering Co.
Morgan Hill, CA 95037

Site Topographic Map
270 W. Dunne Avenue

DATE: Jan 2024
SCALE: 1"=20'
DRAWN BY: RS
CHECKED BY: HS

JOB NO
221089

SHEET
2
OF
6



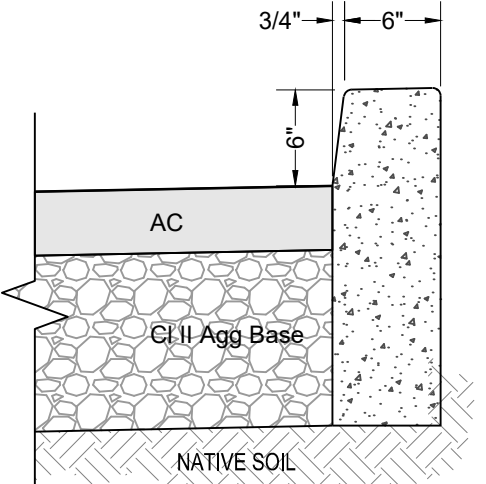
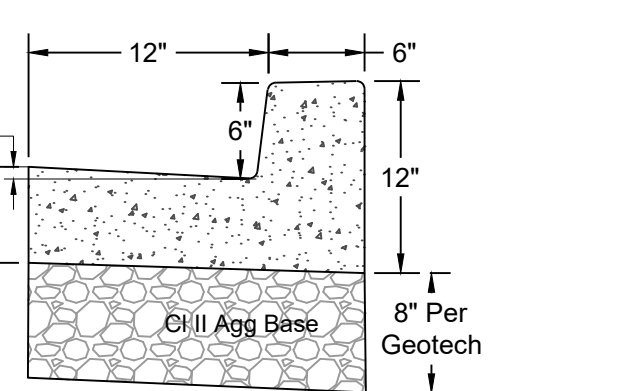
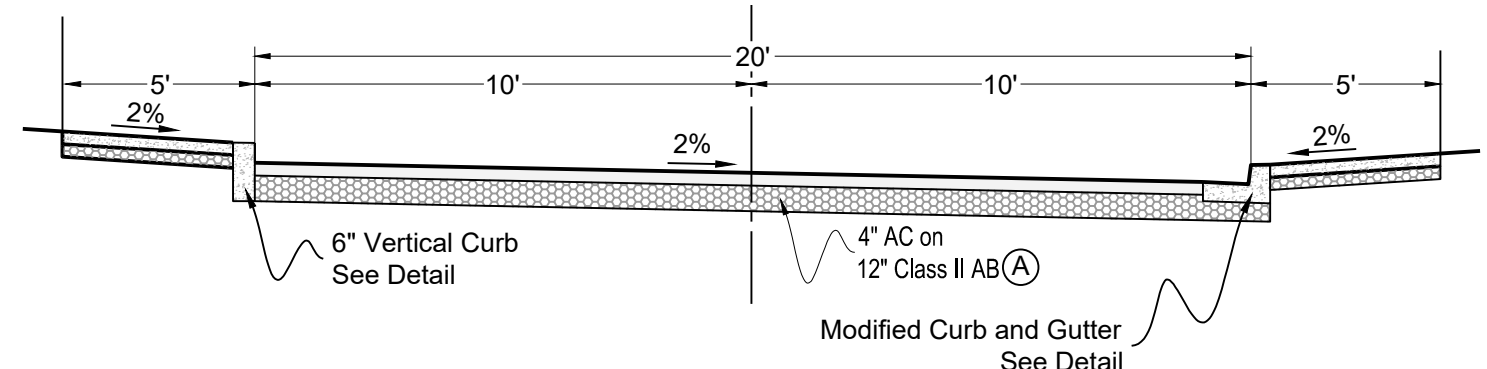
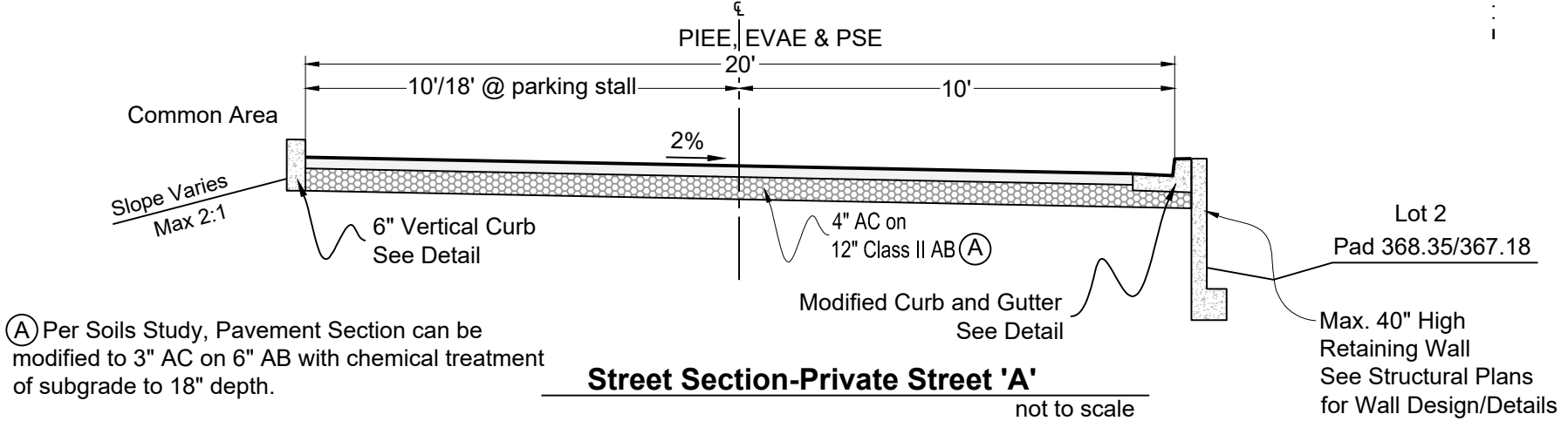
- GRADING AND SITE PREPARATION NOTES:**
- ALL AREAS TO RECEIVE FILL SHALL BE STRIPPED TO A DEPTH DETERMINED BY THE SOILS ENGINEER. ANY A.C. OR P.C.C. PAVING SHALL BE SCARIFIED & REMOVED & SUBGRADE PREPARED & COMPACTED PER SOILS ENGINEER'S RECOMMENDATIONS PRIOR TO ANY FILLING.
 - ALL MATERIAL TO BE USED AS FILL WITHIN BUILDING PAD AREAS & PARKING OR DRIVEWAY AREAS TO BE FREE OF ALL VEGETATION & FOREIGN MATTER AND SHALL BE APPROVED BY SOILS ENGINEER.
 - BUILDING PADS & DRIVEWAY SUBGRADE SHALL BE COMPACTED PER RECOMMENDATIONS MADE BY THE SOILS ENGINEER.
 - BUILDING PADS SHALL BE LEVEL SIDE-TO-SIDE AND FRONT-TO-REAR, UNLESS OTHERWISE SHOWN.
 - STRIPPINGS MAY BE PLACED IN PLANTING AREA OR BURIED IN DESIGNATED PARK AREAS; ALL EXCESS STRIPPINGS SHALL BE HAULED AWAY. PAVING DEBRIS SHALL BE HAULED AWAY TO AN APPROVED DISPOSAL SITE.
 - ALL WORK SHOWN OR NOTED ON THESE PLANS SHALL BE DONE IN STRICT ACCORDANCE WITH THE RECOMMENDATIONS OF THE SOILS ENGINEER, ALL LOCAL, STATE, AND FEDERAL MINIMUM STANDARDS AND THE LATEST EDITION OF THE UNIFORM BUILDING CODE. NOTIFY SOILS ENGINEER 2 WORKING DAYS PRIOR TO BEGINNING OF ANY GRADING. REFER TO SOILS STUDY BY Cleary Consultants (Project No. 1425.1, Dated May 2022).
 - CONNECTIONS TO EXISTING PUBLIC UTILITIES SHALL BE DONE WITH APPROVAL & IN ACCORDANCE WITH THE UTILITY COMPANY'S REQUIREMENTS.
 - CONTRACTOR SHALL PROTECT ALL EXISTING SITE IMPROVEMENTS NOT SCHEDULED FOR REMOVAL DURING CONSTRUCTION. THEY SHALL REPAIR ANY DAMAGE TO NEW CONDITION AT THEIR EXPENSE.
 - VERIFY ALL EXISTING SITE CONDITIONS, SITE DIMENSIONS AND GRADES PRIOR TO START OF WORK.
 - CONFORM TO THE RECOMMENDATIONS OF THE DRAWINGS, DETAILS AND SITE SOILS REPORT FOR COMPACTION, STRIPPING, GRADING, PAVING AND UTILITY TRENCHES.
 - SOIL COMPACTION TESTS SHALL BE PAID FOR BY THE OWNER/DEVELOPER AS PER NOTE 3.
 - ALL GRADING AND RELATED WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY OF MORGAN HILL AND THE RECOMMENDATION OF THE SOILS ENGINEER.
 - CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING SERVICES AND UNDERGROUND UTILITIES & SEWERS. LOCATIONS SHOWN ON THE PLAN ARE APPROXIMATE AND SHOWN FOR GENERAL INFORMATION ONLY. CONTRACTOR SHALL CALL U.S.A. AT 800-227-2600 48 HOURS PRIOR TO UNDERGROUND WORK FOR FIELD LOCATOR SERVICE.
 - CONTRACTOR SHALL VERIFY THE LOCATIONS OF THE BUILDING AND PARKING IMPROVEMENTS FROM THE ARCHITECT'S DIMENSIONED DRAWING.
 - FOUNDATIONS AND FOOTING DETAILS SHOWN ARE FOR GRADING RELATIONSHIPS ONLY. CONTRACTOR SHALL REFER TO DIMENSIONED STRUCTURAL OR ARCHITECTURAL PLANS FOR ACTUAL DIMENSIONED DETAILS.
 - ANY VOIDS CREATED BY STRUCTURE REMOVAL, TREE REMOVAL, SEPTIC TANK AND LEACH LINE REMOVAL MUST BE BACKFILLED WITH PROPERLY COMPACTED NATIVE SOILS THAT ARE FREE OF ORGANICS & OTHER DELETERIOUS MATERIALS OR WITH APPROVED IMPORT FILL & COMPACTED TO THE SOILS ENGINEER'S RECOMMENDATIONS.
 - IT SHALL BE THE RESPONSIBILITY OF THE GRADING CONTRACTOR, DURING GRADING OPERATION, IN COOPERATION WITH MH ENGINEERING TO VERIFY QUANTITIES OF EARTHWORK. QUANTITIES SHOWN HAVE BEEN DILIGENTLY ESTIMATED BY THE ENGINEER, BASED UPON AVAILABLE INFORMATION. IN ORDER TO ASSIST THE CONTRACTOR, THE GROUND TOPOGRAPHY ELEVATIONS & CONTOURS WERE FURNISHED BY MH Engineering, dated June 2021. MH Engineering DOES NOT GUARANTEE CURRENT ACCURACY OF THE GROUND ELEVATIONS. CONTRACTOR SHALL FIELD VERIFY FOR HIMSELF THAT NO ADDITIONAL GRADING, IMPORTING OR EXPORTING OF EARTH HAS TAKEN PLACE SINCE THE TOPO SURVEY OF PROPERTY.
 - THE EARTHWORK QUANTITIES SHOWN ARE PROVIDED AS A COURTESY AND CONVENIENCE TO THE CONTRACTOR. THE CUT & FILLS SHOWN ARE APPROXIMATE CALCULATED QUANTITIES BASED ON THE DIFFERENCE BETWEEN EXISTING GROUND ELEVATIONS (CONTOURS) & ROUGH GRADE ELEVATIONS. THE CALCULATION MAKES NO PROVISION FOR SCARIFICATION & COMPACTION WORK OR FILLS. FOR THIS REASON & BECAUSE OF VARIABLES SUCH AS COMPACTION, SHRINKAGE & THE CONTRACTOR'S METHOD OF OPERATION, THE VOLUME OF DIRT ACTUALLY MOVED IN THE FIELD WILL PROBABLY VARY TO SOME EXTENT FROM THE CALCULATED VOLUME. FOR THE PURPOSE OF APPROXIMATING THE SHRINKAGE, 12% WAS USED FOR THE FILL VOLUMES.
 - THE CONTRACTOR'S EARTHWORK BID REFLECTS HIS OWN CALCULATION OF THE EARTHWORK COMPACTED & COMPLETE IN PLACE TO THE DETAILS, LINE, AND GRADE SHOWN ON THE PLANS.

Earthwork Summary-----10" Slab Section

Description	Cut	Fill
Strippings loss (2" depth)	Typically Absorbed Onsite	
Streets & Site grading (incl. 12% compaction)	4,079	7,943
Underground Pipe manifold excavation Spoils	200	
Trench Spoils (wet & dry)	900	
Hardscape & Fine Grading-estimate	250	
Net volume	5,429	7,943

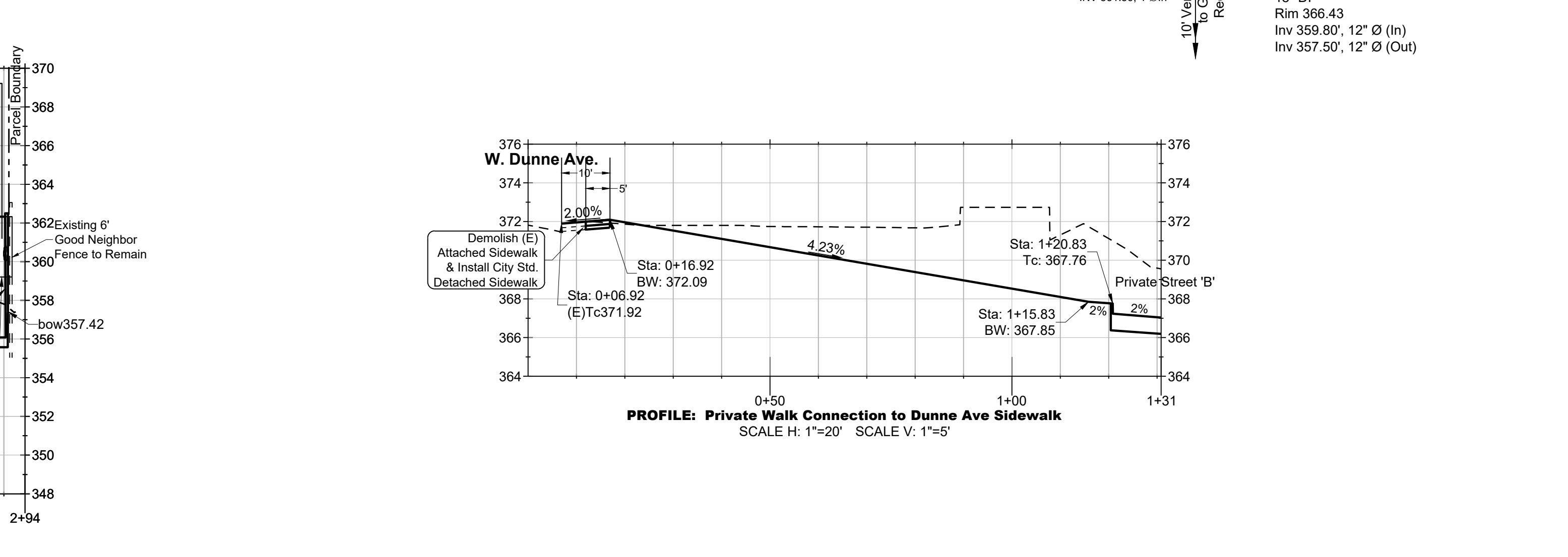
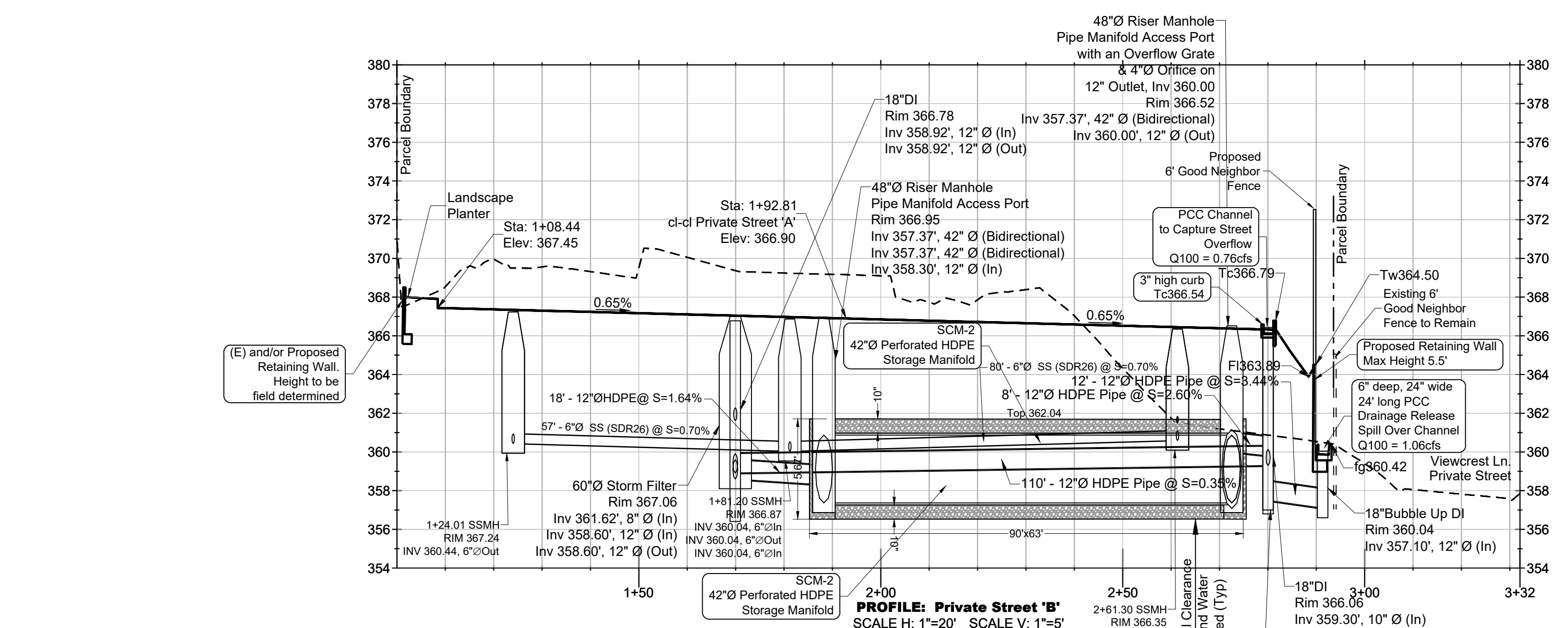
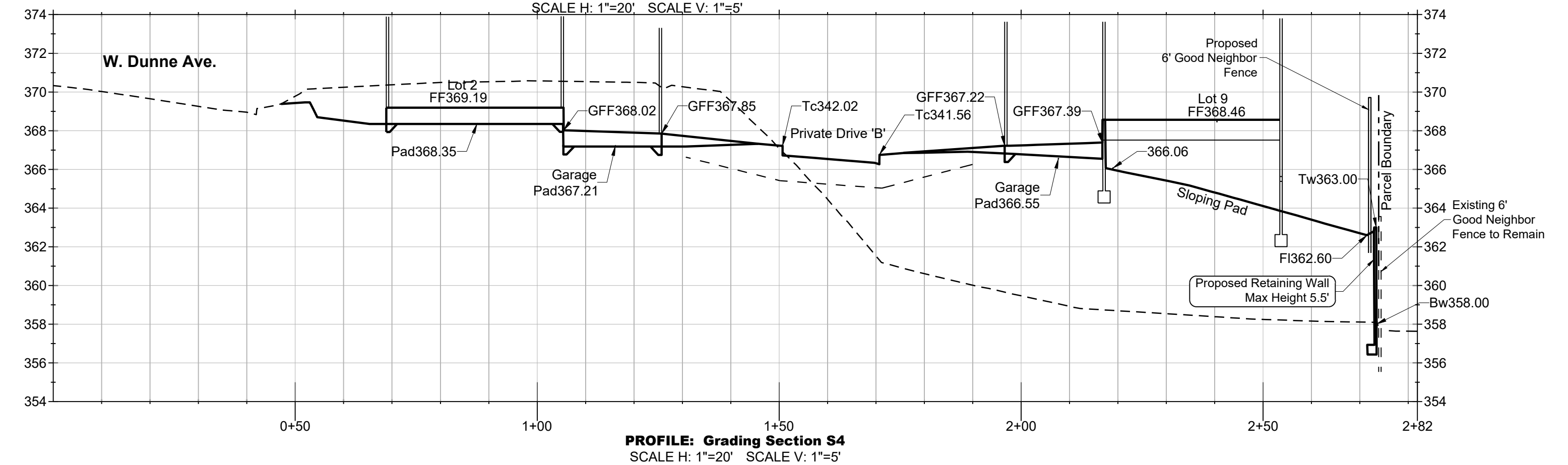
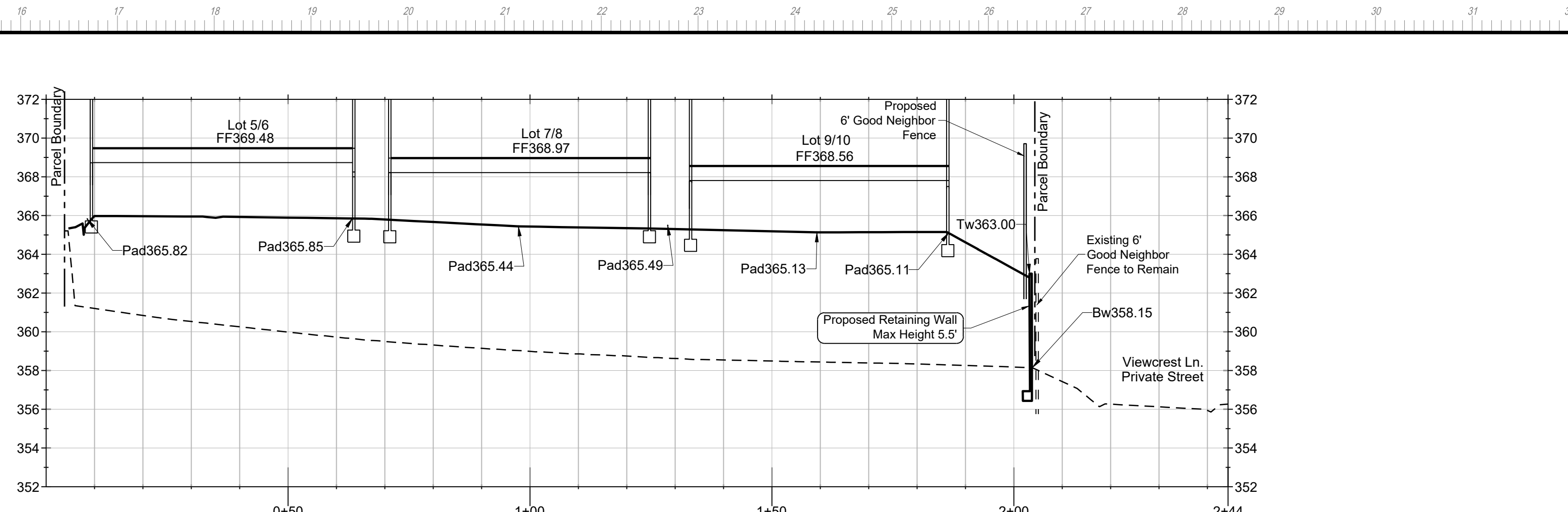
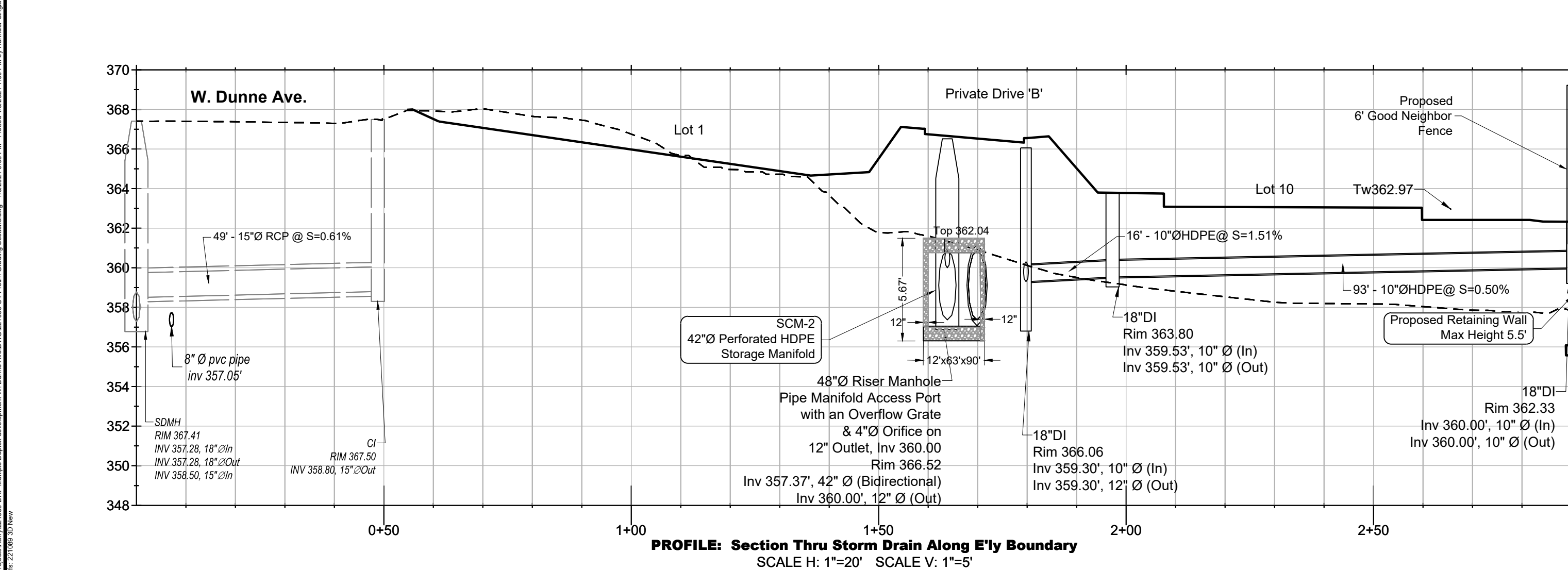
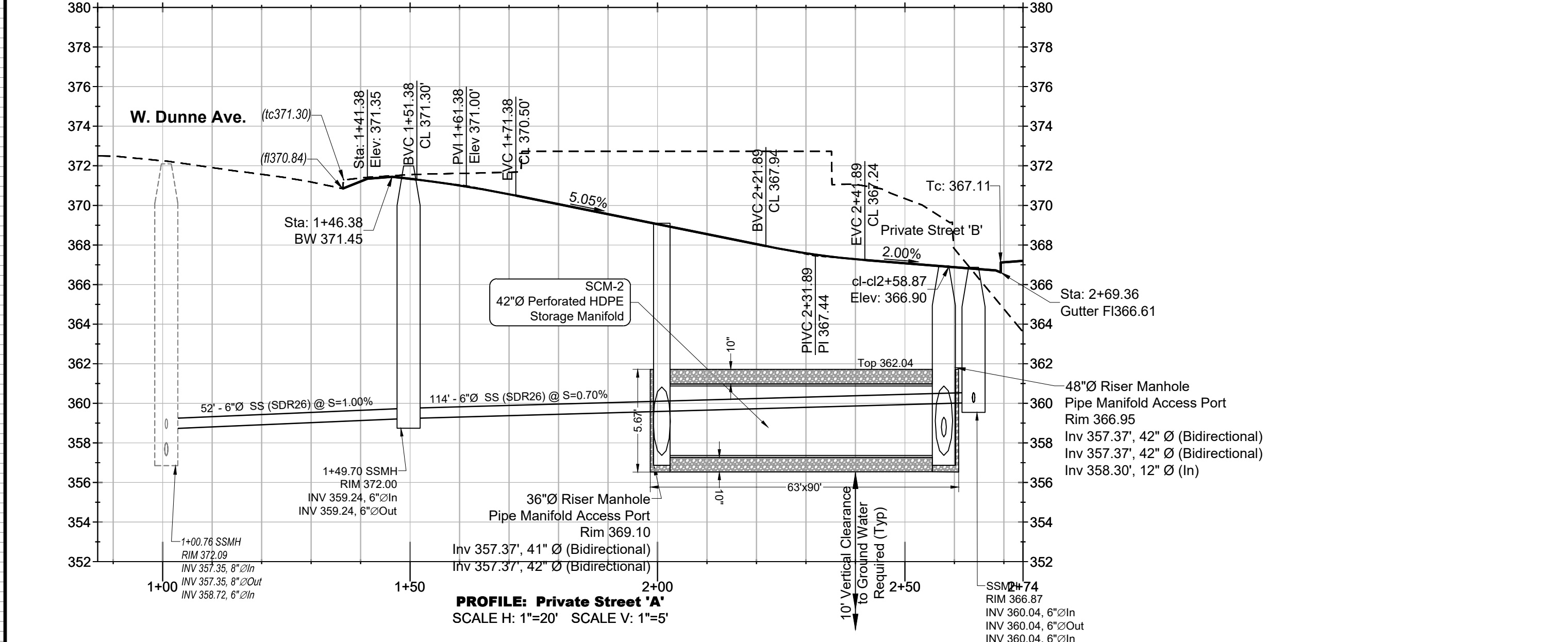
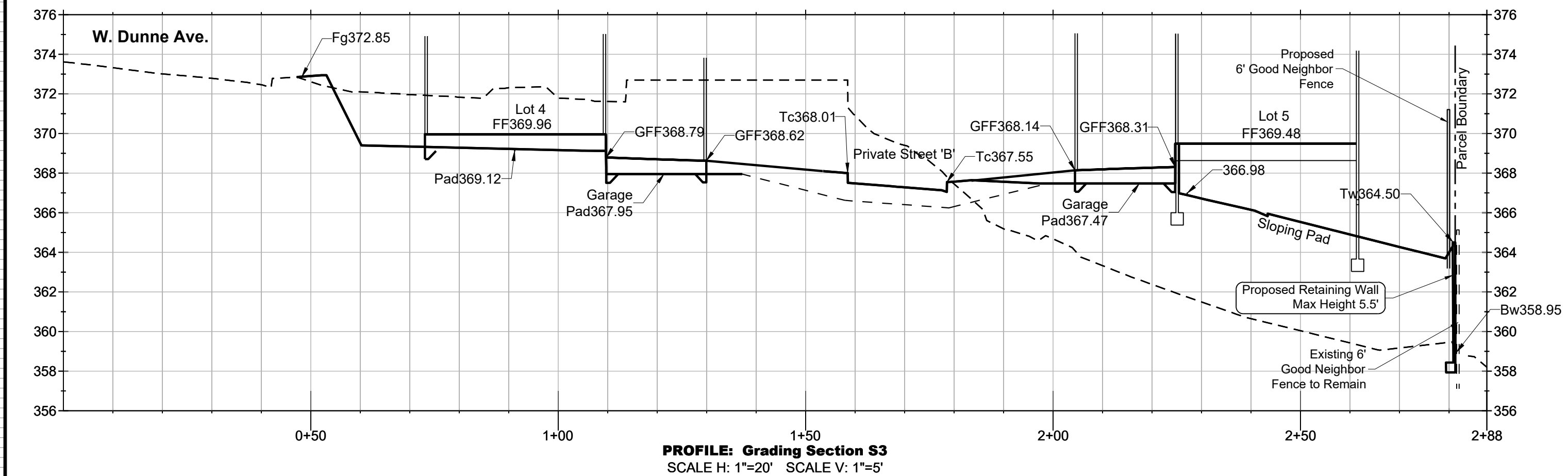
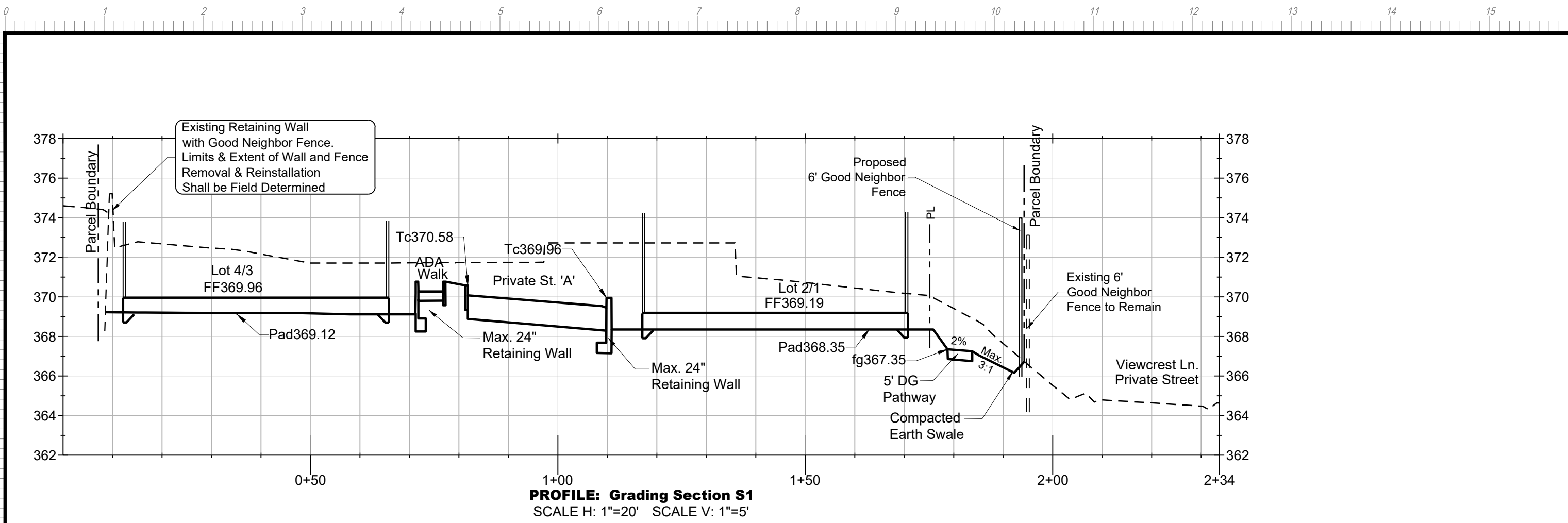
Estimated Import 2,514±

Note: all unusable strippings shall be hauled offsite as part of the site clearing and grubbing item of work.



(A) Per Soils Study, Pavement Section can be modified to 3" AC on 6" AB with chemical treatment of subgrade to 18" depth.

(B) Per Soils Study, subgrade preparation shall be to a minimum depth of 12 inches under pavement sections and compacted to 95%. This compaction percentage shall also apply to the base rock section.



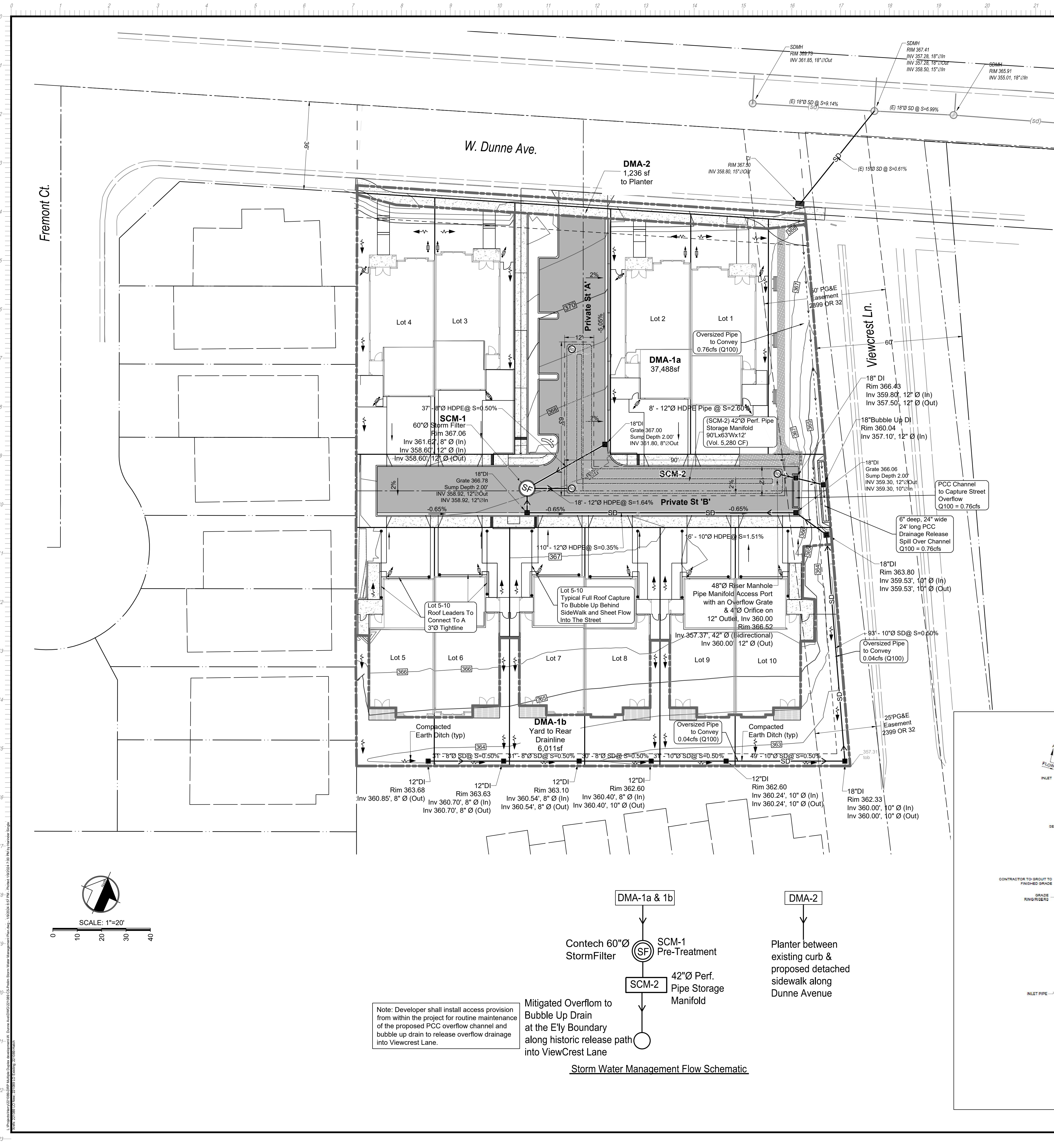
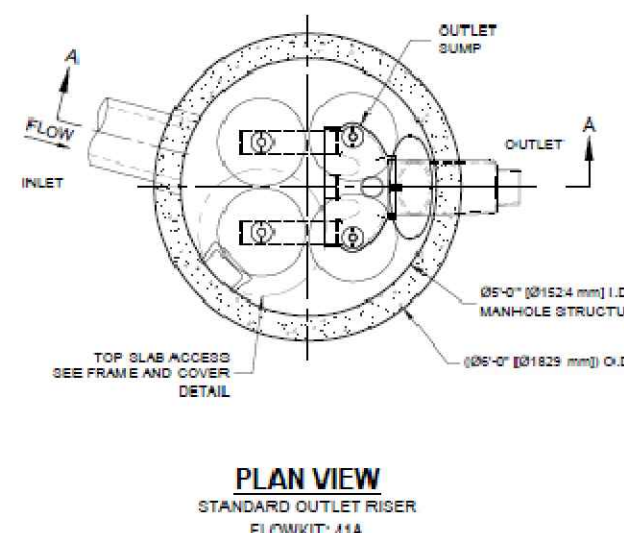


Table 1: Project Data

Project Name/Number	Robertson (SR2022-0023)
Application Submittal Date	Nov. 2022
Project Location	270 W. Dunne Avenue
APN#	767-12-060
Project Type and Description	Residential Project comprising of 10 townhome style attached units and related Access Street improvements
Total Project Site Area (acres)	44,735 sf
Total New Impervious Surface Area	28,314 sf
Total Replaced Impervious Surface Area	1,087 sf
Total Pre-Project Impervious Surface Area	9,608 sf
Total Post-Project Pervious Surface Area	16,421 sf
Net Impervious Area (Exhibit shall be provided to justify net impervious area results)	28,314 sf
Watershed Management Zone(s)	WMZ 1
85 th Design Storm	1.15 inch
95 th Design Storm	1.80 inch

270 W. Dunne Ave - Project LID Area Tabulation					
DMA	DMA area (sf)	DMA Impervious Area (I.A.) sf			Pervious Area (sf)
		Public Hardscape	Roofs, Onsite Driveways & Yard	Private Street & Walks	
1a	37,488	0	19,710	7,517	10,261
1b	6,011	0	0	0	6,011
2	1,236	972	0	0	1,087
Total Area	44,735	972	19,710	7,517	28,314
Total Project Site Gross Area		44,735			
Total New Impervious Area		28,314			
Total Replaced Impervious Area (Public Sidewalk & Drive Approach)		1,087			
Total New Pervious Area		16,421			
Net Impervious Area		28,314-22,500 (Tier 4 Project)			



STORMFILTER DESIGN NOTES

STORMFILTER TREATMENT CAPACITY IS A FUNCTION OF THE CARTRIDGE SELECTION AND THE NUMBER OF CARTRIDGES. THE STANDARD MANHOLE STYLE IS SHOWN WITH THE MAXIMUM NUMBER OF CARTRIDGES (4). VOLUME SYSTEM IS ALSO AVAILABLE WITH MAXIMUM 4 CARTRIDGES. SEE OF 124 (P) FOR MANHOLE STORMFILTERS. PEAK HYDRAULIC CAPACITY IS 1.0 CFS PER 1.0 L.S.U. IF THE SITE CONDITIONS EXCEED 1.0 CFS PER 1.0 L.S.U. AN UPSTREAM BYPASS STRUCTURE IS REQUIRED.

CARTRIDGE SELECTION	21" (884 mm)	18" (686 mm)	LOW DROP
CARTRIDGE HEIGHT	21" (884 mm)	18" (686 mm)	18" (686 mm)
RECOMMENDED HYDRAULIC DRAIN (L.S.U.)	2 (1.50)	1 (0.85)	1 (0.85)
SPECIFIC FLOW RATE (gpm/ft L.S.U.)	2.1 (3.5)	1.67 (1.08)	1.67 (1.08)
CARTRIDGE FLOW RATE (gpm/ft L.S.U.)	2.5 (4.2)	1.87 (1.19)	1.87 (1.19)

1.15" gpm/ft (1.0 L.S.U.) SPECIFIC FLOW RATE IS APPROVED WITH PROPHOCON® (PCC) MEDIA ONLY.

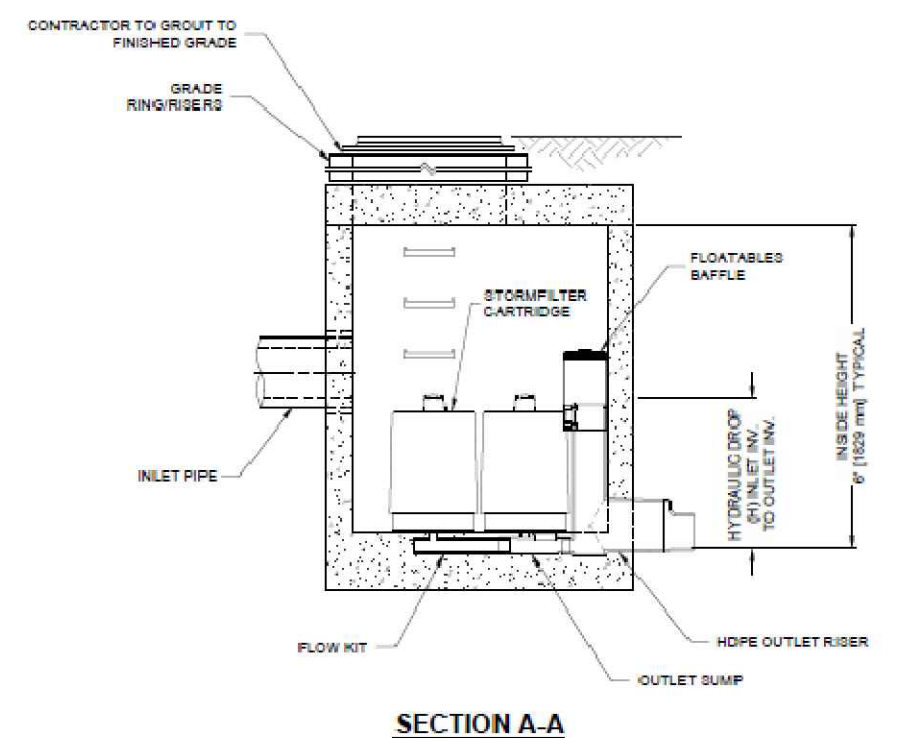
SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID	WATER QUALITY FLOW RATE (CFS) (L.S.U.)	PEAK FLOW RATE (CFS) (L.S.U.)	RETURN PERIOD OF PEAK FLOW (yrs)	CARTRIDGE HEIGHT (SEE TABLE ABOVE)	NUMBER OF CARTRIDGES REQUIRED	CARTRIDGE FLOW RATE	MEDIA TYPE (SEE TABLE ABOVE)

PIPE DATA	PIPE	MATERIAL	DIAMETER
INLET PIPE			
OUTLET PIPE			

PIPE DATA	PIPE	MATERIAL	DIAMETER
INLET PIPE			
OUTLET PIPE			

NOTES (SPECIAL REQUIREMENTS):
PER ENGINEER OF RECORD



GENERAL NOTES

- CONTRACTOR TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
- CONTRIBUTORS MARKED WITH 1 ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
- FOR SITE SPECIFIC DRAWINGS WITH DETAILED UNITS DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTRACT ENGINEERED SOLUTIONS LLC REPRESENTATIVE. WWW.CONTECHES.COM
- STORMFILTER WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
- STRUCTURE SHALL BE SET ASHIFT HORIZ. LOAD RATING, ASSUMING EARTH COVER OF 2' IF 18" DIA. PIPE AND GROUNDWATER ELEVATION AT OR BELOW THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET ASHTO M88 AND BE CAST WITH THE CORRECT LOAD.
- FILTER CARTRIDGES SHALL BE MEDIA FILLED, PASSIVE, SPHON ACTUATED, RADIAL FLOW, AND SELF-CLEANING. RADIAL MEDIA DEPTH SHALL BE 18" MINIMUM. FILTER MEDIA CONTACT TIME SHALL BE AT LEAST 30 SECONDS.
- SPECIFIC FLOW RATE IS EQUAL TO THE FILTER TREATMENT CAPACITY (GPM) (L.S.U.) DIVIDED BY THE FILTER CONTACT SURFACE AREA (SQ. FT.).
- STORMFILTER STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-778 AND ASHTO LOAD FACTOR DESIGN METHOD.

INSTALLATION NOTES

- ANTI-SUBSIDENCE BACKFILL DEPTH, AND/OR ANTI-POLLUTION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
- CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STORMFILTER STRUCTURE.
- CONTRACTOR TO PROVIDE, INSTALL AND GROUT INLET/OUTLET PIPES.
- CONTRACTOR TO PROVIDE AND INSTALL CONNECTOR TO THE OUTLET RISER TUBE. STORMFILTERS EQUIPPED WITH A DUAL DIAMETER HOPE OUTLET TUBE AND SAND COLUMN. IF OUTLET PIPE IS LARGER THAN 8 INCHES (203 mm), CONTRACTOR TO REMOVE THE 8 INCH (203 mm) OUTLET TUBE AT HOPE-UP CUT LINE. COUPLING BY FRANCHISE OR EQUAL AND PROVIDED BY CONTRACTOR.
- CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT CARTRIDGES FROM CONSTRUCTION-RELATED EROSION RUNOFF.

CONTECH
ENGINEERED SOLUTIONS LLC
www.conteches.com
1025 Cedarhurst Dr., Suite 100, West Chester, OH 45389
603-638-1122 610-646-7002 610-646-7993 FAX

SFMH60
STORMFILTER
STANDARD DETAIL

MH engineering Co.
16075 Vineyard Boulevard
Morgan Hill, CA 95037

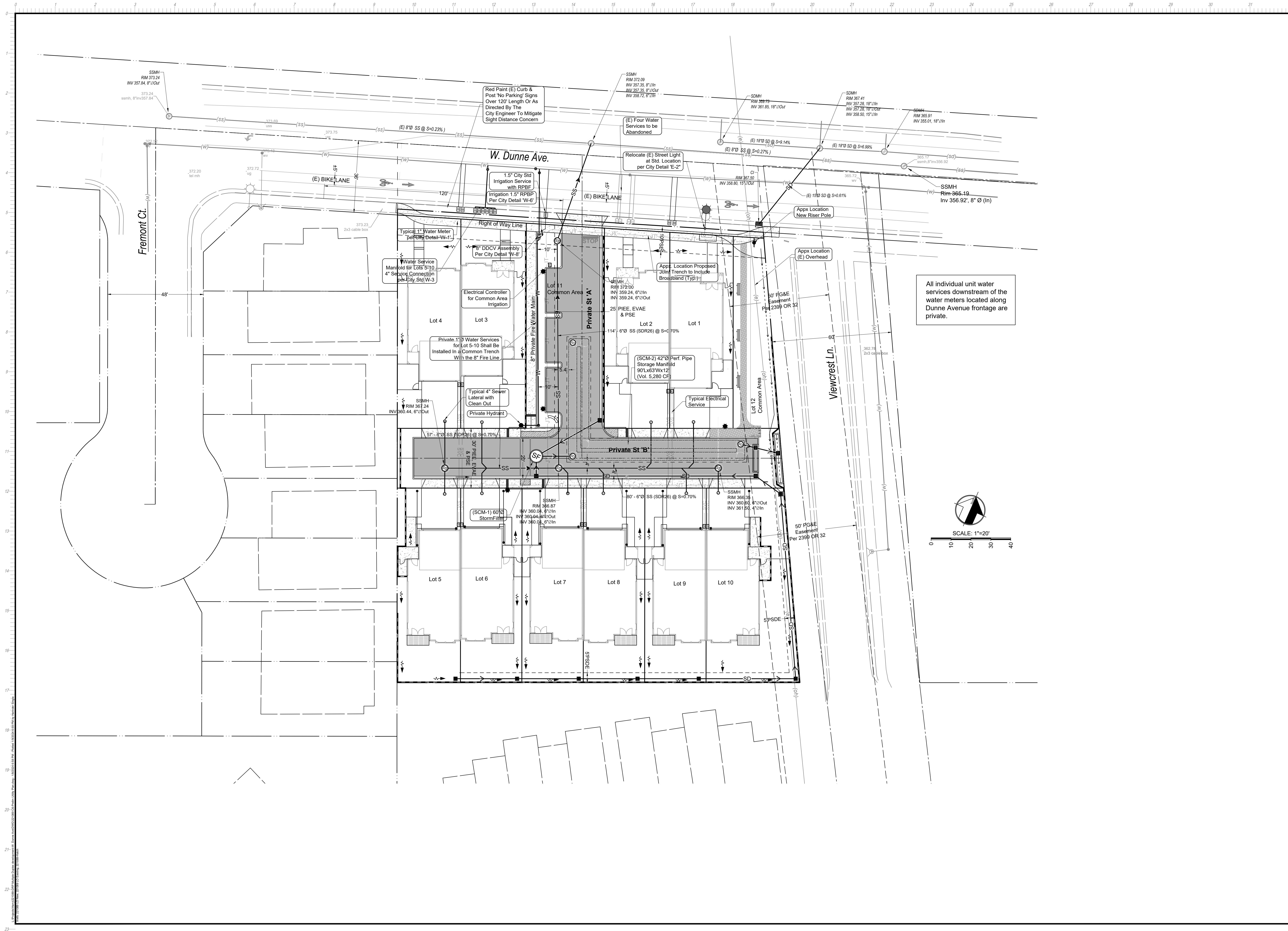
Preliminary Storm Water Management Plan

270 W. Dunne Avenue

DATE: Jan 2024
SCALE: 1"=20'
DRAWN BY: RS
CHECKED BY: HS

JOB NO: 221089

SHEET 5 OF 6



270 WEST DUNNE AVE TOWNHOMES - SB330 SUBMITTAL

DRP BUILDERS, INC.

270 WEST DUNNE, MORGAN HILL, CA 95037

SCOPE OF WORK

GENERAL PROJECT DESCRIPTION INCLUDES:

- DEMOLISH EXISTING RESIDENCE
- BUILD 10 NEW TOWNHOMES

NOTE:
THERE IS NO GAS ON THIS PROJECT

ABBREVIATIONS

ABV ACFL AP ACPL ACT ACR ADD ADH ADJ AGG A/C ALT ALUM ADA ANC AB ANOD ARCH AD AC AT APN AUTO @ & BA BP BSMT BRG BPL BM BLW BETW BIT BLK BLKG BD BS BW BOT BRK BRZ BLDG BUR	above above finished floor access floor acoustical plaster acoustical tile acrylic plastic addendum adhesive adjacent aggregate air conditioning alternate aluminum american disability assoc. anchor, anchorage anchor bolt anodized architect (ural) area drain asphalt concrete asphalt tile assessor parcel map automatic at and	DSA DR DA DH DF DBL PLT drain DRB DWR DWG EF ER ELEC EP EWC EL ELEV EMB EMER EMT ENC EQ EQP EXCA EXH <E> EXMP EB EXT EVS EA EW FB FOC FOF FOM FOS FF FN FBD FRP FIN FFE FNL FAL FE FEC FNT FP FRC FLG FLX FLR FLCO FD FLUOR FJT FTG FND FR FRA FS OPH FUR GA GALV GI GP PB GC GL GLB GB GD GRN GVL GRT GPDW GPL PERF GFCI GYP	division of the state architect door double acting double hung douglas fir double plate drain drainboard drawer drawing each face eave rafter electric (al) electrical panelboard electric water cooler elevation embedment emergency electrical metallic tubing enclose (ure) equal equipment estimate excavate light exhaust existing expanded metal plate expansion bolt exposed exterior extra strong each each way face brick face of concrete face of finish face of masonry face of stud factory finish fence fiberboard fiber reinforced plastic finish (ed) finished floor elevation finished floor line fire alarm fire extinguisher fire extinguisher cabinet fireplace fireproof fire-resistant coating flashing flexible floor (ing) floor cleanout floor drain fluorescent flush joint footing foundation frame (d), (ing) fresh air full size furnished by others furred (ing) future gage galvanized galvanized iron galvanized pipe general contract (or) glass, glazing glass block grab bar grade (ing) granite grout gypsum drywall construction continue (ous) contract (or) control joint copper corner guard corrugated counter counterflashing course (s) cross grain cubic foot cubic yard center line cement plaster	INCL ID INT INV IPS INCAN ISA JC JT JF J KPL KIT KD LBL LAB LB LS LAM LAV LH LT LW LMS LTL LBS LVR MB MI MH MFR MRB MAS MO MATL MAX MECH MC MTL MFD MRD MIN MIR MISC MOD MLD MNT MT MOV MULL NL NAT (N) NRC NOM NIC NTS OBS OC OPG OPH OD OA O/ PNT PNL PNC PTD PTR PAR PK PBD PTN POT PVT PDM PED PERF PERIM PLAM PLT PG PLWD PVC PSF PCC PPN PRF PFMG PTN QT	include (d), (ing) inside diameter interior invert iron pipe size incandescent international sign association janitor's closet joint joint filler joist kickplate kitchen knock down label laboratory lag bolt lag screw laminated (d) lavatory left hand length light lightweight limestone lintel louver machine bolt malleable iron manhole manufacture (er) marble masonry masonry opening material (s) maximum mechanical medicine cabinet metal metal floor decking metal roof decking minimum mirror miscellaneous modular molding, molding mount (ed), (ing) movable mullion nailable natural new noise reduction coefficient nominal not in contract not to scale obscure on center (s) opening opposite hand outside diameter overall overhead over paint (ed) panel panic bar paper towel dispenser paper towel receptor parallel parking particle board partition path of travel pave (d), (ing) pavement pedestal pedestals perforate (d) perimeter planting area plaster plastic laminate plate plate glass plywood polyvinylchloride pounds per square foot precast concrete prefinished preformed pre-formed metal gutter project tracking number property line, plate quarry tile	RAD RWL REF RFL REFR REG RCP REM RES RA RVS REV RH ROW R RD RFH RR RM RO RB RBT SFG SCCOE SCH SCD SSD SMD SED SEC SHTH SHT SH SIM SB SC SP SPC SPK SPEC SQ SST STD STA STO SD STR SCT SUS SYM STC TKBD TKS TEL TV TC TZ THK THR TPN TPD T&G TO TS TR T TYP UMC UBC UFC UR UNT VCT VB VERT VTR WC WCO WD WG WH WI WIND WR WSC W/ W/O	radius rainwater leader reference reflect (d), (ing) refrigerator register reinforced conc pipe remove resilient return air reverse (side) revision (s), revised right hand right-of-way riser roof drain roof hatch roof rafter room rough opening rubber base rubber tile safety glass santa clara county office of education schedule see civil drawings see structural drawings see mechanical drawings see electrical drawings sections sheathing sheet shelf, shelving similar solid block solid core soundproof spacer speaker specification (s) square stainless steel standard station storage storm drain structural structural clay tile suspended symmetry (cal) sound transmission class tackboard tackstrip telephone television terra cotta terrazzo thick (ness) threshold toilet partition toilet paper dispenser tongue and groove top of towel bar transom tread typical uniform mechanical code uniform building code uniform plumbing code uniform fire code urinal unless noted otherwise vinyl composition tile vapor barrier vertical vent through roof water closet wall cleanout wood wire glass water heater wrought iron window waterproof water resistant wainscot (ing) with w/o
---	--	--	---	--	--	---	--

SHEET LEGEND

ARCHITECTURAL	A0.1	TITLE SHEET
CIVIL	C1	TENTATIVE MAP
	C2	SITE TOPO MAP
	C3	PRELIMINARY GRADING & DRAINAGE PLAN
	C4	PRELIMINARY GRADING SECTIONS
	C5	PRELIMINARY STORM WATER MANAGEMENT PLAN
	C6	PRELIMINARY UTILITY PLAN

ARCHITECTURAL	A1.0	OVERALL SITE PLAN
	A1.1	EXISTING & DEMO SITE PLAN
	A1.2	FENCE PLAN
	A1.3	STREET VIEW ELEVATIONS & DETAILS
	A2.1	FLOOR & ROOF PLAN (LOTS 1-4)
	A2.2	FLOOR & ROOF PLAN (LOTS 5-10)
	A3.1	EXT. ELEVATIONS & MATERIALS (LOTS 1-4)
	A3.2	EXT. ELEVATIONS & MATERIALS (LOTS 1-4)
	A3.3	EXT. ELEVATIONS & MATERIALS (LOTS 5-10)
	A3.4	EXT. ELEVATIONS & MATERIALS (LOTS 5-10)

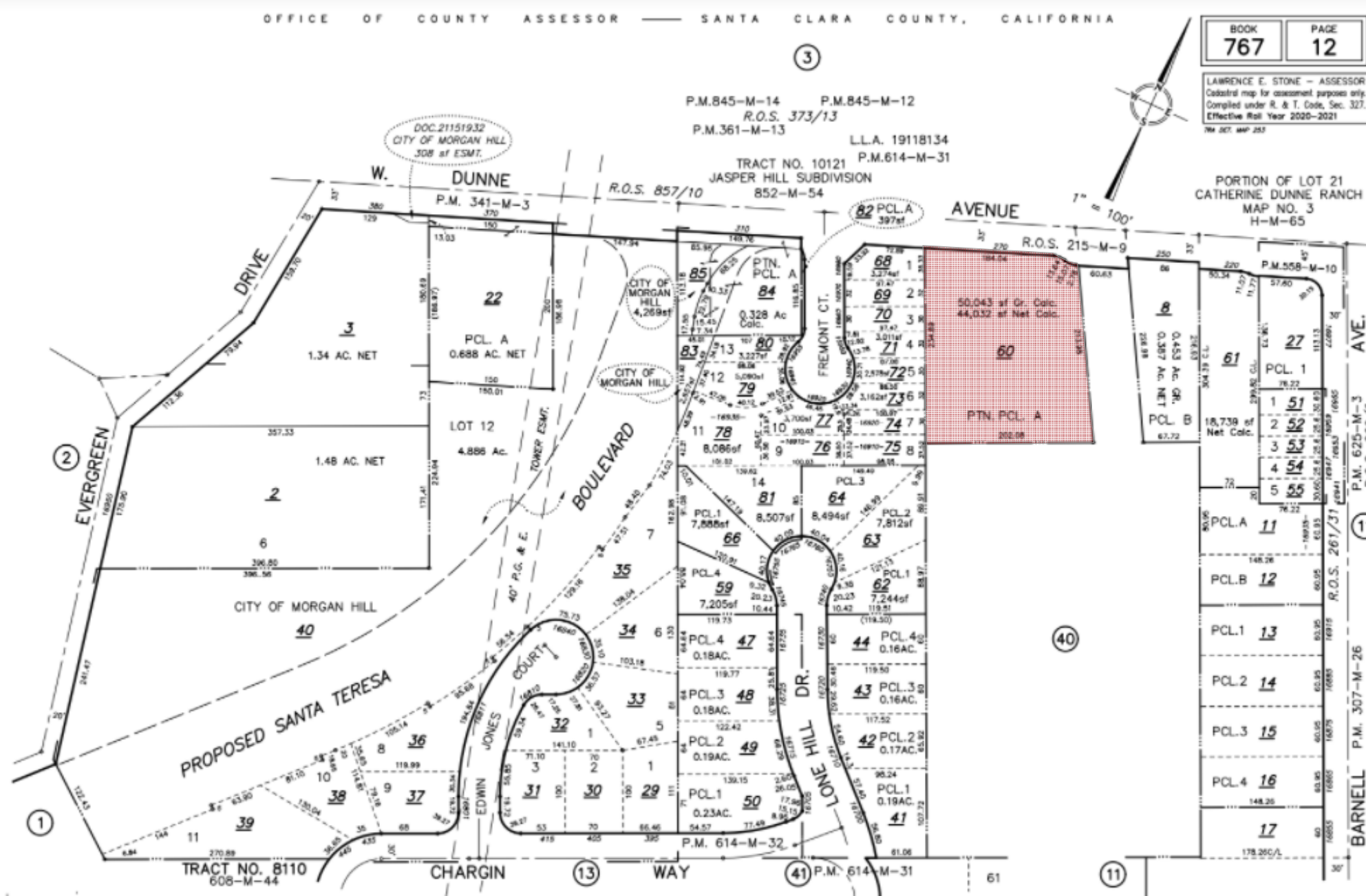
STRUCTURAL	NONE
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MECHANICAL	NONE
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ELECTRICAL	E1.0	ELECTRICAL COVER SHEET
	E2.0	PHOTOMETRICS PLAN

LANDSCAPE	L1.1	LANDSCAPE NOTES
	L1.2	LANDSCAPE PLAN
	L1.3	LANDSCAPE DETAILS
	L2.1	IRRIGATION NOTES AND CALS
	L2.2	IRRIGATION PLAN
	L2.3	IRRIGATION DETAILS

APN MAP



SYMBOLS

—	DESCRIBES AN "AREA" OR "FIELD"
RM NAME	ROOM NAME
101	ROOM NUMBER
1	ELEVATION
A3.1	Elevation Reference Number
1	Sheet Number when shown
1	SECTION
A4.1	Section Reference Number
1	Sheet Number when shown
1	ROOM ELEVATION
A5.1	Detail Reference Number
1	Elevation Reference Number
2	Sheet Number where shown
1	TYPICAL DETAIL
A7.1	Detail Reference Number
1	Sheet Number where shown
1	PHOTO REFERENCE
A1.1	Direction Indicator
1	Detail Reference Number
1	Sheet Number where shown
A	TYPICAL COLUMN or SHEAR LINE
A	Column or Shear Line Designation
—	Center Line of Column or Shear Wall
TRUE NORTH	NORTH REF.
NORTH ARROW	

CONTACTS

OWNER	RICARD & BARBARA BORELLO PO BOX 448 GENOA NV 89411 PHONE: 1 (408) 832-5925 EMAIL: david@drpbldrs.com
BUILDER	DRP BUILDERS, INC. PO BOX 6644 GENOA, NV 89411 ATTN: DAVID ROBERTSON PHONE: 1 (408) 683-4221 EMAIL: david@drpbldrs.com
CIVIL	MH ENGINEERING 16075 VINEYARD BLVD. MORGAN HILL, CA 95037 ATTN: HARRY SINGLA PHONE: 408-779-7381
ARCHITECT / LANDSCAPE	WESTON MILES ARCHITECTS, INC. 17500 DEPOT STREET, SUITE #200 MORGAN HILL, CA 95037 ATTN: CHARLES WESTON PHONE: 1-408-779-6686 EMAIL: charles@wmarchitects.com

OCCUPANCY TYPE:	R-3
NUMBER OF STORIES:	2
TYPE OF CONSTRUCTION:	V-B
ZONING	84C-3.500
APN #	767-12-060
SITE ACREAGE	1.15

SQUARE FOOTAGE:	
LOTS 1, 4, 6, 7 & 9	
FIRST FLOOR	975 SF
SECOND FLOOR	1,136 SF
GARAGE	433 SF
TOTAL	2,544 SF

LOTS 2, 3, 5, 8 & 10	
FIRST FLOOR	975 SF
SECOND FLOOR	1,096SF
GARAGE	433 SF
TOTAL	2,504 SF

40% MAXIMUM ENTIRE SITE LOT COVERAGE PER MHMC 18.40.060.A.2

40% OF <E> LOT SQ FT. 50,094 = 20,037 SF ALLOWABLE LOT COVERAGE

TOTAL BUILDING COVERAGE 14,080 < 20,037 THEREFORE OK

50% MAXIMUM BUILDING COVERAGE PER LOT PER MHMC 18.40.05

LOT 1 AREA:
3,198 SF / 2 = 1,598 > 1,408 BUILDING COVERAGE THEREFORE OK

LOT 2 AREA:
3,266 SF / 2 = 1,633 > 1,408 BUILDING COVERAGE THEREFORE OK

LOT 3 AREA:
3,417 SF / 2 = 1,708 > 1,408 BUILDING COVERAGE THEREFORE OK

LOT 4 AREA:
3,378 SF / 2 = 1,689 > 1,408 BUILDING COVERAGE THEREFORE OK

LOT 5 AREA:
3,111 SF / 2 = 1,555 > 1,408 BUILDING COVERAGE THEREFORE OK

LOT 6-9 AREA:
3,013 SF / 2 = 1,506 > 1,408 BUILDING COVERAGE THEREFORE OK

LOT 10 AREA:
4218 SF / 2 = 2,109 > 1,408 BUILDING COVERAGE THEREFORE OK

CODE COMPLIANCE

ALL WORK & MATERIAL SHALL BE PERFORMED & INSTALLED IN COMPLIANCE WITH THE FOLLOWING CODES AS ADOPTED AND AMENDED BY THE GOVERNING JURISDICTION. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CALIFORNIA CODES.

- 2022 CALIFORNIA ADMINISTRATIVE CODE, PART 1, TITLE 24 CCR
- 2022 CALIFORNIA BLDG CODE (CBC), PART 2, TITLE 24, CCR (2018 INTERNATIONAL BLDG CODE VOL. 1-2 AND 2019 CA AMENDMENTS)
- 2022 CALIFORNIA ELECTRICAL CODE (CEC), PART 3, TITLE 24 CCR (2017 NATIONAL ELECTRICAL CODE AND 2019 CA AMENDMENTS)
- 2022 CALIFORNIA MECHANICAL CODE (CMC), PART 4, TITLE 24 CCR (2018 UNIFORM MECHANICAL CODE AND 2019 CA AMENDMENTS)
- 2022 CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24 CCR (2018 UNIFORM PLUMBING CODE AND 2019 CA AMENDMENTS)
- 2022 CALIFORNIA ENERGY CODE (CEC), PART 6, TITLE 24 CCR
- 2022 CALIFORNIA FIRE CODE (CFC), PART 9, TITLE 24 CCR (2018 INTERNATIONAL FIRE CODE AND 2019 CA AMENDMENTS)
- 2022 CALIFORNIA GREEN BUILDING STANDARDS CODE, PART 11, TITLE 24 CCR
- 2022 CALIFORNIA REFERENCED STANDARDS, PART 12, TITLE 24 CCR.
- TITLE 19 CCR, PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS

2010 AMERICANS W/DISABILITIES ACT (ADA) STANDARDS FOR ACCESSIBLE DESIGN

2022 NFPA 13, INSTALLATION OF AUTOMATIC SPRINKLER SYST. (CA AMENDED)

2019 NFPA 14, INSTALLATION OF STANDPIPE & HOLD SYSTEMS (CA AMENDED)

2021 NFPA 17, DRY CHEMICAL EXTINGUISHING SYSTEMS

2021 NFPA 17A, WET CHEMICAL EXTINGUISHING SYSTEMS

2022 NFPA 20, INSTALLATION OF STATIONARY PUMPS FOR FIRE PROTECTION

2023 NFPA 22, WATER TANKS FOR PRIVATE FIRE PROTECTION

2022 NFPA 24, INSTALLATION OF PRIVATE FIRE SERVICE MAINS & THEIR APPURTENANCES (CA EDITION)

2023 NFPA 25, INSPECTION, TESTING, MAINTENANCE OF WATER-BASED FIRE PROTECTION SYSTEMS (CA AMENDED)

2019 NFPA 72, NATIONAL FIRE ALARM CODE (CA AMENDED; SEE UL STD 1071 FOR "VISUAL DEVICES")

2022 NFPA 80, FIRE DOORS AND OTHER OPENING PROTECTIVES

2022 NFPA 110, EMERGENCY AND STANDBY POWER SYSTEMS

2021 NFPA 170, STANDARD FOR FIRE SAFETY & EMERGENCY SYMBOLS

2022 NFPA 2001, CLEAN AGENT FIRE EXTINGUISHING SYSTEMS

SFM 12-10-1, POWER OPERATED EXIT DOORS

SFM 12-10-2, SINGLE POINT LATCHING OR LOCKING DEVICES

SFM 12-10-3, EMERGENCY EXIT & PANIC HARDWARE

UL 38, MANUAL OPERATING SIGNAL BOXES (2008 EDITION)

UL 268, SMOKE DETECTORS FOR FIRE PROTECTIVE SIGNALING SYSTEMS (2021 EDITION)

UL 268A, SMOKE DETECTORS DUCT APPLICATIONS (2008 EDITION)

UL 300, FIRE TESTING OF FIRE EXTINGUISHING SYST. FOR PROTECTION OF RESTAURANT COOKING AREAS (2019 EDITION)

UL 305, PANIC HARDWARE (2012 EDITION)

UL 464, AUDIBLE SIGNAL APPLICATIONS (2016 EDITION)

UL 521, HEAT DETECTORS FOR FIRE PREVENTING SIGNALING SYSTEM (1999 EDITION)

UL 864, CONTROL UNITS FOR FIRE PROTECTIVE SIGNALING SYSTEMS (2014 EDITION)

CCR TITLE 8, DIVISION 1, CHAPTER 4, SUBCHAPTER 6, ELEVATOR SAFETY ORDERS, COMMENCING WITH SECTION 3094.2.

ASME A17.1 - 2019 (W/A17.1A/CSA B44A-08 ADDENDA) SAFETY CODE FOR ELEVATORS AND ESCALATORS.

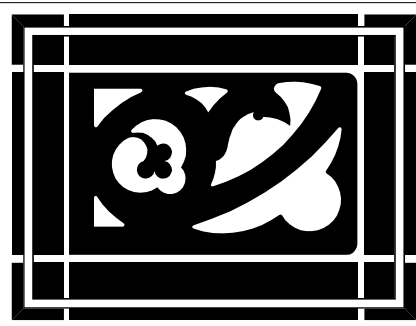
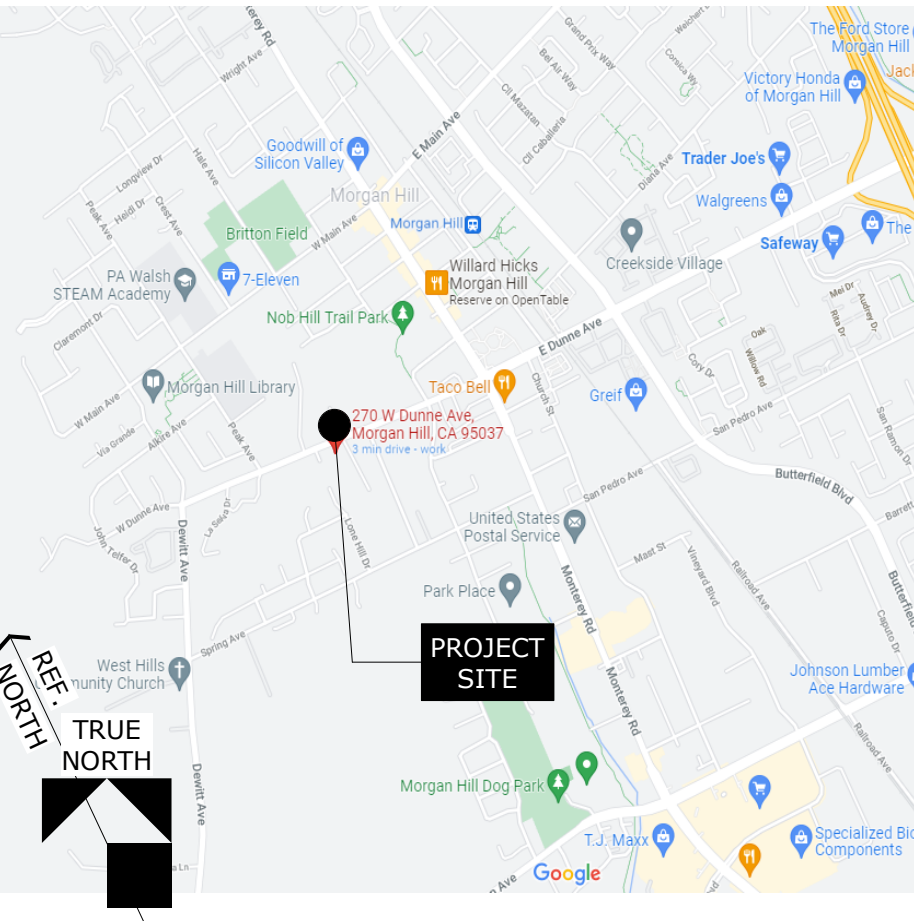
ASME A18.1 - 2021, SAFETY STANDARD FOR PLATFORM LIFTS AND STAIRWAY CHAIRLIFTS, COMMENCING WITH SECTION 2.

ICC 300-2017 STANDARD FOR BLEACHERS, FOLDING AND TELSCOPIC SEATING AND GRANDSTANDS

COMPLIANCE WITH CFC CHAPTER 33 "FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION" WILL BE ENFORCED.

EMERGENCY VEHICLE ACCESS ROADS AND ON SITE FIRE HYDRANTS SHALL BE IN SERVICE AND OPERABLE PRIOR TO LOADING THE SITE WITH COMBUSTABLE MATERIALS.

VICINITY MAP



WESTON MILES
ARCHITECTS

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Morgan Hill, CA 95037
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REVISIONS

1	03/08/2023	RESUBMITTAL #1
2	7/3/2023	RESUBMITTAL #2
3	8/15/2023	RESUBMITTAL #3

TITLE SHEET

270 WEST DUNNE AVE TOWNHOMES

DRP BUILDERS, INC.
270 WEST DUNNE, MORGAN HILL, CA 95037

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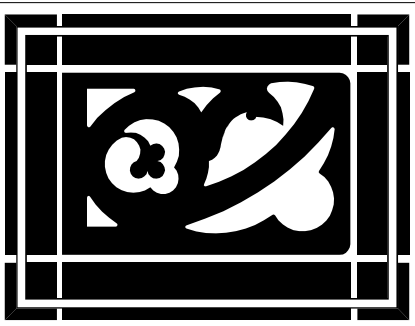
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DATE: 03/07/2023

JOB NO: 21014

A0.1



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NOT VALID WITHOUT SIGNATURE

REVISIONS

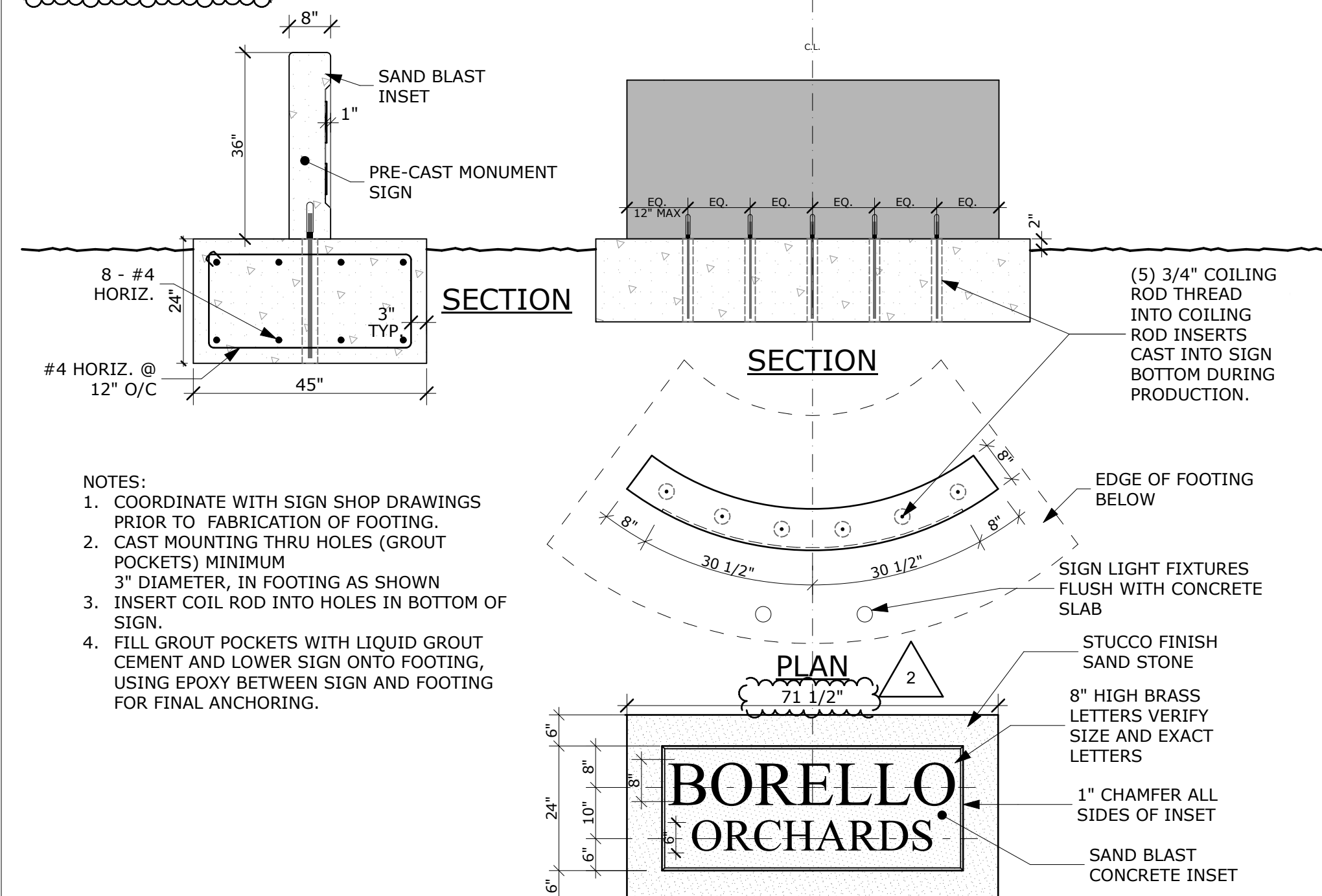
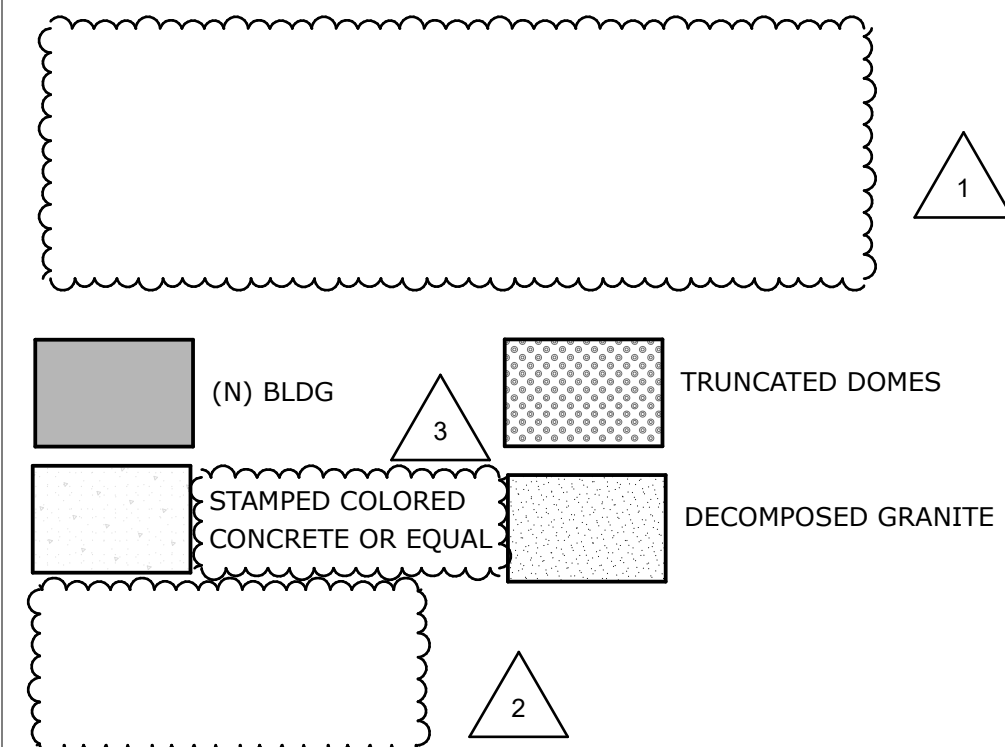
1	03/08/2023	RESUBMITTAL #1
2	7/3/2023	RESUBMITTAL #2
3	8/15/2023	RESUBMITTAL #3

KEY NOTES

- 01 UNDERGROUND WATER RETENTION SYSTEM SEE CIVIL DRAWINGS
- 02 6' RETAINING WALL- SEE CIVIL DRAWINGS
- 03 AT GRADE SIGNAGE LIGHTING FIXTURES
- 04 PAINT "STOP" IN 8" WHITE LETTERS WITH 1" PAINTED WHITE BAND THAT EXTENDS THE WIDTH OF LANE AT NEW STOP SIGN
- 05 NEW STREET LIGHT
- 06 NEW FIRE HYDRANT SEE CIVIL
- 07 COMBINATION STOP SIGN AND STREET NAME SIGN
- 08 VITAL CLUSTER MAILBOX W/ 12 UNIT MAILBOXES AND 1 PARCEL R W/ SANDSTONE FINISH
- 09 NEW SIGNAGE SEE DETAIL 2/A1.0
- 10 FIRE TRUCK TURNAROUND PER CITY STANDARD 11-E
- 12 NONE
- 13 TREX EQUIPMENT SCREEN
- 14 BIKE RACK
- 15 CLEAR VISION TRIANGLE
- 16 TRASH AND RECYCLING STORAGE AREAS
- 17 PARK BENCH

SYMBOL LEGEND

- PROPERTY LINE
- PROPERTY EASMENT LINE SCD
- >< FENCE
- (N) FENCE SEE FENCE PLAN ON 1/A1.2



- NOTES:
1. COORDINATE WITH SIGN SHOP DRAWINGS PRIOR TO FABRICATION OF FOOTING.
 2. CAST MOUNTING THRU HOLES (GROUT POCKETS) MINIMUM 3" DIAMETER, IN FOOTING AS SHOWN
 3. INSERT COIL ROD INTO HOLES IN BOTTOM OF SIGN.
 4. FILL GROUT POCKETS WITH LIQUID GROUT CEMENT AND LOWER SIGN ONTO FOOTING, USING EPOXY BETWEEN SIGN AND FOOTING FOR FINAL ANCHORING.

ALTERNATIVE MEDIUM DENSITY
RESIDENTIAL DEVELOPMENT
STANDARDS

Space Per Lot	3,000— 4,356
Private Open Space [1]	300 sq. ft.
Common Open Space	175 sq. ft.

TEABLE 18.40-4
SCALE: 1' = 1'-0"

	Duet
Lot Width (min)	30 ft.
Lot Depth (min)	85 ft.
Lot Coverage (max) [3]	50%
Floor Area Ratio (max)	N/A
Height	
Setbacks	
Front [4]	10 ft.
Interior Side	3 ft. [5]
Street Side	6 ft.
Rear	10 ft.

TABLE 18.40-2
SCALE: 1' = 1'-0"

OVERALL SITE PLAN
270 WEST DUNNE AVE TOWNHOMES
DRP BUILDERS, INC.
270 WEST DUNNE, MORGAN HILL, CA 95037

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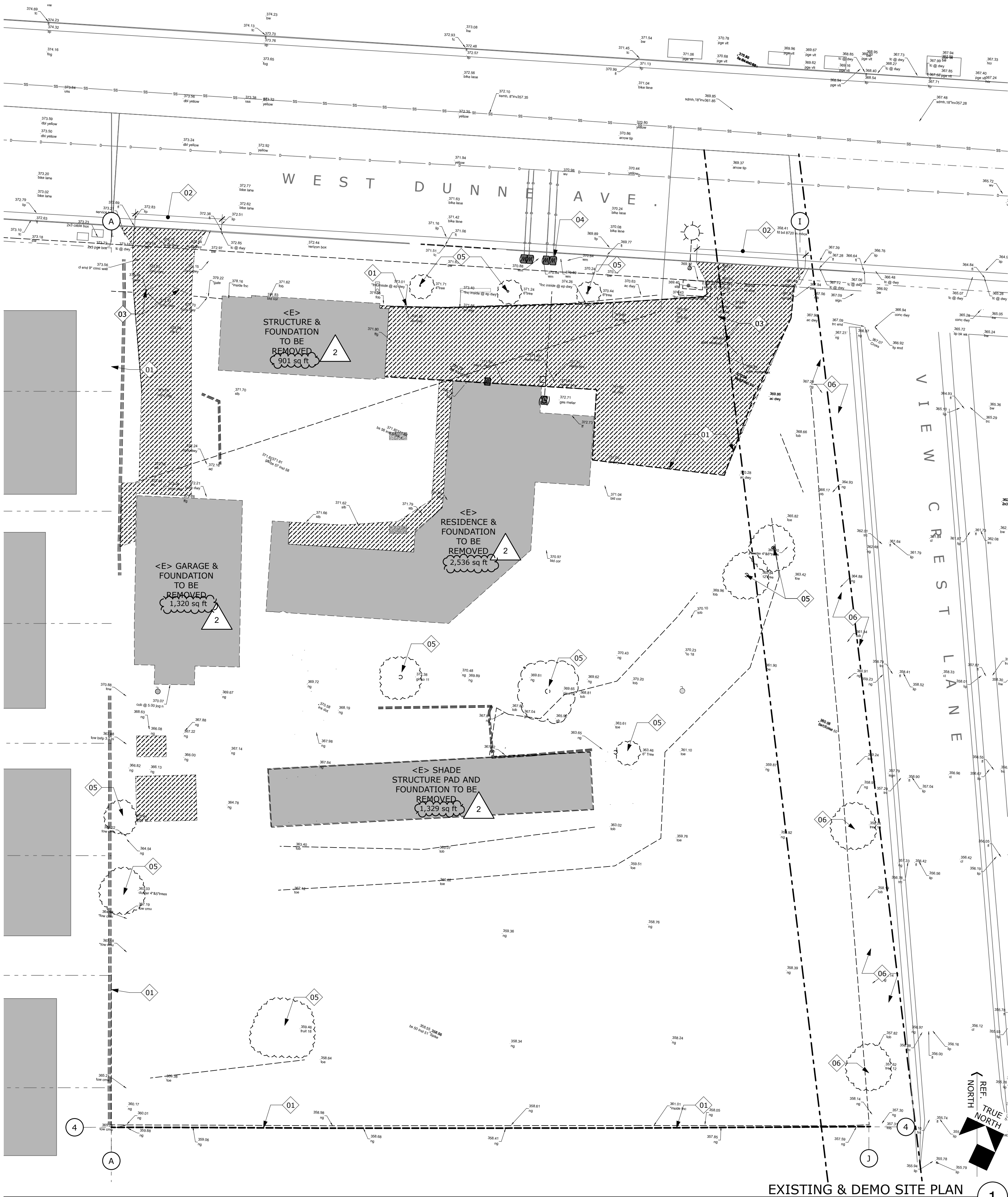
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A1.0



EXISTING & DEMO SITE PLAN

SCALE: 1/16" = 1'-0"

GENERAL NOTES

- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE FOLLOWING:
 - APPLICABLE SECTIONS OF THE STATE OF CALIFORNIA'S DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, LATEST EDITION, HEREINAFTER CALLED "CALTRANS";
 - CALIFORNIA PLUMBING CODE AND CALIFORNIA BUILDING CODE PROVISIONS;
 - AWWA STANDARD SPECIFICATIONS;
 - CITY/COUNTY DESIGN STANDARDS WHERE APPLICABLE;
 - STANDARDS OF THE UNITED STATES DEPARTMENT OF LABOR, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION, OFFICE OF STANDARDS AND RULES OF THE STATE DIVISION OF INDUSTRIAL SAFETY;
 - THESE PLANS AND DETAILS SHOWN HEREON. WHERE CONFLICTS EXIST BETWEEN ANY OF THE ABOVE LISTED SPECIFICATIONS THE MOST STRINGENT SPECIFICATION SHALL PREVAIL.
- CONTRACTOR SHALL VERIFY LOCATION OF ALL <E> ABOVE GROUND UTILITIES AND PROVIDE FOR THEIR TEMPORARY DISCONNECTION, PROTECTION, REMOVAL AND/ OR STORAGE AS MAY BE REQUIRED DURING CONSTRUCTION. CONTRACTOR SHALL COORDINATE WITH THE COUNTY/DISTRICT TO DETERMINE WHETHER TEMPORARY SERVICES ARE NECESSARY.
- ALL SPOILS, DEBRIS, AND INCIDENTAL ITEMS SHALL BE HAULED OFF SITE BY CONTRACTOR AND BE DISPOSED OF IN A LAWFUL MANNER AS IT ACCUMULATES.
- CONTRACTOR SHALL TAKE CARE NOT TO DAMAGE IN ANY WAY, ANY EXISTING ELEMENTS NOT DESIGNATED FOR REMOVAL. SUCH DAMAGE IS THE RESPONSIBILITY OF THE CONTRACTOR AT NO ADDITIONAL COST TO THE COUNTY/DISTRICT.
- COORDINATE SHUT-OFF OF ALL UTILITIES PRIOR TO ANY DEMOLITION.
- CONTRACTOR IS TO PROTECT AND KEEP <E> TREES NOT MARKED FOR RELOCATION OR REMOVAL.
- THE SITE MUST BE CLEANED AT THE END OF EACH BUSINESS DAY.
- CONTRACTOR TO MAINTAIN A SAFE, SECURE SITE.
- THIS DRAWING IS TO OUR BEST KNOWLEDGE AND REFLECTS THE <E> SITE CONDITIONS.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SECURE ALL PERMITS NECESSARY TO PERFORM THE WORK, INCLUDING BUT NOT LIMITED TO WORK IN THE PUBLIC RIGHT-OF-WAY, TREE REMOVAL, AND UTILITY MODIFICATIONS.
- ALL KNOWN EXISTING UTILITY LINES ARE SHOWN FOR INFORMATION ONLY. CONTRACTOR SHALL EXERCISE ALL NECESSARY CAUTION TO AVOID DAMAGE TO ANY EXISTING UTILITY LINES OR FACILITIES TO REMAIN IN PLACE. WHETHER OR NOT SUCH LINES OR FACILITIES ARE SHOWN ON THESE PLANS, AND SHALL BEAR FULL RESPONSIBILITY FOR ANY DAMAGE THERETO. CONTRACTOR IS ADVISED TO CONTACT UNDERGROUND SERVICE ALERT (USA) AT (800) 642-2444 OR A PRIVATE UNDERGROUND LOCATER SERVICE (AT CONTRACTOR'S EXPENSE) AND THE AFFECTED UTILITY COMPANY FOR MARKING UNDERGROUND LINES PRIOR TO BEGINNING WORK.
- TO REDUCE CONSTRUCTION DUST THESE CONTROL MEASURES SHALL BE REQUIRED DURING DEMOLITION/CONSTRUCTION
 - WATER ALL ACTIVE CONSTRUCTION AREAS AT LEAST TWICE DAILY
 - COVER ALL TRUCKS HAULING SOIL, SAND, OR LOOSE MATERIALS OR REQUIRE ALL TRUCKS TO MAINTAIN AT LEAST TWO FEET OF FREEBOARD.
 - SWEEP STREET DAILY (WITH WATER SWEEPERS) IF VISIBLE SOIL MATERIAL IS CARRIED INTO ADJACENT PUBLIC STREETS.
 - ENCLOSE, COVER, WATER TWICE DAILY OR APPLY NON-TOXIC SOIL BINDERS TO EXPOSED STOCKPILES (DIRT, SAND, ETC.)

DEMOLITION KEY NOTES

- 01 <E> FENCE & FOOTINGS TO BE REMOVED & DISCARDED
- 02 <E> DRIVEWAY TO BE REMOVED AND REPLACED WITH SIDEWALK/CURB/GUTTER PER CITY STANDARDS
- 03 <E> (4) METERS TO BE REMOVED. SEE CIVIL FOR NEW LOCATIONS AND UNDERGROUNDING
- 04 <E> GATE AND FOOTINGS TO BE REMOVED. GATE OPENER TO BE GIVEN TO ARCHITECT
- 05 <E> TREE AND ROOTBALL TO BE REMOVED
- 06 <E> LANDSCAPING AND TREES TO REMAIN. PROTECT DURING DEMOLITION AND CONSTRUCTION

SYMBOL LEGEND

- PROPERTY LINE
- - - ITEMS TO BE DEMOLISHED
- [Hatched Box] <E> STRUCTURE AND FOUNDATION TO BE REMOVED
- [Hatched Box] <E> PAVING TO BE REMOVED

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Morgan Hill, CA 95037
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REVISIONS	
1	03/08/2023 RESUBMITTAL #1
2	7/3/2023 RESUBMITTAL #2
3	8/15/2023 RESUBMITTAL #3

EXISTING & DEMO SITE PLAN
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DRP BUILDERS, INC.
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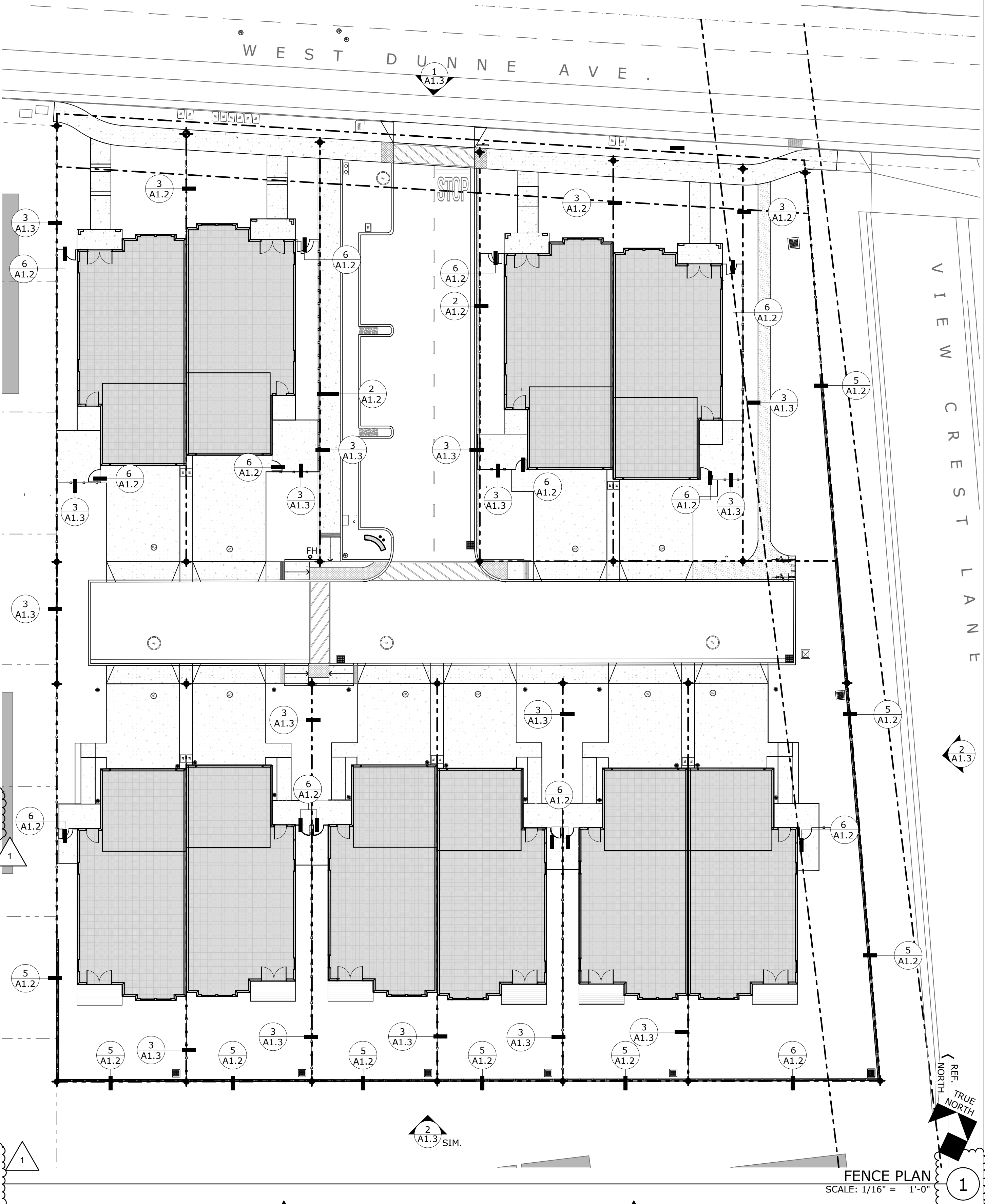
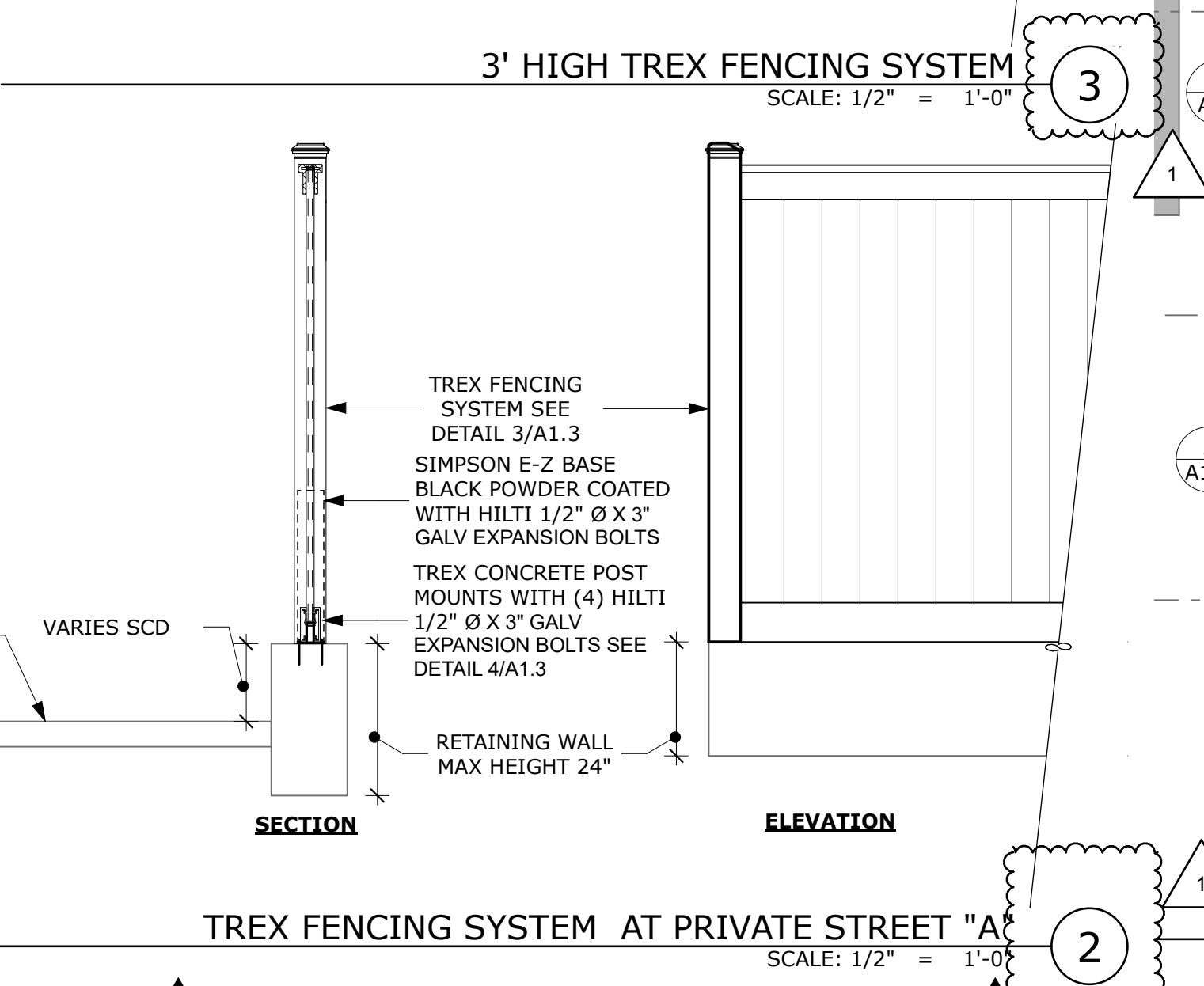
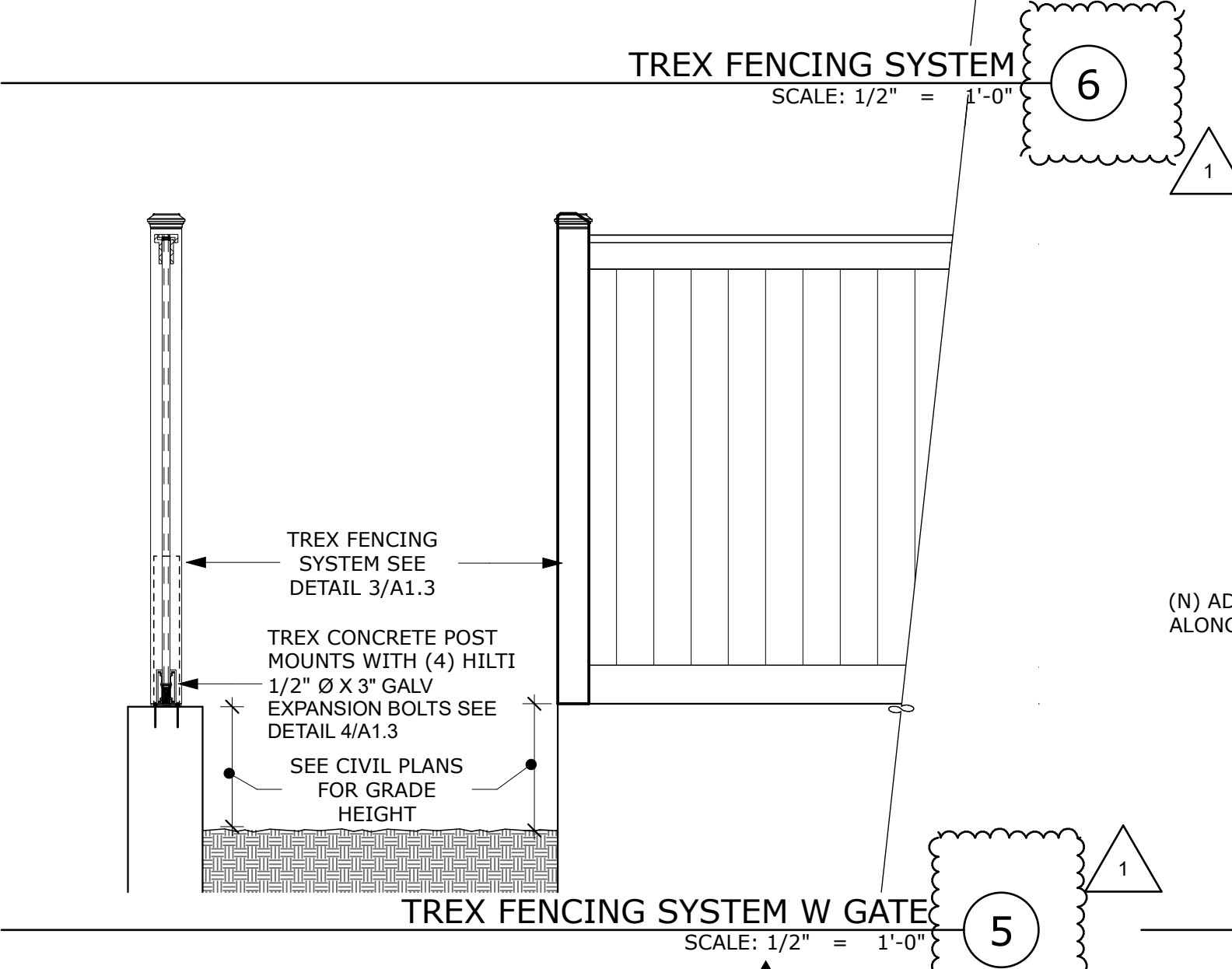
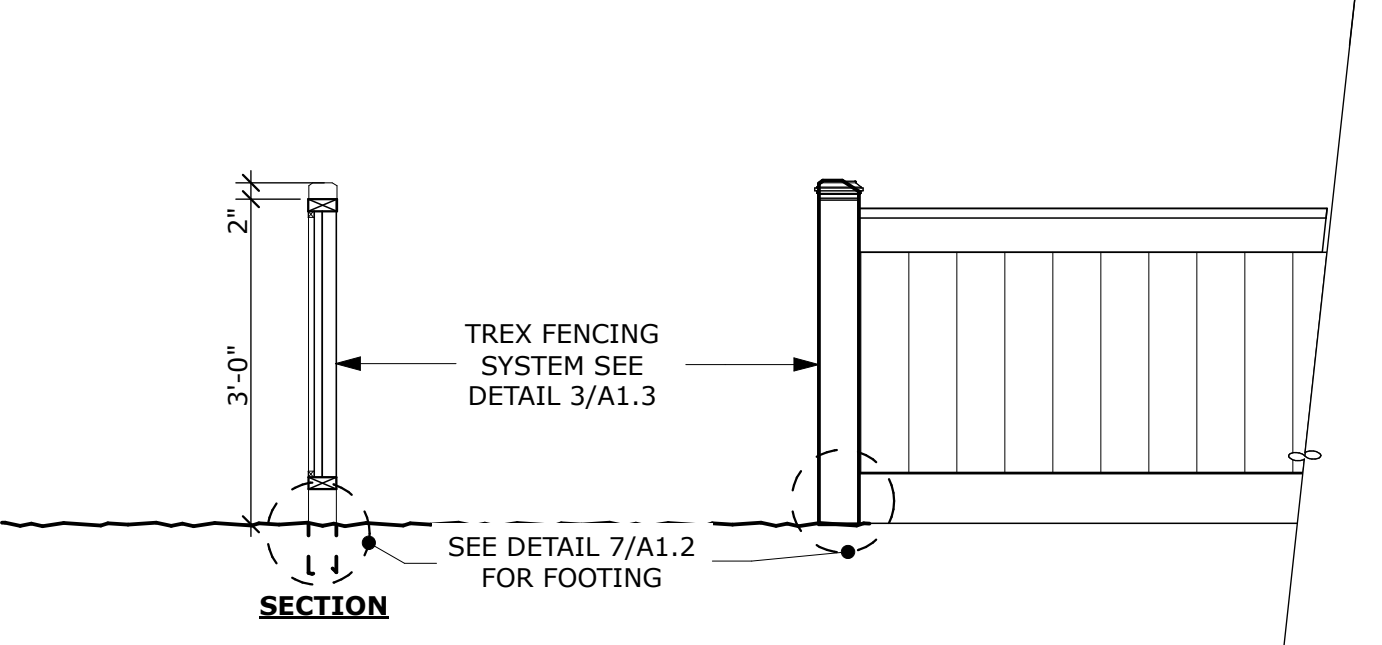
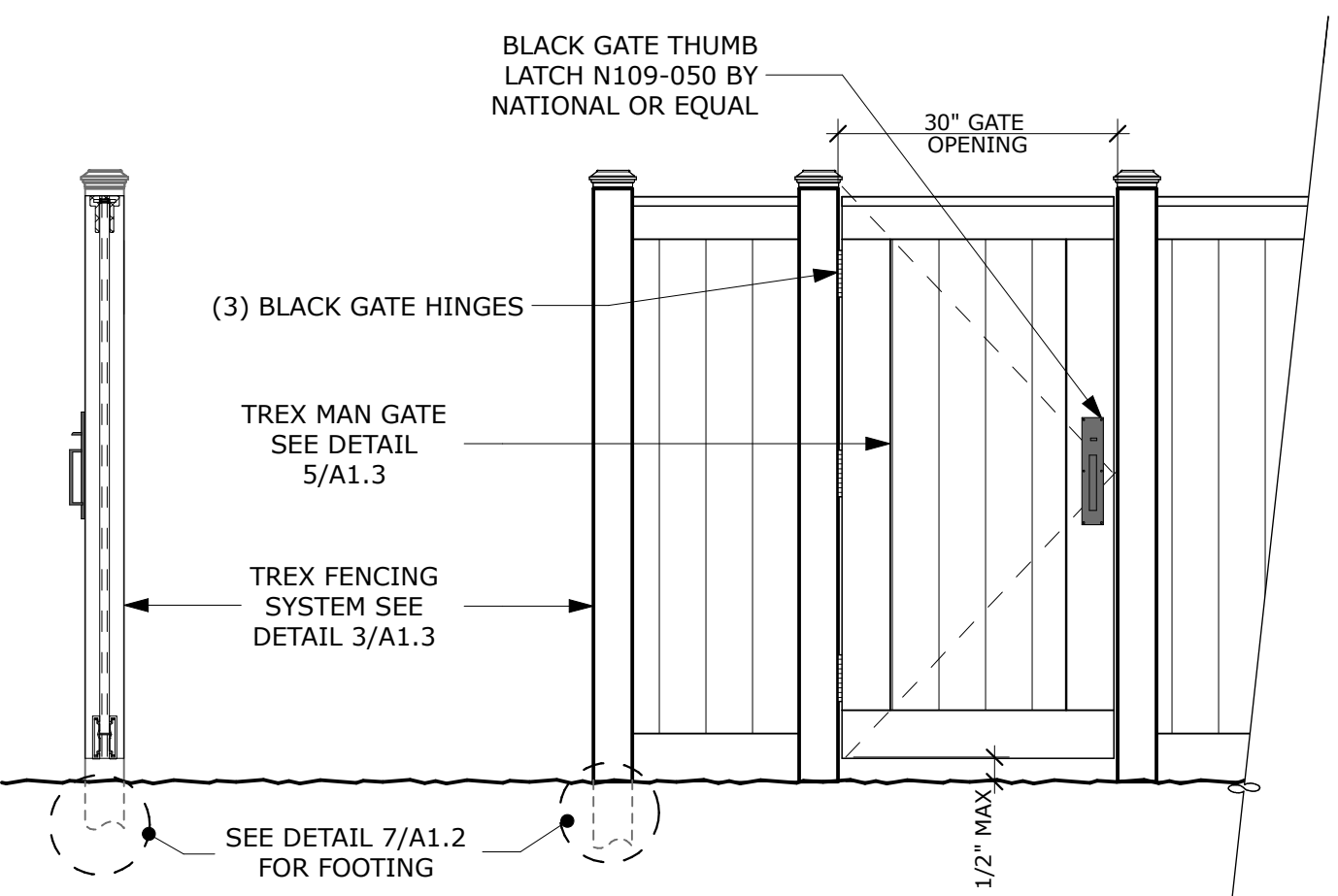
A1.1



NOTE:
ALL EXTERIOR MECHANICAL AND ELECTRICAL EQUIPMENT SHALL BE SCREENED WITHIN FENCE OR INCORPORATED INTO THE DESIGN OF BUILDINGS SO AS NOT TO BE VISIBLE FROM THE PUBLIC-RIGHT-OF-WAY. COMMON AREAS EQUIPMENT TO BE SCREENED INCLUDES, BUT IS NOT LIMITED TO, AIR CONDITIONERS, HEATERS, UTILITY METERS, CABLE EQUIPMENT, TELEPHONE, ENTRY BOXES, BACKFLOW PREVENTIONS, IRRIGATION CONTROL VALVES, ELECTRICAL TRANSFORMERS, PULL BOXES, AND ALL DUCTING FOR AIR CONDITIONING, HEATING, AND BLOWER SYSTEMS. THERE IS TO BE NO ALL ROOF MOUNTED EQUIPMENT ON THIS PROJECT.



REVISIONS	
1	03/08/2023 RESUBMITTAL #1
2	7/3/2023 RESUBMITTAL #2
3	8/15/2023 RESUBMITTAL #3



FENCE PLAN
270 WEST DUNNE AVE TOWNHOMES
DRP BUILDERS, INC.
270 WEST DUNNE, MORGAN HILL, CA 95037

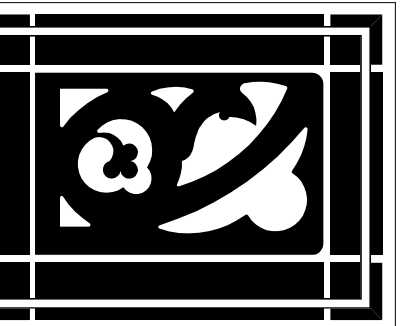
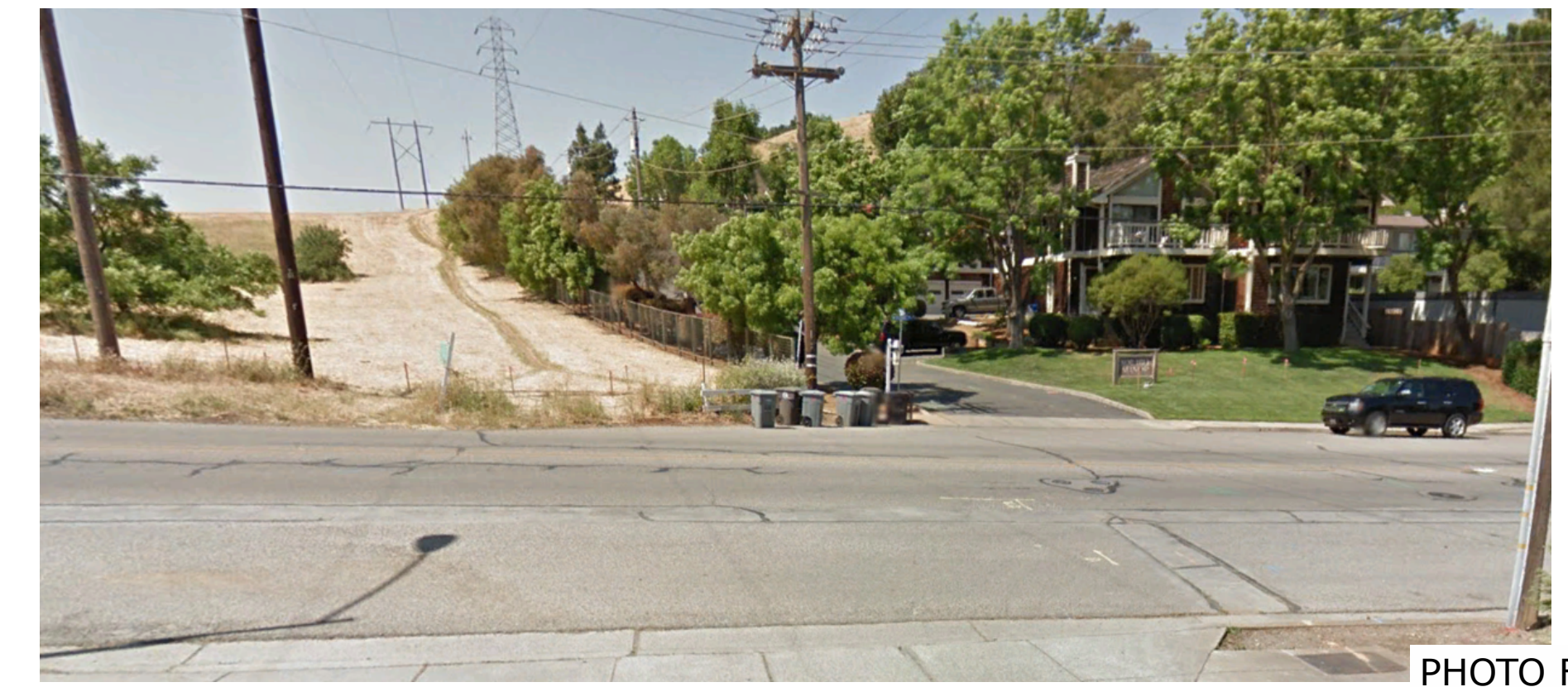
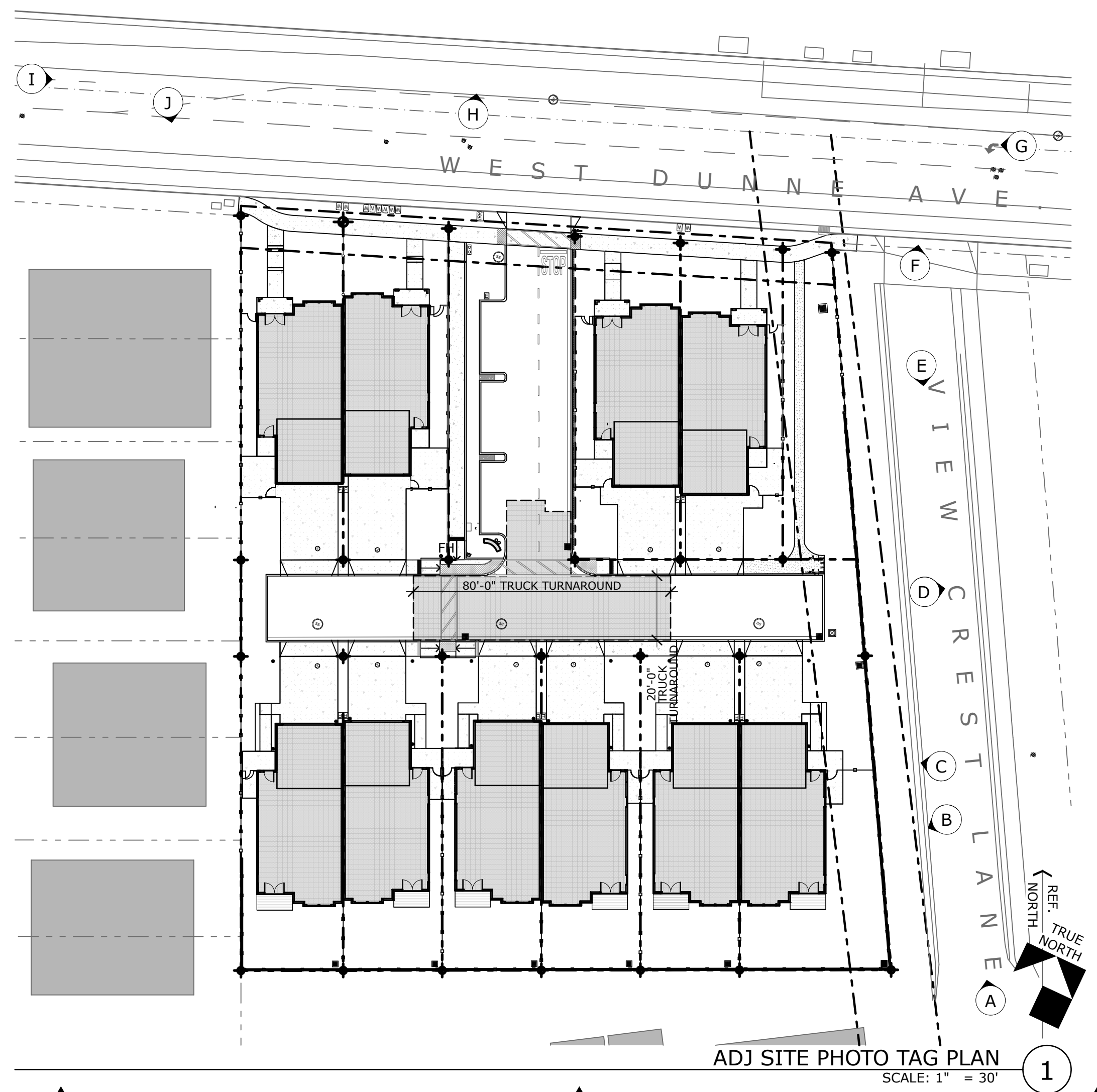
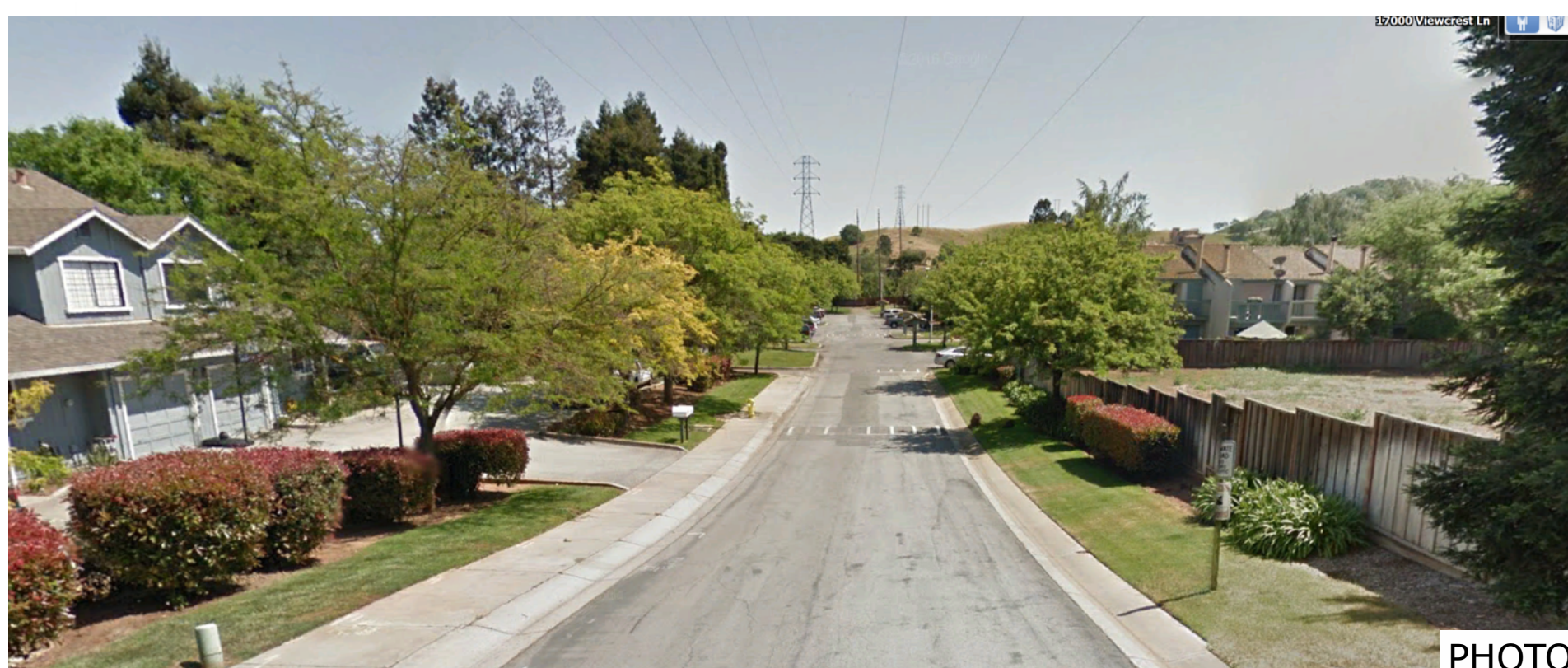
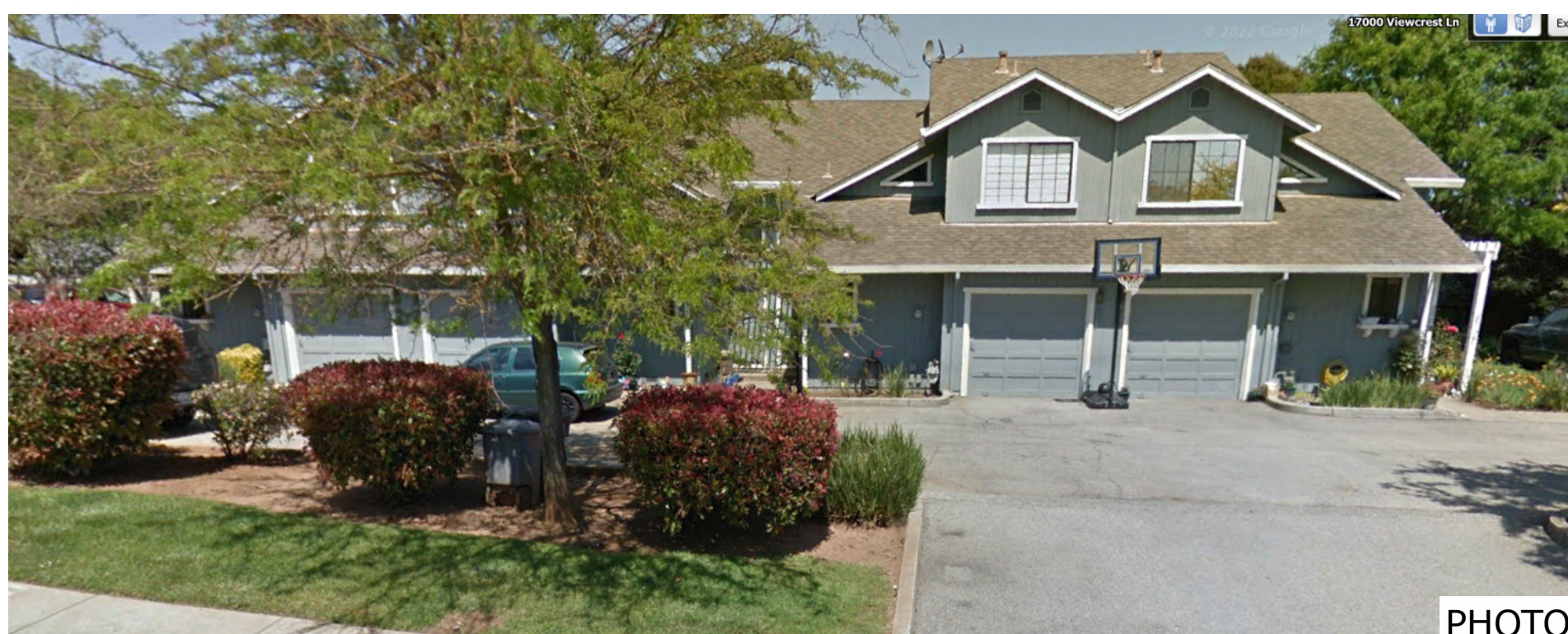
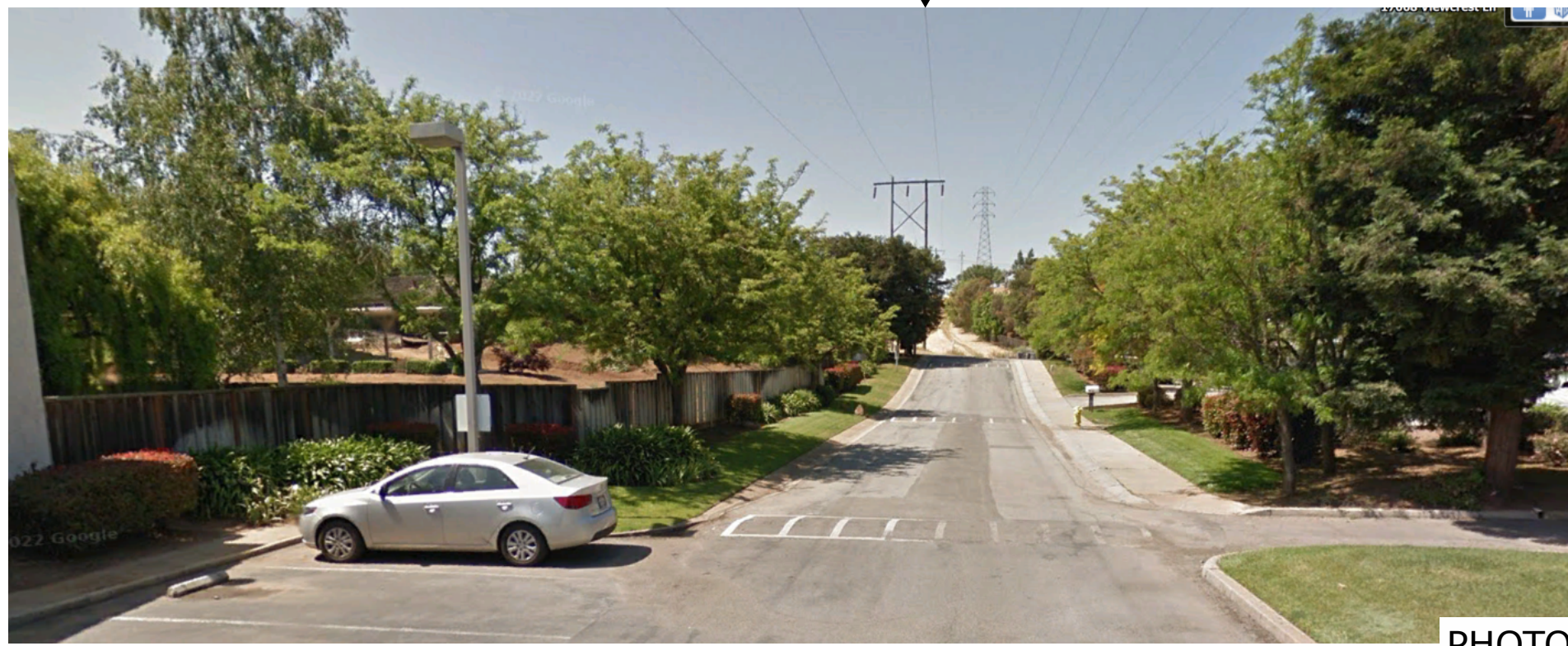
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JOB NO: 21014

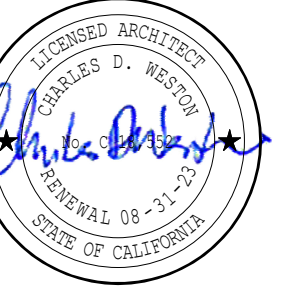
A1.2



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REVISIONS

1 03/08/2023
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2 7/3/2023
RESUBMITTAL #2

3 8/15/2023
RESUBMITTAL #3

ADJACENT SITE PHOTOS

270 WEST DUNNE AVE TOWNHOMES

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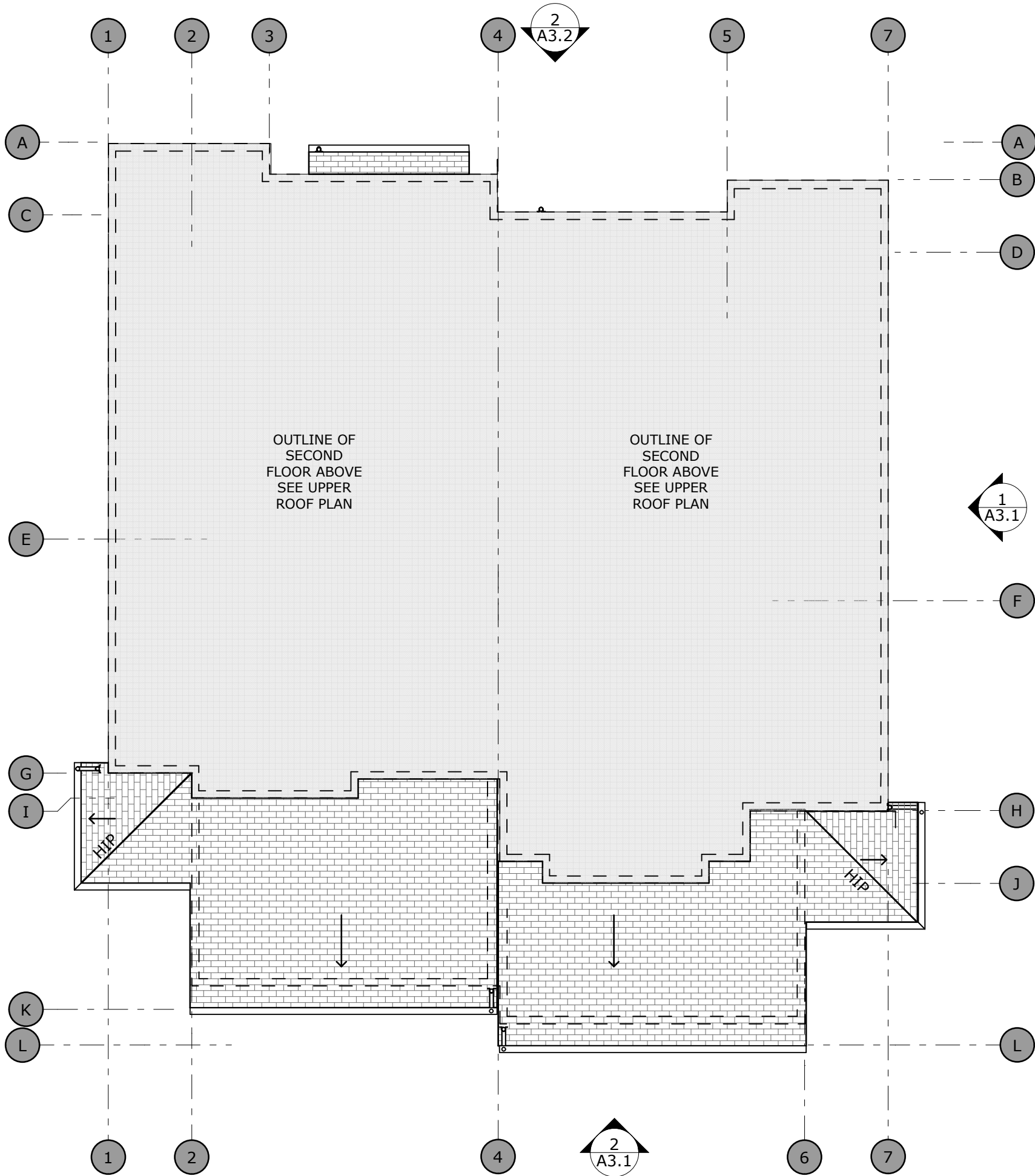
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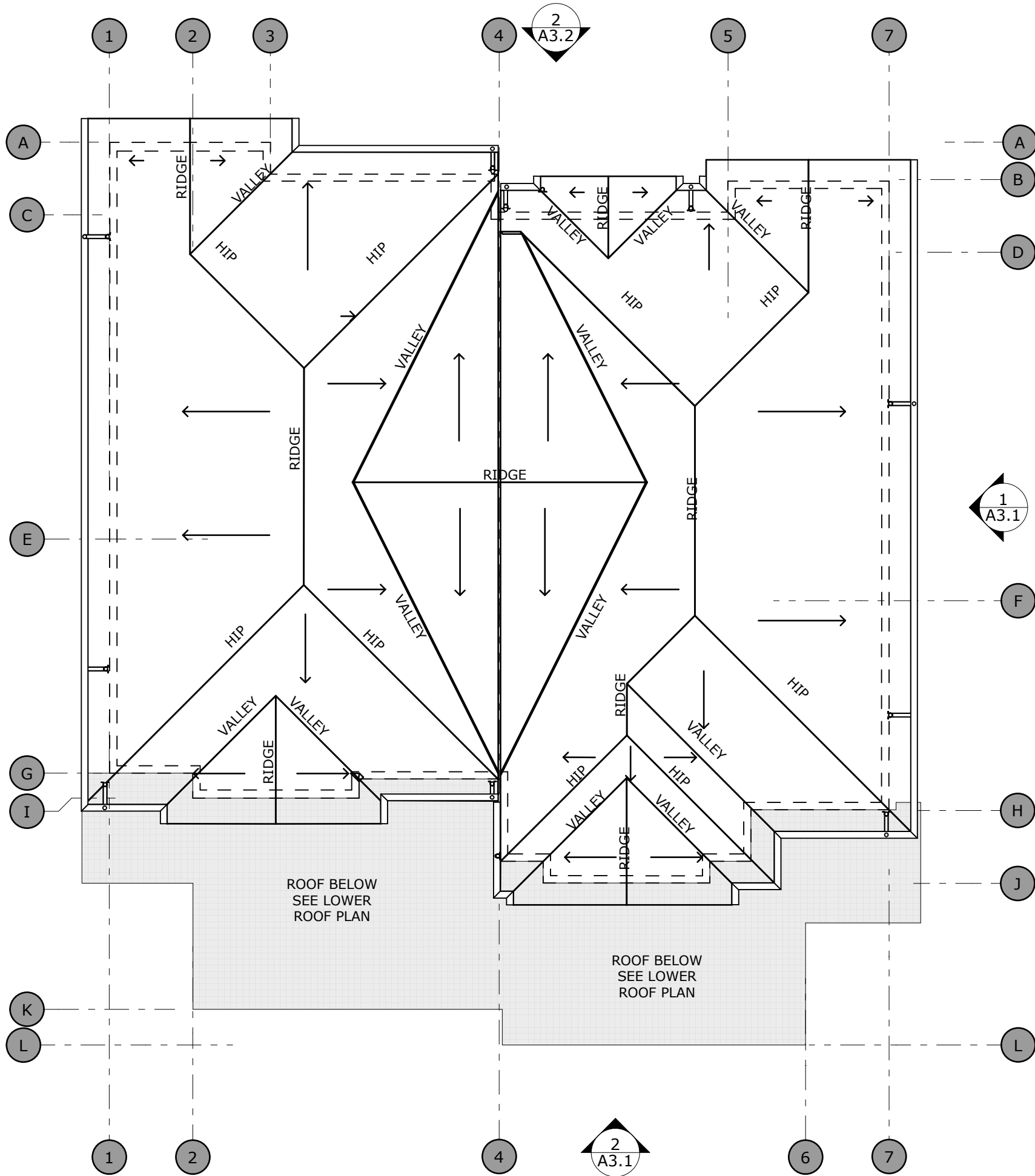
B NO: 31014 

A1.4



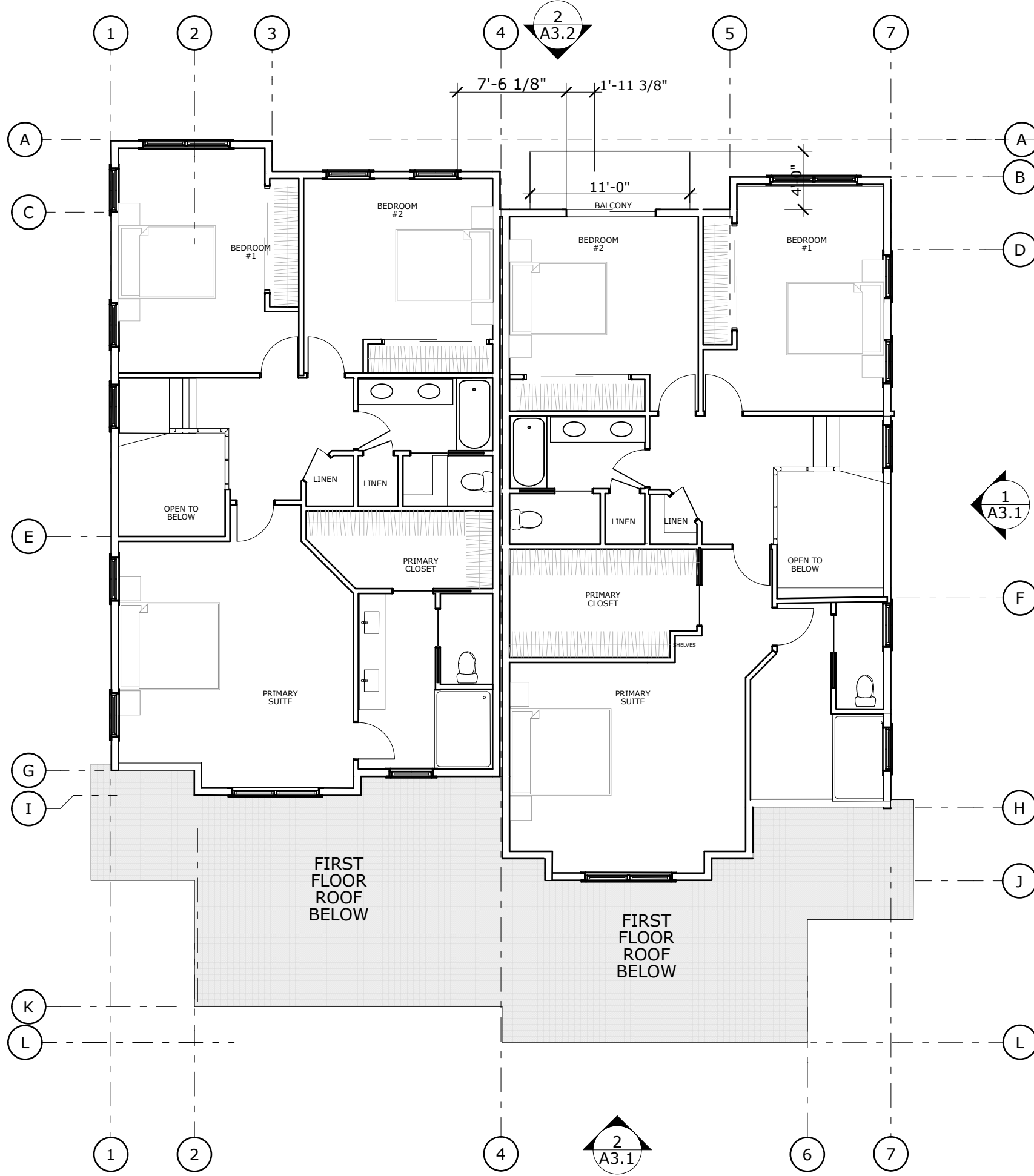
LOWER ROOF PLAN
SCALE: 1/8" = 1'-0"

1



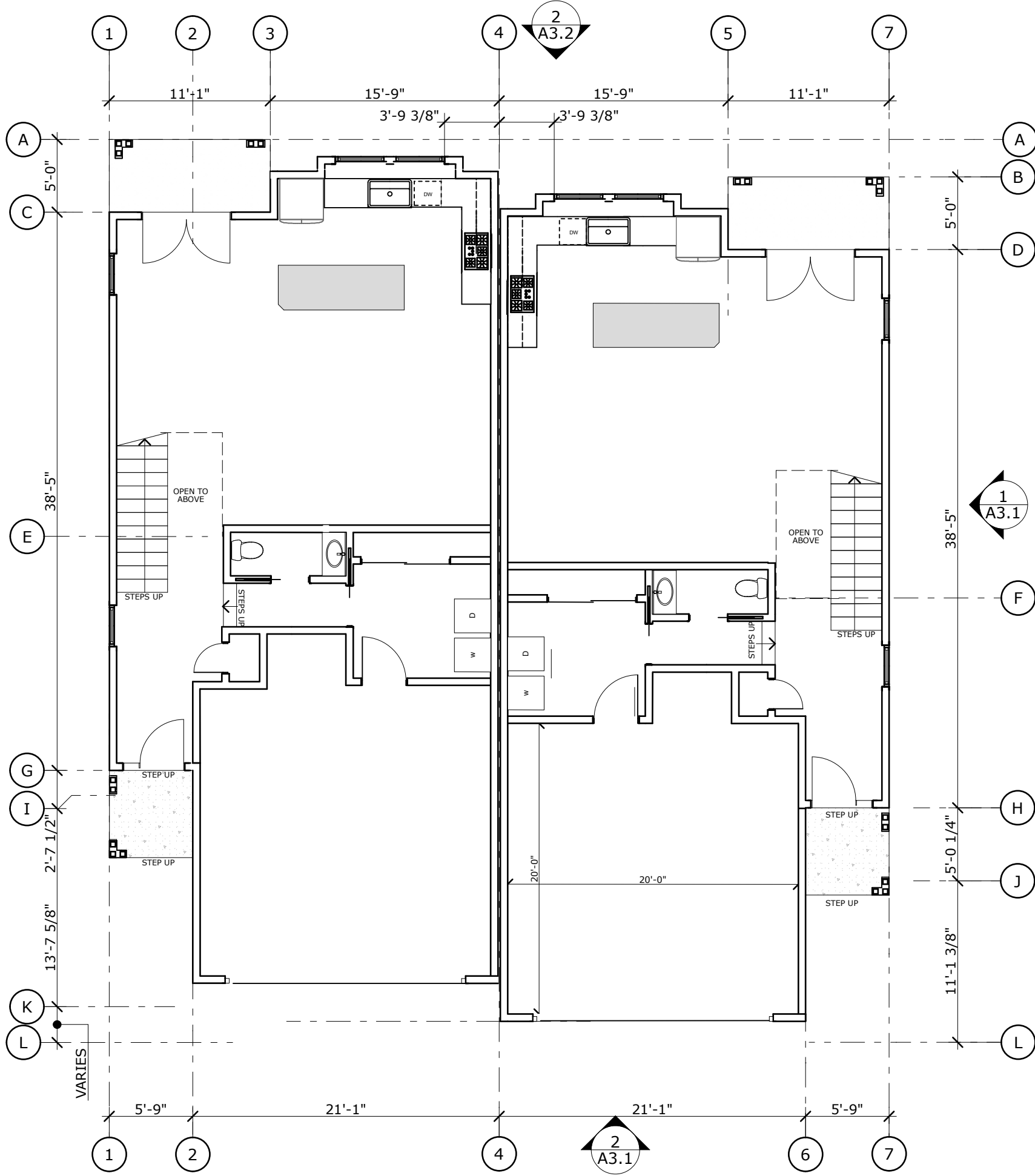
UPPER ROOF PLAN
SCALE: 1/8" = 1'-0"

1



SECOND FLOOR PLAN
SCALE: 1/8" = 1'-0"

2



FIRST FLOOR PLAN
SCALE: 1/8" = 1'-0"

1

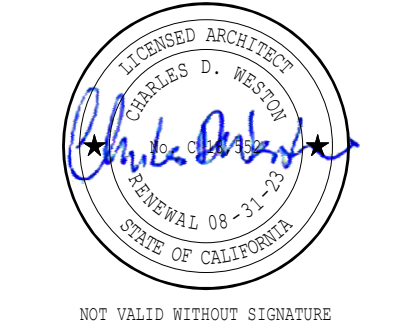
GENERAL NOTES

1. RWL = RAIN WATER LEADER, SEE DETAIL #DrgID(ref)/#LayID (ref)

KEY NOTES

- 01 CORNER GUARDS INSTALLED 12" OFF THE FF @ EACH OUTSIDE CORNER, SEE SPECS.
02 DRINKING FOUNTAIN, SEE DETAIL 47/ADA4
03 WHITE BOARD, SEE SPECS.
04 CONC FLOOR SCORING PATTERN
05 FLOOR DRAIN -SEE MECHANICAL

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REVISIONS

#	DATE	DESCRIPTION
1	03/08/2023	RESUBMITTAL #1
2	7/3/2023	RESUBMITTAL #2
3	8/15/2023	RESUBMITTAL #3

SYMBOL LEGEND

--- 1-HR RATED WALL SYMBOL

FLOOR & ROOF PLAN (LOTS 1-4)

270 WEST DUNNE AVE TOWNHOMES

DRP BUILDERS, INC.
270 WEST DUNNE, MORGAN HILL, CA 95037

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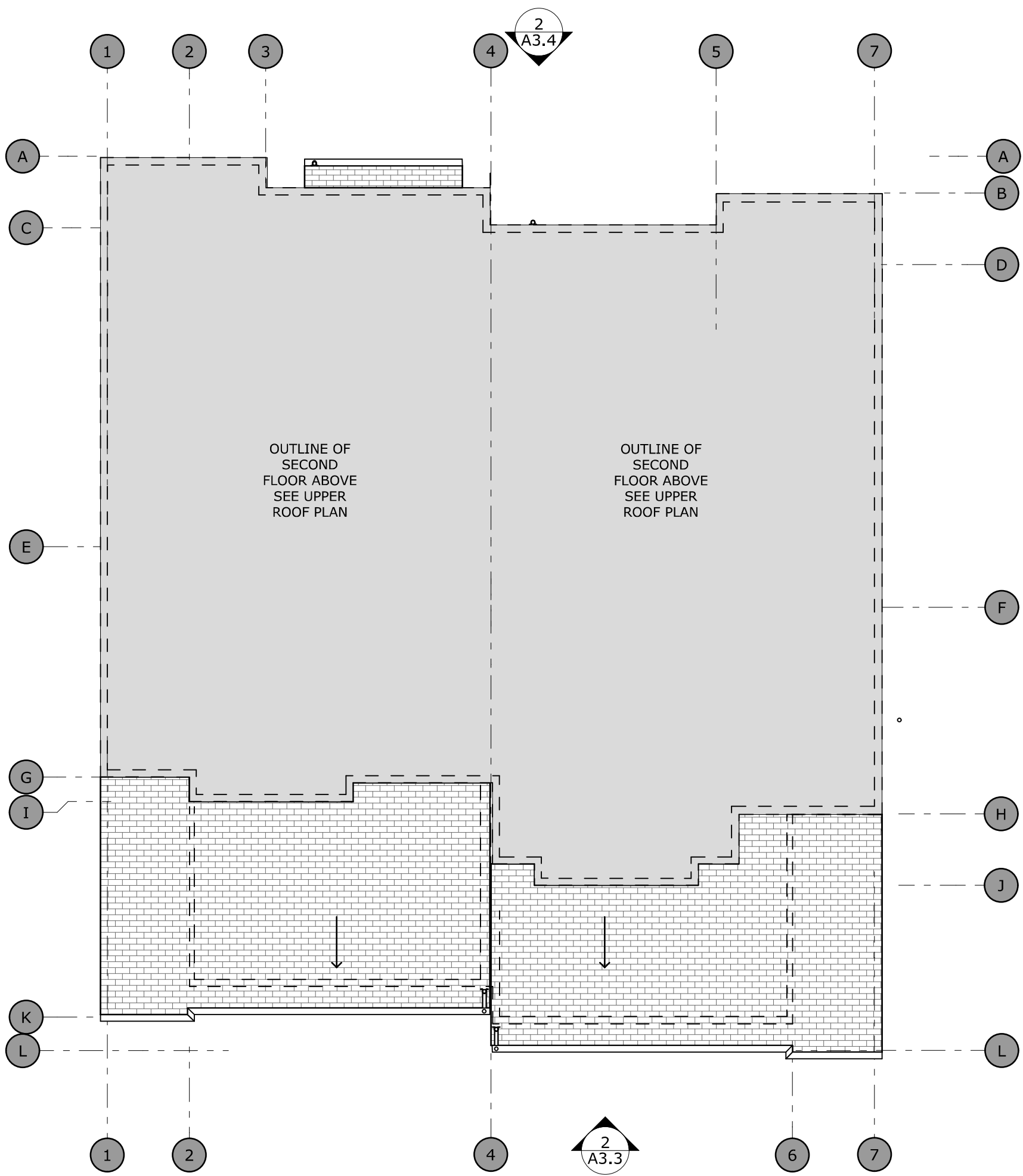
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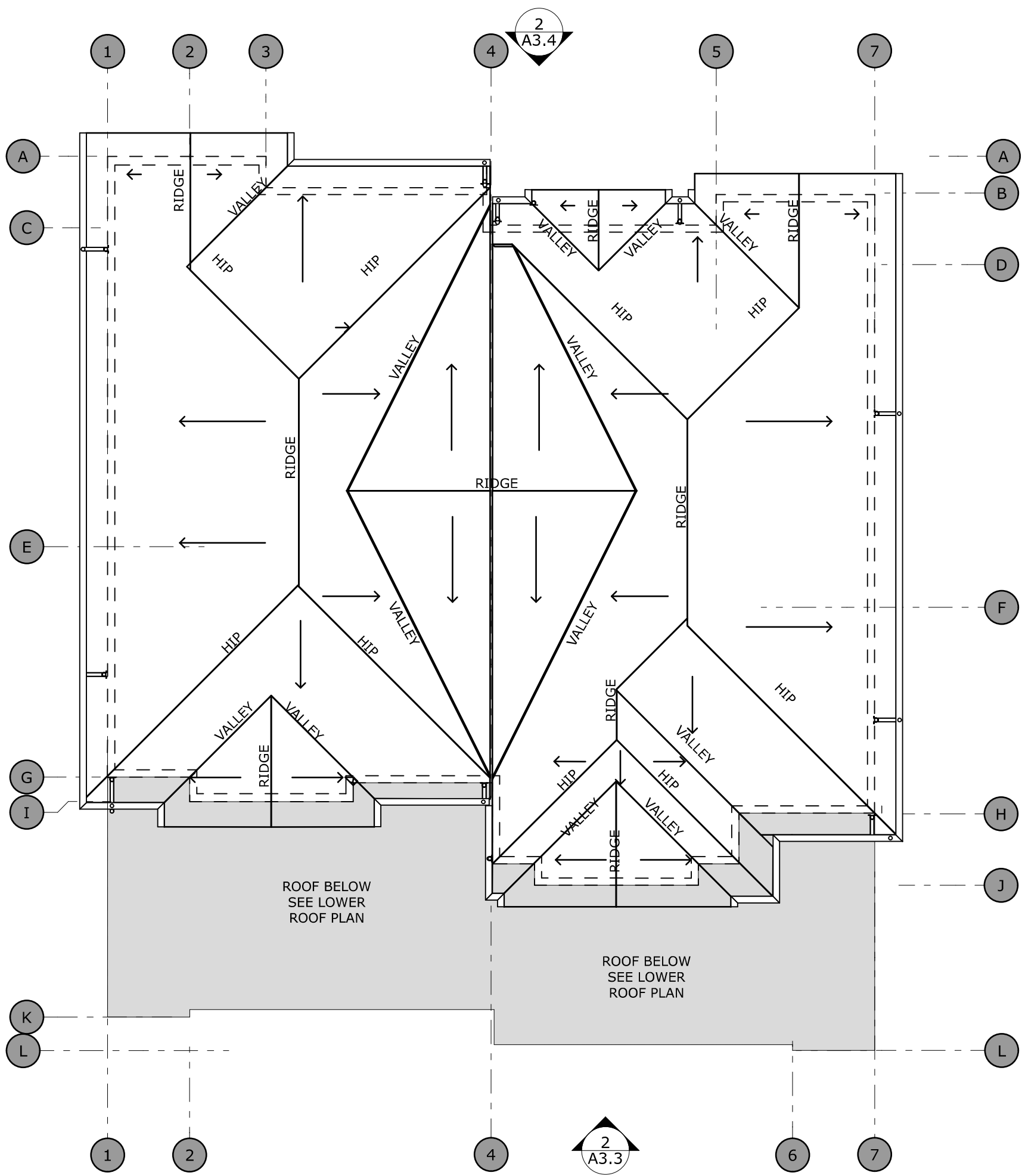
JOB NO: 21014

A2.1



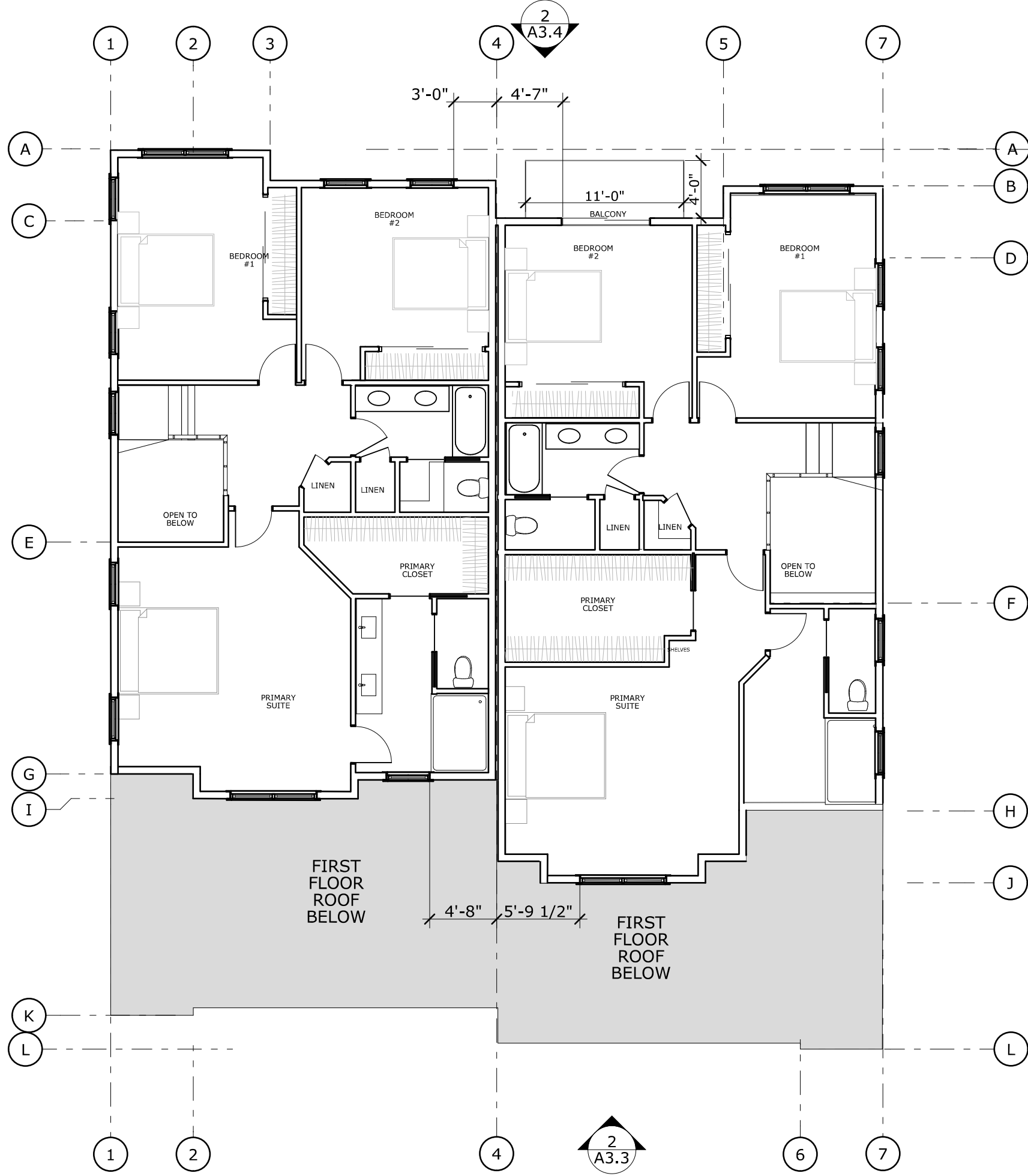
LOWER ROOF PLAN
SCALE: 1/8" = 1'-0"

1



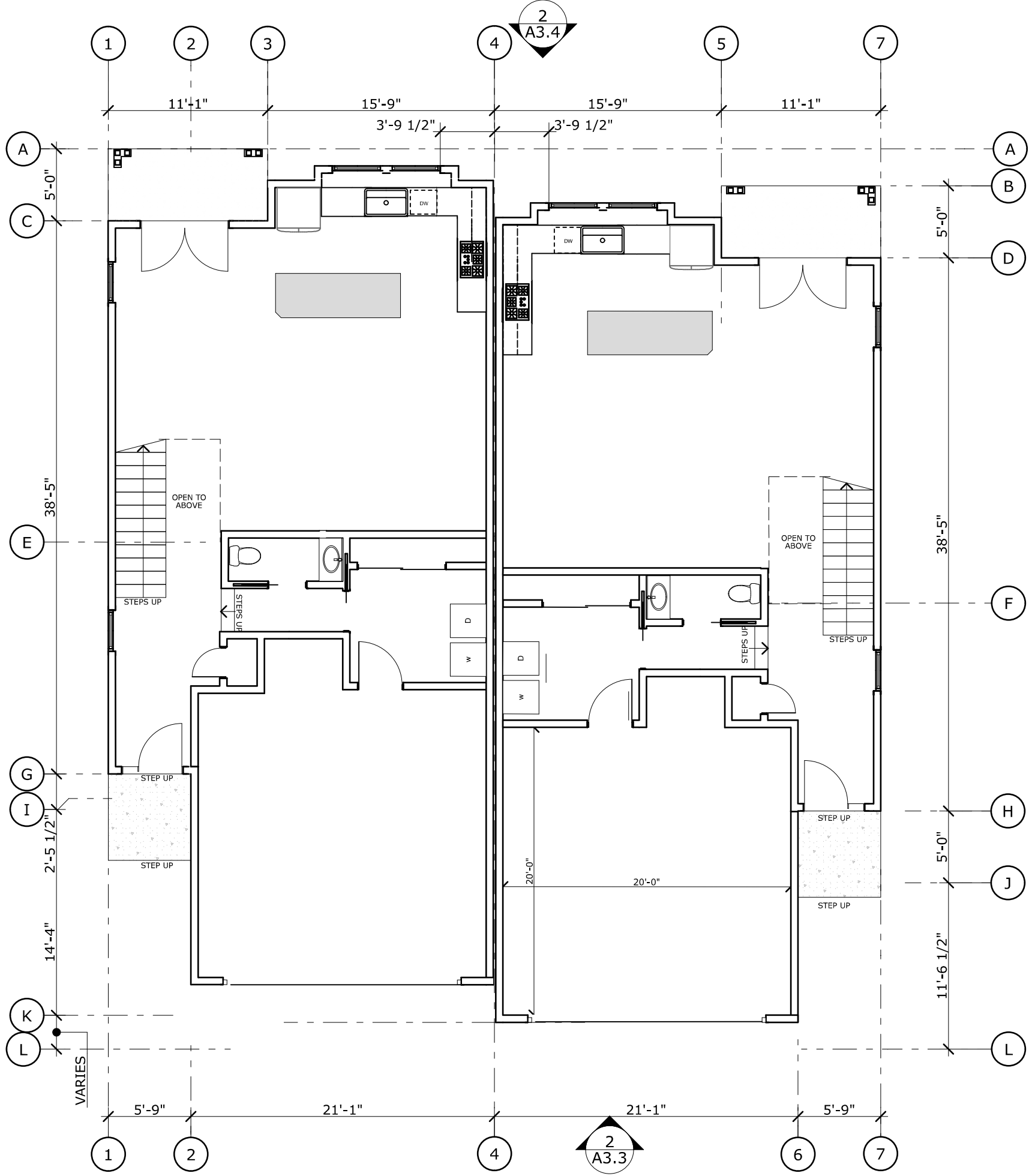
UPPER ROOF PLAN
SCALE: 1/8" = 1'-0"

1



SECOND FLOOR PLAN
SCALE: 1/8" = 1'-0"

2



FIRST FLOOR PLAN
SCALE: 1/8" = 1'-0"

1

GENERAL NOTES

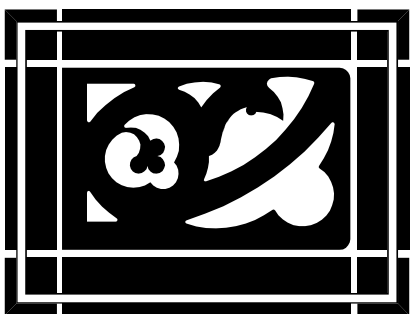
1. RWL = RAIN WATER LEADER, SEE DETAIL #DrgID(ref)/#LayID (ref)

KEY NOTES

- 01 CORNER GUARDS INSTALLED 12" OFF THE FF @ EACH OUTSIDE CORNER, SEE SPECS.
02 DRINKING FOUNTAIN, SEE DETAIL 47/ADA4
03 WHITE BOARD, SEE SPECS.
04 CONC FLOOR SCORING PATTERN
05 FLOOR DRAIN -SEE MECHANICAL

SYMBOL LEGEND

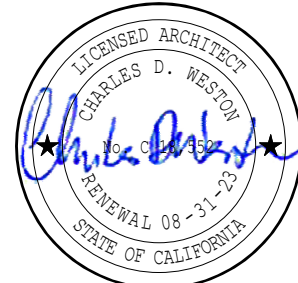
--- 1-HR RATED WALL SYMBOL



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2 7/3/2023
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RESUBMITTAL #3

FLOOR & ROOF PLAN (LOTS 5-10)

270 WEST DUNNE AVE TOWNHOMES

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A2.2



PRODUCT: CERTAINTIED LANDMARK ASPHALT SHINGLES
COLOR: MOIRE BLACK



PRODUCT: ELDORADO STONE VENEER
STYLE: CLIFFSTONE
COLOR: WHITEBARK



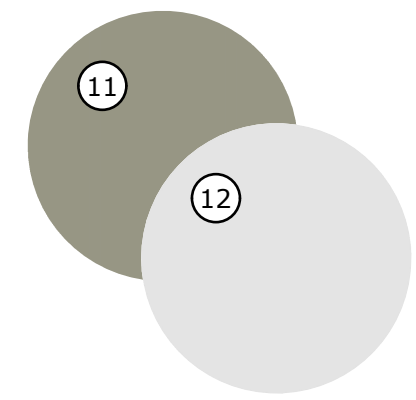
PRODUCT: JOHN TIMBERLAND
STYLE: CRESSONA 12\"/>



PRODUCT: HARDIE PLANK LAP SIDING
TEXTURE: SELECT CEDARMILL
COLOR: MONTEREY TAUPE



PRODUCT: CALSTONE INTERLOCKING PAVERS
STYLE: ATIQUED COBBLE
COLOR: CREAM TAN BROWN



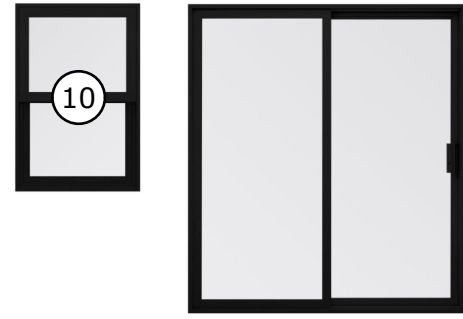
PRODUCT: KELLY MOORE PAINT
COLOR: MATCH HARDIE MONTEREY TAUPE AND ARCTIC WHITE



PRODUCT: HARDIE PANEL VERTICAL SIDING WITH HARDIE TRIM
BOARDS BATTEN STRIPS
TEXTURE: SELECT CEDARMILL
COLOR: ARCTIC WHITE

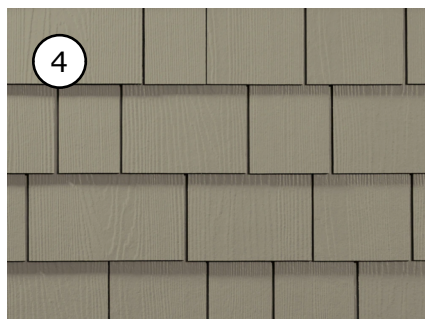


PRODUCT: EXTERIOR WOOD TRIM
DOUGLAS FIR
TEXTURE: RESAWN
COLOR: STAINED (MATCH GARAGE DOOR)



PRODUCT: MILGARD TRINSIC SERIES
WINDOWS & SLIDING PATIO DOORS
COLOR: BLACK

NOTE: MINIMUM DEPTH OF AT LEAST 1 1/2\"/>



PRODUCT: HARDIE SHINGLE SIDING
TEXTURE: STRAIGHT EDGE PANEL
COLOR: MONTEREY TAUPE



PRODUCT: CLOPAY RUSTIC PLANKED 3/4 LITE WITH 3/4 SIDELITE
CLARION SOL GRILLES
COLOR: DARK FINISH (DARK OAK)



PRODUCT: CLOPAY GALLERY STEEL PREMIUM SERIES GARAGE DOOR
STYLE: LONG PANEL; WINDOWS LONG WITH RECTANGULAR GRILLES
COLOR: ULTRA-GRAIN OAK DARK FINISH

- 01 CUSTOM BUILT TRIANGULAR WOOD GABLE VENTS

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- 1 03/08/2023 RESUBMITTAL #1
2 7/3/2023 RESUBMITTAL #2
3 8/15/2023 RESUBMITTAL #3

EXT. ELEVATIONS & MATERIALS (LOTS 1-4)
270 WEST DUNNE AVE TOWNHOMES

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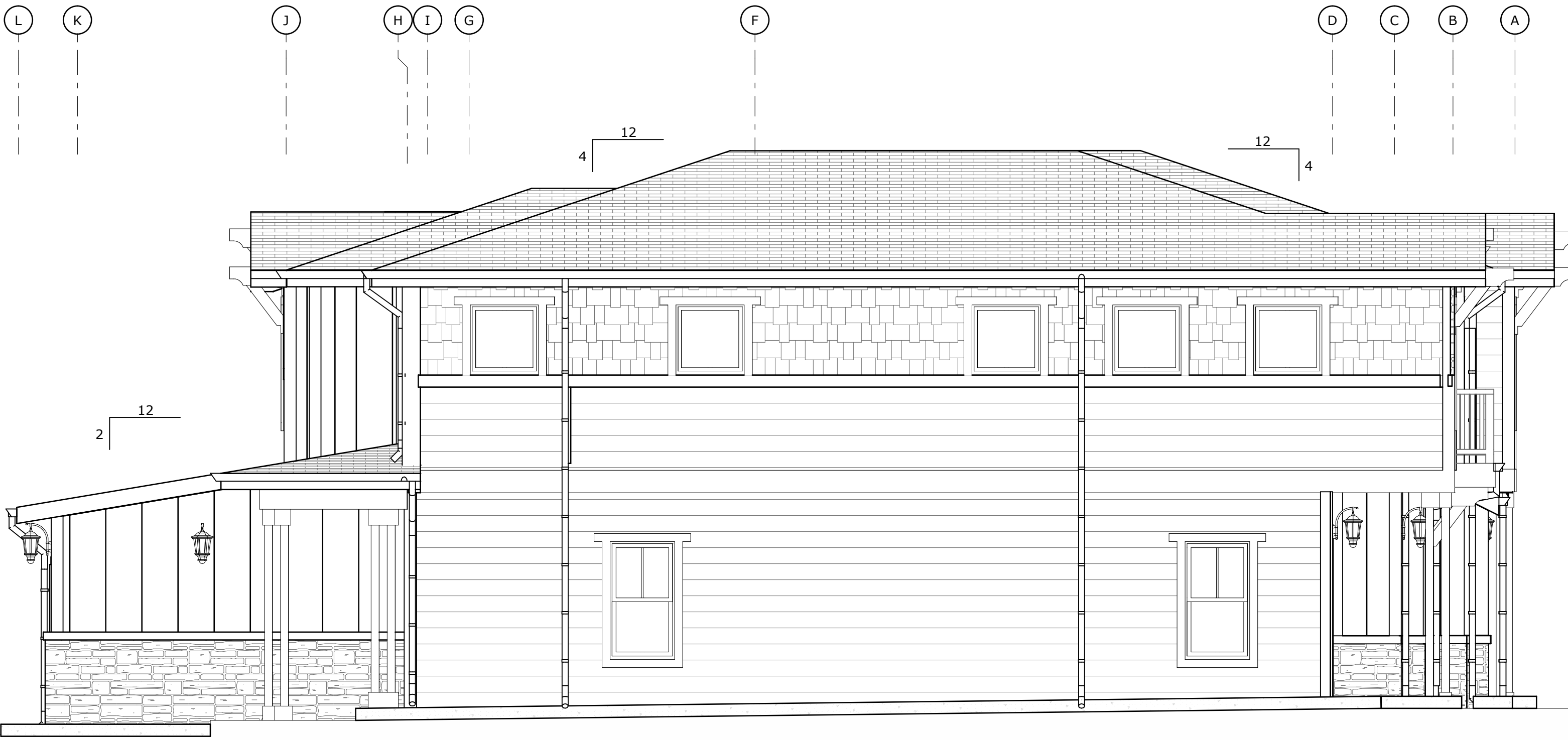
JOB NO: 21014

A3.1



BACK EXTERIOR ELEVATION

SCALE: 1/4" = 1'-0"



EXTERIOR ELEVATION

SCALE: 1/4" = 1'-0"



PRODUCT: CERTAINTEED LANDMARK ASPHALT SHINGLES
COLOR: MOIRE BLACK



PRODUCT: EL Dorado Stone Veneer
STYLE: CLIFFSTONE
COLOR: WHITESARK



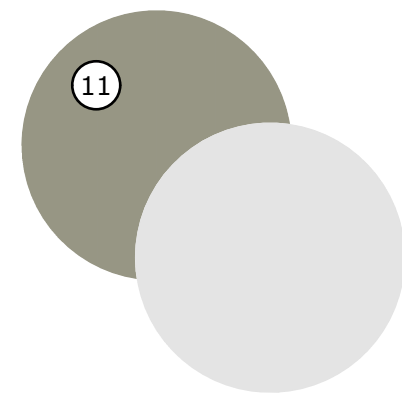
PRODUCT: JOHN TIMBERLAND
STYLE: CRESSONA 12" WALL LIGHT # 9H828
COLOR: OIL RUBBED BRONZE



PRODUCT: HARDIE PLANK LAP SIDING
TEXTURE: SELECT CEDARMILL
COLOR: MONTEREY TAUPE



PRODUCT: CALSTONE INTERLOCKING PAVERS
STYLE: ATIQUED COBBLE
COLOR: CREAM TAN BROWN



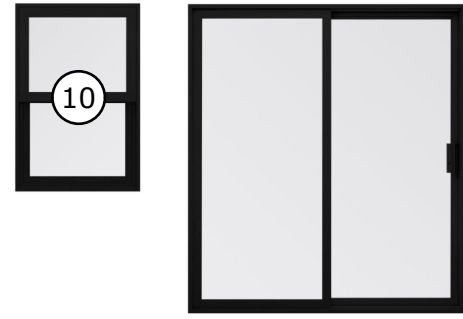
PRODUCT: KELLY MOORE PAINT
COLOR: MATCH HARDIE MONTEREY TAUPE AND ARCTIC WHITE



PRODUCT: HARDIE PANEL VERTICAL SIDING WITH HARDIE TRIM
BOARDS BATTEN STRIPS
TEXTURE: SELECT CEDARMILL
COLOR: ARCTIC WHITE

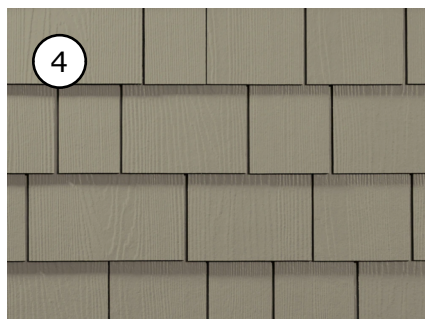


PRODUCT: EXTERIOR WOOD TRIM
DOUGLAS FIR
TEXTURE: RESAWN
COLOR: STAINED (MATCH GARAGE DOOR)



PRODUCT: MILGARD TRINISC SERIES WINDOWS & SLIDING PATIO DOORS
COLOR: BLACK

NOTE: MINIMUM DEPTH OF AT LEAST 1 1/2" FROM GLASS TO EXTERIOR 6" TRIM



PRODUCT: HARDIE SHINGLE SIDING
TEXTURE: STRAIGHT EDGE PANEL
COLOR: MONTEREY TAUPE

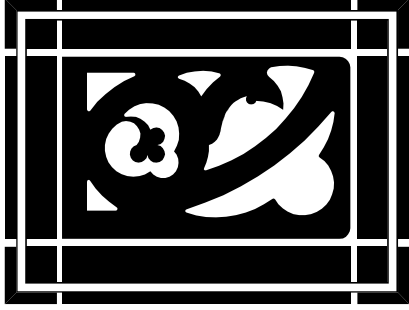


PRODUCT: CLOPAY RUSTIC PLANKED 3/4 LITE WITH 3/4 SIDELITE
CLARION SOL GRILLES
COLOR: DARK FINISH (DARK OAK)



PRODUCT: CLOPAY GALLERY STEEL PREMIUM SERIES GARAGE DOOR
STYLE: LONG PANEL; WINDOWS LONG WITH RECTANGULAR GRILLES & FROSTED GLASS
COLOR: ULTRA-GRAIN OAK DARK FINISH

01 CUSTOM BUILT TRIANGULAR WOOD GABLE VENTS



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- 1 03/08/2023 RESUBMITTAL #1
- 2 7/3/2023 RESUBMITTAL #2
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EXT. ELEVATIONS & MATERIALS (LOTS 1-4)

270 WEST DUNNE AVE TOWNHOMES

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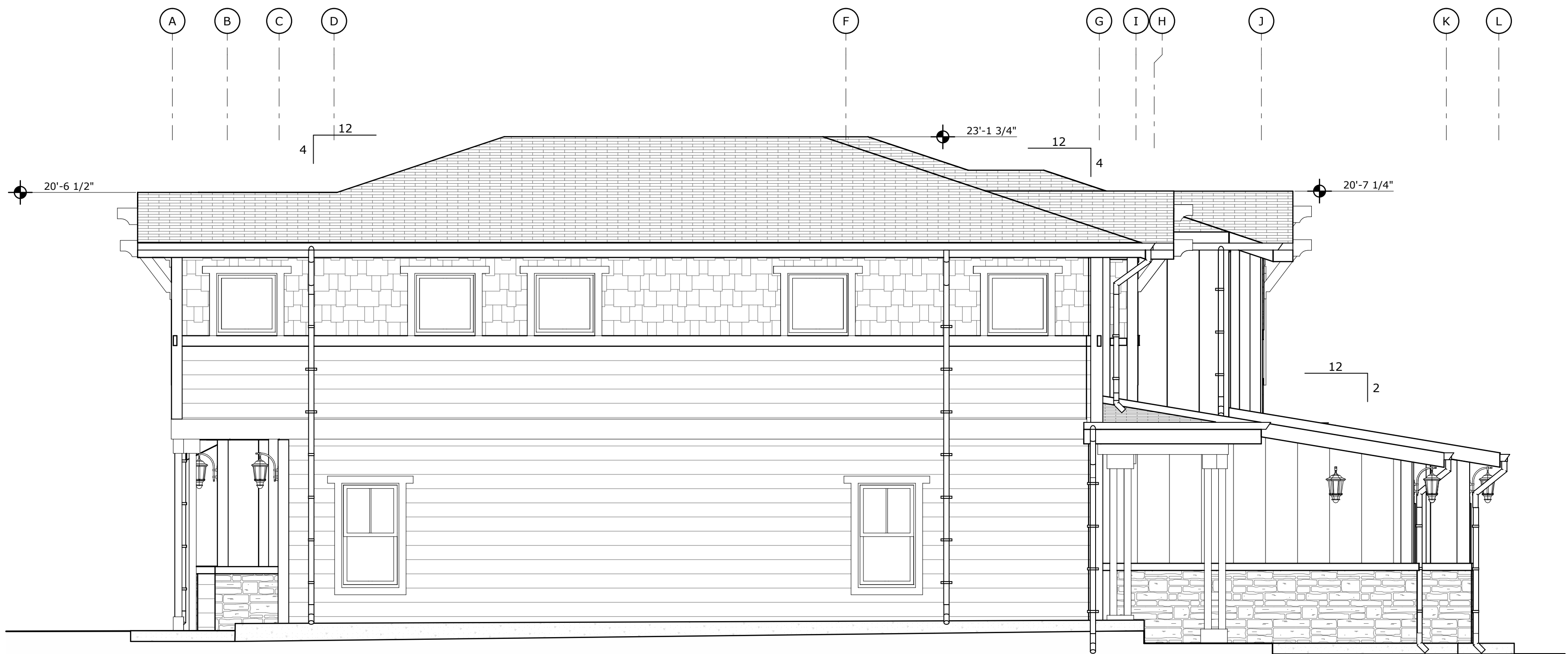
JOB NO: 21014

A3.2



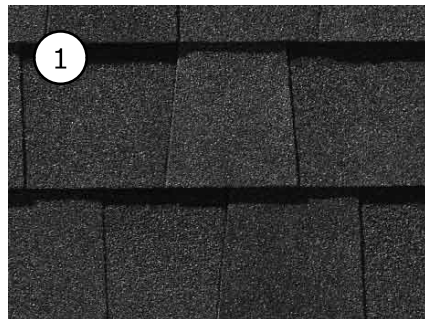
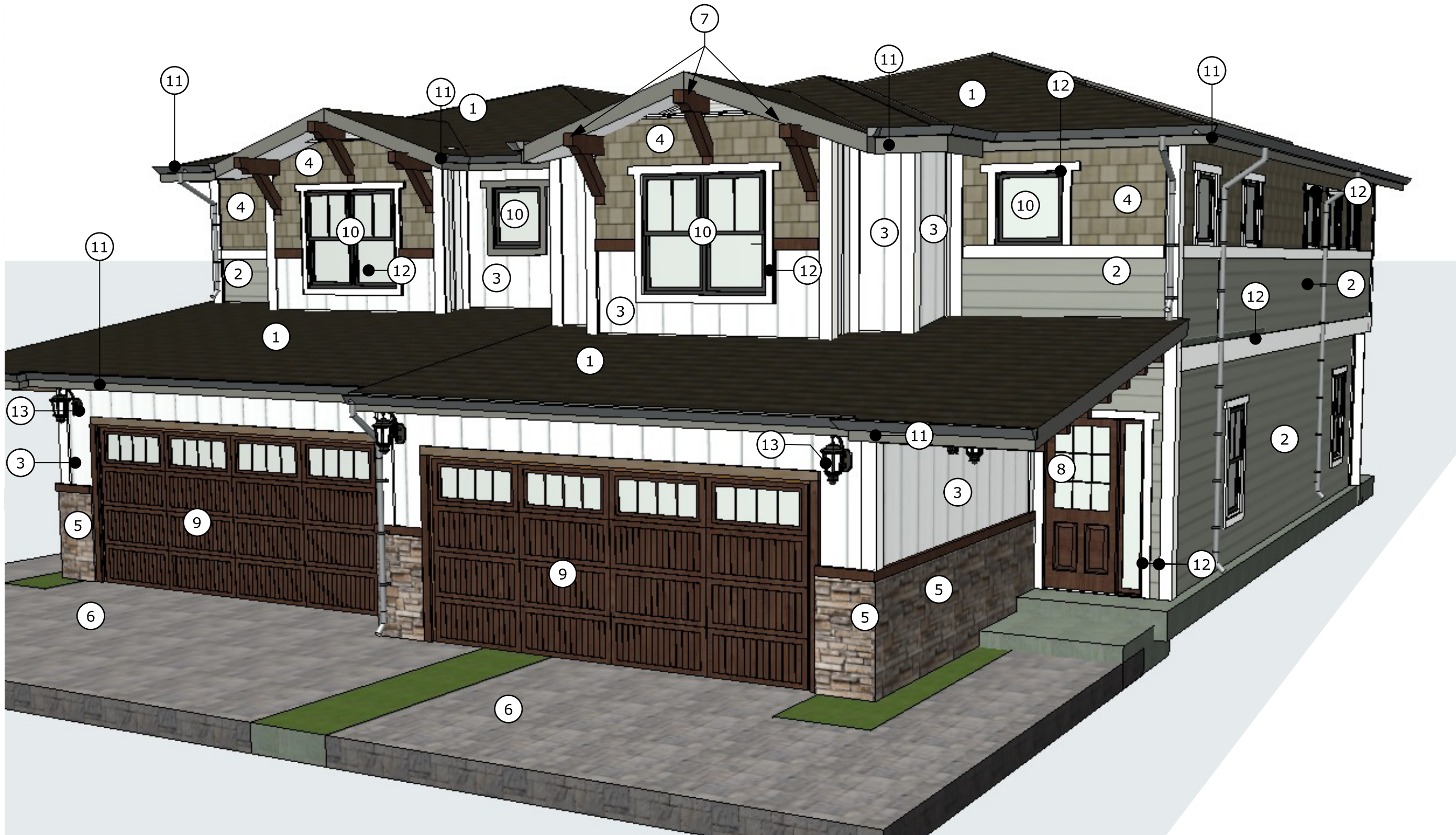
FRONT EXTERIOR ELEVATION
SCALE: 1/4" = 1'-0"

2



EXTERIOR ELEVATION
SCALE: 1/4" = 1'-0"

1



PRODUCT: CERTAINTED LANDMARK ASPHALT SHINGLES
COLOR: MOIRE BLACK



PRODUCT: ELDORADO STONE VENEER
STYLE: CLIFFSTONE
COLOR: WHITEBARK



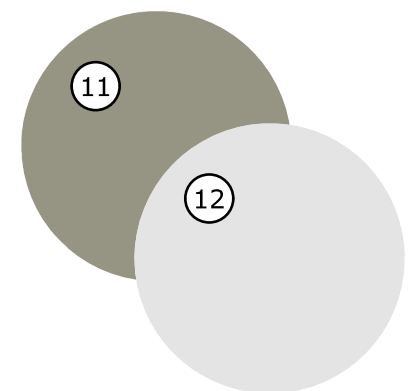
PRODUCT: JOHN TIMBERLAND
STYLE: CRESSWELL - WALL LIGHT # 9H828
COLOR: OIL-RUBBED BRONZE



PRODUCT: HARDIE PLANK LAP SIDING
TEXTURE: SELECT CEDARMILL
COLOR: MONTEREY TAUPE



PRODUCT: CALSTONE INTERLOCKING PAVERS
STYLE: ATIQUED COBBLE
COLOR: CREAM TAN BROWN



PRODUCT: KELLY MOORE PAINT
COLOR: MATCH HARDIE MONTEREY TAUPE AND ARCTIC WHITE



PRODUCT: HARDIE PANEL VERTICAL SIDING WITH HARDIE TRIM
BOARDS BATTEN STRIPS
TEXTURE: SELECT CEDARMILL
COLOR: ARCTIC WHITE

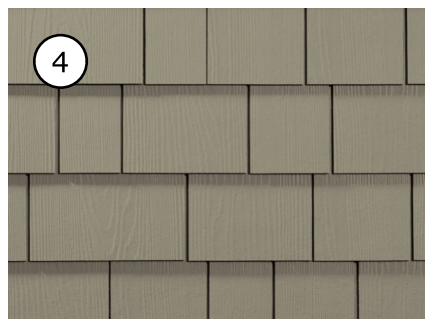


PRODUCT: EXTERIOR WOOD TRIM
DOUGLAS FIR
TEXTURE: RESAWN
COLOR: STAINED (MATCH GARAGE DOOR)



PRODUCT: MILGARD TRINISC SERIES
WINDOWS & SLIDING PATIO DOORS
COLOR: BLACK

NOTE: MINIMUM DEPTH OF AT LEAST 1 1/2" FROM GLASS TO EXTERIOR 6" TRIM



PRODUCT: HARDIE SHINGLE SIDING
TEXTURE: STRAIGHT EDGE PANEL
COLOR: MONTEREY TAUPE



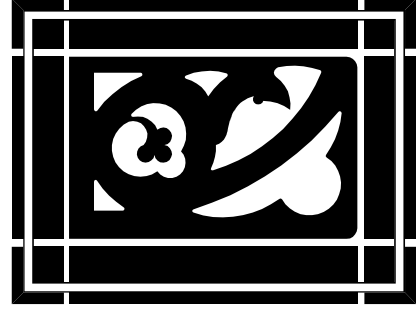
PRODUCT: CLOPAY RUSTIC PLANKED 3/4 LITE WITH 3/4 SIDELITE
CLARION SOL GRILLES
COLOR: DARK FINISH (DARK OAK)



PRODUCT: CLOPAY GALLERY STEEL PREMIUM SERIES GARAGE DOOR
STYLE: LONG PANEL; WINDOWS LONG WITH RECTANGULAR GRILLES
CLARION SOL GRILLES
COLOR: ULTRA-GRAIN OAK DARK FINISH

KEY NOTES

01 CUSTOM BUILT TRIANGULAR WOOD GABLE VENTS



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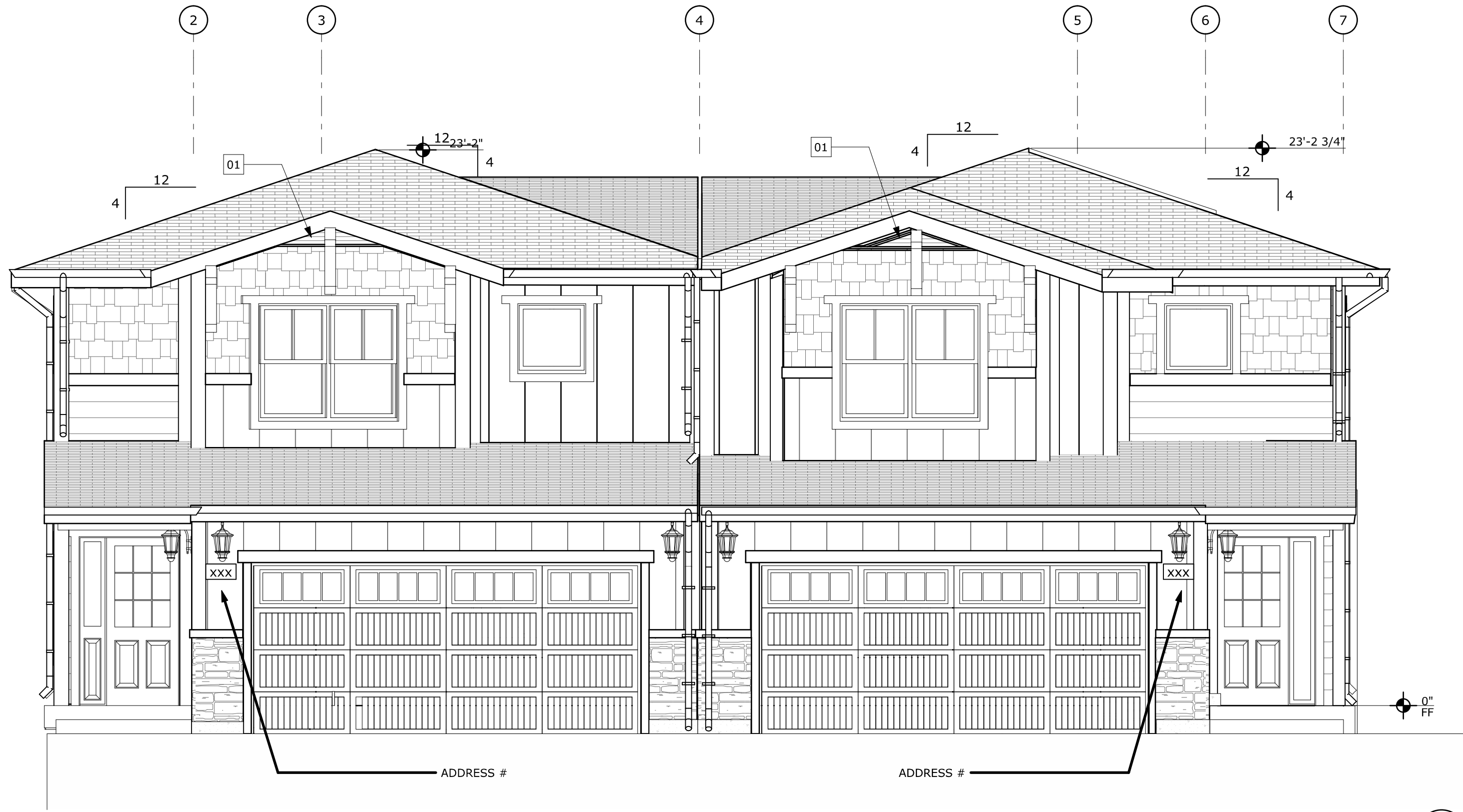
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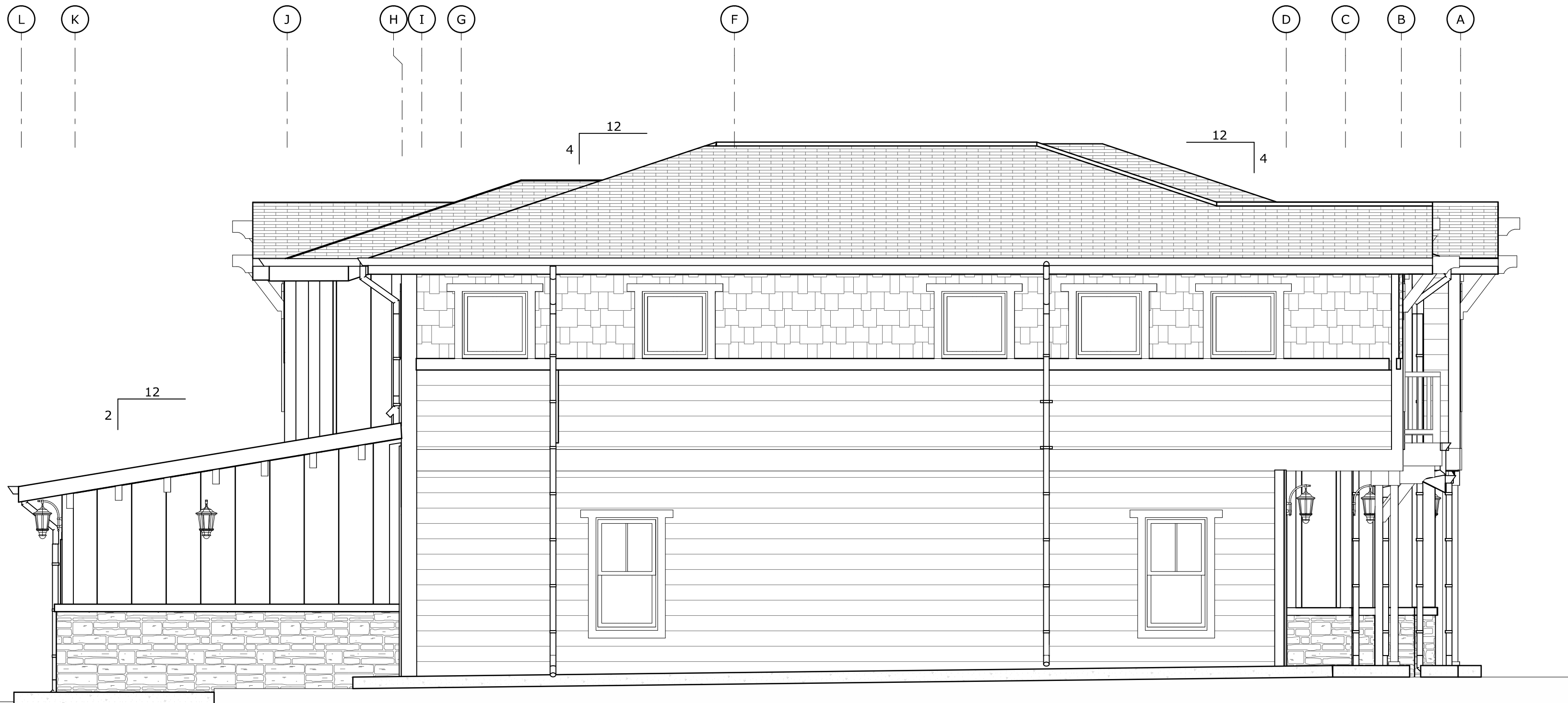
REVISIONS

- 1 03/08/2023 RESUBMITTAL #1
- 2 7/3/2023 RESUBMITTAL #2
- 3 8/15/2023 RESUBMITTAL #3



FRONT EXTERIOR ELEVATION

SCALE: 1/4" = 1'-0"



EXTERIOR ELEVATION

SCALE: 1/4" = 1'-0"

EXT. ELEVATIONS & MATERIALS (LOTS 5-10)

270 WEST DUNNE AVE TOWNHOMES

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270 WEST DUNNE, MORGAN HILL, CA 95037

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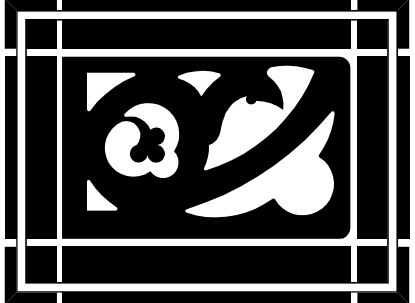
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JOB NO: 21014

A3.3



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REVISIONS	
1	03/08/2023 RESUBMITTAL #1
2	7/3/2023 RESUBMITTAL #2
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EXT. ELEVATIONS & MATERIALS(LOTS 5-10)

270 WEST DUNNE AVE TOWNHOMES

DRP BUILDERS, INC.
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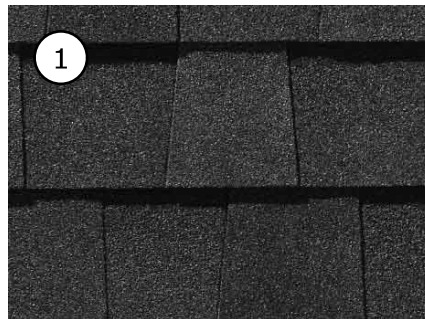
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JOB NO: 21014

A3.4



PRODUCT: CERTAINTED LANDMARK
ASPHALT SHINGLES
COLOR: MOIRE BLACK



PRODUCT: ELDORADO STONE VENEER
CLIFFSTONE
COLOR: WHITEBARK



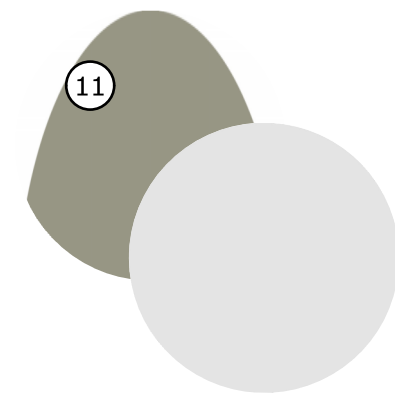
PRODUCT: JOHN TIMBERLAND
STYLE: CRESSBARK
COLOR: OIL-RUBBED BRONZE



PRODUCT: HARDIE PLANK LAP SIDING
TEXTURE: SELECT CEDARMILL
COLOR: MONTEREY TAUPE



PRODUCT: CALSTONE INTERLOCKING
PAVERS
STYLE: ANTIQUED COBBLE
COLOR: CREAM TAN BROWN



PRODUCT: KELLY MOORE PAINT
COLOR: MATCH HARDIE MONTEREY
TAUPE AND ARCTIC WHITE



PRODUCT: HARDIE PANEL VERTICAL
SIDING WITH HARDIE TRIM
BOARDS BATTEN STRIPS
TEXTURE: SELECT CEDARMILL
COLOR: ARCTIC WHITE

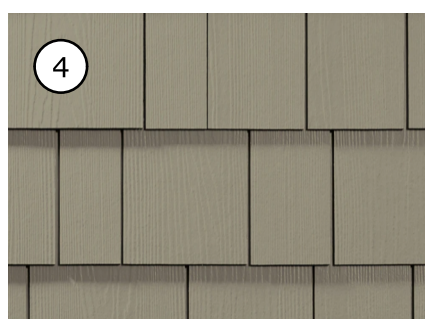


PRODUCT: EXTERIOR WOOD TRIM
DOUGLAS FIR
TEXTURE: RESAWN
COLOR: STAINED (MATCH
GARAGE DOOR)



PRODUCT: MILGARD TRINISC SERIES
WINDOWS & SLIDING PATIO
DOORS
COLOR: BLACK

NOTE:
MINIMUM DEPTH OF AT LEAST 1 1/2" FROM GLASS
TO EXTERIOR 6" TRIM



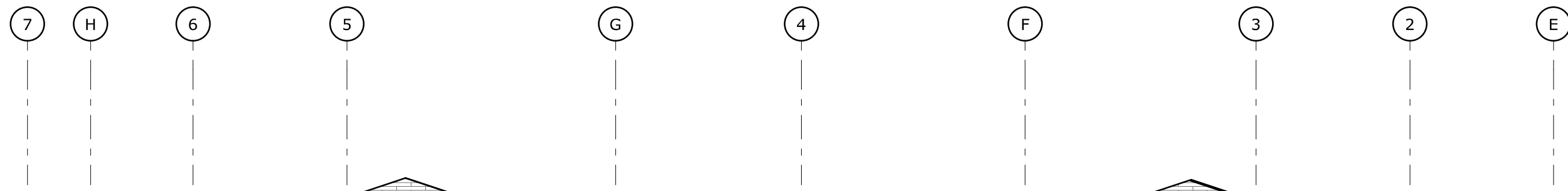
PRODUCT: HARDIE SHINGLE SIDING
TEXTURE: STRAIGHT EDGE PANEL
COLOR: MONTEREY TAUPE



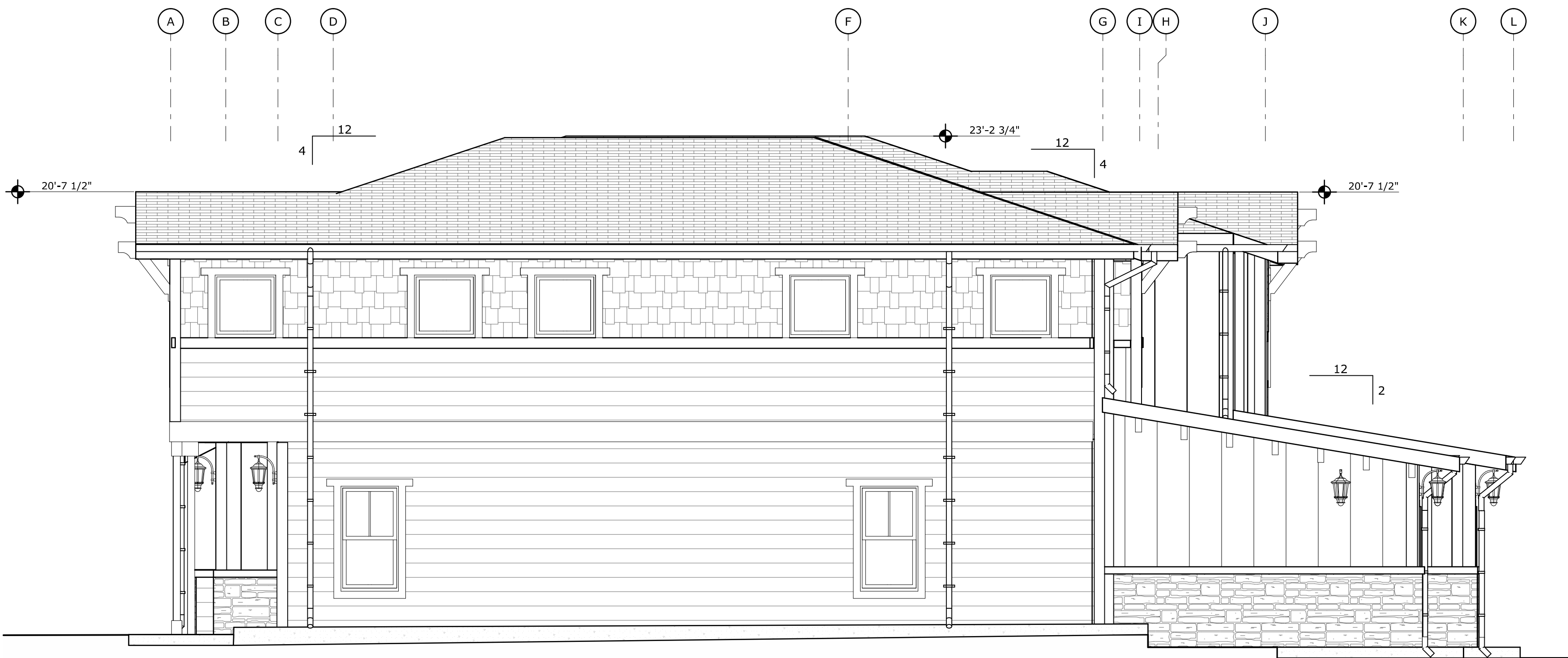
PRODUCT: CLOPAY RUSTIC PLANKED 3/4
LTE WITH 3/4 SIDELITE
CLARION SOL GRILLES
COLOR: DARK FINISH (DARK OAK)



PRODUCT: CLOPAY GALLERY STEEL PREMIUM SERIES GARAGE DOOR
STYLE: LONG PANEL; WINDOWS LONG WITH RECTANGULAR GRILLES &
FROSTED GLASS
COLOR: ULTRA-GRAIN OAK DARK FINISH



BACK EXTERIOR ELEVATION
SCALE: 1/4" = 1'-0"



EXTERIOR ELEVATION
SCALE: 1/4" = 1'-0"

DRP Builders, Inc.

CA Lic. #727299 NV Lic. #87087

P.O. Box 664 ♦ Genoa, NV 89411 ♦ Phone: 408-683-4221 ♦ Fax: 408-350-2134

Item 2

Attachment 4

I agree to comply with the requirements of the water-efficient landscape ordinance and submit a complete landscape document package

Rebekah Robertson on behalf of DRP

Applicant Name

Applicant Signature Date: 6/28/2023

After installation of landscaping on property, I agree to have an irrigation audit, landscape audit, irrigation schedule and maintenance schedule conducted by a certified irrigation auditor and submit it to the City for final project sign off

Rebekah Robertson on behalf of DRP

Applicant Name

Applicant Signature Date: 6/28/2023

SITE INFO

PROJECT ADDRESS:	270 WEST DUNNE CA 95070 LOTS 1-10
PROJECT TYPE:	10 NEW TOWNHOMES
WATER SUPPLY:	CITY OF MORGAN HILL WATER
MAX SITE SLOPES:	SITE DOES NOT EXCEED 10%
TOTAL LANDSCAPED AREA:	5,434 SF
WATER TYPE:	POTABLE

(THERE ARE NO SLOPES GREATER THAN 25%ON THIS PROPERTY)

GENERAL NOTES

- AFTER INSTALLATION OF LANDSCAPING ON PROPERTY, I AGREE TO HAVE AN IRRIGATION AUDIT, LANDSCAPE AUDIT, IRRIGATION SCHEDULE, AND MAINTENANCE SCHEDULE CONDUCTED BY A CERTIFIED IRRIGATION AUDITOR AND SUBMIT IT TO THE CITY FOR FINAL PROJECT SIGN OFF
- THE DEVELOPER WILL SUBMIT RECEIPTS AND/OR INVOICES FOR ALL COMPOST AND MULCH PURCHASES TO ENVIRONMENTAL SERVICES DIVISION AFTER FINAL CONSTRUCTION
- THE SOIL SURVEY WILL BE COMPLETED POST-CONSTRUCTION DUE TO MASS GRADING SUBMITTED AS PART OF THE CERTIFICATE OF COMPLETION
- MULCH COVER IS 3 INCHES THICK. MULCH THAT IS ORGANIC RECYCLED OR POST-CONSUMER SHALL TAKE PRECEDENCE. TYPES OF MULCH NOT ALLOWED INCLUDE: BARK, GORILLA HAIR, SHREDDED CEDAR, OR VIRGIN MATERIALS.
- COMPOST TO BE AT A MINIMUM RATE OF FOUR CUBIC YARDS PER ONE THOUSAND SQUARE FEET OF PERMEABLE AREA SHALL BE INCORPORATED TO A DEPTH OF SIX INCHES INTO THE SOIL.

SOIL PREPERATION NOTES NOTES

- PRIOR TO THE PLANTING OF ANY MATERIALS, COMPACTED SOILS SHALL BE TRANSFORMED TO A FRIABLE CONDITION. ON ENGINEERED SLOPES, ONLY AMENDED PLANTING HOLDS NEED MEET THIS REQUIREMENT
- SOIL AMENDMENT SHALL BE INCORPORATED ACCORDING TO RECOMMENDATIONS OF THE SOIL REPORT AND WHAT IS APPROPRIATE FOR THE PLANT SELECTED
- FOR LANDSCAPE INSTALLATIONS, COMPOST AT A RATE OF A MINIMUM OF 4 CUBIC YARDS PER 1,000 SQUARE FEET OF PERMEABLE AREA SHALL BE INCORPORATED TO A DEPTH OF 6 IN INTO THE SOIL. SO I WAS WITH GREATER THAN 6% ORGANIC MATTER IN THE TOP SIX INCHES OF SOIL ARE EXEMPT FROM ADDING COMPOST AND TILLING.
- A MINIMUM 3 INCH LAYER OF MULCH SHE'LL BE APPLIED ON ALL EXPOSED SOIL SERVICES OF PLATINARIES EXCEPT IN TURF AREAS, CREEPING OR ROOTING OVER GROUND COVERS, OR DIRECT SEATING APPLICATIONS FOR MULCH IS CONTRAINDICATED
- STABILIZING MULCHING PRODUCTS SHALL BE USED ON SLOPES THAT MAY CURRENT ENGINEERING STANDARDS.
- THE MULCHING PORTION OF THE SEED\ MULCH SLURRY AND HYDRO-SEEDED APPLICATIONS SHALL MEET SUCH MULCHING REQUIREMENTS
- ORGANIC MULCH MATERIALS MADE FROM RECYCLED OR POST-CONSUMER SHALL TAKE PRESIDENTS OVER INORGANIC MATERIALS OR VIRGIN FOREST PRODUCTS UNLESS THE RECYCLED POST-CONSUMER ORGANIC PRODUCTS ARE NOT LOCALLY AVAILABLE. ORGANIC MULCHES ARE NOT REQUIRED WHERE PROHIBITED BY LOCAL FUEL MODIFICATION PLAN GUIDELINES OR APPLICABLE LOCAL ORDINANCES.(THE USE OF BARK MULCH, GORILLA MULCH, SHREDDED CEDAR ARE STRONGLY DISCOURAGED AND SHOULD NOT BE USED IN ANY)

I have complied with the criteria of the ordinance and applied them for the efficient use of water in the landscape design plan

Lesley Miles, Architect C 26,458

Name

Signature Date: 6/28/2023

CONTACTS

OWNER RICARD & BARBARA BORELLO
PO BOX 448
GENOA NV 89411

PHONE: 1 (408) 832-5925
EMAIL:david@drpbuilder.com

BUILDER DRP BUILDERS, INC.
PO BOX 6644
GENOA, NV 89411

ATTN:DAVID ROBERTSON
PHONE: 1 (408) 683-4221
EMAIL:david@drpbuilder.com

IRRIGATION ANLA ASSOCIATES
1213 LINCOLN AV3 #211
SAN JOSE CA 95125

ATTN: HERIK PLATO
PHONE: 408-292-2196

ARCHITECT/ LANDSCAPE WESTON MILES ARCHITECTS, INC.
17500 DEPOT STREET, SUITE #200
MORGAN HILL, CA 95037

ATTN: CHARLES WESTON
PHONE: 1-408-779-6686
EMAIL: charles@wmarchitects.com

SECTION 329000 - PLANTING: LANDSCAPE WORK

1.1 GENERAL

1.2 SUMMARY

- This Section includes all labor, materials, equipment, operations, or methods listed, mentioned, or scheduled on the plans and/or herein specified, including all incidentals necessary and required for completion of work under this Section.
- Provide and install all landscaping as shown on project Drawings and as specified herein, including all planting and maintenance under a ninety (90) calendar-day maintenance period (see part 3.8 of this Section).

1.3 RELATED SECTIONS

- Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Special Conditions and Section 01 of these Contract Documents.

1.4 GENERAL CONDITIONS

- The contractor shall maintain adequate protection of his work from damage and shall protect the County's and adjacent property and related appurtenances from injury or loss arising from this Contract. Damaged or disturbed items shall be replaced with equal by the Contractor at no cost to the County.
- The Contractor shall pay Federal, State, and Local Sales and/or Use Taxes to materials, processes, or devices purchased or used in connection with the work. Local, Municipal, and State Laws and Rules and Regulations governing or relating to any portion of this work are hereby incorporated into these Specifications.

1.5 PERMITS, LICENSES, AND INSPECTIONS

- Any permit, license and/or inspection required by the legal authorities or agencies having jurisdiction over the construction or installation of the work as shown on the Plans or specified herein, shall be paid and obtained by the Contractor at the proper time.

1.6 BONDS AND INSURANCES

- The Contractor shall furnish the appropriate bond(s) in the amount of the required per cent of his bid proposal and carry insurance as required by the District. The Contractor shall be informed of these requirements from the District prior to submitting his bid proposal.

1.7 EXISTING CONDITIONS

- The Contractor shall visit the subject site to review the various existing conditions. A condition found to deviate from the Plans and Specifications shall be reported to the District's Authorized Representative prior to submitting his bid proposal.

1.8 PURPOSE OF DOCUMENTS

- The intent of the documents is to include, unless otherwise stated, the labor, materials, equipment, appliances, and transportation for the proper execution of the work as required for complete construction as shown on the Plans and specified herein. The Contractor shall be responsible for complete layout of improvements as shown on the Plans and as specified herein. Written dimensions shall take precedence over scaled dimensions. Follow as closely as practical making no alterations unless prior review and appropriate action is taken by the District's Authorized Representative.
- Each plant shall be installed in locations as shown on the Plans. Plants improperly located shall be relocated at no additional cost to the County. Notwithstanding is the fact that these documents may be deficient in setting forth a complete detailed description of the work to be done.

1.9 RECORD DRAWINGS

- On one set of the Plans, the Contractor shall record accurately changes in the work which constitute departures from the original Contract Drawings. The Contractor shall dimension from two permanent points of reference (building corners, sidewalks, or road intersections, etc.) the location of the following items:
 - Connections to existing water lines
 - Routing of pressure supply lines
 - Sprinkler control valves
- Upon completion of each increment of work, the Contractor shall transfer information including the dimensions to a clean set of prints of the Plans and the changes. The dimensions and changes shall be recorded in a legible and workmanlike manner to the satisfaction of the District 's Authorized Representative. Prior to stage acceptance, these Plans shall be presented to the District's Authorized Representative for review.

2.1 PRODUCTS

2.2 MATERIALS

- Plant Material:
 - Plants and planting material shall meet the specifications of Federal, State, and County laws requiring inspection for plant disease and insect control. Inspection certificates required by law shall accompany shipments, of which a copy of each inspection certificate shall be given to the District.
 - Plants shall be true to botanical name and one of each bundle or lot shall be tagged with the botanical name and container size of the plants in accordance with the standards of practice recommended by the American Association of Nurserymen.
 - Plants shall be healthy, vigorous stock, free of insects and disease, and not root-bound. Quality and size shall conform with the current edition of "Horticultural Standards" for number one grade nursery stock as adopted by the American Association of Nurserymen. Plants which are not true to botanical name shall be removed from the site and replaced with acceptable plants at no extra cost to the County. Botanical names shall take precedence over common names.
 - Due to ever changing availability of plant material, the Contractor may submit plant type substitution requests to the District 's Authorized Representative for review, prior to ordering.

3.1 EXECUTION

3.2 PREPARATION

- Finish Grading:
 - Planting areas shall be graded to the elevations indicated on the site plan. Grades not otherwise indicated shall be uniform levels or slopes between points where elevations are given. Minor adjustments of finish grades shall be made at the direction of the District 's Authorized Representative, if required, at no additional cost to the District.

- Finish grade shall be smooth, even, and of a uniform plane with no abrupt changes of surface. Soil area adjacent to buildings shall slope away from the buildings to allow a natural runoff of water, and surface drainage shall be directed as indicated on the drawings by remodeling surfaces to facilitate the natural runoff of water. Low spots and pockets shall be graded to drain properly.
- Shrub areas: The finish grade of shrubbery areas shall be 1-1/2 inches below the grade of adjacent pavement, walks, curbs, header, or walls. An exception to the above requirements shall be made wherever drainage conditions may require flush grade.

B. Soil Preparation:

- Prior to planting, Contractor shall obtain soils test from certified soil testing lab and send copy to Architect. Commercial fertilizer shall be as per recommendations of soils lab. It shall be delivered to the site in bags labeled with manufacturer's guaranteed analysis. If stored at the site, fertilizer shall be protected from the elements prior to use.
- Organic Soil Amendment (OSA): Shall be nitrogenized fine grained Redwood sawdust, or approved equal. The Contractor shall submit samples to the Architect for review prior to ordering of material. Particle size, mix proportions, Ph, and salinity content shall conform to manufacturer's literature.
- Backfill Mix for Shrubs and Trees: Shall consist of 70% native soil excavated from the planting holes (free of rock/debris 1 inch or greater in size), 30% nitrogenized redwood sawdust (OSA), and the following additional amendments:

Container Size	Soil Fertility
1. Shrubs (1, 5, & 15 gallon)	1. As per soils lab recommendation
2. Trees (5 & 15 gallon & 24" box)	2. As per soils lab recommendation

- Using a rotary-cultivator, thoroughly till three inches of OSA a minimum of two passes of all areas six inches deep in two directions 90 degrees to each other including all areas that include shrubs only. Rake entire area to remove clods and stones over one inc in diameter, and sticks, ect. Maintain adequate distance from mud sills in accordance with local codes.

C. Planter Preparation

- Excavate planter areas and tree wells in paved interior to a depth of 10" or below paving base rock, which ever is deeper.
- Dispose of all base rock from planter areas off site.
- Back fill planters with top soil. Submit source and sample to Architect prior to installation.
- Back fill into existing sub soil to a depth of 6" to create a transitional layer of soil.
- Water down and lightly compact topsoil to remove air pockets and achieve specified grade

3.3 SHRUB AND TREE PLANTING

- Excavation of planting holes shall be a minimum of twice the depth and diameter of the plant root ball.
- Sides and the bottom of the planting hole shall be thoroughly "broken up" and loosened so that no "auger slick" or compaction of soil exists.
- Planting trees: minimum 1" per hour drainage from planting pit. If not achieved, notify Architect.
- Fill holes with amended backfill mixture to the proper height to receive the plant and thoroughly tamp the mixture.
- Lightly loosen the outer edge of the root ball soil and set the plant in the center of the hole.
- Compact backfill mixture around root ball until 2/3 of the hole is filled, then water thoroughly.
- Place remaining backfill in hole so that crown of plant is 1-1/2" to 2" above surrounding grade.
- A four-inch-high water basin shall be constructed around each shrub and tree as per detail on the Plans (except when plant is located within turf area).
- Each plant basin shall be mulched by applying nitrogenized redwood sawdust to a depth of two inches, evenly spread over the entire basin area and soaked thoroughly. Then all planting areas will be mulched/top dressed.
- Trees to be planted in interior paved walkways as indicated on the drawings shall be planted with deep-root planters with perforated pipe and sock for aeration.

3.4 INSTALLATION OF TOP DRESSING

- Following all plant material planting, refined raking of finish grades, application and watering-in of weed control treatment, all shrubs, tree areas and/or ground cover areas shall be top dressed.
- All top dressing will be Earth Tones Mulch Pro Chip (50% Mahogany, 50% Dark Brown) or approved equal. Contractor shall submit samples to County's Authorized Representative for review and appropriate action. Maximum chip size shall be 1/2" diameter of uniform color and consistency.
- The Contractor shall spread the top dressing a minimum of 2 inches deep over all areas, and shall uniformly rake so as to create a smooth plane. Neat uniform appearance of all top dressing shall be maintained at all times and is solely the responsibility of the contractor.

3.5 GENERAL INSTALLATION

- Preparation:
 - Remove dead and decaying vegetation, sticks, stones and debris over 1/2" in diameter. Dispose of off site at the time of removal.

3.6 STAKING AND GUYING TREES

- Trees shall be staked as per details on the Drawings.
- Tree stakes shall be treated Lodge Pole Pine: two, 2 inch in diameter, 10 feet long for 15 G.C./24" box size trees; 3 inch in diameter, 12 foot poles for 36 inch box or larger.
- Trees shall be tied as per tree staking detail. Over-sized trees shall have 12' poles and two or more ties, as determined by the Architect.
- Staking poles shall not interfere with the lateral branching of trees.

3.7 WEED CONTROL

- Shrub and/or ground cover areas shall be weed-free with acceptable pre- emergent

- Prior to laying down of mulch/top dressing, a letter stating that the work has been completed shall be signed and verified by the Architect and delivered by the Contractor to the District.

3.8 CLEAN-UP

- After planting and irrigation operations have been completed, the Contractor shall remove trash, empty plant containers, and tools and equipment used in this work, or any other debris accumulated by the work, as specified herein, from the site of the work.
- Scars, ruts, or other marks in the area caused by this work shall be repaired at the Contractor's expense, and the ground left in a neat and orderly condition throughout the site or work at no additional cost to the District. All hardsurface paved areas shall be thoroughly cleaned.

3.9 FIELD OBSERVATIONS AND ACCEPTANCE

- The District's Authorized Representative shall perform at least two project field observations upon completion of each phase of the work. Field observations shall be arranged by the Contractor by notification to the District 's Authorized Representative two days prior to field observation date.
 - The first field observation shall take place upon completion of the designated maintenance period. Discrepancies noted by the District 's Authorized Representative must be corrected and written notice of completion of remedial work delivered to the District prior to the next field observation.
 - The second field observation will take place upon completion of all remedial work. If the job is satisfactory and to the best of the District 's Authorized Representative's knowledge, information, and belief, that the work is carried out in general conformance with the Plans, Specifications, and Contract, and general design intent, a written notice of final review shall be prepared by the District 's Authorized Representative and submitted for stage approval to the County, prior to termination of the maintenance period and stage acceptance. The District shall issue stage acceptance to the Contractor.
- If the job is **NOT** satisfactory, the Contractor shall continue the maintenance period at no cost to the District until stage acceptance by the District has been issued.
- Irrigation:
 - Field observation of final pressure rating of mainline testing and observation of pressurized lateral line tests.
 - Field observation of irrigation coverage test.
 - Field observation of overall irrigation system operation and compliance with the plans and installation procedures as specified herein.
- Planting:
 - Field observation of final finish grading to review drainage and general appearance before planting.
 - Field observation of plants in containers prior to planting.
 - Field observation of plant locations to review general conformance with the Plans and planting procedures as specified herein.

3.10 MAINTENANCE

- It shall be the sole responsibility of the Contractor to maintain grades, planting, and irrigation as specified herein through stage acceptance by the District and review by the District 's Authorized Representative. Maintenance shall include responsibility for losses due to neglect or vandalism, and continue for a full 90 calendar days initiating after the job is fully completed and written notice of start of maintenance is received from the District.
- Finish grade shall be maintained to facilitate run-off with silt build-up at back of walk and headers removed.
- Irrigation system to be checked minimum once a week, heads lowered or raised as needed. Leaks, damage, and/or settling shall be repaired immediately.
- Plantings shall be weeded, fertilized, cultivated, sprayed, and pruned as necessary to produce a healthy plant specimen.
- Irrigation shall be checked, heads adjusted for coverage and over-spray, no water on buildings, walks, parking areas, etc. Controller shall be labeled to location of valves per Irrigation Plans.
- Guarantee of planting and irrigation for one calendar year shall commence at the time of stage acceptance by District or his Authorized Representative.

3.11 GUARANTEE PERIOD

The guarantee period will commence upon issuance of stage acceptance by the District to the Contractor at the termination of the maintenance period.

- Planting Guarantee
 - The Contractor will guarantee the planting (as specified herein) for a period of two (2) calendar years. The signing of the Contract for work is considered as the written guarantee to carry out this provision.
 - Plant material which is lost due to improper planting or plant diseases or pests which were present at the time of the start of the guarantee period shall be replaced by the Contractor at no cost to the District.
- Completion of Guarantee Period and Final Acceptance
 - A final field observation will take place upon completion of the designated guarantee period.
 - Discrepancies noted by the District 's Authorized Representative, which are a direct cause of the Contractor's work as shown on the Plans and specified herein, shall be made correct and complete to the satisfaction of the District at no additional cost to the District.

END OF SECTION

The developer will submit receipts and/or invoices for all compost and mulch purchases to Environmental Services Division after final construction

Rebekah Robertson Signed on Behalf of DRP Builders, Inc.

Rebekah Robertson Applicant Signature 9/14/2023

REVISIONS

- 03/08/2023
RESUBMITTAL #1
- 7/3/2023
RESUBMITTAL #2
- 8/15/2023
RESUBMITTAL #3

LANDSCAPE NOTES

These drawings are instruments of service and are the property of WESTON MILES ARCHITECTS, INC. All designs and other information on the drawings are for use on the specified project and shall not be used otherwise without the expressed written permission of WESTON MILES ARCHITECTS, INC.

Written dimensions on these drawings shall have precedence over scaled dimensions. Contractors shall verify and be responsible for all dimensions and conditions on the job and this office shall be notified of any variations from the dimensions and conditions shown by these drawings. Shop details shall be submitted to this office for approval before proceeding with fabrication.

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DATE: 03/07/2023

JOB NO: 21014

L1.0

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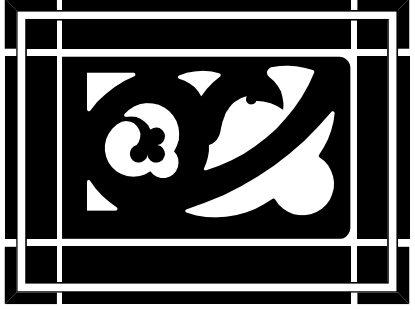


GENERAL NOTES

1. CONTRACTOR TO COORDINATE FINAL LOCATION/LAYOUT OF ALL PLANTS W/LANDSCAPE ARCHITECT ONSITE PRIOR TO PLANTING
2. CONTRACTOR SHALL VERIFY LOCATION AND DEPTH OF ALL <E> UTILITIES PRIOR TO ANY EXCAVATION.
3. ALL SPOILS, DEBRIS, AND INCIDENTAL ITEMS TO BE REMOVED SHALL BE HAULED OFF SITE BY CONTRACTOR AND BE DISPOSED OF IN A LAWFUL MANNER AS IT ACCUMULATES.
4. CONTRACTOR SHALL TAKE CARE NOT TO DAMAGE IN ANY WAY, ANY <E>ELEMENTS NOT DESIGNATED FOR REMOVAL. SUCH DAMAGE IS THE RESPONSIBILITY OF THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
5. SHUT OFF ALL WATER, GAS & ELECTRIC WILL NEED TO BE COORDINATED W/<E>SITE OPERATIONS
6. THIS DRAWING REFLECTS THE <E> SITE CONDITIONS TO THE BEST OF OUR KNOWLEDGE
7. THE SITE MUST BE CLEANED AT THE END OF EACH BUSINESS DAY.
8. CONTRACTOR TO MAINTAIN A SAFE, SECURE SITE.
9. PLANT 5 GALLON POPLAR TREES EVERY 4' ALL ALONG EAST DUNNE

PLANTING LEGEND

SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
TREES				
	BRACHYCHITON POPULNEUS	KURRAJONG	24" BOX	SEE DETAIL 9/L1.3
	PISTACHIA CHINENSIS	CHINESE PISTACH	15 GAL	SEE DETAIL 9/L1.3
	CERCIS OCCIDENTALIS	WESTERN REDBUD	15 GAL	SEE DETAIL 9/L1.3
	ARBUTUS MARINA	MARINA STRAWBERRY TREE	15 GAL	SEE DETAIL 9/L1.3
SHRUBS				
	SPHAERALCEA AMBIGUA	APPRICOT MALLOW	5 GAL	SEE DETAIL 1/L1.3
	CEANOTHUS CARMEL CREEPER	CARMEL CREEPER	5 GAL	SEE DETAIL 1/L1.3
	ROSMARINUS PROSTRATUS	PROSTRATE ROSEMARY	5 GAL	SEE DETAIL 1/L1.3
	SALVIA APIANA	WHITE SAGE	5 GAL	SEE DETAIL 1/L1.3
	MUHLENBERGIA CAPILLARIS	MULY GRASS	1 GAL	SEE DETAIL 1/L1.3
	LAVENDULA HIDCOTE	HIDCOTE LAVENDER	1 GAL	SEE DETAIL 1/L1.3
	FESTUCA GLUACA	BLUE FESTUCA	1 GAL	SEE DETAIL 1/L1.3
VINES				
	CAMPSIS RADICANS	TRUMPET VINE	15 GAL	SEE DETAIL 3/L1.3



WESTON MILES
ARCHITECTS

17500 Depot Street, Suite #200
Morgan Hill, CA 95037
1 • 408 • 779 • 6686

• Architecture • Landscape •



REVISIONS	
1	03/08/2023 RESUBMITTAL #1
2	7/3/2023 RESUBMITTAL #2
3	8/15/2023 RESUBMITTAL #3

LANDSCAPE PLAN
270 WEST DUNNE AVE TOWNHOMES
DRP BUILDERS, INC.
270 WEST DUNNE, MORGAN HILL, CA 95037

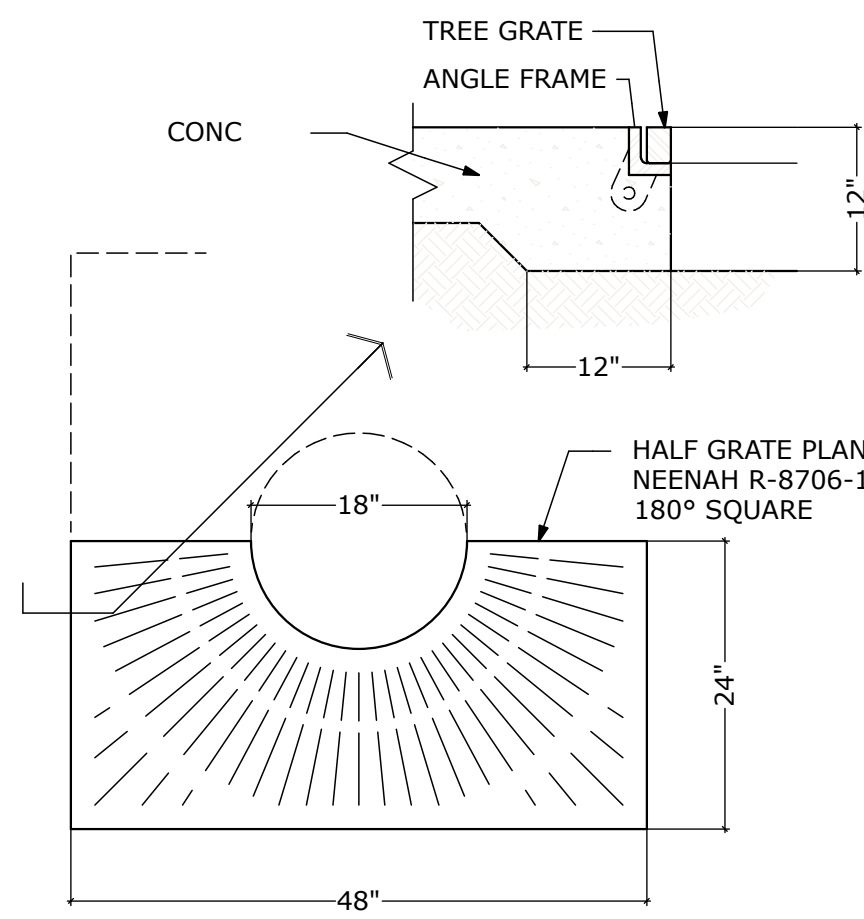
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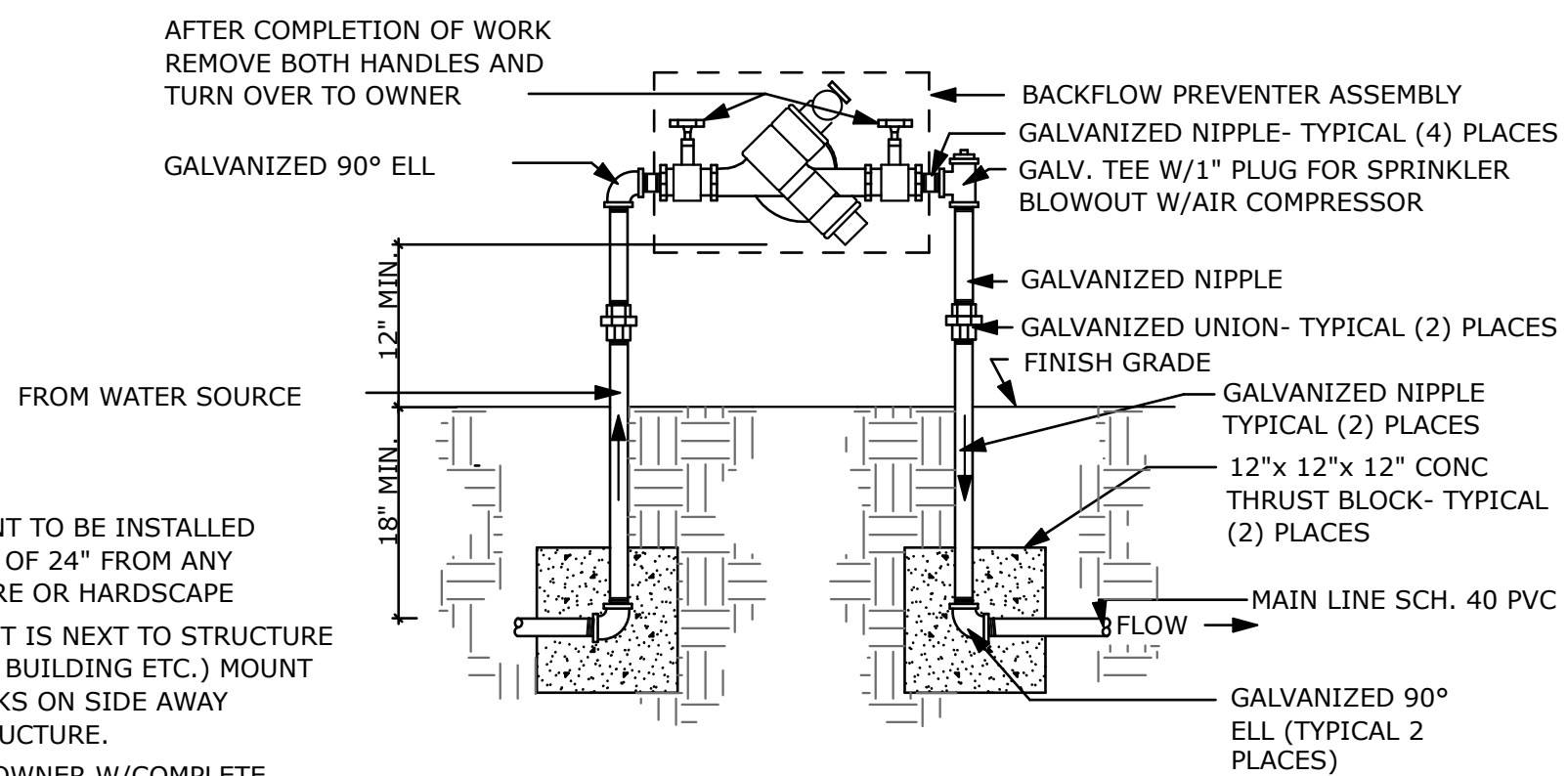
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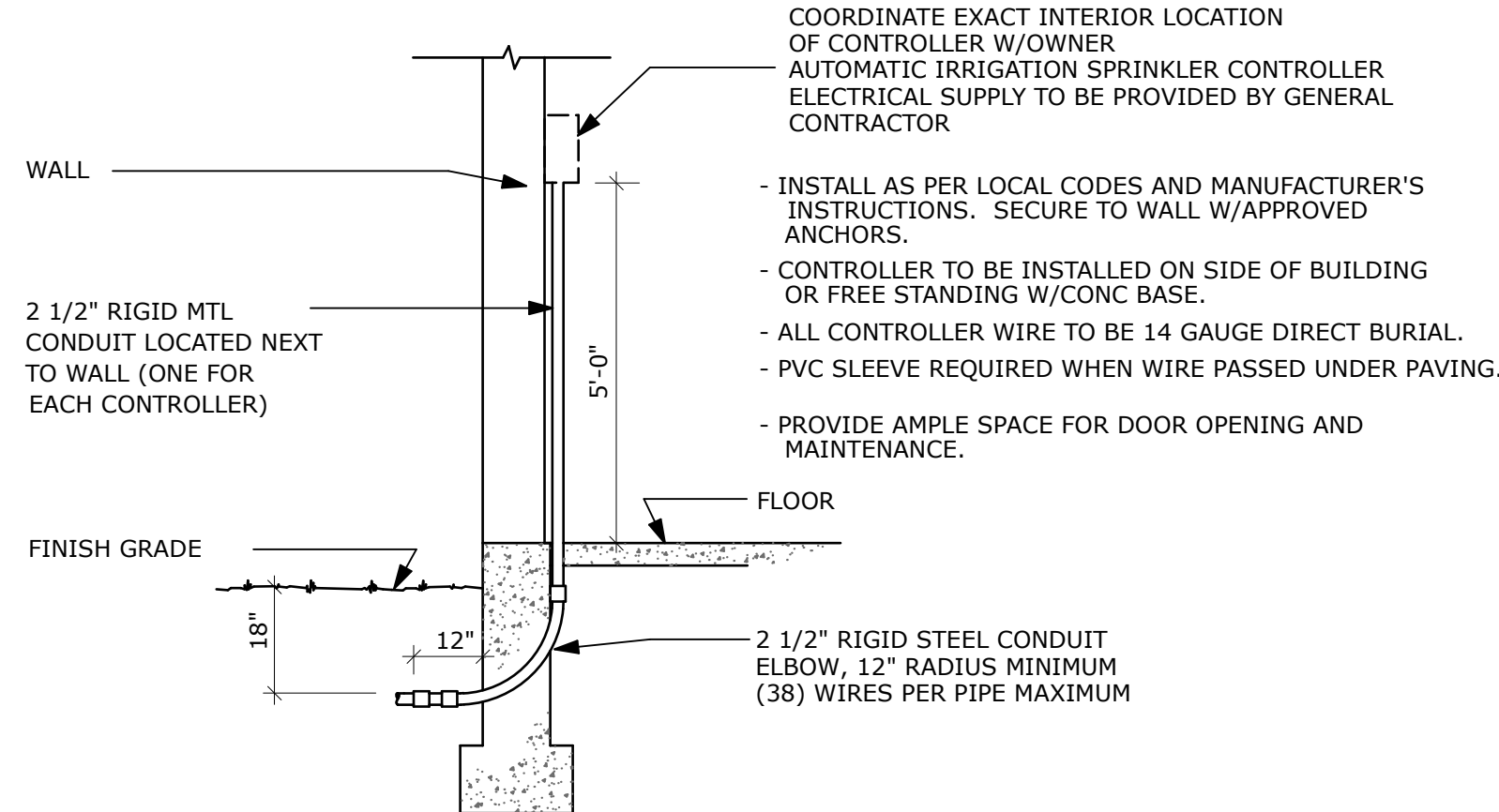
TREE WELL
SCALE: 3/4" = 1'-0"

NOTE:

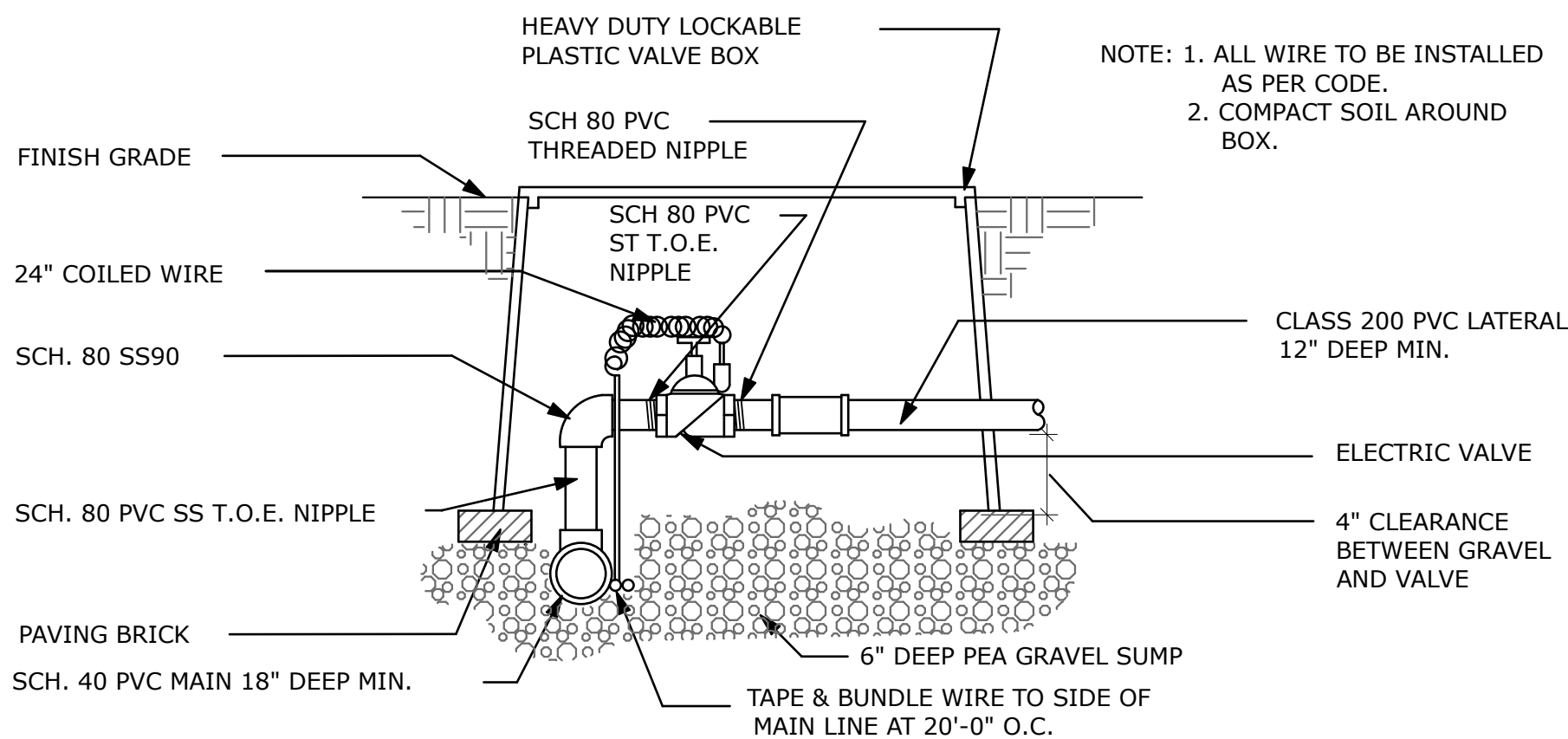
- EQUIPMENT TO BE INSTALLED AT A MIN. OF 24" FROM ANY STRUCTURE OR HARDSCAPE
- WHEN UNIT IS NEXT TO STRUCTURE (i.e. WALL, BUILDING ETC.) MOUNT TEST COCKS ON SIDE AWAY FROM STRUCTURE.
- PROVIDE OWNER W/COMPLETE WRITTEN INSTRUCTIONS ON HOW TO DRAIN ENTIRE BACKFLOW UNIT TO PREVENT FREEZING.



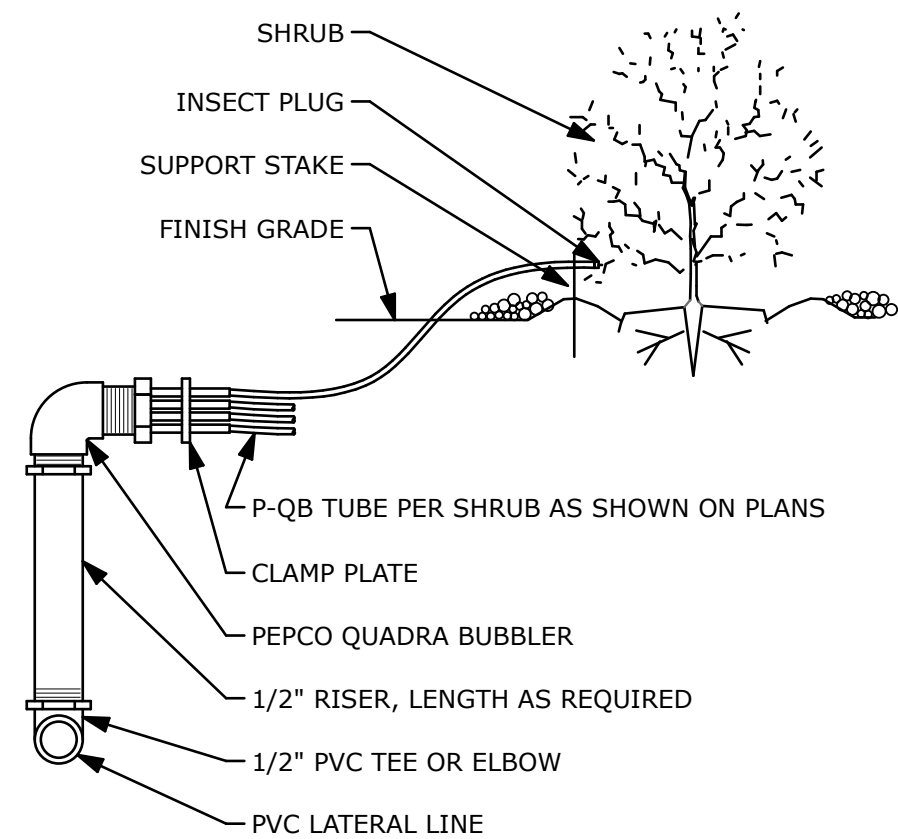
REDUCED PRESSURE BACKFLOW PREVENTER
SCALE: 1" = 1'-0"



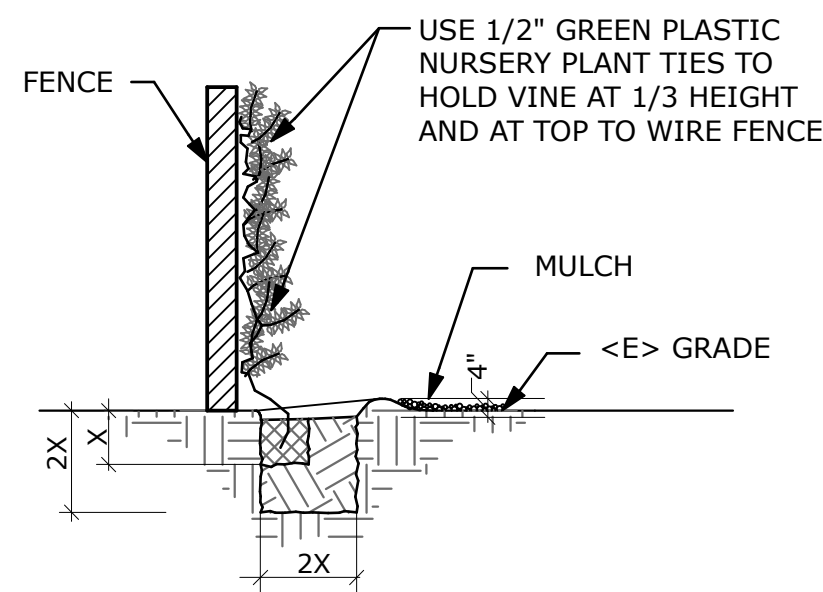
CONTROLLER
SCALE: 1" = 1'-0"



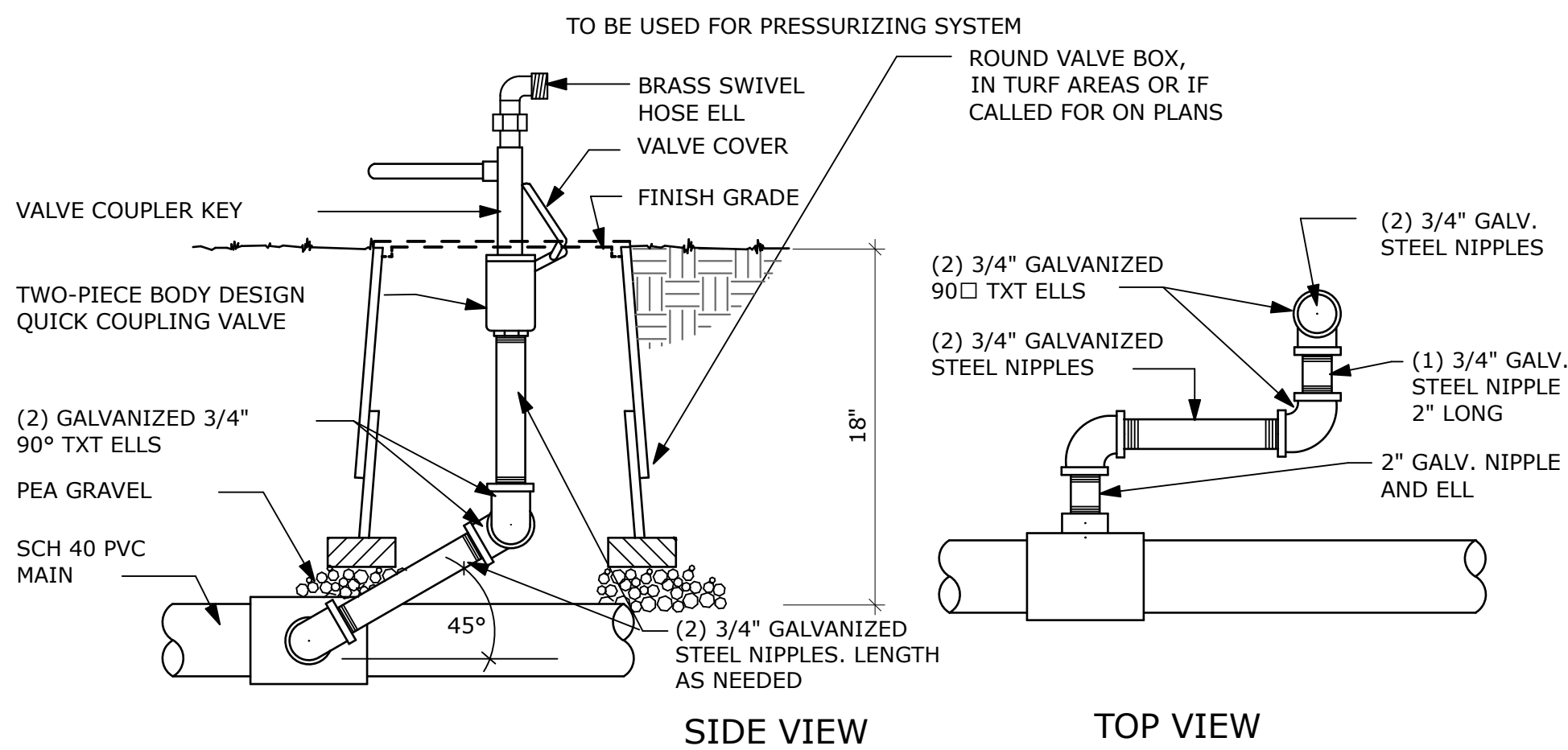
AUTOMATIC VALVE
SCALE: 1" = 1'-0"



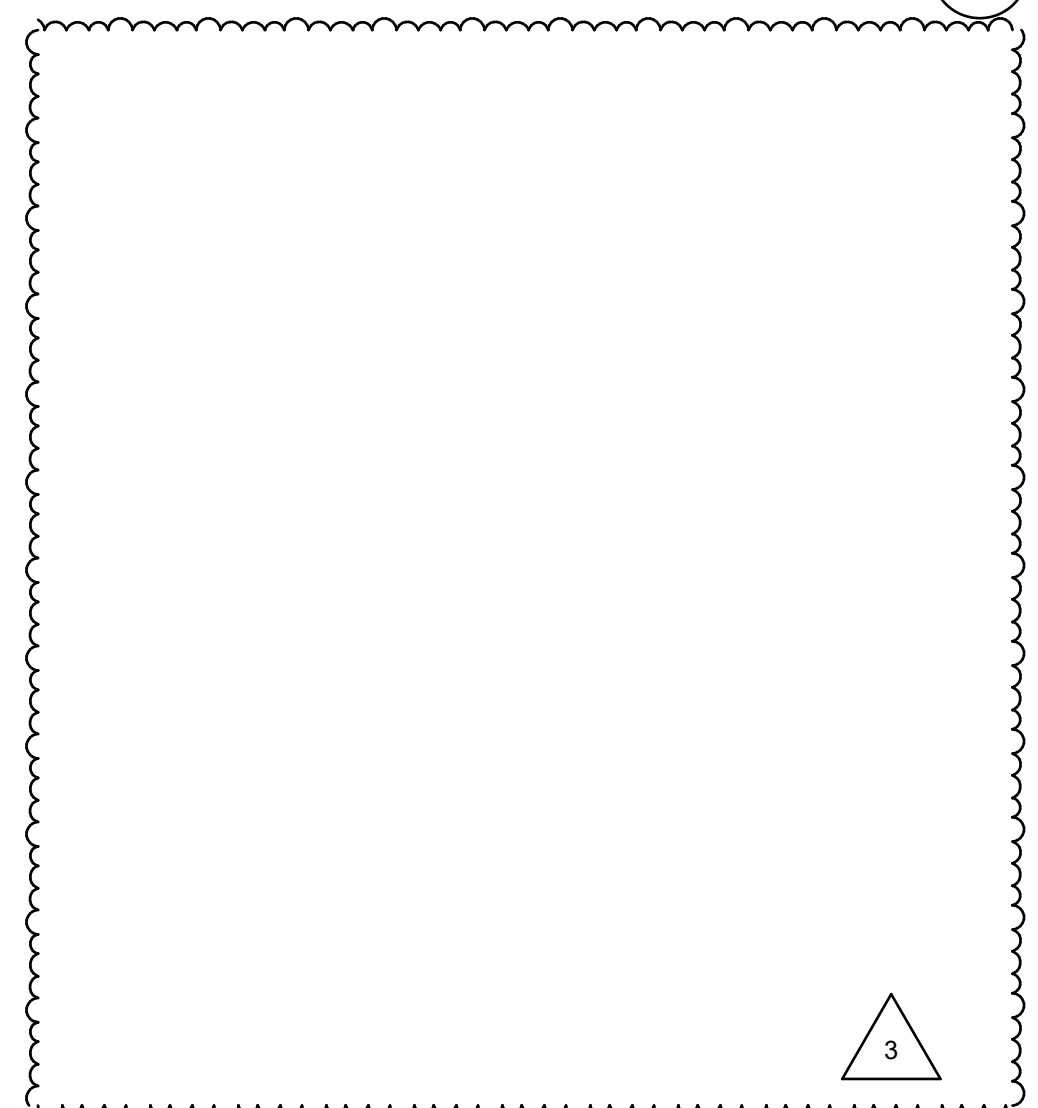
QUADRA BUBBLER
SCALE: 1" = 1'-0"



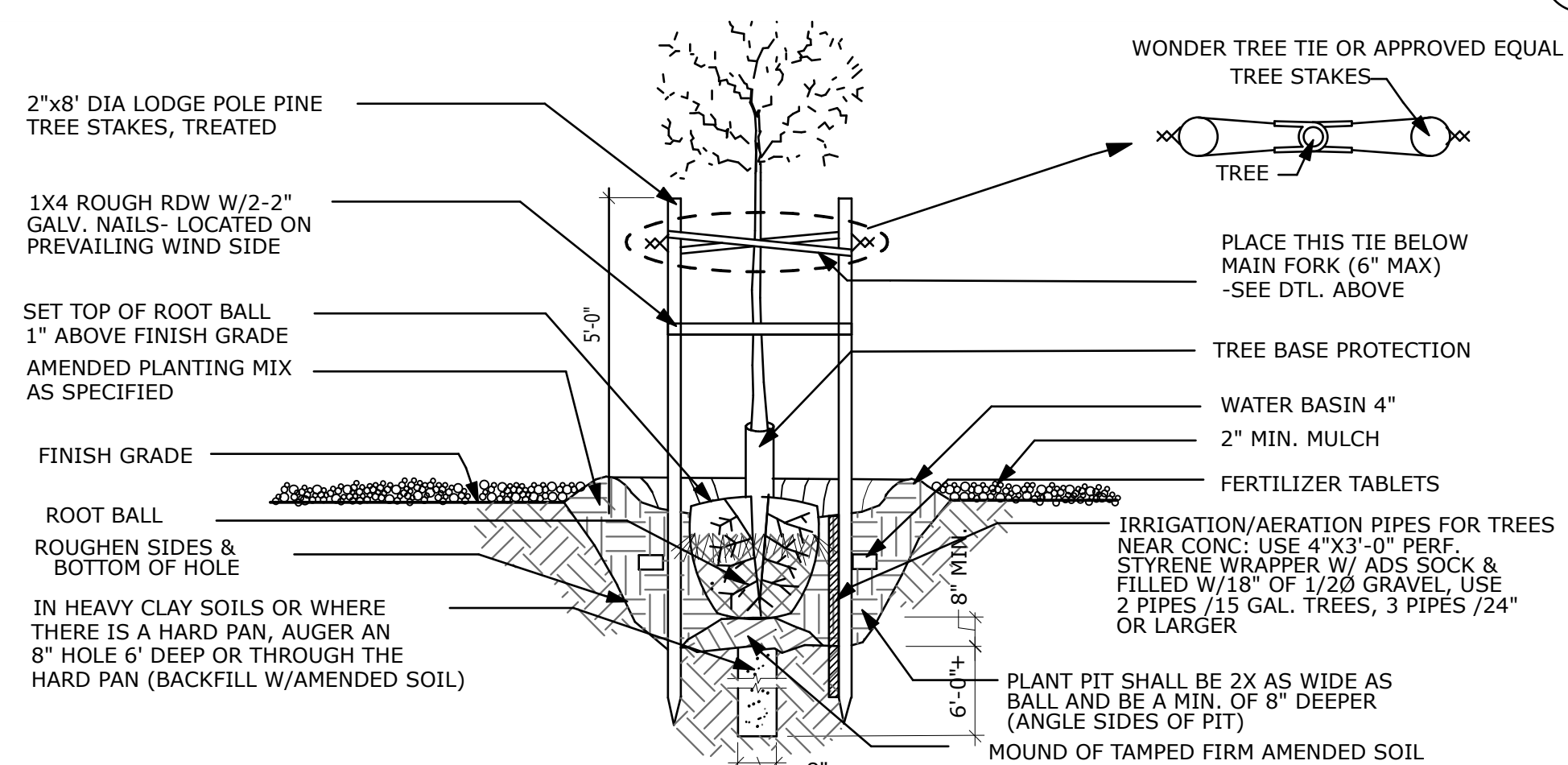
VINE PLANTING
SCALE: 1" = 1'-0"



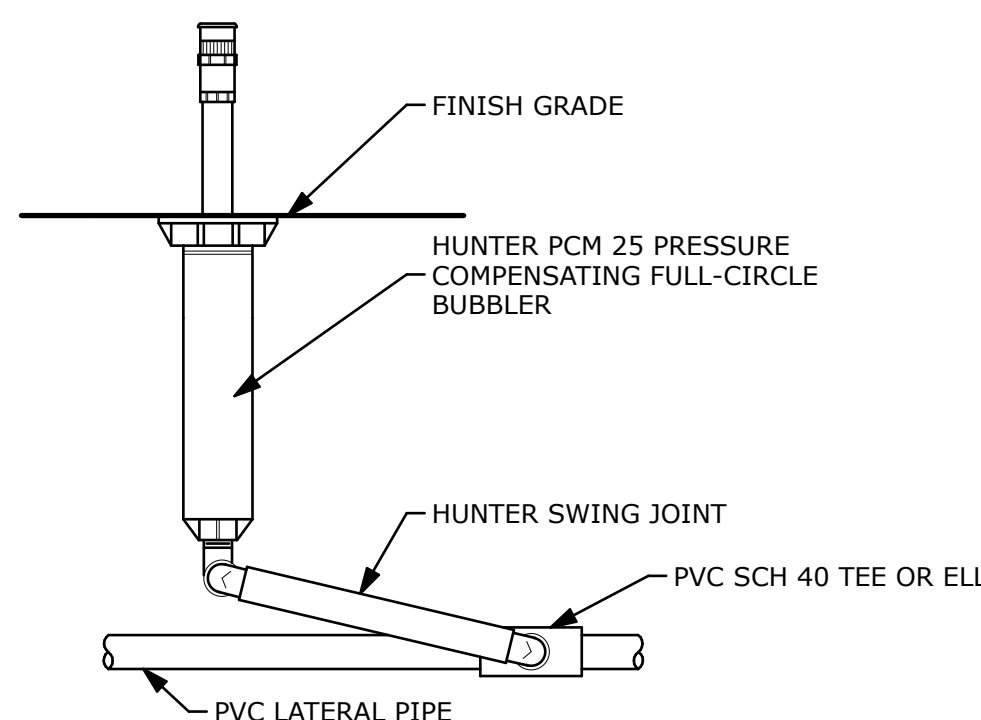
QUICK COUPLING VALVE
SCALE: 1" = 1'-0"



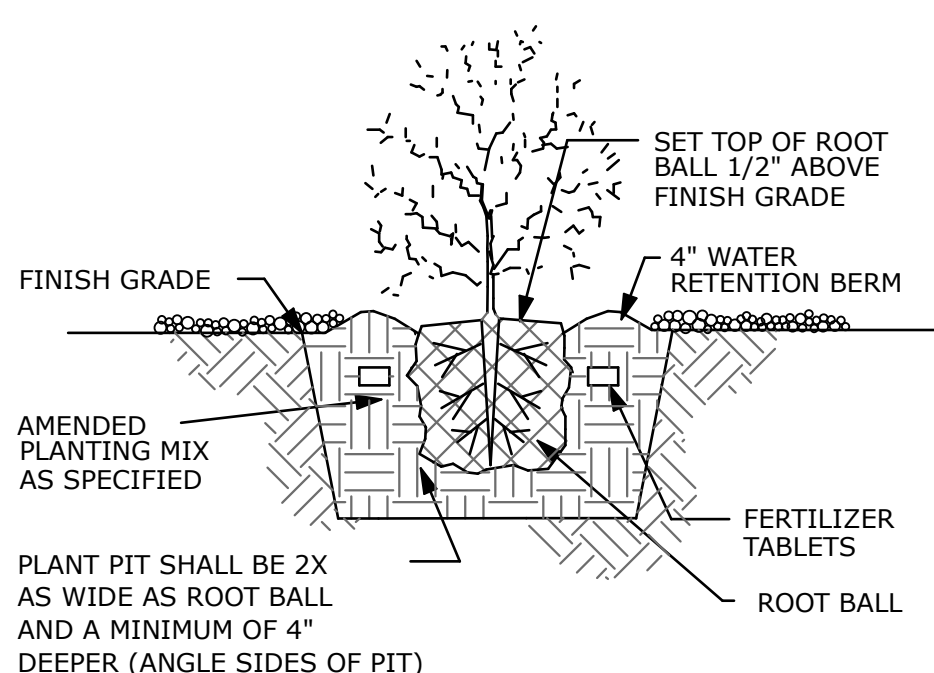
TRENCHING
SCALE: 1" = 1'-0"



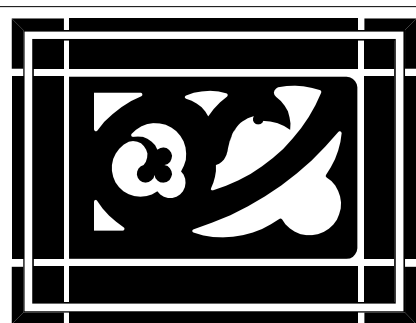
TREE PLANTING & STAKING
SCALE: 1" = 1'-0"



TREE BUBBLER
SCALE: 1" = 1'-0"



SHRUB PLANTING
SCALE: 1" = 1'-0"



WESTON MILES
ARCHITECTS

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Morgan Hill, CA 95037
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• Architecture • Landscape •



REVISIONS	
1	03/08/2023 RESUBMITTAL #1
2	7/3/2023 RESUBMITTAL #2
3	8/15/2023 RESUBMITTAL #3

LANDSCAPE DETAILS

270 WEST DUNNE AVE TOWNHOMES

DRP BUILDERS, INC.
270 WEST DUNNE, MORGAN HILL, CA 95037

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Written dimensions on these drawings shall have precedence over noted dimensions. Contractors shall verify and be responsible for all dimensions and conditions on the job and this office shall be notified of any variations from the dimensions and conditions shown by these drawings. Shop details shall be submitted to this office for approval before proceeding with fabrication.

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DATE: 03/07/2023

JOB NO: 21014

L1.3

LOT 1 - California Water Efficient Landscape Worksheet								
Reference Evapotranspiration (ET _c)		49.5	Project Type		Residential		0.55	
Hydrozone # / Planting Description ^a	Plant Factor (PF)	Irrigation Method ^b	Irrigation Efficiency (IE) ^c	ETAF (PF/IE)	Landscape Area (Sq. Ft.)	ETAF x Area	Estimated Total Water Use (ETWU) ^d	
Regular Landscape Areas								
A1, Tree Bubbler	0.3	Drip	0.81	0.37	200	74	2273	
A2, Shrub Bubbler	0.3	Drip	0.81	0.37	230	85	2614	
Totals					430	159	4888	
						ETWU Total	4888	
						Maximum Allowed Water Allowance (MAWA) ^e	7258	
ETAF Calculations								
Regular Landscape Areas								
Total ETAF x Area	159							
Total Area	430							
Average ETAF	0.37							

LOT 2 - California Water Efficient Landscape Worksheet								
Reference Evapotranspiration (ET _c)		49.5		Project Type		Residential		0.55
Hydrozone # / Planting Description ^a	Plant Factor (PF)	Irrigation Method ^b	Irrigation Efficiency (IE) ^c	ETAF (PF/IE)	Landscape Area (Sq. Ft.)	ETAF x Area	Estimated Total Water Use (ETWU) ^d	
Regular Landscape Areas								
B1, Shrub Bubbler	0.4	Drip	0.81	0.49	155	77	2349	
B2, Shrub Bubbler	0.3	Drip	0.81	0.37	295	109	3353	
B3, Tree Bubbler	0.3	Drip	0.81	0.37	600	222	6820	
Totals					1050	408	12522	
						ETWU Total	12522	
Maximum Allowed Water Allowance (MAWA) ^e							17723	
ETAF Calculations								
Regular Landscape Areas								
Total ETAF x Area	408							
Total Area	1050							
Average ETAF	0.39							

LOT 3 - California Water Efficient Landscape Worksheet								
Reference Evapotranspiration (ET _c)		49.5		Project Type		Residential		0.55
Hydrozone # / Planting Description ^a	Plant Factor (PF)	Irrigation Method ^b	Irrigation Efficiency (IE) ^c	ETAF (PF/IE)	Landscape Area (Sq. Ft.)	ETAF x Area	Estimated Total Water Use (ETWU) ^d	
Regular Landscape Areas								
C1, Tree Bubbler	0.4	Drip	0.81	0.49	200	99	3031	
C2, Shrub Bubbler	0.3	Drip	0.81	0.37	312	116	3546	
				Totals	512	214	6578	
						ETWU Total	6578	
Maximum Allowed Water Allowance (MAWA) ^e							8642	
ETAF Calculations								
Regular Landscape Areas								
Total ETAF x Area	214							
Total Area	512							
Average ETAF	0.42							

IRRIGATION DEMOLITION NOTES:

- CONTRACTOR SHALL EXECUTE IRRIGATION WORK EXPEDITIOUSLY TO MAINTAIN WATER SERVICE FOR EXISTING TO REMAIN IRRIGATION SYSTEMS LOCATED OUTSIDE OF PROJECT AREA AS REQUIRED TO MAINTAIN PLANT MATERIAL IN A HEALTHY CONDITION.
- CONTRACTOR SHALL SCHEDULE OR PHASE WORK AS APPROPRIATE WITH GENERAL CONTRACTOR'S OVER-ALL PROJECT SCHEDULING.
- IRRIGATION CONTRACTOR SHALL INCLUDE IN THEIR BID TO COORDINATE WITH GENERAL CONTRACTOR PRIOR TO DEMOLITION AND GRADING AND MAKE TEMPORARY AND PERMANENT CONNECTIONS AND / OR REPAIRS AS NECESSARY TO MAINTAIN IRRIGATION WATER SERVICE TO IRRIGATION SYSTEMS LOCATED OUTSIDE OF PROJECT AREA AFFECTED BY CONSTRUCTION. CONTRACTOR TO MAINTAIN WATER SUPPLY TO PLANTS AND TURF AT ALL TIMES OR SUPPLY WATER MANUALLY TO MAINTAIN PLANTS AND TURF IN HEALTHY CONDITION THROUGHOUT CONSTRUCTION. DAMAGE TO TURF DUE TO INSUFFICIENT WATER SHALL BE REPAIRED BY INSTALLING NEW SOD.
- CONTRACTOR SHALL NOTIFY AND COORDINATE WITH CAMPUS LANDSCAPE SUPERVISOR IN ADVANCE OF PLANNED DISRUPTIONS OF IRRIGATION WATER SERVICE.

IRRIGATION NOTES

- I HAVE COMPLIED WITH THE CRITERIA OF THE ORDINANCE AND APPLIED THEM ACCORDINGLY FOR THE EFFICIENT USE OF WATER IN THE IRRIGATION DESIGN PLAN.


ALISSA J. NOGUEZ, CALIFORNIA LANDSCAPE ARCHITECT #3676
- THESE NOTES ARE FOR GENERAL REFERENCE IN CONJUNCTION WITH AND AS A SUPPLEMENT TO THE WRITTEN SPECIFICATIONS, DETAILS, ADDENDA AND CHANGE ORDERS ASSOCIATED WITH THE CONTRACT DOCUMENTS.
- CONTRACTOR SHALL BECOME FAMILIAR WITH THE LOCATION OF EXISTING AND PROPOSED UNDERGROUND SERVICES. CONTACT UNDERGROUND SERVICE ALERT (USA) AT (800) 642-2444 PRIOR TO BEGINNING WORK. CONTACT OWNER'S REPRESENTATIVE SHOULD ANY CONFLICTS ARISE.
- THE IRRIGATION SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH LOCAL CODES AND REGULATIONS. CONTRACTOR TO CONFORM TO THE REQUIREMENTS OF NFPA 24, SECTION 8.1, MINIMUM DEPTH-OF-COVER (36 INCHES) FOR PIPE TO INCLUDE FIRE LANE ROUTES OF ACCESS.
- THIS SYSTEM IS DESIGNED TO OPERATE AT 60 PSI AND 30 GPM FROM THE POINT OF CONNECTION. CONTRACTOR SHALL VERIFY PRESSURE AND FLOW PRIOR TO BEGINNING OF WORK. CONTACT OWNER'S REPRESENTATIVE IMMEDIATELY SHOULD CONFLICTS ARISE.
- THE IRRIGATION SYSTEM DESIGN IS DIAGRAMMATIC. WHERE PIPING, VALVES, ETC. ARE SHOWN OUTSIDE OF PLANTING AREAS, THE INTENT IS FOR PIPING, VALVES, ETC. TO BE INSTALLED WITHIN PLANTING AREAS UNLESS OTHERWISE NOTED AND DETAILED.
- CONTRACTOR SHALL COORDINATE IRRIGATION INSTALLATION WITH OTHER TRADES. CONTRACTOR TO COORDINATE AND VERIFY ALL SLEEVEING, PIPING, ELECTRICAL SUPPLY, POINT OF CONNECTION, ETC.
- CONTRACTOR IS RESPONSIBLE FOR COMPLETE AND UNIFORM COVERAGE OF PLANTING AND TURF AREAS. CONTRACTOR TO THROTTLE THE FLOW CONTROL AT EACH VALVE TO OBTAIN OPTIMUM OPERATING PRESSURE FOR EACH CIRCUIT. ADJUST SPRAY HEADS AND NOZZLES FOR OPTIMUM COVERAGE WHILE PREVENTING OVERSPRAY ONTO WALKWAYS AND STRUCTURES. ADDITIONALLY, CONTRACTOR SHALL ADJUST ALL VALVES, NOZZLES, AND HEADS FOR OPTIMUM COVERAGE, AVOIDING MISTING, OVERSPRAY, OR UNDERSPRAY.
- LATERAL LINES TO BE SIZED PER PIPE SIZING CHART.
- CONTRACTOR TO MAINTAIN AS-BUILT DRAWING SET TO BE AVAILABLE ON SITE AT ALL TIMES AND AT TIME OF SUBSTANTIAL COMPLETION REVIEW. CONTRACTOR SHALL PREPARE REDUCED, COLOR-CODED PLANS, LAMINATE, AND PLACE (1) IN CONTROLLER ENCLOSURE AND DELIVER (1) TO OWNER'S REPRESENTATIVE AFTER APPROVAL OF RECORD DRAWING SUBMITTAL AND PRIOR TO FINAL COMPLETION.
- CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN TRENCHING AROUND EXISTING TREES AND SHRUBS. CONTRACTOR SHALL HAND TRENCH WHEN TRENCHING ACROSS ROOTS 2" AND LARGER TO PRESERVE ROOT SYSTEM. ROOTS SMALLER THAN 2" MAY BE TRIMMED. DO NOT TEAR ANY ROOTS.
- THE CONTRACTOR SHALL BE RESPONSIBLE UNDER THIS CONTRACT FOR REPAIRING OR REPLACING, AT THEIR OWN EXPENSE, ANY STRUCTURES, FENCES, WALLS, PLANT MATERIAL OR TREES DAMAGED OR DESTROYED, BOTH ON THIS PROPERTY OR THOSE PROPERTIES ADJACENT TO THIS SITE. THE DAMAGED ITEM(S) WILL BE RESTORED TO THEIR ORIGINAL CONDITION OR REPLACED TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE.
- CONTRACTOR SHALL RETAIN THE SERVICES OF A THIRD-PARTY CERTIFIED LANDSCAPE IRRIGATION WATER AUDITOR TO PERFORM A LANDSCAPE IRRIGATION WATER AUDIT AND PREPARE AN IRRIGATION AUDIT REPORT COMPLIANT WITH MWEO 492.12 INCLUDING, BUT NOT LIMITED TO INSPECTION, SYSTEM TUNE-UP, SYSTEM TEST WITH DISTRIBUTION UNIFORMITY, CORRECTING OVER-SPRAY OR RUN-OFF AND CONFIGURING CONTROLLERS WITH APPLICATION RATE, SOIL TYPE, PLANT FACTORS, SLOPE, SUN EXPOSURE AND OTHER FACTORS NECESSARY FOR ACCURATE WATERING TIMES MUST BE AFTER 7 PM AND BEFORE 9 AM.
- REFER TO SPECIFICATIONS SECTION AND IRRIGATIONS DETAILS ON SHEET L.13.

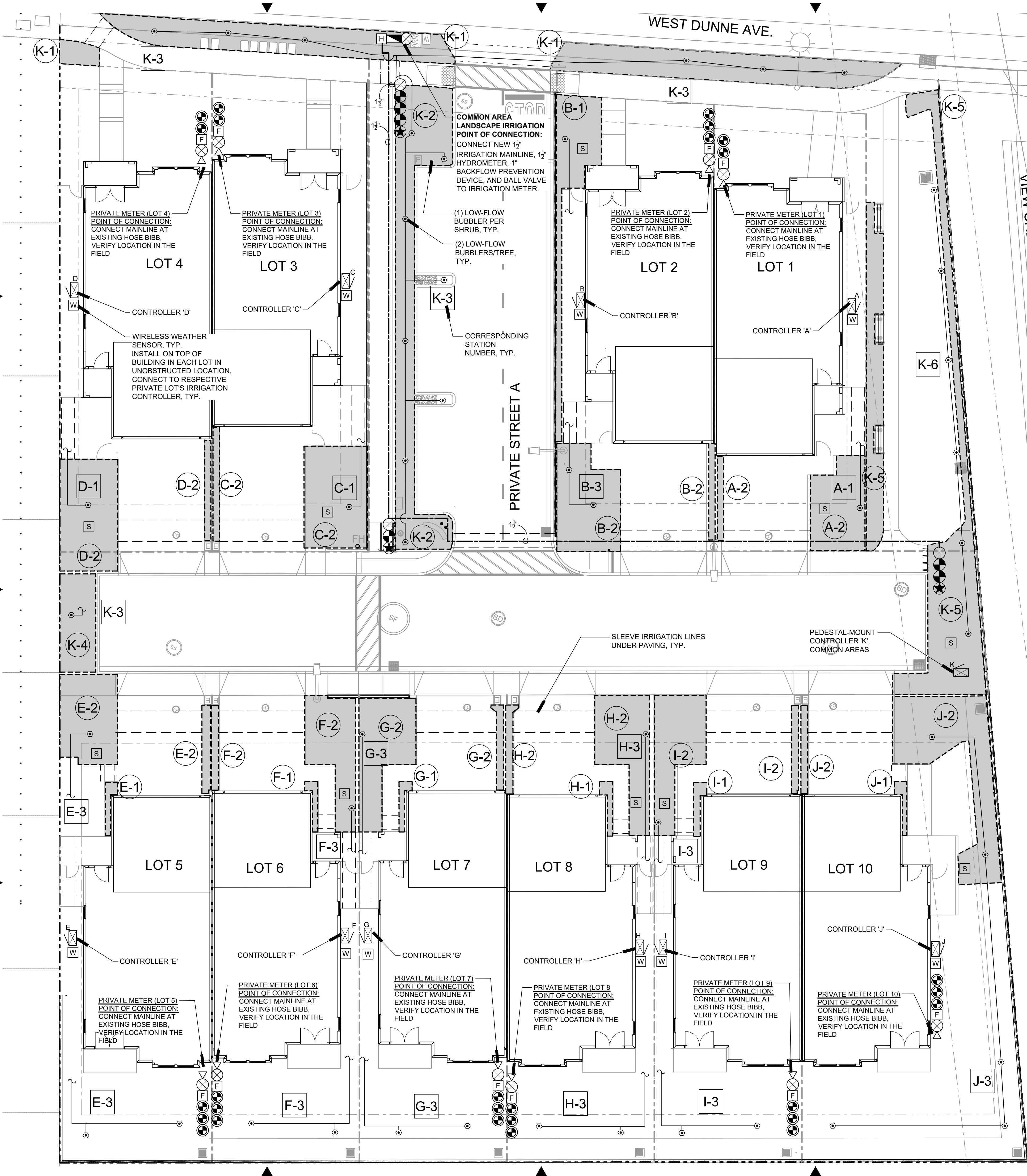
329100 TEMPORARY TREE AND PLANT PROTECTION
328400 PLANTING IRRIGATION

LOT 4 - California Water Efficient Landscape Worksheet								
Reference Evapotranspiration (ET _c)		49.5		Project Type		Residential		0.55
Hydrozone # / Planting Description ^a	Plant Factor (PF)	Irrigation Method ^b	Irrigation Efficiency (IE) ^c	ETAF (PF/IE)	Landscape Area (Sq. Ft.)	ETAF x Area	Estimated Total Water Use (ETWU) ^d	
Regular Landscape Areas								
D1, Tree Bubbler	0.3	Drip	0.81	0.37	200	74	2273	
D2, Shrub Bubbler	0.3	Drip	0.81	0.37	309	114	3512	
0	0.3	Drip	0.81	0.37	0	0	0	
Totals					509	189	5786	
						ETWU Total	5786	
Maximum Allowed Water Allowance (MAWA) ^e							8592	
ETAF Calculations								
Regular Landscape Areas								
Total ETAF x Area	189							
Total Area	509							
Average ETAF	0.37							

LOT 5 - California Water Efficient Landscape Worksheet									
Reference Evapotranspiration (ET _c)		49.5		Project Type		Residential		0.55	
Hydrozone # / Planting Description ^a	Plant Factor (PF)	Irrigation Method ^b	Irrigation Efficiency (IE) ^c	ETAF (PF/IE)	Landscape Area (Sq. Ft.)	ETAF x Area	Estimated Total Water Use (ETWU) ^d		
Regular Landscape Areas									
E1, Shrub Bubbler	0.4	Drip		0.81	0.49	16	8	242	
E2, Shrub Bubbler	0.3	Drip		0.81	0.37	270	100	3069	
E3, Tree Bubbler	0.3	Drip		0.81	0.37	600	222	6820	
					Totals	886	330	10131	
							ETWU Total	10131	
							Maximum Allowed Water Allowance (MAWA) ^e	14955	
ETAF Calculations									
Regular Landscape Areas									
Total ETAF x Area	330								
Total Area	886								
Average ETAF	0.37								

LOT 6 - California Water Efficient Landscape Worksheet									
Reference Evapotranspiration (ET _c)		49.5		Project Type		Residential		0.55	
Hydrozone # / Planting Description ^a	Plant Factor (PF)	Irrigation Method ^b	Irrigation Efficiency (IE) ^c	ETAF (PF/IE)	Landscape Area (Sq. Ft.)	ETAF x Area	Estimated Total Water Use (ETWU) ^d		
Regular Landscape Areas									
F1, Shrub Bubbler	0.4	Drip		0.81	0.49	16	8	242	
F2, Shrub Bubbler	0.3	Drip		0.81	0.37	247	91	2808	
F3, Tree Bubbler	0.3	Drip		0.81	0.37	600	222	6820	
					Totals	863	322	9870	
							ETWU Total	9870	
							Maximum Allowed Water Allowance (MAWA) ^e	14567	
ETAF Calculations									
Regular Landscape Areas									
Total ETAF x Area	322								
Total Area	863								
Average ETAF	0.37								

LOT 7 - California Water Efficient Landscape Worksheet								
Reference Evapotranspiration (ET _c)		49.5		Project Type		Residential		0.55
Hydrozone # / Planting Description ^a	Plant Factor (PF)	Irrigation Method ^b	Irrigation Efficiency (IE) ^c	ETAF (PF/IE)	Landscape Area (Sq. Ft.)	ETAF x Area	Estimated Total Water Use (ETWU) ^d	
Regular Landscape Areas								
G1, Shrub Bubbler	0.4	Drip		0.81	0.49	15	7	227
G2, Shrub Bubbler	0.3	Drip		0.81	0.37	249	92	2830
G3, Tree Bubbler	0.3	Drip		0.81	0.37	600	222	6820



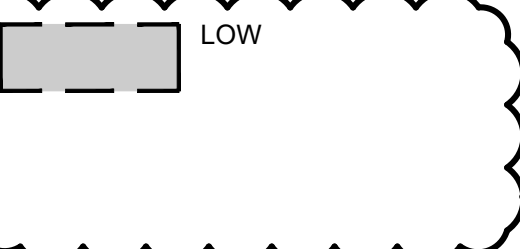
IRRIGATION LEGEND

SYM	MODEL	MANUF.	DESCRIPTION	GPM	PSI	RAD
BUBBLER						
⊙	1401	RAINBIRD	FLOOD BUBBLER IN DRAIN TUBE, TWO PER NEW TREE, NUMBER PER EXISTING TREE PER PLAN	0.25	30	-
•	1401	RAINBIRD	FLOOD BUBBLER, ONE PER SHRUB OR VINE	0.25	30	-
VALVES						
▣	825Y	FEBCO	1" BACKFLOW PREVENTER, INSTALL IN CAGE PER DETAIL			
⊗	4660-T	NIBCO	PLASTIC BALL VALVE, LINE SIZE			
⊙	PESB-PRS-D w/ PRF075RBY	RAINBIRD	PRESSURE REGULATED REMOTE CONTROL VALVE, SIZE PER PLAN, INSTALL REGULATOR/STRAINER UPSTREAM OF VALVES WITH FLOWS LESS THAN 5 GPM			
⊙	075-ASVF w/ PRF075RBY	RAINBIRD	PRESSURE REGULATED ANTI-SIPHON REMOTE CONTROL VALVE, INSTALL REGULATOR/STRAINER UPSTREAM OF VALVES WITH FLOWS LESS THAN 5 GPM.			
★	44LRC	RAINBIRD	1" QUICK COUPLING VALVE WITH RUBBER CAP, PROVIDE MATCHED QUICK COUPLING KEY (1 PER 5 VALVES)			
△			EXISTING HOSE BIBB - VERIFY LOCATION IN THE FIELD			
CONTROLLER/SENSOR						
A-1	ESP4ME3	RAINBIRD	PRIVATE LOT, EXTERIOR WALL MOUNT CONTROLLER A,B,C,D,E,F,G,H,I,J, COORDINATE POWER SUPPLY WITH ELECTRICAL TRADE			
K	ESP12LXMEF LXMSSPED	RAINBIRD	CONTROLLER K - COMMON AREAS - 12 STATION EXTERIOR STAINLESS STEEL PEDESTAL MOUNT IRRIGATION CONTROLLER, COORDINATE POWER SUPPLY WITH ELECTRICAL TRADE			
H	6HM15ER11EEMEL	NETAFIM	1-1/2" PRESSURE REDUCING MANUAL ELECTRIC HYDROMETER, CONNECT TO NEW CONTROLLER 'A'			
F	MJ100B	RAINBIRD	1" FLOW METER, CONNECT TO RESPECTIVE LOT'S CONTROLLER			
W	WR2	RAINBIRD	WIRELESS WEATHER SENSOR WITH AUTOMATIC RAIN SENSING OVERRIDE, MOUNT TO BUILDING			
S	SMRT-Y	RAINBIRD	SOIL MOISURE SENSOR			
PIPING						
—	SCH 40 PVC NON-PRESSURIZED LATERAL LINE, 12" DEPTH, NSF APPROVED, SIZE PER LATERAL SIZING CHART THIS SHEET, PURPLE COLOR					
—	SCH 40 (UP TO 2 1/2") CLASS 315 (3" AND LARGER) PVC PRESSURIZED MAINLINE, NSF APPROVED SIZE PER PLAN, 18" DEPTH, 36" DEPTH UNDER FIRE LANE, PURPLE COLOR					
---	SCH 40 PVC SLEEVES, 2 IN EACH LOCATION, 3" MIN. IN SIZE, 36" DEPTH					

LATERAL PIPE SIZE CHART, SCH 40 PVC

GALLONS PER MINUTE	PIPE SIZE
0 - 7 GPM	3/4"
8 - 12 GPM	1"
13 - 22 GPM	1-1/4"
23 - 30 GPM	1-1/2"
31 - 50 GPM	2"
51 - 70 GPM	2-1/2"
71 - 110 GPM	3"

HYDROZONE AREAS:



SHRUB HYDROZONES: A-2 A = CONTROLLER DESIGNATION
2 = VALVE NUMBER

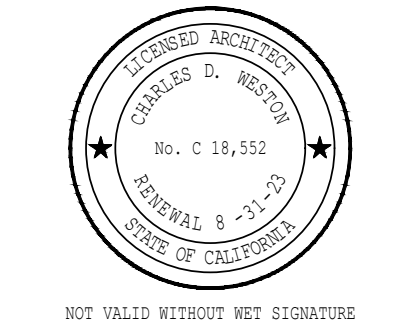
TREE HYDROZONES: D-1 D = CONTROLLER DESIGNATION
1 = VALVE NUMBER

NOTES:

- HYDROZONES BASED ON PLANT SPECIES WATER USE FOR ZONE 1 PER WUCOLS IV, 2014.
- HYDROZONE NUMBERS CORRESPOND TO VALVE NUMBERS.
- TREE HYDROZONE AREAS ESTIMATED FROM MATURE CANOPY SIZE BY SPECIES.
- SEE SHEET L2.1 FOR ESTIMATED TOTAL WATER USE.
- THE WATER SUPPLY TYPE FOR THIS SITE IS POTABLE.
- THE LOCAL WATER PURVEYOR FOR THIS SITE IS: CITY OF MORGAN HILL.
- PROJECT APPLICANT CONTACT INFORMATION:
DAVE ROBERTSON
DRP BUILDERS, INC.
PO BOX 664
GENOA, NV 89411



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www.wmla-associates.com
CONSULTANT JOB NO. 2231



REVISIONS

1	
2	06.27.2023
3	08.15.2023

IRRIGATION PLAN
270 WEST DUNNE AVE TOWNHOMES
DRP BUILDERS, INC.
270 WEST DUNNE, MORGAN HILL, CA 95037

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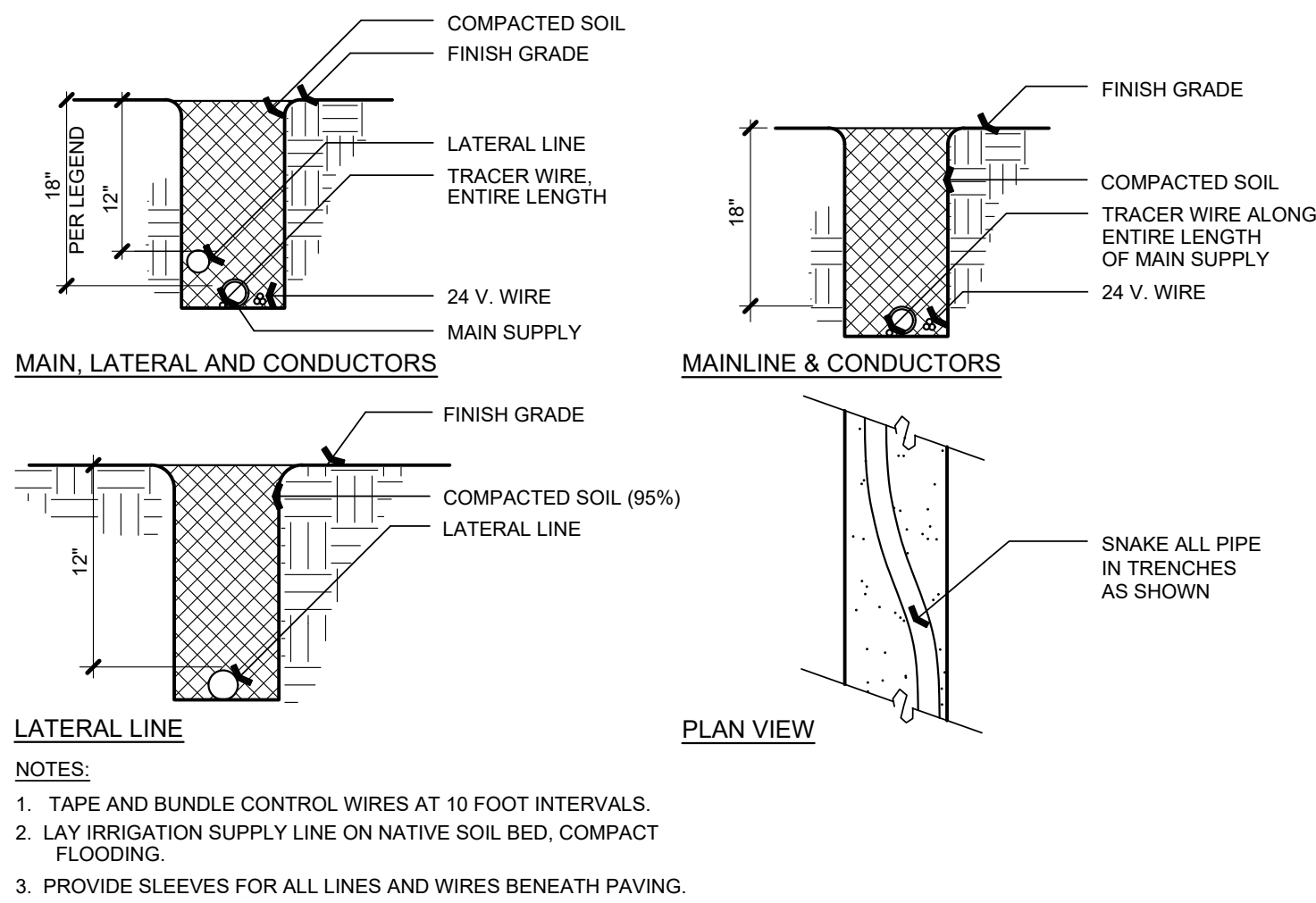
JOB NO: 21014

L2.2



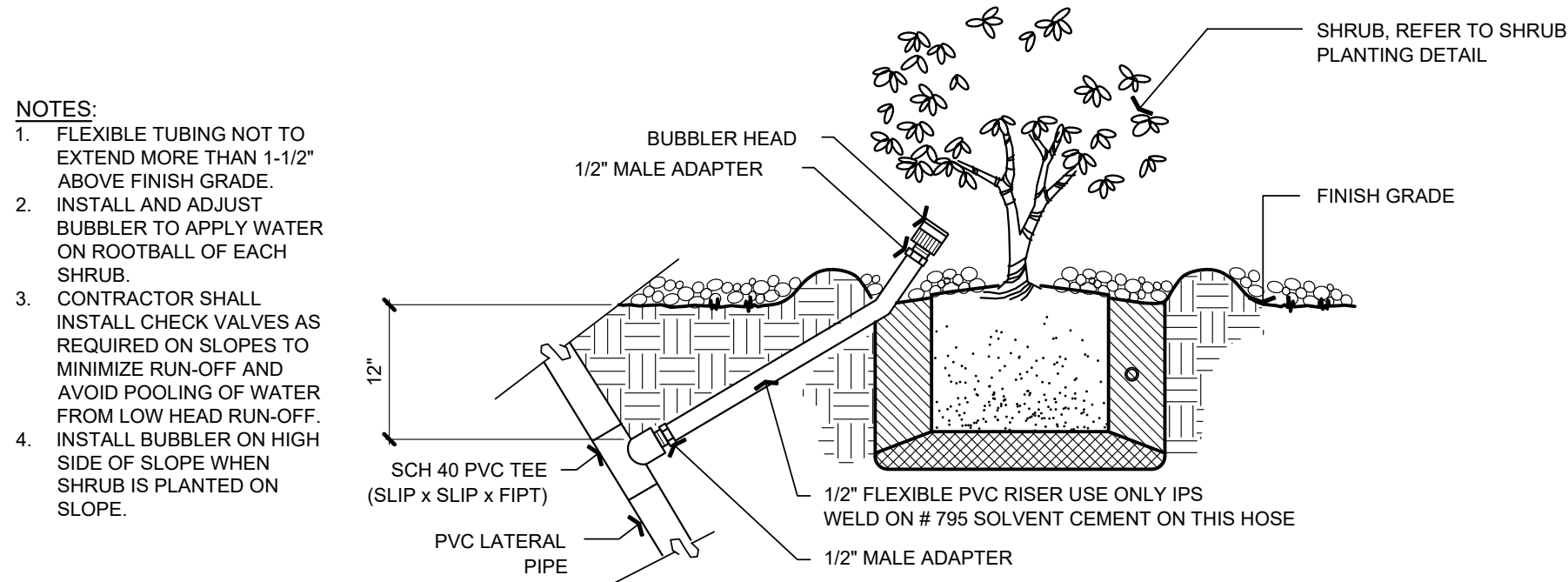
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K TRENCHING



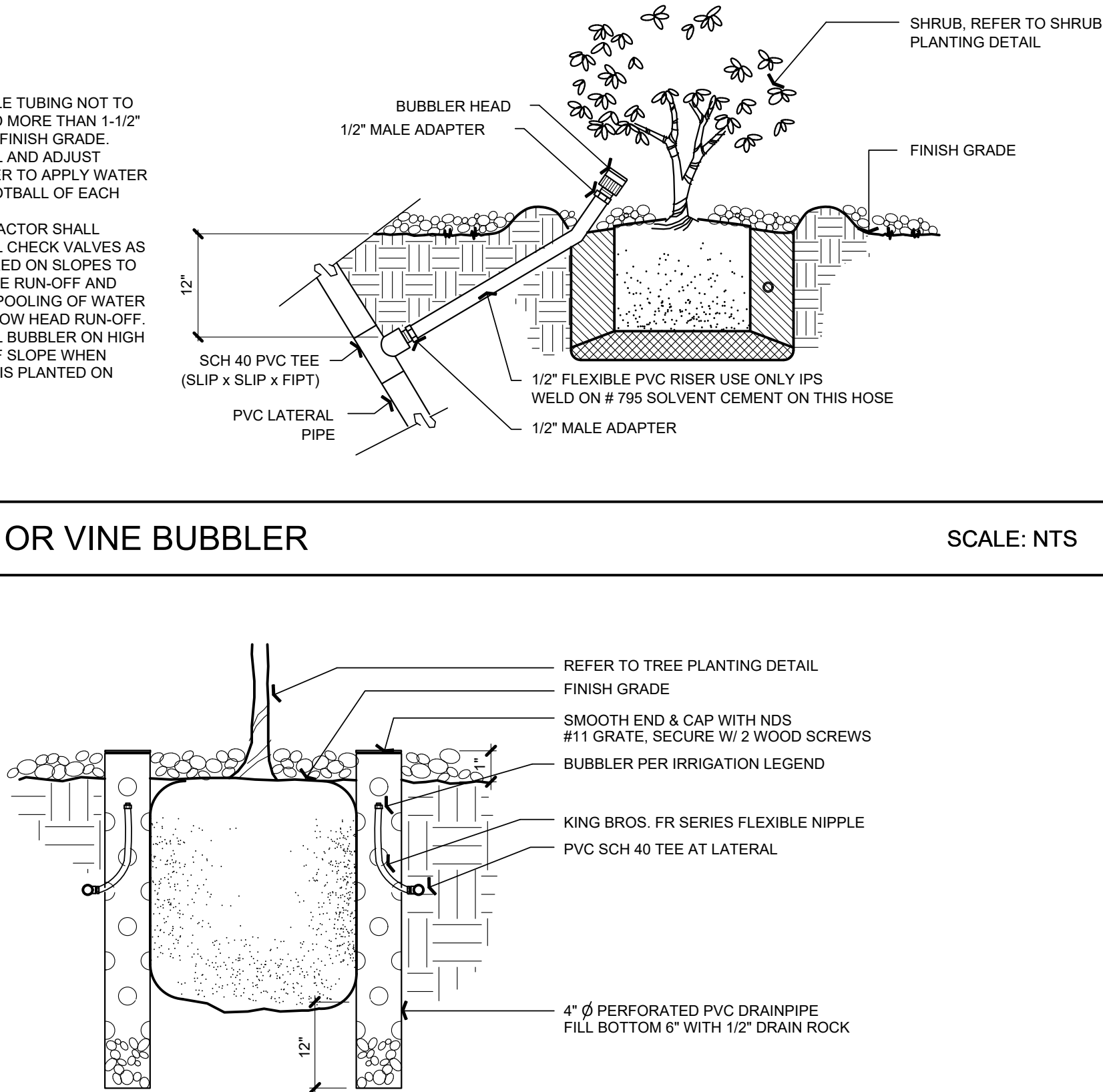
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J WIRE CONNECTIONS



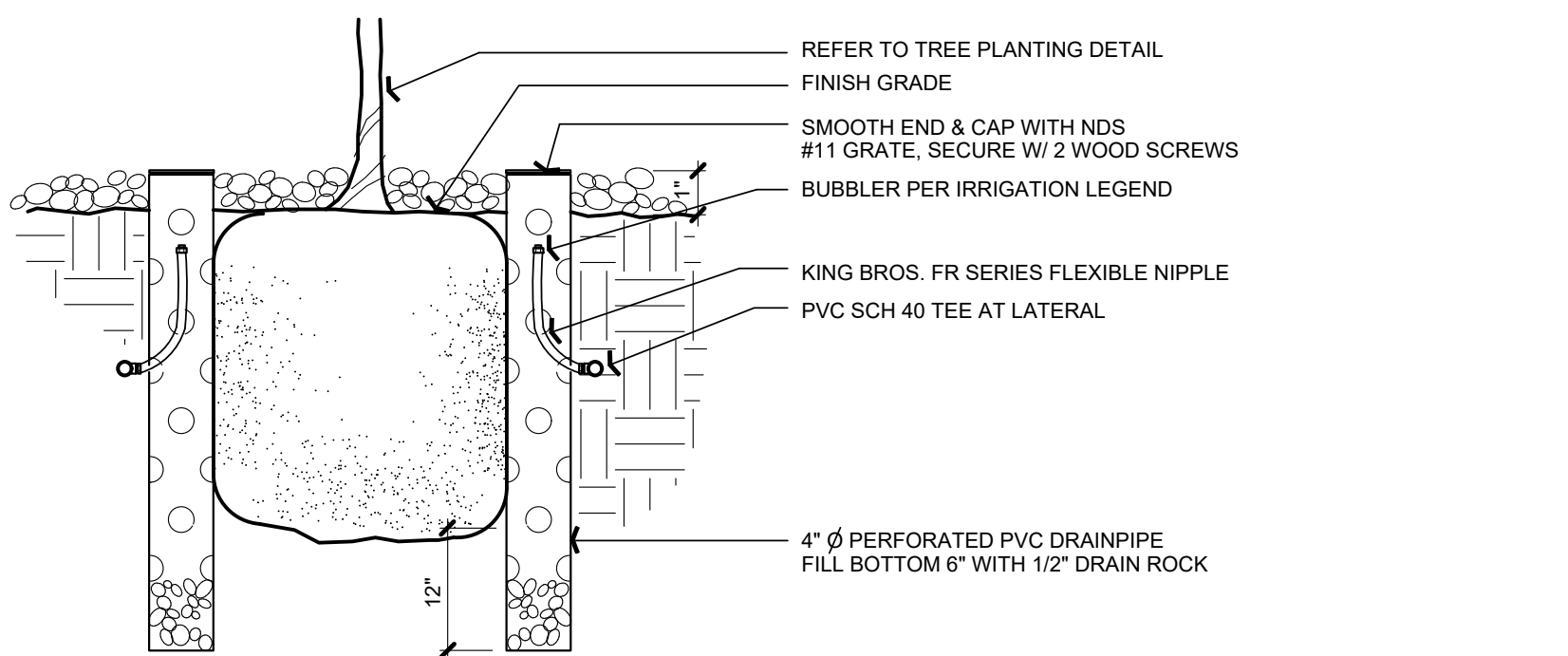
SCALE: NTS

I SHRUB OR VINE BUBBLER



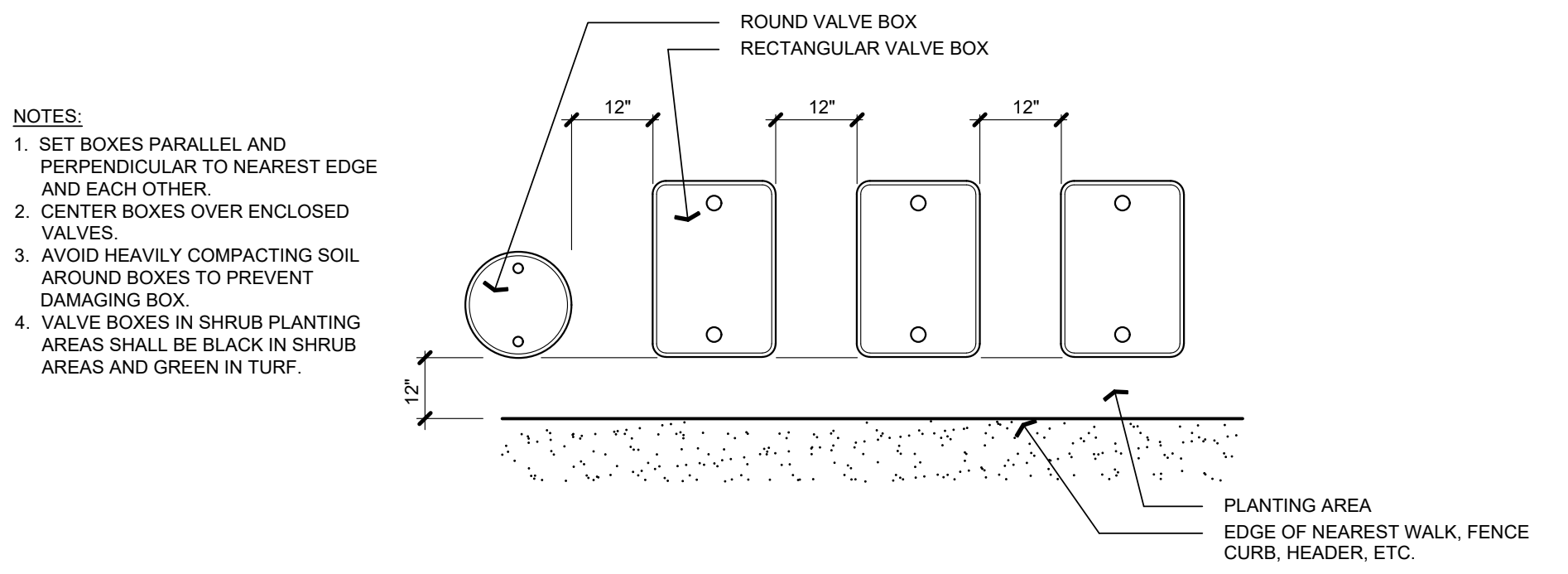
SCALE: NTS

H TREE BUBBLER



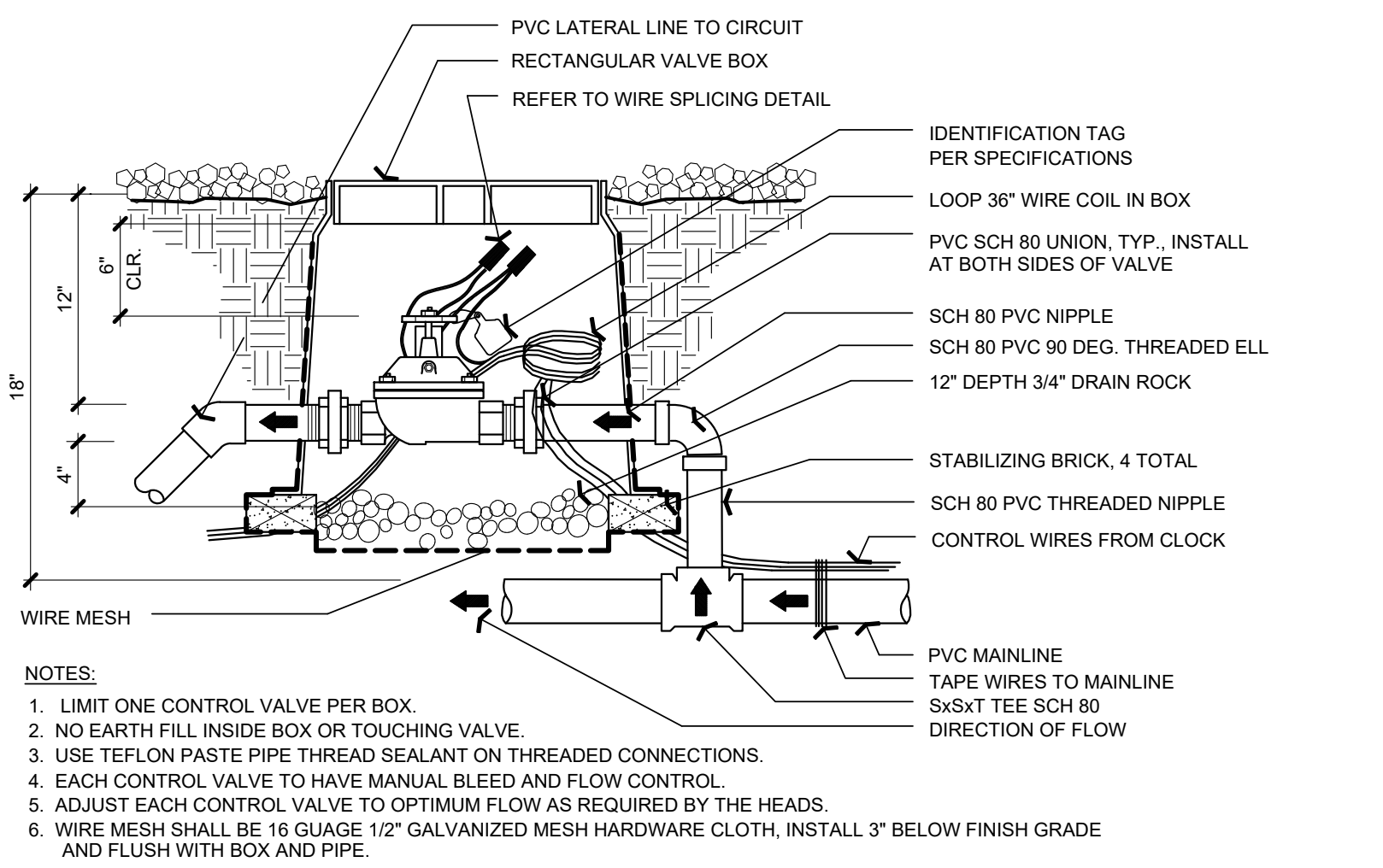
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G VALVE BOX ALIGNMENT



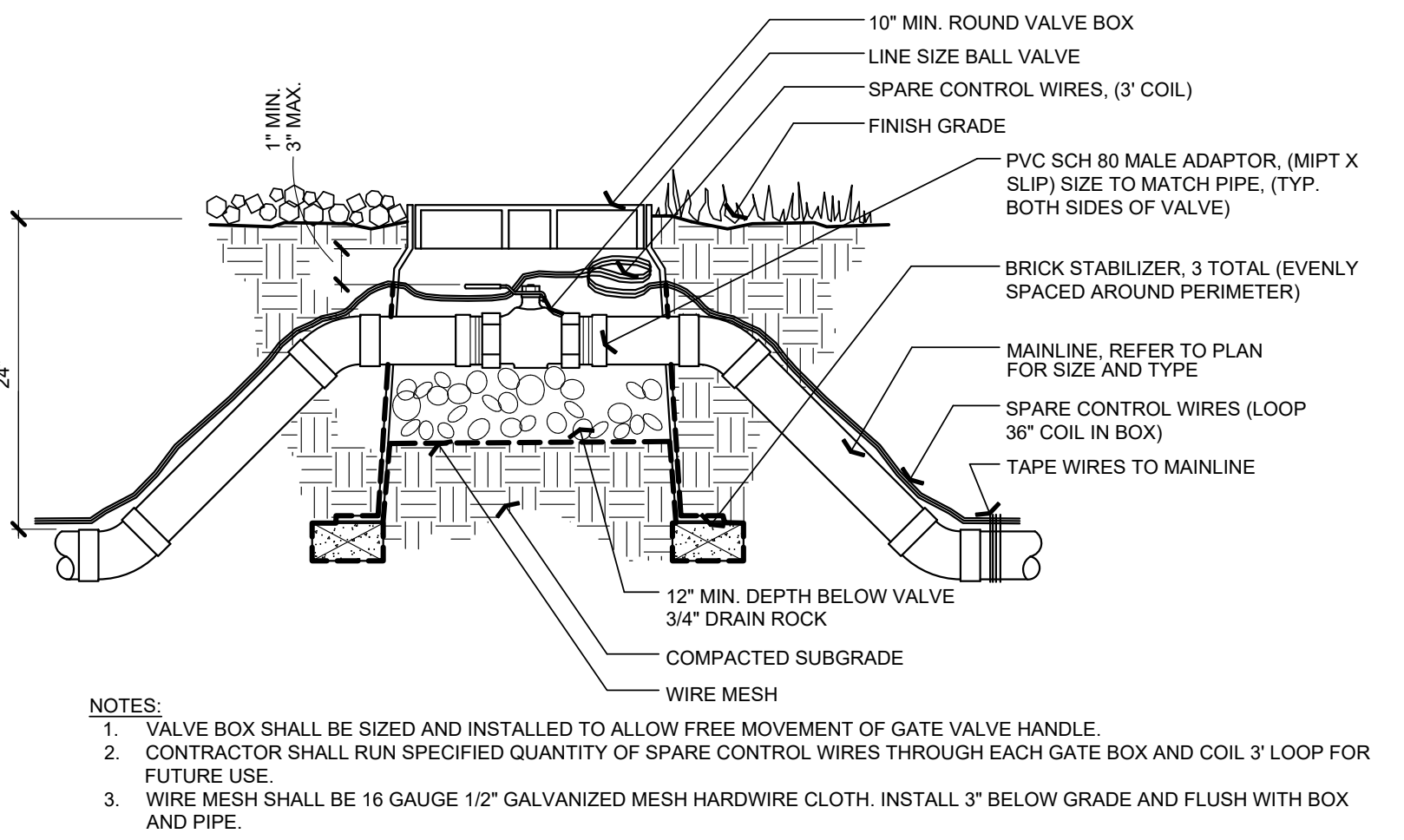
SCALE: NTS

F QUICK COUPLING VALVE



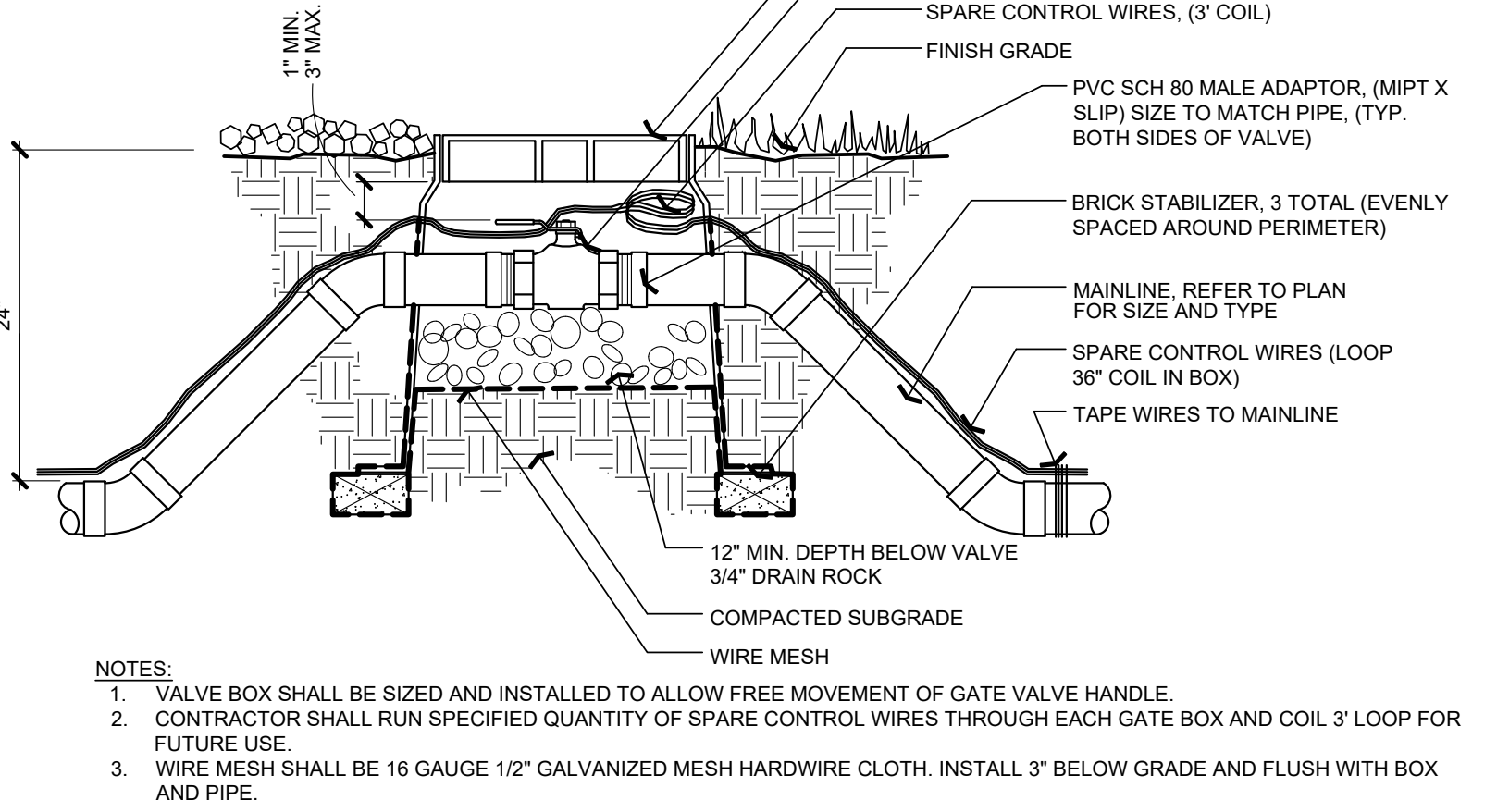
SCALE: NTS

E REMOTE CONTROL VALVE



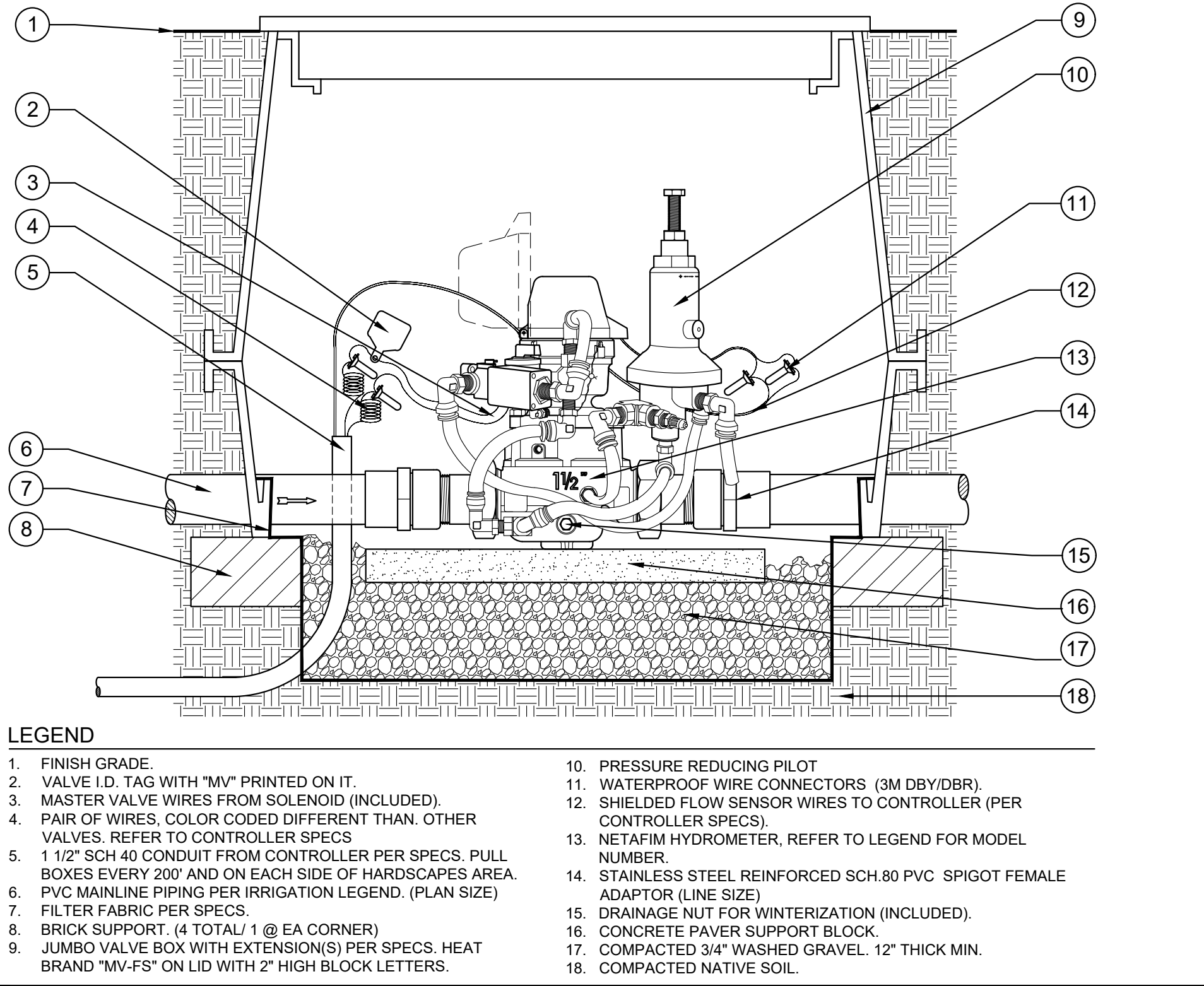
SCALE: NTS

B BALL VALVE



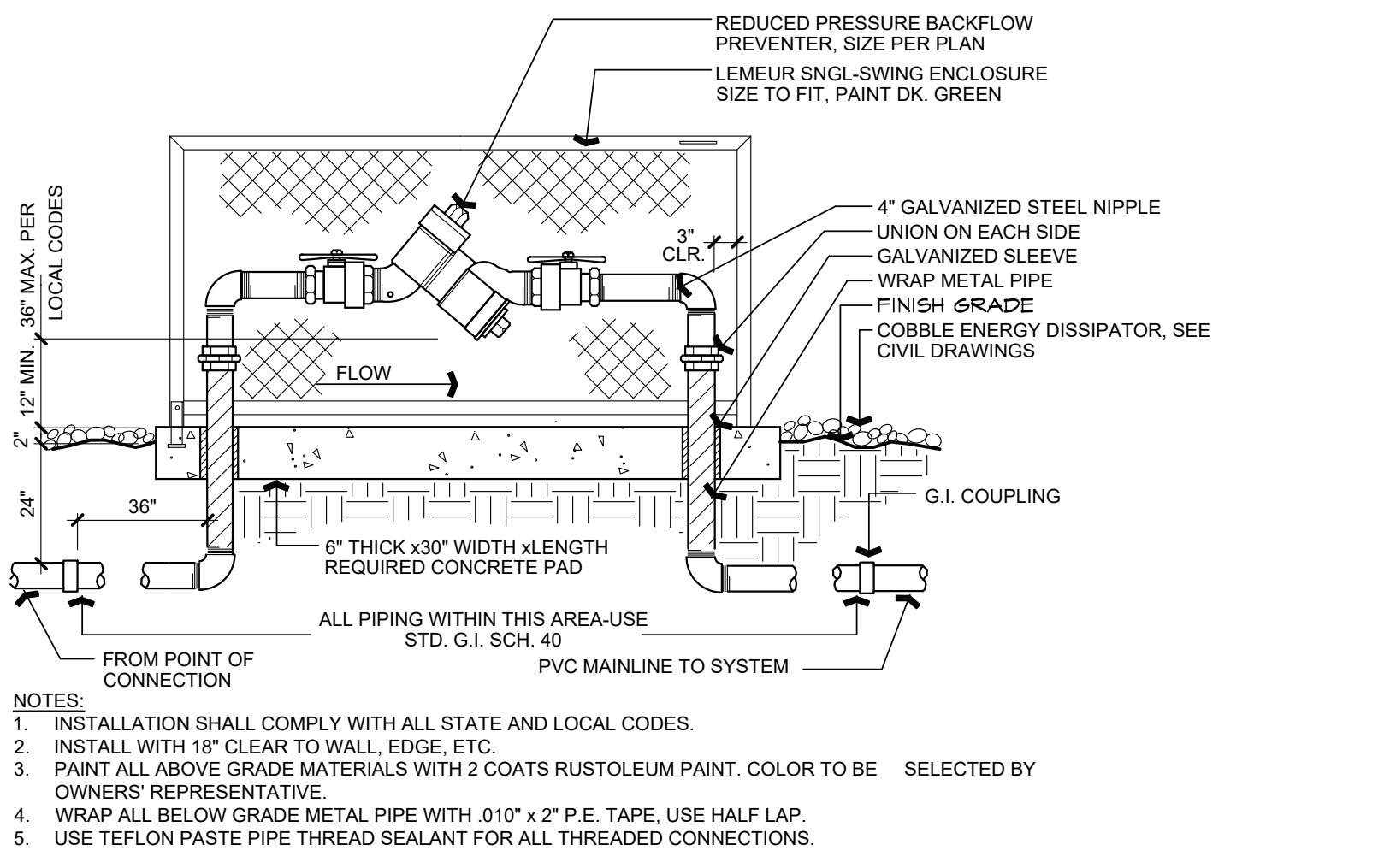
SCALE: NTS

C HYDROMETER



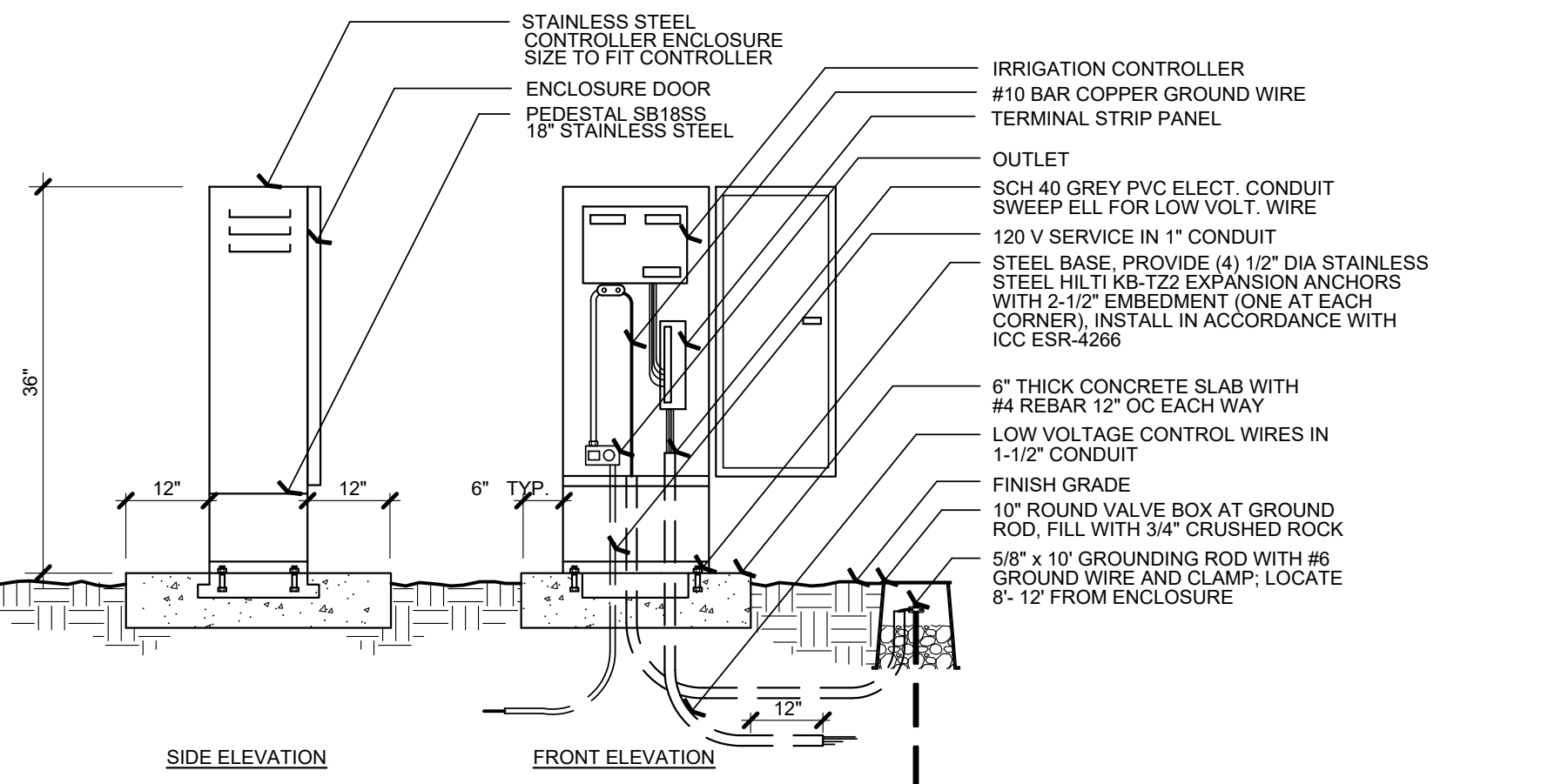
SCALE: NTS

B BACKFLOW PREVENTION DEVICE



SCALE: NTS

A CONTROLLER 'A', PEDESTAL MOUNT



SCALE: NTS

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NOT VALID WITHOUT SET SIGNATURE

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Signature: 05/31/2025
Reviewed Date: 08/15/2023
Date

REVISIONS

1	
2	06.27.2023
3	08.15.2023

IRRIGATION DETAILS
270 WEST DUNNE AVE TOWNHOMES
DRP BUILDERS, INC.
270 WEST DUNNE, MORGAN HILL, CA 95037

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DATE: 08/15/2023

JOB NO: 21014

L2.3



West Dunne – Robertson Residential Project

Class 32 Categorical Exemption Report

prepared by

City of Morgan Hill
Development Services Center
17575 Peak Avenue
Morgan Hill, California 95037
Contact: Joey Dinh, Associate Planner

prepared with the assistance of

Rincon Consultants, Inc.
449 15th Street, Suite 303
Oakland, California 94612

July 2024



RINCON CONSULTANTS, INC. SINCE 1994

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- Appendix A Air Quality and Greenhouse Gas Emissions Calculations
- Appendix B Preliminary Stormwater Report
- Appendix C Historic Evaluation of the Residence at 270 West Dunne Avenue in the City of Morgan Hill (HRE)
- Appendix D HRE Peer Review and Desktop Analysis

1 Introduction

This report serves as the technical documentation of an environmental analysis performed by Rincon Consultants, Inc. for the West Dunne – Robertson Residential Project in Morgan Hill, California. The intent of the analysis is to document whether the project is eligible for a Class 32 Categorical Exemption (CE) pursuant to *CEQA Guidelines* Section 15332. The report provides an introduction, project description, and evaluation of the project's consistency with the requirements for a Class 32 exemption. This includes an analysis of the project's potential impacts in the areas of biological resources, traffic, air quality, noise, water quality, and historic resources. The report concludes that the project is eligible for a Class 32 CE.

The City of Morgan Hill proposes to adopt a Class 32 CE for a proposed project at 270 West Dunne Avenue (APN 767-12-060). The *CEQA Guidelines* in Section 15332 states that a CE is allowed when:

- a. The project is consistent with the applicable general plan designation and all applicable general plan policies as well as with applicable zoning designation and regulations.
- b. The proposed development occurs within city limits on a project site of no more than five acres substantially surrounded by urban uses.
- c. The project site has no value as habitat for endangered, rare, or threatened species.
- d. Approval of the project would not result in any significant effects relating to traffic, noise, air quality, or water quality.
- e. The site can be adequately served by all required utilities and public services.

Additionally, *CEQA Guidelines* Section 15300.2 outlines exceptions to the applicability of a CE, including cumulative impacts, significant effects due to unusual circumstances, scenic highways, hazardous waste sites, and historical resources. A full listing of these exceptions and an assessment of their applicability to the proposed project is provided in this report.

Rincon Consultants, Inc. evaluated the project's consistency with the above requirements, including its potential impacts in the areas of biological resources, traffic, noise, air quality, and water quality as well as the applicability of the exceptions to use of a Class 32 CE to confirm the project's eligibility for the Class 32 CE.

2 Project Location and Description

2.1 Project Location and Existing Conditions

The project site encompasses one rectangular-shaped 1.03-acre parcel (Assessor Parcel Number APN 767-12-060) located at 270 West Dunne Avenue in Morgan Hill. The project site is currently developed with a single-family dwelling and accessory dwelling unit, a detached garage, two small storage sheds, and a covered bocce ball court. The project site is bounded to the north by West Dunne Avenue, beyond which is undeveloped land and a single-family residence; to the east by Viewcrest Lane, beyond which is residential development; to the west by single family residences; and to the south by the Hidden Meadows Apartment condominium community. The project site slopes at an approximately seven percent grade towards the southeast, with an undeveloped portion to the south of the existing structures. While most of the vegetation on site is comprised of non-native ruderal species, mature trees and native vegetation are also present throughout the project site. A small drainage area runs along the southern border of the project site, and a small, shallow concrete drainage swale in Viewcrest Lane adjacent and parallel to the eastern boundary of the project site conveys runoff southward.

The site has a General Plan land use designation of Residential Attached Low Density (6-16 dwelling units per acre [du/ac]) (Morgan Hill 2021) and is zoned Residential Attached Low Density (RAL-3,500).

Figure 1 shows the project site in a regional context and Figure 2 shows the project site at a local scale.

2.2 Project Description

The project would involve demolition of the existing residence, removal of existing trees, and the subsequent construction of 10 townhouse single-family attached units with two-car garages, and internal roadways. The project would require approval of a vesting tentative subdivision map and design permit for the development of the 10 units.

Table 1 shows the characteristics of the proposed project.

Table 1 Project Characteristics

Characteristic	Project Details
Address	270 West Dunne Avenue
Assessor's Parcel Numbers	767-12-060
Gross Parcel Area	44,735 SF
Lot Coverage	35.24%
Height	Maximum: 23 feet and 2 inches 2 stories above grade
Lots	12
Residential Units	10 townhouse single-family attached units with two-car garages
Vehicle Parking	2 Electric Vehicle stalls
SF = square feet	

Site Access, Parking, and Circulation

Vehicular and emergency vehicle access to the site would be via a newly-constructed private driveway from West Dunne Avenue. The project would include two new internal roadways in a T-configuration that would allow for emergency vehicle turn-around, and the units would each include two-car garages. Pedestrian access and circulation would be via sidewalks and a proposed off-street bicycle and pedestrian path adjacent to proposed Lot 1 with connectivity to the public sidewalk. Figure 3 shows the proposed lot and roadway configuration.

Landscaping and Open Space

The project would involve removal of the existing trees on the project site. Landscaping would include new trees and shrubs adjacent to the project site along West Dunne Avenue, Viewcrest Lane, and the proposed new private street entering the project site from West Dunne Avenue. Private open space for each unit would also include one to two trees.

Each unit would include 322 to 1,634 square feet of private open space. The project would include 11,635 square feet of common area across two additional lots (proposed lots 11 and 12).

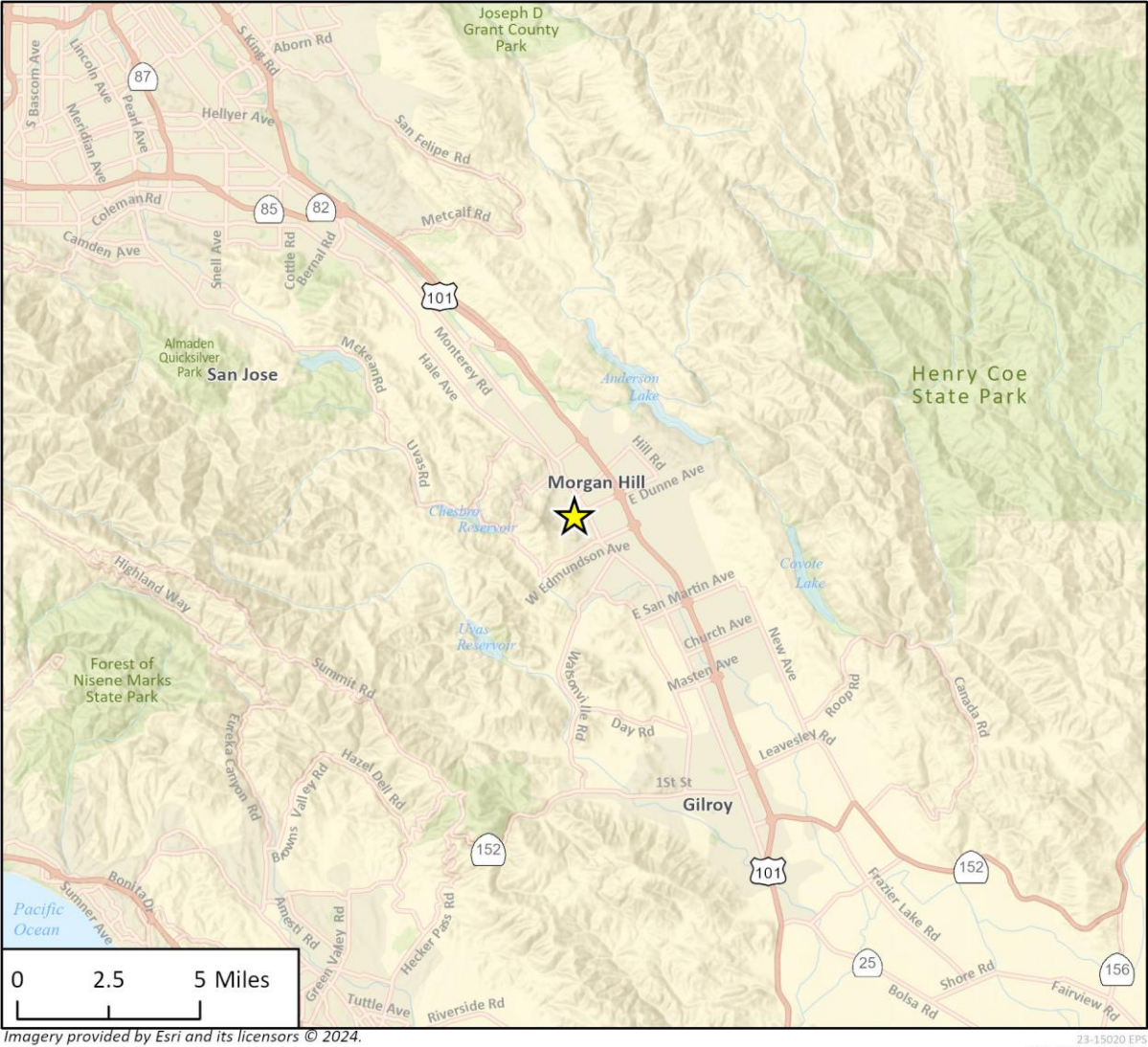
Utilities and Stormwater Management

The City of Morgan Hill provides water services within the city. Silicon Valley Clean Energy provides electricity services to the city via Pacific Gas and Electric (PG&E) infrastructure. PG&E provides natural gas services to the city. Recology South Valley collects garbage and recycling within Morgan Hill (Morgan Hill 2024). The project would treat runoff through a storm filter and would employ permanent stormwater control measures including an underground pipe manifold infiltration system.

Construction

Project construction would occur over approximately 10 months. The project would involve demolition of the existing structures on the project site, the removal of trees, site grading and preparation, and the construction of new residential units. The proposed project would require excavation of approximately 5,429 cubic yards of soil which would be used as fill onsite, in addition to 2,519 cubic yards of soil imported from off-site sources. Construction staging and parking would occur onsite. All construction equipment would use EPA Tier 4 rated engines.

Figure 1 Regional Project Location



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Fig 1 Regional Location

★ Project Location

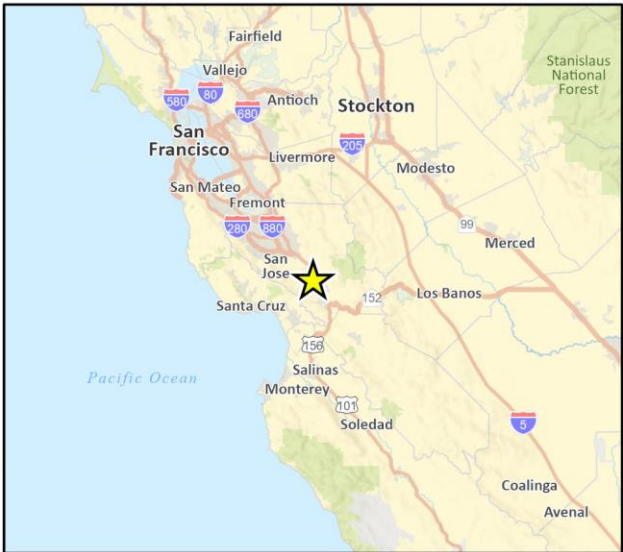


Figure 2 Project Site Location

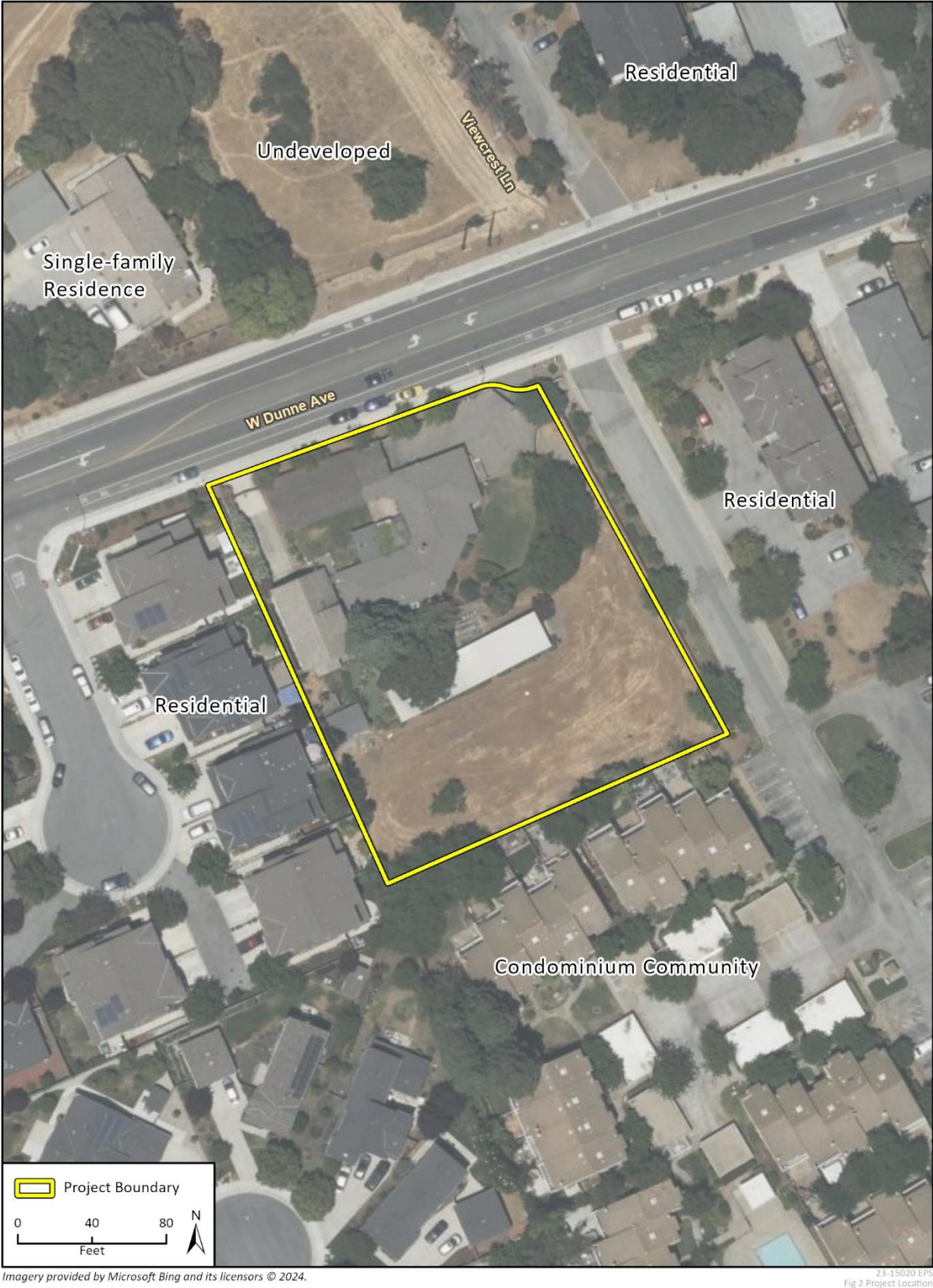


Figure 3 Proposed Lot Configuration



Source: MH Engineering Co., 01/2024.

3 Consistency Analysis

3.1 Criterion (a)

The project is consistent with the applicable general plan designation and all applicable general plan policies as well as with applicable zoning designation and regulations.

According to the City of Morgan Hill 2035 General Plan, the project site is designated for Residential Attached Low land uses (6-16 du/ac). Pursuant to the Morgan Hill 2035 General Plan, the Residential Attached Low designation permits attached homes including duplexes/duets, courtyard homes, townhomes, and garden apartments. The proposed density of 10 units on the approximately one-acre site would be within the General Plan's residential density range of six to 16 units per acre. The 10 proposed single-family attached units would thus be consistent with the allowable uses of and density for the project site, according to its General Plan land use designation.

The project site is zoned Residential Attached Low Density (RAL-3,500). Pursuant to the Morgan Hill Municipal Code (MHMC), the RAL-3,500 zone permits duets and duplexes and single-family attached dwellings. The proposed 10 single-family attached units would thus be consistent with the allowable uses of the project site, according to its zoning designation. The proposed buildings would be approximately 23 feet tall and would therefore not exceed the RAL-3,500 maximum allowed building height of 30 feet. The City's Alternative Medium Density Residential Development Standards require front setbacks of 10 feet or greater, interior side setbacks of three feet or greater, street side setbacks of six feet or greater, and rear setbacks of 10 feet or greater. The proposed project includes front setbacks of at least 19 feet, interior side setbacks of at least four feet, street side setbacks of at least five feet, and rear setbacks of at least 20 feet. Therefore, the proposed project setbacks meet Alternative Medium Density Residential Development Standards pursuant to MHMC 18.40.

3.2 Criterion (b)

The proposed development occurs within city limits on a project site of no more than five acres substantially surrounded by urban uses.

The project site is located on a 1.03-acre parcel within the limits of the city of Morgan Hill. It is surrounded by urban uses, including to the east by Viewcrest Lane, beyond which is residential development; to the west by single family residences; to the south by a condominium community; to the north by West Dunne Avenue, beyond which is a single-family residence and undeveloped land. While some undeveloped land exists across West Dunne Avenue to the north of the project site, more than 75 percent of the project site is surrounded by qualified urban uses.

3.3 Criterion (c)

The project site has no value as habitat for endangered, rare, or threatened species.

Listed species are defined as species categorized as endangered, rare, or threatened (or as candidates for such designations) under the Federal Endangered Species Act (FESA) or the California Endangered Species Act (CESA). A project site has no value as habitat for listed species if the site

lacks suitable habitat and/or appropriate habitat and micro-habitat constituents for listed species, or if suitable habitat within the project site is outside of the listed species known range.

To identify listed species with potential to occur within the project site, a variety of technical information was reviewed, including queries of the United States Fish and Wildlife Service (USFWS) Environmental Conservation Online System: Information, Planning and Conservation System (USFWS 2024), USFWS Critical Habitat Portal (USFWS 2023b), USFWS National Wetland Inventory (USFWS 2024c), California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDDB) (CDFW 2024a), CDFW Biogeographic Information and Observation System (CDFW 2024b) and California Native Plant Society (CNPS) Online Inventory of Rare Threatened and Endangered Plants of California (CNPS 2023). The review of the resource agency databases for known listed species occurrences within the nine USGS quadrangles containing and surrounding the project site identified 19 listed animal species and 11 listed plant species. Additionally, a Rincon Consultants biologist conducted a site visit on February 21, 2024 to determine if suitable habitat is present for listed species.

Approximately 0.75-acre of the site is formerly exposed soil vegetated with mostly non-native ruderal species including black mustard (*Brassica nigra*), plantain (*Plantago lanceolata*), burclover (*Medicago polymorpha*), and milk thistle (*Silybum marianum*). Mature trees, including two large pines (*Pinus sp.*), a redwood (*Sequoia sempervirens*), fruit trees, and ornamental landscaped trees are present throughout the project site. Native vegetation present includes willowherb (*Epilobium sp.*), California poppy (*Eschscholzia californica*), California hedgenettle (*Stachys bullata*), and miner's lettuce (*Claytonia perfoliata*). The southern half of the undeveloped, vegetated portion of the site appeared to be annually cleared with mechanical tools. A small drainage area runs along the southern border of the project site. The drainage area appears to collect runoff from the project site and is not connected to discernable drainage courses or streams. Additionally, a small street drainage runs parallel to the eastern boundary of the project site. Thirteen (13) common bird species, including oak titmouse (*Baeolophus inornatus*), yellow-rumped warbler (*Setophaga coronate*), black phoebe (*Sayornis nigricans*), white-crowned sparrow (*Zonotrichia leucophrys*), and bushtit (*Psaltiriparus minimus*), were observed foraging on the project site or collecting nesting materials.

No suitable habitats or natural vegetation communities are present on the project site that would support the majority of listed species evaluated during the background review. Of the 30 listed species known to occur in the region, the following two species are known to occur in vegetation types with characteristics similar to the project site: Swainson's hawk (*Buteo swainsoni*) and Crotch's bumblebee (*Bombus crotchii*).

Swainson's hawk, a raptor, is a CESA threatened species that may briefly move through the site, but the species is typically associated with more open habitats such as grasslands or agricultural fields for foraging. Due to the urbanized nature of the site, it is not expected that Swainson's Hawk would use vegetation present on the site as nesting habitat.

While Crotch's bumblebee, a candidate species for listing under the CESA, has two known population occurrences approximately 1.5 miles from the project site (CDFW 2024a), and the project site includes formerly landscaped areas that may provide marginal habitat for the species, there is low potential for this species to occur. Potential habitat on the project site is of low quality due to the small percentage of preferred plant resources as compared to dominating ruderals, low number (less than 10) of small mammal burrows present, and proximity to paved roadways. Due to surrounding development, disturbance from annual vegetation clearing, the small size of available

habitat on the site, and limited floral resources, this species is not expected to occur on the project site.

Due to the developed and disturbed nature of the project site, tall fencing surrounding the property, small size of the project site, human activity at the site, and absence of natural vegetation communities, the project site is not expected to support listed species. Thus, the project site has no value as habitat for endangered, rare, or threatened species.

3.4 Criterion (d)

Approval of the project would not result in any significant effects relating to traffic, noise, air quality, or water quality.

The following discussion provides an analysis of the project's potential effects with respect to traffic, noise, air quality, and water quality.

A. Traffic

Trip Generation

Rincon prepared a desktop analysis for proposed project estimated trip generation rates. Project operational vehicle trip generation rates were based on estimates from Trip Generation Manual, 11th Edition (Institute of Transportation Engineers [ITE] 2021), which are based on a compilation of empirical trip generation surveys at locations throughout the country to forecast the number of trips that would be generated by the project. The average trip rate for "Single-Family Attached Housing" (Land Use 215) were applied to the proposed project. This land use describes the proposed single-family residences. As shown in Table 2, the project is expected to generate a gross total of 72 daily trips, including 6 morning (AM) peak hour trips and 7 afternoon (PM) peak hour trips.

Table 2 Trip Generation

Land Use	Units	Daily Trip Rate Per Unit	AM Trip Rate Per Unit	PM Trip Rate Per Unit	Daily Trips	AM Peak Hour Trips	PM Peak Hour Trips
Single-Family Attached Housing	10	7.20	0.55	0.61	72	6	7

Source: Institute of Transportation Engineers [ITE], Trip Generation, 11th Edition, 2021

Vehicle Miles Traveled

Pursuant to Senate Bill 743, transportation and traffic impacts should be measured using vehicle miles travelled (VMT) instead of the previously used Level of Service (LOS) (California Office of Planning and Research [OPR] 2013). Reducing VMT is an effective climate strategy and is intended to decrease greenhouse gas emissions associated with the transportation sector while increasing benefits to human health.

The City of Morgan Hill has not yet adopted VMT screening thresholds; therefore, OPR screening thresholds are used to determine if a project may be assumed to result in a less-than significant transportation impact. Under OPR's VMT Screening Criteria, a residential project is presumed to result in less than significant VMT impacts if it generates fewer than 110 average daily trips (OPR

2018). The proposed project would result in approximately 72 daily trips and would therefore have a less than significant VMT impact.

Site Access

Vehicular and emergency vehicle access to the site would be via a newly-constructed private roadway from West Dunne Avenue. Pedestrian access and circulation would be via sidewalks and a proposed off-street bicycle and pedestrian route adjacent to proposed Lot 1 with connectivity to the public sidewalk. Newly-constructed private streets would be required to conform to applicable City street design standards, which are developed in coordination with the Fire Marshall pursuant to Morgan Hill Code of Ordinances Chapter 17.34. Obstructions to visibility would be prohibited pursuant to Morgan Hill Code of Ordinances Chapter 10.36; a clear vision triangle is shown on the project plans for ingress and egress to and from the project site at West Dunne Avenue. A truck turnaround area would be incorporated into the street design pursuant to City Standard 11-E. Email correspondence with Joey Dinh, City Planner, on May 9, 2024, confirmed that the City's engineers had reviewed and approved the turnaround plan on the condition that it met Fire Prevention standards, and the Fire Prevention Division confirmed that the turnaround plan is adequate. Furthermore, new development would be subject to development impact mitigation fees described in Chapter 3.56 of the Morgan Hill Code of Ordinances to fund the design, upgrading or improvement of the traffic network.

Construction Traffic

Construction traffic impacts could be significant if the project would create a prolonged impact due to lane closure; impede emergency vehicle access; create traffic hazards to bicycles and/or pedestrians; or result in similar substantial impediments to circulation or safety. Based on the following assumptions, project construction would not cause significant traffic impacts.

Construction hours would be limited to 7:00 a.m. through 8:00 p.m. Monday through Friday, and 9:00 a.m. through 6:00 p.m. on Saturday pursuant to MHMC Chapter 8.28. Project construction activity specified by the applicant (scheduled for Mondays through Fridays between 7:00 a.m. and 5:00 p.m. and Saturdays between 9:00 a.m. and 3:00 p.m.), would occur within the allowable construction day and time limits defined in the MHMC. Construction of the proposed project would not involve road closures that would impede or delay emergency vehicle access or create significant hazards to bicycles and pedestrians.

Construction vehicles, haul trucks, and construction workers are assumed to travel primarily along West Dunne Avenue with some site access provided from Viewcrest Lane. Construction staging and parking would occur onsite. Construction of the project would involve approximately two one-way hauling trips a day during the demolition phase, and 16 one-way hauling trips a day during the site preparation phase (Appendix A). Assuming the trips are generally spread out over a 10-hour construction day (7:00 a.m. to 5:00 p.m.), fewer than two trips would occur per hour on average; construction trucks would not significantly disrupt the flow of traffic on West Dunne Avenue. Construction trips would generally be staggered throughout the day, with most trips occurring during off-peak hours. Impacts would be less than significant. In addition, the project would be subject to the following City of Morgan Hill Condition of Approval:

Transportation

Prior to initiation of construction activities, the project applicant shall prepare a Construction Traffic Management Plan for review and approval by the City of Morgan Hill. The plan shall include the following:

- A project staging plan to maximize on-site storage of materials and equipment
- A set of comprehensive traffic control measures, including scheduling of major truck trips and deliveries to avoid peak hours; lane closure proceedings; signs, cones and other warning devices for drivers; and designation of construction access routes.
- Provisions for maintaining adequate emergency access to the project site.
- Permitted construction hours
- Designated locations for construction staging areas
- Identification of parking areas for construction employees, site visitors, and inspectors, including on-site locations; and
- Provisions for street sweeping to remove construction-related debris on public streets.

Finally, it should be noted that construction traffic impacts are temporary by their nature and would have no effect on traffic and circulation beyond the construction period.

Conclusion

Compliance with City requirements such as street design standards would ensure operational impacts related to circulation would be less than significant. Daily trips from the project would be below the City's significance threshold. The project would be required to develop a Construction Traffic Management Plan for review and approval by the City to ensure there would be no substantial issues regarding site access along West Dunne Avenue, and on-site circulation or emergency access. The City's engineers and Fire Prevention Division have reviewed the project's emergency access and turnaround plan and confirmed it meets requirements. Compliance with the City's requirements including construction hour limitations and the City's standard conditions of approval would ensure that impacts related to construction traffic remain less than significant. Furthermore, the proposed project would not have an adverse effect on the existing transit, pedestrian, or bicycle facilities in the area. Therefore, the project would meet the requirements for Traffic under *criterion (d)*.

B. Noise

Existing Ambient Noise Levels

The project site is located in an existing residential area adjacent to West Dunne Avenue. Noise sources in the project area include traffic on West Dunne Avenue and residential sources such as speech and property maintenance. Based on the environmental noise assessment prepared for the project by Salter, the existing ambient noise level near the northeastern corner of the property (adjacent to West Dunne Avenue) is 69 dBA DNL¹, while the existing ambient noise level at the southeastern corner of the property (adjacent to Viewcrest Lane) is 53 dBA DNL (Salter 2023).

¹ The Day-Night Average Level (DNL), a noise level descriptor used to evaluate community noise exposure, is the 24-hour average noise level with an added 10 dBA "penalty" for noise occurring during nighttime hours (10:00 p.m. to 7:00 a.m.).

Construction Noise

Construction of the project would generate temporary noise that would be audible at nearby single-family residences to the east, south, and west of the project site. Noise associated with construction is a function of the type of construction equipment, the location and sensitivity of nearby land uses, and the timing and duration of the construction activities. Based on construction details provided by the applicant, it is estimated that the construction period would involve approximately 27 days for demolition, 18 days for site preparation, 51 days for grading, seven months for building construction, 28 days for paving, and 51 days for architectural coating.

While all phases of construction would generate noise, the site preparation and grading phases would represent the loudest periods of noise-generating activity. The greatest anticipated sources of construction noise would be generated by large earthmoving equipment such as excavators and compactors. Because the City does not specify quantitative noise level criteria for assessing construction noise impact, construction noise was evaluated according to guidelines published by the Federal Transit Administration (FTA), which specify a daytime noise limit of 80 dBA L_{eq} (8-hour) at residential land uses. Construction equipment is typically dispersed in various areas of the site, with only a limited amount of equipment operating near a given location at a particular time. The *FTA Transit Noise and Vibration Impact Assessment Manual* (FTA 2018) recommends evaluating construction noise impacts from the center of the construction site, stating that the distance variable in its recommended construction noise calculation “assumes that all equipment operates at the center of the project.” In accordance with FTA recommendations, construction noise for all phases was analyzed from the center of the site.

Construction noise was estimated using the Federal Highway Administration (FHWA) Roadway Construction Noise Model (RCNM) (FHWA 2006). Expected noise levels generated during the site preparation and grading phases of construction at the nearest single-family residences located approximately 95 feet to the west of the center of the project site would be up to 77 dBA L_{eq} (8-hour), which is below the FTA’s threshold of 80 dBA L_{eq} (8-hour).

Additionally, project construction activity specified by the applicant (scheduled for Mondays through Fridays between 7:00 a.m. and 5:00 p.m. and Saturdays between 9:00 a.m. and 3:00 p.m.), would occur within the allowable construction day and time limits defined in the City of Morgan Hill Code of Ordinances: between 7:00 a.m. and 8:00 p.m. Monday through Friday and between 9:00 a.m. and 6:00 p.m. on Saturday. Therefore, noise impacts related to temporary construction noise would be less than significant.

Operational Noise

Onsite Stationary Sources

The primary source of operational noise generated by the project would be heating, ventilation, and air-conditioning (HVAC) units located at the exterior of each proposed residence, assumed to be located at the side of each residence. Based on the site plans, HVAC units may be located as close as five feet from the project’s western property line and a six-foot-tall perimeter fence is proposed along the entire property.

Section 18.76.090 of the City of Morgan Hill Code of Ordinances states that no noise level may be produced so as to exceed the noise level limits shown in Table 3 below.

Table 3 City of Morgan Hill Code of Ordinances Maximum Noise Levels

Receiving Land Use	Maximum Noise Level at Lot Line of Receiving Use ¹
Industrial and Wholesale	70 dBA
Commercial	65 dBA
Residential or Public/Quasi Public	60 dbA

¹ The planning commission may allow an additional 5 dBA noise level at the lot line if the maximum noise level shown in [Table 3] cannot be achieved with reasonable and feasible mitigation.

Source: City of Morgan Hill 2024.

As shown in Table 3, a significant impact would occur if noise levels generated by the Project's HVAC equipment exceed 60 dBA at any nearby residential property lines.

Typical HVAC equipment produces a noise level of 72 dBA at a distance of three feet away. Accounting for the distance between the proposed HVAC units along the western project boundary relative to the adjacent properties and the proposed six-foot-tall fence along the project boundary (which would provide an estimated noise reduction of 12 dBA), noise generated by the project's HVAC equipment would attenuate to approximately 57 dBA at the adjacent residential property line to the west. Therefore, noise generated by the project's HVAC equipment would not exceed the City's noise limit of 60 dBA at a receiving residential property line, and impacts would be less than significant.

In addition to mechanical equipment, the project would generate noise from people gathering and conversing in private open spaces and rear yards. The main source of noise associated with the use of these outdoor spaces would be human speech, with a typical conversation between two people using normal voices (not raised) producing 60 dBA at three feet away (Engineering ToolBox 2005). Speech from conversations would quickly dissipate and would not interfere with surrounding outdoor activities and noise-sensitive uses. Additionally, this type of noise generated by the project would be similar to the existing residential noise environment of the immediate area. Furthermore, per Assembly Bill 1307 (2023), the effect of noise generated by residential project occupants and their guests is not a significant effect on the environment. Therefore, this impact would be less than significant.

Offsite Traffic Noise

The project would result in an increase in vehicle trips due to residents traveling to and from the site, primarily on West Dunne Avenue. A significant impact would occur if the project would increase traffic noise levels by 3 dBA or more on nearby roadways, which is considered a barely perceptible change in noise. As discussed in the Traffic section above, the project would generate approximately 72 daily vehicle trips, assumed to primarily occur on West Dunne Avenue. Per the City's Transportation Master Plan Update, traffic counts collected on West Dunne Avenue show that this roadway carries an average daily traffic (ADT) volume of 6,705 vehicles (City of Morgan Hill 2023). This increase in traffic volumes would result in a noise increase of approximately 0.05 dBA on this roadway. Therefore, the project would not result in offsite traffic noise increases of 3 dBA or more, and impacts would be considered less than significant.

Vibration

To determine potential impacts from construction vibration, this analysis is based on vibration limits contained in the 2018 Federal Transit Administration's (FTA) *Transit Noise and Vibration Impact Assessment Manual*, which are shown in Table 4.

Table 4 Groundborne Vibration Architectural Damage Criteria

Building Category	PPV (in/sec)
I. Reinforced concrete, steel, or timber (no plaster)	0.5
II. Engineered concrete and masonry (no plaster)	0.3
III. Non-engineered timber and masonry buildings	0.2
IV. Buildings extremely susceptible to vibration damage	0.12

in/sec = inches per second; PPV = peak particle velocity
Source: FTA 2018

Based on FTA recommendations, limiting vibration levels to below 0.2 inches per second peak particle velocity (in/sec PPV) at residential structures would prevent structural damage regardless of building construction type (FTA 2018).

Project construction would not involve activities typically associated with excessive groundborne vibration, such as pile driving or blasting. The greatest anticipated sources of vibration during general project construction activities would be a static roller during the paving phase and an excavator during the site preparation and grading phases.

The static roller may be used as close as 20 feet from the nearest residential structure during construction, while the excavator may be used as close as 15 feet from the nearest residential structure. Table 5 presents the estimated vibration levels produced by construction equipment at respective distances to the nearest sensitive receivers.

Table 5 Groundborne Vibration Levels During Construction

Equipment	Vibration Level at Reference Distance of 25 feet (in/sec PPV)	Distance to Nearest Sensitive Receiver (feet)	Approximate Vibration Level (in/sec PPV)	Vibration Threshold of 0.2 in/sec PPV exceeded?
Static Roller	0.05	20	0.07	No
Excavator	0.089	15	0.191	No

Source: FTA 2018 and Mclver 2012

As shown in Table 5, use of the static roller would generate a vibration level of approximately 0.07 in/sec PPV at the nearest offsite residential structure located 20 feet away, which would not exceed the FTA threshold of 0.2 in/sec PPV. Similarly, use of an excavator would generate a vibration level of approximately 0.191 in/sec PPV at the nearest residential structure located 15 feet away, which is also below the FTA threshold of 0.2 in/sec PPV.

Therefore, temporary vibration impacts associated with construction would be less than significant. In addition, the project does not include any substantial vibration sources associated with operation, such as railroad or subway lines. Thus, operational vibration impacts would also be less than significant.

Airport Noise

The closest airport or air strip to the project site is the San Martin Airport, located approximately 4.3 miles southeast of the project site. Based on Figure 5 of the Comprehensive Land Use Plan for San Martin Airport, the project site is not located within the 55 dBA CNEL noise contour for this airport (Santa Clara County 2020). Therefore, implementation of the Project would not expose people in the project area to excessive airport noise levels and no significant airport-related noise impacts would occur.

Conclusion

Construction noise generated during the site preparation and grading phases would generate noise levels of up to 77 dBA L_{eq} at the nearest residential property line, which would not exceed the FTA's threshold of 80 dBA L_{eq} at nearby sensitive receptors. In addition, construction would be limited to hours allowed by the City's Code of Ordinances, which are between 7:00 a.m. and 5:00 p.m. Mondays through Fridays and between 9:00 a.m. and 3:00 p.m. on Saturdays. Therefore, construction noise impacts would be less than significant. Similarly, vibration from construction equipment would not exceed the FTA threshold of 0.2 in/sec PPV at the nearest off-site residential structures, and vibration impacts would be less than significant.

The project would introduce sources of operational noise to the site, primarily outdoor HVAC equipment. However, the project's HVAC equipment would not generate noise levels that exceed the noise limits stated in the City's Code of Ordinances at nearby residential property lines, and operational noise impacts would be less than significant. Similarly, project-generated traffic would not increase traffic noise on nearby roadways above 3 dBA, therefore the project's traffic noise impacts would be less than significant.

Lastly, implementation of the project would not expose workers or residents in the project area to excessive airport noise levels; therefore, airport noise impacts would be less than significant.

C. Air Quality

The federal and State Clean Air Acts (CAA) mandate the control and reduction of certain air pollutants. Under these laws, the U.S. Environmental Protection Agency (U.S. EPA) and the California Air Resources Board (CARB) have established the National Ambient Air Quality Standards (NAAQS) and the California Ambient Air Quality Standards (CAAQS) for criteria pollutants and other pollutants. Some pollutants are emitted directly from a source (e.g., vehicle tailpipe, an exhaust stack of a factory, etc.) into the atmosphere, including carbon monoxide, volatile organic compounds (VOC)/reactive organic gases (ROG),² nitrogen oxides (NO_x), particulate matter with diameters of ten microns or less (PM_{10}) and 2.5 microns or less ($PM_{2.5}$), sulfur dioxide, and lead. Other pollutants are created indirectly through chemical reactions in the atmosphere, such as ozone, which is created by atmospheric chemical and photochemical reactions primarily between ROG and NO_x . Secondary pollutants include oxidants, ozone, and sulfate and nitrate particulates (smog).

A significant adverse air quality impact may occur when a project conflicts with or obstructs implementation of the applicable air quality plan; results in a cumulatively considerable net increase

² CARB defines VOC and ROG similarly as, "any compound of carbon excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate," with the exception that VOC are compounds that participate in atmospheric photochemical reactions. For the purposes of this analysis, ROG and VOC are considered comparable in terms of mass emissions, and the term ROG is used in this report.

of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard; exposes sensitive receptors to substantial pollutant concentrations; or results in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Thresholds of Significance and Screening Criteria

The project site is located within the San Francisco Bay Area Basin and falls under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). This air quality analysis conforms to the methodologies recommended by *BAAQMD's 2022 CEQA Guidelines* (BAAQMD 2022). Table 6 shows the significance thresholds that have been recommended by BAAQMD for project operations and construction in the San Francisco Bay Area Air Basin.

Table 6 Air Quality Thresholds of Significance

Pollutant/ Precursor	Construction-Related Thresholds	Operation-Related Thresholds	
	Average Daily Emissions (pounds per day)	Maximum Annual Emissions (tpy)	Average Daily Emissions (lbs/day)
ROG	54	10	54
NO _x	54	10	54
PM ₁₀	82 (exhaust)	15	82
PM _{2.5}	54 (exhaust)	10	54

Notes: tpy = tons per year; lbs/day = pounds per day; NO_x = oxides of nitrogen; PM_{2.5} = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM₁₀ = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; ROG = reactive organic gases; tpy = tons per year.
Source: BAAQMD 2022, Table 3-1

According to Chapter 4 of *BAAQMD's 2022 CEQA Guidelines*, which includes BAAQMD's screening criteria, construction of a project would result in less than significant impacts related to criteria air pollutants if:

- The project size is at or below the applicable screening level size shown in Table 4-1.
- All best management practices (see Table 5-2 in Chapter 5, "Project-Level Air Quality Impacts" of the guidelines) are included in the project design and implemented during construction.
- Construction-related activities would not overlap with operational activities.
- Construction-related activities would not include:
 - Demolition,
 - Simultaneous occurrence of two or more construction phases (e.g., paving and building construction would occur simultaneously),
 - Extensive site preparation (e.g., grading, cut and fill, or earth movement),
 - Extensive material transport (e.g., soil import and export requiring a considerable amount of haul truck activity), or
 - Stationary sources (e.g., backup generators) subject to Air District rules and regulations.

If a project includes any of the screening criteria above, then the lead agency would need to perform a detailed assessment of the project's criteria air pollutant and precursor emissions.

Additionally, operation of a project would result in less than significant impacts related to criteria air pollutants if:

- The project size is at or below the applicable operational screening level size shown in Table 4-1.
- Operational activities would not include stationary engines (e.g., backup generators) and industrial sources subject to Air District rules and regulations.
- Operational activities would not overlap with construction-related activities.

Consistency with Applicable Air Quality Plan

The California Clean Air Act requires that air districts create a Clean Air Plan that describes how the jurisdiction will meet air quality standards. The most recently adopted air quality plan is the 2017 Bay Area Clean Air Plan (2017 Plan) (BAAQMD 2017a). The 2017 Plan focuses on two paramount goals, both consistent with the mission of BAAQMD:

- Protect air quality and health at the regional and local scale by attaining all national and state air quality standards and eliminating disparities among Bay Area communities in cancer health risk from TACs
- Protect the climate by reducing Bay Area GHG emissions to 40 percent below 1990 levels by 2030, and 80 percent below 1990 levels by 2050

Under BAAQMD's methodology, a determination of consistency with the 2017 Plan should demonstrate that a project:

- Supports the primary goals of the air quality plan
- Includes applicable control measures from the air quality plan
- Does not disrupt or hinder implementation of any air quality plan control measures

A project that would not support the 2017 Plan's goals would not be considered consistent with the 2017 Plan. On an individual project basis, consistency with BAAQMD quantitative thresholds is interpreted as demonstrating support with the 2017 Plan's goals. The project would not result in exceedances of BAAQMD thresholds for criteria air pollutants and thus would not conflict with the 2017 Plan's goal to attain air quality standards.

The 2017 Plan includes goals and measures to promote building decarbonization, conservation of water, use of on-site renewable energy, and energy efficiency. The project would be supplied electricity by PG&E, which is required to procure 100 percent of its energy supply from renewable sources by 2045. The project would comply with applicable California Green Building Standards, including installation of energy-efficient equipment and lighting. The project would also include an all-electric design and would not utilize natural gas. Therefore, the project would not conflict with or obstruct the implementation of an applicable air quality plan, and impacts would be less than significant impact.

Criteria Pollutant Emissions

The following subsections discuss emissions associated with construction and operation of the proposed project. Air pollutant emissions generated by project construction and operation were estimated using the California Emissions Estimator Model (CalEEMod), version 2022.1 based on project-specific information.

CONSTRUCTION EMISSIONS

The proposed project would involve the construction of 10 duet single-family attached units, which would be below the BAAQMD's construction screening criteria of 254 units. However, the project would involve the demolition of an existing residence on site and therefore the project would not meet BAAQMD screening criteria. Construction emissions were estimated using the California Emissions Estimator Model (CalEEMod) Version 2022.1. Data input into the model was sourced from the client and defaults were used for unknown information. Construction emissions for the proposed project are shown in Table 7 below.

Table 7 Construction Emissions

	Average Daily Emissions (pounds per day)					
	ROG	NO _x	CO	PM ₁₀	PM _{2.5}	SO _x
2024	<1	3	8	<1	<1	<1
2025	8	9	18	<1	<1	<1
Average Daily Construction Emissions	1	1	3	<1	<1	<1
BAAQMD Thresholds	54	54	N/A	82	54	N/A
Threshold Exceeded?	No	No	N/A	No	No	N/A

See Appendix A for CalEEMod worksheets; emission data presented is the highest of winter or summer outputs.
 N/A = not applicable; lbs/day = pounds per day; ROG = reactive organic gases; NO_x = oxides of nitrogen; CO = Carbon Monoxide; PM_{2.5} = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM₁₀ = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; SO_x = oxides of sulfur
 No BAAQMD threshold for CO or SO_x

As indicated in Table 7, the proposed project would not exceed BAAQMD thresholds for construction emissions.

OPERATIONAL EMISSIONS

The proposed project would involve the construction of 10 duet single-family attached units, which is well below the BAAQMD's operational screening criteria of 421 units. Operational activities would not include stationary engines or industrial sources and would not overlap with construction-related activities. Therefore, the proposed project would satisfy BAAQMD's operational screening criteria and operational-related impacts would be less than significant.

Exposure of Sensitive Receptors

Certain population groups, such as children, the elderly, and people with health problems, are particularly sensitive to air pollution. Therefore, the majority of sensitive receptor locations are schools, hospitals, and residences. Sensitive receptors in the project vicinity include duet single-family residences immediately adjacent to the west of the project site, single family residence across West Dunne Avenue to the north of the project site, and duet single-family residences across Barnell Avenue to the east of the project site. Localized air quality impacts to sensitive receptors typically result from CO hotspots and TACs, which are discussed in the following subsections.

CARBON MONOXIDE HOTSPOTS

According to BAAQMD Chapter 4, *Screening for Criteria Air Pollutants and Precursors*, a project would have less than significant CO impacts if:

- The project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, the regional transportation plan, and local congestion management agency plans.
- Project-generated traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
- Project-generated traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

The project is presumed to be consistent with applicable congestion management programs. There are no intersections in the project vicinity with volumes of more than 44,000 vehicles per hour; for example, a previous City traffic count for West Dunne Avenue in 2015 showed 7,603 average daily trips near the project site, which would be much lower than the 44,000 vehicle per hour threshold (City of Morgan Hill 2015). Additionally, the San Francisco Bay Area Air Basin has been designated attainment for both federal and State standards for CO since 1998 (BAAQMD 2017b). Therefore, impacts related to CO emissions would be less than significant.

TOXIC AIR CONTAMINANTS

Certain population groups such as children, the elderly, and people with health issues are particularly sensitive to air pollution. The majority of sensitive receptor locations are schools, residences and hospitals. The closest sensitive receptors to the project site are the duet single-family residences immediately adjacent to the west of the project site, single family residence across West Dunne Avenue to the north of the project site, and duet single-family residences across Barnell Avenue to the east of the project site. The following subsections discuss the project's potential to result in impacts related to TAC emissions during construction and operation.

Construction

Construction-related activities would result in temporary project-generated emissions of diesel particulate matter (DPM) exhaust emissions from off-road, heavy-duty diesel equipment for site preparation, grading, building construction, and other construction activities. DPM was identified as a TAC by CARB in 1998 (CARB 2024).

Generation of DPM from construction projects typically occurs in a single area for a short period. Construction of the proposed project would occur over approximately 10 months. The dose to which the receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the extent of exposure that person has to the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher exposure level for the Maximally Exposed Individual. The risks estimated for a Maximally Exposed Individual are higher if a fixed exposure occurs over a longer period of time. According to the California Office of Environmental Health Hazard Assessment (OEHHA), health risk assessments, which determine the exposure of sensitive receptors to toxic emissions, should be based on a 70-year exposure period; however, such assessments should be limited to the period/duration of activities associated with the project. Thus, the duration of proposed construction activities (i.e., 10 months) is approximately three percent of the total exposure period used for 30-year health risk calculations. Current models and methodologies for conducting health-risk assessments are associated with longer-term exposure periods of 9, 30, and

70 years, which do not correlate well with the temporary and highly variable nature of construction activities, resulting in difficulties in producing accurate estimates of health risk (BAAQMD 2023).

The maximum PM₁₀ and PM_{2.5} emissions would occur during demolition, site preparation and grading activities. These activities would last for approximately four months. PM emissions would decrease for the remaining construction period because construction activities such as building construction and paving would require less intensive construction equipment. While the maximum DPM emissions associated with site preparation and grading activities would only occur for a portion of the overall construction period, these activities represent the worst-case condition for the total construction period. This would represent less than one percent of the total 30-year exposure period for health risk calculation. In addition, the construction equipment used would have US EPA Tier 4 engines, which greatly reduces DPM emissions compared to older engines. Given the aforementioned discussion, DPM generated by project construction would not create conditions where the probability is greater than one in one million of contracting cancer for the Maximally Exposed Individual or to generate ground-level concentrations of non-carcinogenic TACs that exceed a Hazard Index greater than one for the Maximally Exposed Individual. Therefore, project construction would not expose sensitive receptors to substantial TAC concentrations, and impacts would be less than significant.

Operation

Sources of operational TACs include, but are not limited to, land uses such as freeways and high-volume roadways, truck distribution centers, ports, rail yards, refineries, chrome plating facilities, dry cleaners using perchloroethylene, and gasoline dispensing facilities. The project does not include construction of new gas stations, dry cleaners, highways, roadways, or other sources that could be considered new permitted or non-permitted sources of TAC or PM_{2.5} in proximity to sensitive receptors. In addition, mobile emissions generated from the project would be minimal and spread over a broad geographical area. Therefore, project operation would not expose sensitive receptors to substantial TAC concentrations, and impacts would be less than significant.

Odors

BAAQMD's 2022 CEQA Air Quality Guidelines identifies land uses that have the potential to generate substantial odor complaints. The uses in the table include wastewater treatment plants, landfills or transfer stations, refineries, composting facilities, confined animal facilities, food manufacturing, smelting plants, and chemical plants (BAAQMD 2023). Odors are typically associated with industrial projects involving the use of chemicals, solvents, petroleum products, and other strong-smelling elements used in manufacturing processes, as well as sewage treatment facilities and landfills.

The project does not involve, nor would locate, new sensitive receptors in proximity to odor-emitting uses as identified in BAAQMD's 2022 CEQA Air Quality Guidelines. The proposed uses would not generate objectionable odors that would affect a substantial number of people. Furthermore, the project would be subject to BAAQMD Regulation 7, Odorous Substances, which requires abatement of any nuisance generating an odor complaint. Therefore, the project would not substantially cause new sources of odors and would not significantly expose sensitive receptors to existing or new odors, and impacts would be less than significant.

Conclusion

The proposed project would not result in significant air quality impacts.

D. Water Quality

The project site is currently developed with existing structures and there are no wetlands on or near the project site (USFWS 2024). The project site is within the Dewitt Creek watershed, which is tributary to West Little Llagas Creek. As described above under *Criterion (c)*, a small drainage area runs along the southern border of the project site. The drainage area appears to collect runoff from the project site and does not appear to be connected to any discernable drainage courses or streams.

The project would employ permanent stormwater control measures including an interconnected underground pipe manifold infiltration system. Runoff would be pre-treated through a stormwater filter before being conveyed into the underground manifold system and infiltrated into native soil. The collection system would be oversized to eliminate any street overland release, and any potential overflow would be captured into a PCC ditch and bubble up drain along the historic release path onto Viewcrest Lane (Appendix B). According to the preliminary stormwater report, the pre-project 100-year storm runoff is 0.65 cubic feet per second (cfs) and the post-project 100-year storm runoff would be reduced to 0.59 cfs; therefore, the project includes a sufficient storm drainage collection system to serve the project and would be designed to be capable of handling a 100-year storm without local flooding. The project site is connected to an existing stormwater drainage system managed and maintained by the City of Morgan Hill. Construction of the proposed project would not alter the course of a pond or creek or other stream or river.

Currently the project site is partially covered in impervious paving and structures. The project would replace impervious and pervious surfaces with new imperious paving, landscaping, and buildings. The current impervious surface area of the project site is approximately 9,608 square feet. The project would result in a total impervious surface area after buildout of 28,314 square feet (Appendix B).

The project would be subject to compliance with the California Regional Water Quality Control Board Central Coast Region (Region 3) Resolution No. R3-2013-0032, and the City's NPDES Permit. Additionally, the proposed project would be required to comply with Chapter 18.140 of the MHMC which sets requirements for stormwater management including the requirement to implement Best Management Practices (BMPs) and the requirement to create a stormwater runoff management plan to reduce stormwater runoff.

Impervious surface that would result from the construction of the proposed project would not create or contribute runoff that would exceed the capacity of the existing stormwater conveyance infrastructure or otherwise result in flooding on or near the project site.

Conclusion

Because the project would not substantially increase stormwater runoff and would be required to comply with City requirements to control and filter runoff, development of the proposed project would not degrade the quality of stormwater runoff from the site. With the proposed stormwater control measures, post-project 100-year outflow rates would be reduced compared with pre-project outflow rates. The proposed project would not substantially increase runoff volumes, result in substantial erosion or siltation, or result in flooding on- or off-site. Additionally, the project would not substantially alter the existing drainage pattern of the site such that flooding or water quality violations would occur. Therefore, the project would meet the requirements for water quality under *criterion (d)*.

3.5 Criterion (e)

The site can be adequately served by all required utilities and public services.

The project would be located in an urban area served by existing public utilities and services. The proposed project is relatively small with only 10 units and would not result in a substantial increase in demand for services or utilities. Valley Water supplies water to the city, and the City of Morgan Hill provides water services to the project site. Silicon Valley Clean Energy provides electricity services to the city via Pacific Gas and Electric (PG&E) infrastructure. Natural gas infrastructure is not proposed as part of this project. Recology South Valley collects garbage and recycling within Morgan Hill (Morgan Hill 2024a). Wastewater is transported to a water treatment plant located in Gilroy that is owned and operated by the South County Regional Wastewater Authority (SCRWA), under a Joint Powers Agreement with the Cities of Morgan Hill and Gilroy. Utility lines for the proposed project would be connected to existing infrastructure on the project site. As described under *Criterion (d)*, stormwater from the project would be pre-treated through a stormwater filter and reduced to by proposed onsite stormwater control measures before being conveyed into the existing storm drain system under West Dunne Avenue.

Conclusion

The proposed project involves infill development on a project site in an urban area that is already served by existing utilities and public services. As discussed under criterion (a), the project is within the allowed density for the site and is consistent with the General Plan land use designation for the site. The project would not increase the intensity of use such that existing utility and public service providers would not be able to serve the project site. Therefore, the project would meet the requirements for Utilities and Service Systems under *criterion (e)*.

4 Exceptions to the Exemption

CEQA Guidelines Section 15300.2 outlines exceptions to the applicability of a Categorical Exemption, including cumulative impacts, significant effects due to unusual circumstances, scenic highways, hazardous waste sites, and historical resources. These exceptions are discussed below. As shown, none of the exceptions would apply.

4.1 Cumulative Impacts

CEQA Guidelines Section 15300.2 states that “all exemptions for these classes are inapplicable when the cumulative impact of successive projects of the same type in the same place, over time is significant.” Table 8 includes a list of relevant projects within 0.5 miles of the project site.

Table 8 Cumulative Projects List

Project Location	Land Use	Description	Status	Distance to Project Site (miles)
Spring-Giancola Multiple Permits	Residential	Subdivision Map for 23 lots	Approved	0.25
17090 Peak Avenue	Residential	48-unit care facility	Entitlements Approved	0.2
16720 Monterey Road	Commercial	Reconstruction of existing gas station	Entitlements Approved	0.5
East side of Depot Street, north of East Dunne Avenue	Residential	49 Multi-family units and office space	Under Construction	0.5
Monterey Road, San Pedro Avenue, and Church Street	Residential	82 Age-restricted rental units	Under Construction	0.5
Source: City of Morgan Hill 2024b				

As discussed in Section 3.3, Criterion (c) above, the project would not affect sensitive biological resources and therefore would not result in a cumulative impact related to biological resources. As discussed in Sections 3.4, Criterion (d), subsections A and C above, VMT and air quality analyses already take into account cumulative impacts and these impacts were found to be less than significant. As discussed in Section 3.4, Criterion (d), subsection D and Section 3.5, Criterion (e), the proposed project would not contribute pollutants such that water quality would be impacted and would be served by available utilities and public services. Therefore, impacts related to these issue areas were found to be less than significant and the project would not result in a cumulatively considerable contribution to potential cumulative impacts.

The project would involve temporary noise and vibration during construction; however, these effects are localized and would cease upon cessation of construction activities. Therefore, the project would not result in a cumulatively considerable contribution to a cumulative noise increase. Construction noise impacts may overlap for the proposed project and the projects listed above. However, due to the distance between the proposed project site and the project included in the cumulative projects list and because construction noise impacts are temporary, the project would not result in significant cumulative noise impacts. Overall, the project would not result in a significant contribution to potential cumulative impacts. Therefore, this exception does not apply to the proposed project.

4.2 Significant Effect due to Unusual Circumstances

CEQA Guidelines Section 15300.2 states that “a categorical exemption shall not be used for an activity where there is a reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances.”

As discussed under Section 2.1, *Project Location and Setting*, the project site is currently developed with existing structures and non-native landscaping. Neither the site, its surroundings, or the proposed project itself (a residential project in a residential neighborhood) are unusual in terms of existing conditions, land uses or proposed features. The project site does not possess characteristics which would qualify as unusual circumstances under *CEQA Guidelines* Section 15300.2. There are no known unusual circumstances at the project site or related to project operations that would result in a reasonable possibility of significant effects to the environment. Therefore, this exception to a CE does not apply to the proposed project.

4.3 Scenic Highways

CEQA Guidelines Section 15300.2 states that a CE “shall not be used for a project which may result in damage to scenic resources, including but not limited to, trees, historic buildings, rock outcroppings, or similar resources, within a highway officially designated as a state scenic highway.”

CEQA Guidelines Section 15300.2 states that a categorical exemption “shall not be used for a project which may result in damage to scenic resources, including but not limited to, trees, historic buildings, rock outcroppings, or similar resources, within a highway officially designated as a state scenic highway.” There are no designated State Scenic Highways in the vicinity of the project site. The closest scenic highway is Highway 1, which has been recognized as eligible for designation as a State Scenic Highway, located approximately 8 miles southwest of the project site (Caltrans 2019). Due to distance and intervening topography, structures and trees, the project site is not visible from Highway 1. The project would not damage scenic resources within a highway officially designated as a state scenic highway. This exception would not apply to the project.

4.4 Hazardous Waste Sites

CEQA Guidelines Section 15300.2 states that a categorical exemption “shall not be used for a project located on a site which is included on any list compiled pursuant to Section 65962.5 of the Government Code.”

A search of the EnviroStor environmental database, the California Department of Toxic Substances Control Hazardous Waste and Substances Sites (Cortese) List (CalEPA 2024), and the Geotracker Database (SWRCB 2024) was conducted in March 2024 (DTSC 2024). The records review indicated that the project site is not listed on any of these lists. Therefore, this exception does not apply to the project.

4.5 Historical Resources

CEQA Guidelines Section 15300.2(f) states that a categorical exemption “shall not be used for a project which may cause a substantial adverse change in the significance of a historical resource.”

In support of the analysis presented below, Rincon Consultants completed a peer review of the *Historic Evaluation of the Residence at 270 West Dunne Avenue in the City of Morgan Hill* (270 West Dunne Avenue HRE) in March 2024; Rincon additionally conducted a Cultural Resources Desktop Analysis in April 2024. The 270 West Dunne Avenue HRE, in addition to the peer review and Cultural Resources Desktop Analysis are included in Appendix C and D, respectively.

Based on the 270 West Dunne HRE, the proposed project site contains no built environment historical resources. The desktop analysis was based on the results of a cultural resources records search of the California Historical Resources Information System, a Sacred Lands File (SLF) search conducted by the Native American Heritage Commission (NAHC), a review of historical maps and aerial imagery, and a review of the geotechnical report prepared for the project. Review of these materials indicated that there are no known archaeological resources that may qualify as historical resources within the project site. While no known archaeological resources that may qualify as historical resources under CEQA are present within the project site, previous and modern disturbances may have disturbed shallowly buried resources, if any once existed onsite. Proposed project-related ground disturbance will extend below disturbed soils or fill materials and into underlying native soils, and it is possible that subsurface archaeological materials may be encountered. The City’s Standard Condition of Approval for development projects, which includes procedures to follow in the event of an unanticipated discovery, cultural resources sensitivity training for construction personnel, full-time Native American monitoring of all ground-disturbing activities by a member of the Tamien Nation, and retention of an archaeologist to respond to discoveries as needed, would apply and address unanticipated discovery of subsurface archaeological materials. Compliance with existing state regulations would also be required in the event of an unanticipated discovery of human remains.

5 Summary

Based on this analysis, the proposed West Dunne Residential Project meets the criteria for a Class 32 Categorical Exemption pursuant to Section 15332 of the State CEQA Guidelines and is exempt from CEQA pursuant to CEQA Guidelines Article 19.

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Appendix A

Air Quality and Greenhouse Gas Emissions Calculations

270 W Dunne Avenue Detailed Report

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5.4.1. Construction Vehicle Control Strategies

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

5.6.2. Construction Earthmoving Control Strategies

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

5.9. Operational Mobile Sources

5.9.1. Unmitigated

5.9.2. Mitigated

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.1.2. Mitigated

5.10.2. Architectural Coatings

5.10.3. Landscape Equipment

5.10.4. Landscape Equipment - Mitigated

5.11. Operational Energy Consumption

5.11.1. Unmitigated

5.11.2. Mitigated

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

5.12.2. Mitigated

5.13. Operational Waste Generation

5.13.1. Unmitigated

5.13.2. Mitigated

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

5.14.2. Mitigated

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

5.15.2. Mitigated

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

5.16.2. Process Boilers

5.17. User Defined

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

5.18.2.2. Mitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	270 W Dunne Avenue
Construction Start Date	12/2/2024
Operational Year	2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	1.80
Precipitation (days)	32.8
Location	270 W Dunne Ave, Morgan Hill, CA 95037, USA
County	Santa Clara
City	Morgan Hill
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1933
EDFZ	1
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.22

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
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Condo/Townhouse	10.0	Dwelling Unit	1.03	33,729	0.00	0.00	29.0	—
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1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-10-A	Water Exposed Surfaces

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.10	7.60	0.39	5.14	0.01	0.01	0.09	0.10	0.01	0.02	0.03	—	786	786	0.03	0.01	0.40	791
Mit.	0.10	7.60	0.39	5.14	0.01	0.01	0.09	0.10	0.01	0.02	0.03	—	786	786	0.03	0.01	0.40	791
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.55	0.45	8.68	18.4	0.03	0.07	0.75	0.82	0.06	0.17	0.23	—	3,945	3,945	0.21	0.24	0.10	4,016
Mit.	0.55	0.45	8.68	18.4	0.03	0.07	0.75	0.81	0.06	0.17	0.23	—	3,945	3,945	0.21	0.24	0.10	4,016
% Reduced	—	—	—	—	—	—	< 0.5%	< 0.5%	—	—	—	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.08	1.23	0.95	3.44	< 0.005	0.01	0.08	0.09	0.01	0.02	0.03	—	600	600	0.03	0.02	0.19	606

Mit.	0.08	1.23	0.95	3.44	< 0.005	0.01	0.08	0.09	0.01	0.02	0.03	—	600	600	0.03	0.02	0.19	606
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.02	0.23	0.17	0.63	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	99.3	99.3	< 0.005	< 0.005	0.03	100
Mit.	0.02	0.23	0.17	0.63	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	99.3	99.3	< 0.005	< 0.005	0.03	100
% Reduced	—	—	—	—	—	—	< 0.5%	< 0.5%	—	< 0.5%	< 0.5%	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.10	7.60	0.39	5.14	0.01	0.01	0.09	0.10	0.01	0.02	0.03	—	786	786	0.03	0.01	0.40	791
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.19	0.17	3.08	7.69	0.01	0.02	0.29	0.32	0.02	0.06	0.08	—	1,261	1,261	0.06	0.04	0.02	1,273
2025	0.55	0.45	8.68	18.4	0.03	0.07	0.75	0.82	0.06	0.17	0.23	—	3,945	3,945	0.21	0.24	0.10	4,016
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.01	0.01	0.22	0.54	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	88.9	88.9	< 0.005	< 0.005	0.02	89.8
2025	0.08	1.23	0.95	3.44	< 0.005	0.01	0.08	0.09	0.01	0.02	0.03	—	600	600	0.03	0.02	0.19	606
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	< 0.005	< 0.005	0.04	0.10	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	14.7	14.7	< 0.005	< 0.005	< 0.005	14.9
2025	0.02	0.23	0.17	0.63	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	99.3	99.3	< 0.005	< 0.005	0.03	100

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.10	7.60	0.39	5.14	0.01	0.01	0.09	0.10	0.01	0.02	0.03	—	786	786	0.03	0.01	0.40	791
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.19	0.17	3.08	7.69	0.01	0.02	0.29	0.32	0.02	0.06	0.08	—	1,261	1,261	0.06	0.04	0.02	1,273
2025	0.55	0.45	8.68	18.4	0.03	0.07	0.75	0.81	0.06	0.17	0.23	—	3,945	3,945	0.21	0.24	0.10	4,016
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.01	0.01	0.22	0.54	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	88.9	88.9	< 0.005	< 0.005	0.02	89.8
2025	0.08	1.23	0.95	3.44	< 0.005	0.01	0.08	0.09	0.01	0.02	0.03	—	600	600	0.03	0.02	0.19	606
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	< 0.005	< 0.005	0.04	0.10	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	14.7	14.7	< 0.005	< 0.005	< 0.005	14.9
2025	0.02	0.23	0.17	0.63	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	99.3	99.3	< 0.005	< 0.005	0.03	100

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.35	1.16	0.21	2.83	0.01	< 0.005	0.49	0.49	< 0.005	0.12	0.13	4.64	612	617	0.42	0.02	2.34	637
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unmit.	0.29	1.10	0.24	2.12	< 0.005	< 0.005	0.49	0.49	< 0.005	0.12	0.13	4.64	578	583	0.43	0.03	0.30	602
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.28	1.09	0.20	2.12	< 0.005	< 0.005	0.43	0.43	< 0.005	0.11	0.11	4.64	530	535	0.42	0.02	1.05	553
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.05	0.20	0.04	0.39	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.02	0.77	87.8	88.6	0.07	< 0.005	0.17	91.6

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.30	0.28	0.20	2.26	0.01	< 0.005	0.49	0.49	< 0.005	0.12	0.13	—	538	538	0.02	0.02	2.10	547
Area	0.05	0.89	0.01	0.57	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	1.52	1.52	< 0.005	< 0.005	—	1.52
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	71.8	71.8	0.01	< 0.005	—	72.5
Water	—	—	—	—	—	—	—	—	—	—	—	0.78	1.31	2.09	< 0.005	< 0.005	—	2.67
Waste	—	—	—	—	—	—	—	—	—	—	—	3.87	0.00	3.87	0.39	0.00	—	13.5
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.24	0.24
Total	0.35	1.16	0.21	2.83	0.01	< 0.005	0.49	0.49	< 0.005	0.12	0.13	4.64	612	617	0.42	0.02	2.34	637
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.29	0.26	0.24	2.12	< 0.005	< 0.005	0.49	0.49	< 0.005	0.12	0.13	—	505	505	0.03	0.02	0.05	513
Area	0.00	0.84	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
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	71.8	71.8	0.01	< 0.005	—	72.5
Water	—	—	—	—	—	—	—	—	—	—	—	0.78	1.31	2.09	< 0.005	< 0.005	—	2.67
Waste	—	—	—	—	—	—	—	—	—	—	—	3.87	0.00	3.87	0.39	0.00	—	13.5

Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.24	0.24
Total	0.29	1.10	0.24	2.12	< 0.005	< 0.005	0.49	0.49	< 0.005	0.12	0.13	4.64	578	583	0.43	0.03	0.30	602
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.25	0.23	0.20	1.84	< 0.005	< 0.005	0.43	0.43	< 0.005	0.11	0.11	—	456	456	0.02	0.02	0.81	464
Area	0.03	0.86	< 0.005	0.28	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	0.75	0.75	< 0.005	< 0.005	—	0.75
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	71.8	71.8	0.01	< 0.005	—	72.5
Water	—	—	—	—	—	—	—	—	—	—	—	0.78	1.31	2.09	< 0.005	< 0.005	—	2.67
Waste	—	—	—	—	—	—	—	—	—	—	—	3.87	0.00	3.87	0.39	0.00	—	13.5
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.24	0.24
Total	0.28	1.09	0.20	2.12	< 0.005	< 0.005	0.43	0.43	< 0.005	0.11	0.11	4.64	530	535	0.42	0.02	1.05	553
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.05	0.04	0.04	0.34	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.02	—	75.6	75.6	< 0.005	< 0.005	0.13	76.8
Area	< 0.005	0.16	< 0.005	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	0.12	0.12	< 0.005	< 0.005	—	0.12
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	11.9	11.9	< 0.005	< 0.005	—	12.0
Water	—	—	—	—	—	—	—	—	—	—	—	0.13	0.22	0.35	< 0.005	< 0.005	—	0.44
Waste	—	—	—	—	—	—	—	—	—	—	—	0.64	0.00	0.64	0.06	0.00	—	2.24
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04	0.04
Total	0.05	0.20	0.04	0.39	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.02	0.77	87.8	88.6	0.07	< 0.005	0.17	91.6

2.6. Operations Emissions by Sector, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.30	0.28	0.20	2.26	0.01	< 0.005	0.49	0.49	< 0.005	0.12	0.13	—	538	538	0.02	0.02	2.10	547
Area	0.05	0.89	0.01	0.57	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	1.52	1.52	< 0.005	< 0.005	—	1.52

Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	71.8	71.8	0.01	< 0.005	—	72.5
Water	—	—	—	—	—	—	—	—	—	—	—	0.78	1.31	2.09	< 0.005	< 0.005	—	2.67
Waste	—	—	—	—	—	—	—	—	—	—	—	3.87	0.00	3.87	0.39	0.00	—	13.5
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.24	0.24
Total	0.35	1.16	0.21	2.83	0.01	< 0.005	0.49	0.49	< 0.005	0.12	0.13	4.64	612	617	0.42	0.02	2.34	637
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.29	0.26	0.24	2.12	< 0.005	< 0.005	0.49	0.49	< 0.005	0.12	0.13	—	505	505	0.03	0.02	0.05	513
Area	0.00	0.84	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
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	71.8	71.8	0.01	< 0.005	—	72.5
Water	—	—	—	—	—	—	—	—	—	—	—	0.78	1.31	2.09	< 0.005	< 0.005	—	2.67
Waste	—	—	—	—	—	—	—	—	—	—	—	3.87	0.00	3.87	0.39	0.00	—	13.5
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.24	0.24
Total	0.29	1.10	0.24	2.12	< 0.005	< 0.005	0.49	0.49	< 0.005	0.12	0.13	4.64	578	583	0.43	0.03	0.30	602
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.25	0.23	0.20	1.84	< 0.005	< 0.005	0.43	0.43	< 0.005	0.11	0.11	—	456	456	0.02	0.02	0.81	464
Area	0.03	0.86	< 0.005	0.28	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	0.75	0.75	< 0.005	< 0.005	—	0.75
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	71.8	71.8	0.01	< 0.005	—	72.5
Water	—	—	—	—	—	—	—	—	—	—	—	0.78	1.31	2.09	< 0.005	< 0.005	—	2.67
Waste	—	—	—	—	—	—	—	—	—	—	—	3.87	0.00	3.87	0.39	0.00	—	13.5
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.24	0.24
Total	0.28	1.09	0.20	2.12	< 0.005	< 0.005	0.43	0.43	< 0.005	0.11	0.11	4.64	530	535	0.42	0.02	1.05	553
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.05	0.04	0.04	0.34	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.02	—	75.6	75.6	< 0.005	< 0.005	0.13	76.8
Area	< 0.005	0.16	< 0.005	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	0.12	0.12	< 0.005	< 0.005	—	0.12
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	11.9	11.9	< 0.005	< 0.005	—	12.0
Water	—	—	—	—	—	—	—	—	—	—	—	0.13	0.22	0.35	< 0.005	< 0.005	—	0.44

Waste	—	—	—	—	—	—	—	—	—	—	—	0.64	0.00	0.64	0.06	0.00	—	2.24
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04	0.04
Total	0.05	0.20	0.04	0.39	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.02	0.77	87.8	88.6	0.07	< 0.005	0.17	91.6

3. Construction Emissions Details

3.1. Demolition (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.13	2.84	7.22	0.01	0.02	—	0.02	0.02	—	0.02	—	1,029	1,029	0.04	0.01	—	1,033
Demolition	—	—	—	—	—	—	0.17	0.17	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.20	0.51	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	72.5	72.5	< 0.005	< 0.005	—	72.8
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	< 0.005	< 0.005	0.04	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	12.0	12.0	< 0.005	< 0.005	—	12.0
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.03	0.38	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	81.0	81.0	< 0.005	< 0.005	0.01	82.1
Vendor	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	0.00
Hauling	0.02	< 0.005	0.20	0.09	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	151	151	0.01	0.02	0.01	158
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.77	5.77	< 0.005	< 0.005	0.01	5.85
Vendor	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	0.00
Hauling	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	10.6	10.6	< 0.005	< 0.005	0.01	11.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.95	0.95	< 0.005	< 0.005	< 0.005	0.97
Vendor	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	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.76	1.76	< 0.005	< 0.005	< 0.005	1.85

3.2. Demolition (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.13	2.84	7.22	0.01	0.02	—	0.02	0.02	—	0.02	—	1,029	1,029	0.04	0.01	—	1,033
Demolition	—	—	—	—	—	—	0.17	0.17	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.20	0.51	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	72.5	72.5	< 0.005	< 0.005	—	72.8
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.04	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	12.0	12.0	< 0.005	< 0.005	—	12.0
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.04	0.03	0.03	0.38	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	81.0	81.0	< 0.005	< 0.005	0.01	82.1
Vendor	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	0.00
Hauling	0.02	< 0.005	0.20	0.09	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	151	151	0.01	0.02	0.01	158
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.77	5.77	< 0.005	< 0.005	0.01	5.85
Vendor	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	0.00
Hauling	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	10.6	10.6	< 0.005	< 0.005	0.01	11.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.95	0.95	< 0.005	< 0.005	< 0.005	0.97
Vendor	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	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.76	1.76	< 0.005	< 0.005	< 0.005	1.85

3.3. Demolition (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.13	2.84	7.22	0.01	0.02	—	0.02	0.02	—	0.02	—	1,029	1,029	0.04	0.01	—	1,033
Demolition	—	—	—	—	—	—	0.17	0.17	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	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	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.04	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.5	14.5	< 0.005	< 0.005	—	14.6
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.40	2.40	< 0.005	< 0.005	—	2.41
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.35	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	79.4	79.4	< 0.005	< 0.005	0.01	80.5
Vendor	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	0.00
Hauling	0.02	< 0.005	0.19	0.09	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	148	148	0.01	0.02	0.01	155
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.13	1.13	< 0.005	< 0.005	< 0.005	1.15
Vendor	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	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.08	2.08	< 0.005	< 0.005	< 0.005	2.19
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.19	0.19	< 0.005	< 0.005	< 0.005	0.19

Vendor	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	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.34	0.34	< 0.005	< 0.005	< 0.005	0.36

3.4. Demolition (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.13	2.84	7.22	0.01	0.02	—	0.02	0.02	—	0.02	—	1,029	1,029	0.04	0.01	—	1,033
Demolition	—	—	—	—	—	—	0.17	0.17	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.04	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.5	14.5	< 0.005	< 0.005	—	14.6
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.40	2.40	< 0.005	< 0.005	—	2.41
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.35	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	79.4	79.4	< 0.005	< 0.005	0.01	80.5
Vendor	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	0.00
Hauling	0.02	< 0.005	0.19	0.09	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	148	148	0.01	0.02	0.01	155
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.13	1.13	< 0.005	< 0.005	< 0.005	1.15
Vendor	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	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.08	2.08	< 0.005	< 0.005	< 0.005	2.19
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.19	0.19	< 0.005	< 0.005	< 0.005	0.19
Vendor	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	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.34	0.34	< 0.005	< 0.005	< 0.005	0.36

3.5. Site Preparation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.15	3.51	8.21	0.01	0.02	—	0.02	0.02	—	0.02	—	1,240	1,240	0.05	0.01	—	1,244
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.18	0.43	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	64.5	64.5	< 0.005	< 0.005	—	64.8
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.7	10.7	< 0.005	< 0.005	—	10.7
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.05	0.61	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	139	139	< 0.005	0.01	0.02	141
Vendor	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	0.00
Hauling	0.12	0.02	1.56	0.73	0.01	0.02	0.31	0.33	0.01	0.08	0.10	—	1,188	1,188	0.10	0.19	0.07	1,246
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.31	7.31	< 0.005	< 0.005	0.01	7.42
Vendor	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	0.00
Hauling	0.01	< 0.005	0.08	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	61.8	61.8	0.01	0.01	0.06	64.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.21	1.21	< 0.005	< 0.005	< 0.005	1.23
Vendor	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	0.00
Hauling	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	10.2	10.2	< 0.005	< 0.005	0.01	10.7

3.6. Site Preparation (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.15	3.51	8.21	0.01	0.02	—	0.02	0.02	—	0.02	—	1,240	1,240	0.05	0.01	—	1,244

Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.18	0.43	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	64.5	64.5	< 0.005	< 0.005	—	64.8
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.7	10.7	< 0.005	< 0.005	—	10.7
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.05	0.61	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	139	139	< 0.005	0.01	0.02	141
Vendor	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	0.00
Hauling	0.12	0.02	1.56	0.73	0.01	0.02	0.31	0.33	0.01	0.08	0.10	—	1,188	1,188	0.10	0.19	0.07	1,246

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.31	7.31	< 0.005	< 0.005	0.01	7.42
Vendor	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	0.00
Hauling	0.01	< 0.005	0.08	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	61.8	61.8	0.01	0.01	0.06	64.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.21	1.21	< 0.005	< 0.005	< 0.005	1.23
Vendor	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	0.00
Hauling	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	10.2	10.2	< 0.005	< 0.005	0.01	10.7

3.7. Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.15	3.51	8.21	0.01	0.02	—	0.02	0.02	—	0.02	—	1,240	1,240	0.05	0.01	—	1,244
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.51	1.19	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	180	180	0.01	< 0.005	—	181

Dust From Material Movement:	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.09	0.22	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	29.8	29.8	< 0.005	< 0.005	—	29.9
Dust From Material Movement:	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.05	0.61	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	139	139	< 0.005	0.01	0.02	141
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.09	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	20.4	20.4	< 0.005	< 0.005	0.04	20.7
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.38	3.38	< 0.005	< 0.005	0.01	3.42
Vendor	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	0.00

Hauling	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	0.00
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3.8. Grading (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.15	3.51	8.21	0.01	0.02	—	0.02	0.02	—	0.02	—	1,240	1,240	0.05	0.01	—	1,244
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.51	1.19	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	180	180	0.01	< 0.005	—	181
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.09	0.22	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	29.8	29.8	< 0.005	< 0.005	—	29.9

Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.05	0.61	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	139	139	< 0.005	0.01	0.02	141
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.09	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	20.4	20.4	< 0.005	< 0.005	0.04	20.7
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.38	3.38	< 0.005	< 0.005	0.01	3.42
Vendor	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	0.00
Hauling	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	0.00

3.9. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.18	2.51	< 0.005	0.01	—	0.01	0.01	—	0.01	—	358	358	0.01	< 0.005	—	359
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.18	2.51	< 0.005	0.01	—	0.01	0.01	—	0.01	—	358	358	0.01	< 0.005	—	359
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.09	1.24	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	177	177	0.01	< 0.005	—	177
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.23	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	29.2	29.2	< 0.005	< 0.005	—	29.3
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.29	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	61.7	61.7	< 0.005	< 0.005	0.24	62.7
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	28.8	28.8	< 0.005	< 0.005	0.08	30.2
Hauling	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	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.25	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	57.2	57.2	< 0.005	< 0.005	0.01	57.9
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	28.9	28.9	< 0.005	< 0.005	< 0.005	30.1
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.12	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	28.5	28.5	< 0.005	< 0.005	0.05	28.9
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	14.2	14.2	< 0.005	< 0.005	0.02	14.9
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	4.72	4.72	< 0.005	< 0.005	0.01	4.79
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.36	2.36	< 0.005	< 0.005	< 0.005	2.46
Hauling	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	0.00

3.10. Building Construction (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.18	2.51	< 0.005	0.01	—	0.01	0.01	—	0.01	—	358	358	0.01	< 0.005	—	359
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.03	0.03	0.18	2.51	< 0.005	0.01	—	0.01	0.01	—	0.01	—	358	358	0.01	< 0.005	—	359
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.09	1.24	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	177	177	0.01	< 0.005	—	177
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.23	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	29.2	29.2	< 0.005	< 0.005	—	29.3
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.29	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	61.7	61.7	< 0.005	< 0.005	0.24	62.7
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	28.8	28.8	< 0.005	< 0.005	0.08	30.2
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.25	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	57.2	57.2	< 0.005	< 0.005	0.01	57.9
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	28.9	28.9	< 0.005	< 0.005	< 0.005	30.1
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.12	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	28.5	28.5	< 0.005	< 0.005	0.05	28.9
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	14.2	14.2	< 0.005	< 0.005	0.02	14.9

Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	4.72	4.72	< 0.005	< 0.005	0.01	4.79
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.36	2.36	< 0.005	< 0.005	< 0.005	2.46
Hauling	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	0.00

3.11. Paving (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.16	2.22	< 0.005	0.01	—	0.01	0.01	—	0.01	—	316	316	0.01	< 0.005	—	317
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.18	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	25.1	25.1	< 0.005	< 0.005	—	25.2
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.16	4.16	< 0.005	< 0.005	—	4.17

Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	21.4	21.4	< 0.005	< 0.005	0.08	21.8
Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.59	1.59	< 0.005	< 0.005	< 0.005	1.62
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.26	0.26	< 0.005	< 0.005	< 0.005	0.27
Vendor	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	0.00
Hauling	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	0.00

3.12. Paving (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.03	0.03	0.16	2.22	< 0.005	0.01	—	0.01	0.01	—	0.01	—	316	316	0.01	< 0.005	—	317
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.18	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	25.1	25.1	< 0.005	< 0.005	—	25.2
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.16	4.16	< 0.005	< 0.005	—	4.17
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	21.4	21.4	< 0.005	< 0.005	0.08	21.8
Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.59	1.59	< 0.005	< 0.005	< 0.005	1.62
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.26	0.26	< 0.005	< 0.005	< 0.005	0.27
Vendor	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	0.00
Hauling	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	0.00

3.13. Architectural Coating (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architect ural Coatings	—	7.54	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architect ural Coatings	—	1.16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architect Coatings	—	0.21	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.3	12.3	< 0.005	< 0.005	0.05	12.5
Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.77	1.77	< 0.005	< 0.005	< 0.005	1.80
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.29	0.29	< 0.005	< 0.005	< 0.005	0.30
Vendor	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	0.00
Hauling	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	0.00

3.14. Architectural Coating (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architect ural Coatings	—	7.54	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architect ural Coatings	—	1.16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architect ural Coatings	—	0.21	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.3	12.3	< 0.005	< 0.005	0.05	12.5
Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.77	1.77	< 0.005	< 0.005	< 0.005	1.80
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.29	0.29	< 0.005	< 0.005	< 0.005	0.30
Vendor	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	0.00
Hauling	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	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.30	0.28	0.20	2.26	0.01	< 0.005	0.49	0.49	< 0.005	0.12	0.13	—	538	538	0.02	0.02	2.10	547
Total	0.30	0.28	0.20	2.26	0.01	< 0.005	0.49	0.49	< 0.005	0.12	0.13	—	538	538	0.02	0.02	2.10	547
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.29	0.26	0.24	2.12	< 0.005	< 0.005	0.49	0.49	< 0.005	0.12	0.13	—	505	505	0.03	0.02	0.05	513

Total	0.29	0.26	0.24	2.12	< 0.005	< 0.005	0.49	0.49	< 0.005	0.12	0.13	—	505	505	0.03	0.02	0.05	513
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.05	0.04	0.04	0.34	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.02	—	75.6	75.6	< 0.005	< 0.005	0.13	76.8
Total	0.05	0.04	0.04	0.34	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.02	—	75.6	75.6	< 0.005	< 0.005	0.13	76.8

4.1.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.30	0.28	0.20	2.26	0.01	< 0.005	0.49	0.49	< 0.005	0.12	0.13	—	538	538	0.02	0.02	2.10	547
Total	0.30	0.28	0.20	2.26	0.01	< 0.005	0.49	0.49	< 0.005	0.12	0.13	—	538	538	0.02	0.02	2.10	547
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.29	0.26	0.24	2.12	< 0.005	< 0.005	0.49	0.49	< 0.005	0.12	0.13	—	505	505	0.03	0.02	0.05	513
Total	0.29	0.26	0.24	2.12	< 0.005	< 0.005	0.49	0.49	< 0.005	0.12	0.13	—	505	505	0.03	0.02	0.05	513
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.05	0.04	0.04	0.34	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.02	—	75.6	75.6	< 0.005	< 0.005	0.13	76.8
Total	0.05	0.04	0.04	0.34	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.02	—	75.6	75.6	< 0.005	< 0.005	0.13	76.8

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	71.8	71.8	0.01	< 0.005	—	72.5
Total	—	—	—	—	—	—	—	—	—	—	—	—	71.8	71.8	0.01	< 0.005	—	72.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	71.8	71.8	0.01	< 0.005	—	72.5
Total	—	—	—	—	—	—	—	—	—	—	—	—	71.8	71.8	0.01	< 0.005	—	72.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	11.9	11.9	< 0.005	< 0.005	—	12.0
Total	—	—	—	—	—	—	—	—	—	—	—	—	11.9	11.9	< 0.005	< 0.005	—	12.0

4.2.2. Electricity Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	71.8	71.8	0.01	< 0.005	—	72.5
Total	—	—	—	—	—	—	—	—	—	—	—	—	71.8	71.8	0.01	< 0.005	—	72.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	71.8	71.8	0.01	< 0.005	—	72.5
Total	—	—	—	—	—	—	—	—	—	—	—	—	71.8	71.8	0.01	< 0.005	—	72.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	11.9	11.9	< 0.005	< 0.005	—	12.0
Total	—	—	—	—	—	—	—	—	—	—	—	—	11.9	11.9	< 0.005	< 0.005	—	12.0

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	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
Total	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	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

Total	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	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
Total	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

4.2.4. Natural Gas Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	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
Total	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	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
Total	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	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
Total	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

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	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
Consumer Products	—	0.72	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.05	0.05	0.01	0.57	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.52	1.52	< 0.005	< 0.005	—	1.52
Total	0.05	0.89	0.01	0.57	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	1.52	1.52	< 0.005	< 0.005	—	1.52
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	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
Consumer Products	—	0.72	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.00	0.84	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	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

Consumer Products	—	0.13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	< 0.005	< 0.005	< 0.005	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.12	0.12	< 0.005	< 0.005	—	0.12
Total	< 0.005	0.16	< 0.005	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	0.12	0.12	< 0.005	< 0.005	—	0.12

4.3.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	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
Consumer Products	—	0.72	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.05	0.05	0.01	0.57	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.52	1.52	< 0.005	< 0.005	—	1.52
Total	0.05	0.89	0.01	0.57	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	1.52	1.52	< 0.005	< 0.005	—	1.52
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	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

Consum Products	—	0.72	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architect ural Coatings	—	0.12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.00	0.84	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	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
Consum er Products	—	0.13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architect ural Coatings	—	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landsca pe Equipme nt	< 0.005	< 0.005	< 0.005	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.12	0.12	< 0.005	< 0.005	—	0.12
Total	< 0.005	0.16	< 0.005	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	0.12	0.12	< 0.005	< 0.005	—	0.12

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/T ownhous e	—	—	—	—	—	—	—	—	—	—	—	0.78	1.31	2.09	< 0.005	< 0.005	—	2.67
Total	—	—	—	—	—	—	—	—	—	—	—	0.78	1.31	2.09	< 0.005	< 0.005	—	2.67

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	0.78	1.31	2.09	< 0.005	< 0.005	—	2.67
Total	—	—	—	—	—	—	—	—	—	—	—	0.78	1.31	2.09	< 0.005	< 0.005	—	2.67
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	0.13	0.22	0.35	< 0.005	< 0.005	—	0.44
Total	—	—	—	—	—	—	—	—	—	—	—	0.13	0.22	0.35	< 0.005	< 0.005	—	0.44

4.4.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	0.78	1.31	2.09	< 0.005	< 0.005	—	2.67
Total	—	—	—	—	—	—	—	—	—	—	—	0.78	1.31	2.09	< 0.005	< 0.005	—	2.67
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	0.78	1.31	2.09	< 0.005	< 0.005	—	2.67
Total	—	—	—	—	—	—	—	—	—	—	—	0.78	1.31	2.09	< 0.005	< 0.005	—	2.67
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	0.13	0.22	0.35	< 0.005	< 0.005	—	0.44
Total	—	—	—	—	—	—	—	—	—	—	—	0.13	0.22	0.35	< 0.005	< 0.005	—	0.44

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	3.87	0.00	3.87	0.39	0.00	—	13.5
Total	—	—	—	—	—	—	—	—	—	—	—	3.87	0.00	3.87	0.39	0.00	—	13.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	3.87	0.00	3.87	0.39	0.00	—	13.5
Total	—	—	—	—	—	—	—	—	—	—	—	3.87	0.00	3.87	0.39	0.00	—	13.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	0.64	0.00	0.64	0.06	0.00	—	2.24
Total	—	—	—	—	—	—	—	—	—	—	—	0.64	0.00	0.64	0.06	0.00	—	2.24

4.5.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	3.87	0.00	3.87	0.39	0.00	—	13.5
Total	—	—	—	—	—	—	—	—	—	—	—	3.87	0.00	3.87	0.39	0.00	—	13.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	3.87	0.00	3.87	0.39	0.00	—	13.5
Total	—	—	—	—	—	—	—	—	—	—	—	3.87	0.00	3.87	0.39	0.00	—	13.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	0.64	0.00	0.64	0.06	0.00	—	2.24
Total	—	—	—	—	—	—	—	—	—	—	—	0.64	0.00	0.64	0.06	0.00	—	2.24

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.24	0.24
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.24	0.24
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.24	0.24
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.24	0.24
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04	0.04
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04	0.04

4.6.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.24	0.24
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.24	0.24
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.24	0.24

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.24	0.24
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04	0.04
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04	0.04

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
----------------	-----	-----	-----	----	-----	-------	-------	-------	--------	--------	--------	------	-------	------	-----	-----	---	------

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipme Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipme nt Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
-------	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
------------	-----	-----	-----	----	-----	-------	-------	-------	--------	--------	--------	------	-------	------	-----	-----	---	------

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequest ered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequest ered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequest ered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	12/2/2024	1/6/2025	6.00	31.0	—
Site Preparation	Site Preparation	1/6/2025	1/27/2025	6.00	19.0	—
Grading	Grading	1/27/2025	3/28/2025	6.00	53.0	—
Building Construction	Building Construction	3/31/2025	10/26/2025	6.00	180	—
Paving	Paving	6/16/2025	7/18/2025	6.00	29.0	—
Architectural Coating	Architectural Coating	7/21/2025	9/23/2025	6.00	56.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Excavators	Diesel	Tier 4 Final	2.00	8.00	36.0	0.38
Demolition	Rubber Tired Loaders	Diesel	Tier 4 Final	1.00	8.00	150	0.36
Demolition	Skid Steer Loaders	Diesel	Tier 4 Final	1.00	8.00	71.0	0.37
Site Preparation	Plate Compactors	Diesel	Tier 4 Final	2.00	8.00	8.00	0.43
Site Preparation	Excavators	Diesel	Tier 4 Final	2.00	8.00	36.0	0.38
Site Preparation	Rubber Tired Loaders	Diesel	Tier 4 Final	1.00	8.00	150	0.36
Site Preparation	Rollers	Diesel	Tier 4 Final	1.00	8.00	36.0	0.38

Site Preparation	Skid Steer Loaders	Diesel	Tier 4 Final	1.00	8.00	71.0	0.37
Grading	Plate Compactors	Diesel	Tier 4 Final	2.00	8.00	8.00	0.43
Grading	Excavators	Diesel	Tier 4 Final	2.00	8.00	36.0	0.38
Grading	Rubber Tired Loaders	Diesel	Tier 4 Final	1.00	8.00	150	0.36
Grading	Rollers	Diesel	Tier 4 Final	1.00	8.00	36.0	0.38
Grading	Skid Steer Loaders	Diesel	Tier 4 Final	1.00	8.00	71.0	0.37
Building Construction	Rough Terrain Forklifts	Diesel	Tier 4 Final	1.00	8.00	96.0	0.40
Paving	Pavers	Diesel	Tier 4 Final	1.00	8.00	81.0	0.42

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Excavators	Diesel	Tier 4 Final	2.00	8.00	36.0	0.38
Demolition	Rubber Tired Loaders	Diesel	Tier 4 Final	1.00	8.00	150	0.36
Demolition	Skid Steer Loaders	Diesel	Tier 4 Final	1.00	8.00	71.0	0.37
Site Preparation	Plate Compactors	Diesel	Tier 4 Final	2.00	8.00	8.00	0.43
Site Preparation	Excavators	Diesel	Tier 4 Final	2.00	8.00	36.0	0.38
Site Preparation	Rubber Tired Loaders	Diesel	Tier 4 Final	1.00	8.00	150	0.36
Site Preparation	Rollers	Diesel	Tier 4 Final	1.00	8.00	36.0	0.38
Site Preparation	Skid Steer Loaders	Diesel	Tier 4 Final	1.00	8.00	71.0	0.37
Grading	Plate Compactors	Diesel	Tier 4 Final	2.00	8.00	8.00	0.43
Grading	Excavators	Diesel	Tier 4 Final	2.00	8.00	36.0	0.38
Grading	Rubber Tired Loaders	Diesel	Tier 4 Final	1.00	8.00	150	0.36
Grading	Rollers	Diesel	Tier 4 Final	1.00	8.00	36.0	0.38
Grading	Skid Steer Loaders	Diesel	Tier 4 Final	1.00	8.00	71.0	0.37
Building Construction	Rough Terrain Forklifts	Diesel	Tier 4 Final	1.00	8.00	96.0	0.40
Paving	Pavers	Diesel	Tier 4 Final	1.00	8.00	81.0	0.42

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	10.0	11.7	LDA,LDT1,LDT2
Demolition	Vendor	—	8.40	HHDT,MHDT
Demolition	Hauling	2.06	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	11.7	LDA,LDT1,LDT2
Site Preparation	Vendor	—	8.40	HHDT,MHDT
Site Preparation	Hauling	16.6	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	17.5	11.7	LDA,LDT1,LDT2
Grading	Vendor	—	8.40	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	7.20	11.7	LDA,LDT1,LDT2
Building Construction	Vendor	1.07	8.40	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	2.50	11.7	LDA,LDT1,LDT2
Paving	Vendor	—	8.40	HHDT,MHDT

Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	1.44	11.7	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	8.40	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	10.0	11.7	LDA,LDT1,LDT2
Demolition	Vendor	—	8.40	HHDT,MHDT
Demolition	Hauling	2.06	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	11.7	LDA,LDT1,LDT2
Site Preparation	Vendor	—	8.40	HHDT,MHDT
Site Preparation	Hauling	16.6	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	17.5	11.7	LDA,LDT1,LDT2
Grading	Vendor	—	8.40	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	7.20	11.7	LDA,LDT1,LDT2

Building Construction	Vendor	1.07	8.40	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	2.50	11.7	LDA,LDT1,LDT2
Paving	Vendor	—	8.40	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	1.44	11.7	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	8.40	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	68,301	22,767	0.00	0.00	—

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (Building Square Footage)	Acres Paved (acres)
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Demolition	0.00	0.00	0.00	5,500	—
Site Preparation	2,519	—	0.00	0.00	—
Grading	—	—	0.00	0.00	—
Paving	0.00	0.00	0.00	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Condo/Townhouse	—	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	204	0.03	< 0.005
2025	0.00	204	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Condo/Townhouse	73.2	81.4	62.8	26,603	622	692	534	226,038

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Condo/Townhouse	73.2	81.4	62.8	26,603	622	692	534	226,038

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Condo/Townhouse	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.1.2. Mitigated

Hearth Type	Unmitigated (number)
Condo/Townhouse	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0
Conventional Wood Stoves	0
Catalytic Wood Stoves	0

Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
68301.22499999999	22,767	0.00	0.00	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Condo/Townhouse	128,394	204	0.0330	0.0040	0.00

5.11.2. Mitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Condo/Townhouse	128,394	204	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Condo/Townhouse	362,664	0.00

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Condo/Townhouse	362,664	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Condo/Townhouse	7.17	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Condo/Townhouse	7.17	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Condo/Townhouse	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Condo/Townhouse	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Condo/Townhouse	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Condo/Townhouse	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
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5.15.2. Mitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
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5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
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5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)
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5.17. User Defined

Equipment Type	Fuel Type
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5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres
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5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres
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5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres
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5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres
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5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)
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5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)
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6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	13.3	annual days of extreme heat
Extreme Precipitation	7.30	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	26.3	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
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Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	35.2
AQ-PM	6.30
AQ-DPM	44.5
Drinking Water	43.9
Lead Risk Housing	41.2
Pesticides	18.6
Toxic Releases	13.8
Traffic	59.9
Effect Indicators	—
CleanUp Sites	29.1
Groundwater	59.9
Haz Waste Facilities/Generators	55.4
Impaired Water Bodies	58.7
Solid Waste	2.52
Sensitive Population	—
Asthma	38.0
Cardio-vascular	62.9
Low Birth Weights	9.08
Socioeconomic Factor Indicators	—

Education	55.5
Housing	48.5
Linguistic	66.9
Poverty	32.8
Unemployment	1.15

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	44.8222764
Employed	91.91582189
Median HI	71.32041576
Education	—
Bachelor's or higher	57.08969588
High school enrollment	19.24804312
Preschool enrollment	46.33645579
Transportation	—
Auto Access	63.41588605
Active commuting	64.1986398
Social	—
2-parent households	29.44950597
Voting	80.67496471
Neighborhood	—
Alcohol availability	35.1340947
Park access	81.35506224
Retail density	44.88643655

Supermarket access	75.36250481
Tree canopy	71.96201719
Housing	—
Homeownership	31.77210317
Housing habitability	55.84498909
Low-inc homeowner severe housing cost burden	92.19812652
Low-inc renter severe housing cost burden	54.92108302
Uncrowded housing	26.88310022
Health Outcomes	—
Insured adults	46.18247145
Arthritis	0.0
Asthma ER Admissions	57.8
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	34.5
Cognitively Disabled	72.6
Physically Disabled	73.0
Heart Attack ER Admissions	34.5
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	57.9
Physical Health Not Good	0.0

Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	53.9
SLR Inundation Area	0.0
Children	13.5
Elderly	70.8
English Speaking	42.8
Foreign-born	43.8
Outdoor Workers	24.2
Climate Change Adaptive Capacity	—
Impervious Surface Cover	60.9
Traffic Density	14.9
Traffic Access	64.2
Other Indices	—
Hardship	58.6
Other Decision Support	—
2016 Voting	70.0

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	32.0
Healthy Places Index Score for Project Location (b)	65.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No

Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

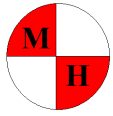
No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Based on applicant provided data and pph of 2.90
Construction: Construction Phases	Based on applicant provided construction schedule, six day work week
Construction: Off-Road Equipment	Based on applicant provided equipment list
Construction: Architectural Coatings	BAAQMD Regulation 8 Rule 3
Operations: Hearths	No woodburning stoves or fireplaces
Operations: Architectural Coatings	BAAQMD Regulation 8 Rule 3
Operations: Water and Waste Water	WTP 100% aerobic
Operations: Energy Use	Project would include all-electric design

Appendix B

Preliminary Stormwater Report



MH engineering Co.

16075 Vineyard Blvd.
Morgan Hill, CA 95037
(408) 779-7381
(408) 226-5712 Fax

Storm Water Control Plan

APN 767-12-060

DRP Builders

270 W. Dunne Ave

MHE 221089

Revised Jan 10, 2024

Sections	Description
Section-1	LID Storm Water Compliance
Section-2	Pipe Sizing Analysis for 100 Year Event
Section-3	Hydrology (Peak Management)
Section-4	Documentation of Drainage Design
Section-5	Post Construction Stormwater Facilities & Maintenance

Attachments:

LID PR checklists

Pipe Sizing Analysis

Infiltration Rates by the Soils Engineer

SCM Volume, Details & Detention routing Analysis

Soils Study

Preliminary Grading Plan, Grading Cross Sections and Storm Water Management Plan (3 pages-24x36)



\\MHE-VFP1\F_Drive\Jobs3\Projects\Harry\221089-WMA W. Dunne Ave DRP Multiple Duplex development\Drainage\Narrative-Storm Water Control Plan.doc



1.1 Project Description:

This 1.03 acre parcel in its current state has a large single family home. Site terrain lays in the southeasterly direction with average slopes under 7%. There is approximately 16 feet of elevation drop from the top of northwesterly public sidewalk on W. Dunne Avenue to the southeasterly corner of the property.

With current RAL-3,000, zoning, property owner has proposed 10 duet units with 2 car garages and private access off W. Dunne Avenue.

Section-1 LID Storm Water Compliance

Project lies within the California Regional Water Quality Control Board Central Coast. Project shall comply with the California Regional Water Quality Control Board Central Coast Region Resolution No. R3-2013-0032 for the Resources Control Board Post Construction Requirements (PCRs):

- a) Project shall provide Stormwater Control Plan Checklist and applicable calculations per the Stormwater Management Guidance Manual for Low Impact Development and Post-Construction Requirements.
- b) Project shall meet the applicable requirements of the Stormwater Management Guidance Manual for Low Impact Development and Post-Construction Requirements:
 - i) Performance Requirement 1: Site Design and Runoff Reduction
 - ii) Performance Requirement 2: Water Quality Treatment
 - iii) Performance Requirement 3: Prevent offsite discharge from events up to the 95th percentile rainfall using SCMs (SCMs).
 - iv) Performance Requirement 4: Control post-project peak flows to not exceed pre-project peak flows for the 2 through 10 year storm events.

Compliance:

1.1 Low Impact Development Design Strategies

1.1.a (PR-1) direct roof runoff onto vegetated areas

1.1.b (PR-1) direct runoff from sidewalks, walkways, and other private hardscape onto vegetated areas

1.1.c (PR-2) Water Quality Treatment:

1.1.c.1 (PR-2) Runoff from impervious areas have been computed at 85th percentile rate and a 60" Ø Storm Filter has been sized to pre-treat the lots & street capture of 2yr post peak runoff (larger than the required 95th percentile storm). Treated water shall convey into 42"Ø underground pipe manifold for retention and infiltration.

1.1.c.2 (PR-2) storm water control measures SCMs (SCMs):

Development projects that create and/or replace at least 5,000 square feet (15,000 square feet for Single-Family Detached Homes) Net Impervious Area are subject to PR-2 in addition to PR-1.

Projects subject to the requirements of PR-2 are responsible for treating any contaminants that are created by the development. Table 2 below corresponds to Table 4 in *Stormwater Management Guidance Manual for Low Impact*



Development & Post Construction Requirements, June 2015, City of Gilroy, City of Morgan Hill, and County of Santa Clara and is listed in order of preference according to said manual.

Table 1: Water Quality Treatment Measures Design Criteria (Guidance Manual Table 4)

Water Quality Treatment Measure*	Design Criteria
LID Treatment System – <i>Harvesting and use, infiltration, evapotranspiration, and bioretention (without an underdrain) SCMs</i>	Retain stormwater from the 85th Percentile 24-hour single storm event routing method
Biofiltration Treatment System – <i>Bioretention with raised underdrain, or other facilities at least as effective as a system with the specified design criteria.</i>	Design of rain event of 0.2 in/hr intensity or 2 x 85 th percentile hourly rainfall intensity or other specified design criteria include: • Maximum surface loading rate of 5 in/hr • Minimum surface reservoir depth (6") • Minimum planting minimum depth (24") • Proper plant selection • Subsurface gravel layer (minimum depth of 12") • Underdrain placement near the top of the gravel layer • No compaction of soils beneath the facility • No liners preventing infiltration
Non-Retention Based Treatment Systems – <i>Lined bioretention, flow-through planters, and high rate tree well filters and media filters</i>	<u>Volume Hydraulic Design Basis:</u> 85 th Percentile 24-hour storm event <u>Flow Hydraulic Design Basis:</u> 0.2 in/hr intensity OR 2 x 85 th Percentile hourly rainfall intensity
*Multiple SCMs may be used to collectively achieve the design criteria.	

As highlighted in yellow above, PR2 with the use of pre-treatment through SCM-1 Contech StromFilter and full retention of 85th percentile storm and infiltration in less than 48 hours at SCM-2.

1.1.d (PR-3) runoff retention:

This development is tributary to East Little Llagas Creek in the Monterey Bay, Region 3. Site falls in zone WMZ-1. SCM-2 (42"Ø Perforated Pipe Manifold) is sized and designed for retention of 95th percentile volume. Soils Engineer has determined 6.23in/hr to be the average infiltration rate at this site, which when reduced by factor of safety 2.0 equals 3.11in/hr. **However, we have taken even more conservative approach to discard the high rate of 10.96in/hr and only use half of the reported lower rate of 1.50in/hr for the drawdown (exfiltration) purposes.** Additionally, we have setup a new 24-hour SCS method hydrology routing model in HydroCAD to include the 95th percentile storm routing with the use of exfiltration. Based on the infiltration rate of 0.75in/hr, 95th percentile volumes (1.8") will infiltrate into the native soil well under the required 48 hour duration. *Full routing results are presented in the Hydrology Section.*



1.1.d.1 (PR-3) Lid site design measures:

Following design measures are incorporated into the site layout:

- a) created open spaces where native vegetation and significant trees are clustered
- b) limit impervious areas with the approved zoning
- c) minimized hardscape within the scope of project
- d) conformed site layout along natural landforms
- e) optimized grading

1.1.f Performance Requirement Certifications

See attached Certifications.

1.2 Storm Water Control Measures (SCMs) for 85th & 95th percentile storm water management

SCM-1: 60" Ø Storm Filter shall pre-treat capture from the entire development.

SCM-2: Project has proposed an 42"Ø HDPE underground pipe manifold system under the private street with north-south and east-west wings with a total footprint of 93'x60'x12' (5.67'high) heigh. Total volume provided 5,280cf.

Pre-treated 95th percentile volume coming off the roofs and private lot hardscape, street and parking is all routed Storm Filter before conveying into the underground pipe manifold for infiltration into the native soil to meet PR-3 compliance and hydromodification for PR-4 compliance and peak mitigation for all storm events including 100 year event.

Both SCMs and related capture & conveyance systems shall be owned and maintained by the HOA.

Section-2 Pipe Sizing Analysis for 100 Year Event

Since this parcel is tributary to Dewitt Creek, Valley Water with their October 11, 2023, comments to Ms. Lynette Kong of the City has directed that the development should not be allowed to take any flow to W. Dunne Avenue public storm drain, which conveys into W. Little Llagas.

As no recorded drainage release easement and/or pipe connection to the south through existing development is available, Valley Water has also recommended that if the project can mimic existing drainage release at the project boundary in the southeasterly direction, then under the purview of California Drainage Law, no easement should be required by the City to allow this project to move forward.

The development being so small in area (gross 1.03 ac) and scope, collection system has been oversized to eliminate any street overland release at the terminus of Private Street 'B'. Drainage for the descending lots has been reconfigured and the interconnected rear drain oversized to handle 0.04cfs (Q100). Lots 5-10 will only convey minor sheet flow from the sloping pad & open space to the rear. Developed portion of these lots including entire roof will drain to the front with the use of roof leader tightlines and bubble up behind the fronting street walkway.



Any potential Street 'B' overflow will be captured with the inclusion of PCC channel and 18" drain inlet at the easterly terminus of this street and conveyed via oversized 12" Ø pipe (Q100 capacity 1.06cfs) designed to the overflow PCC ditch just inside the easterly boundary for sheet flow to the gutter pan of paved Viewcrest Lane. 100-year Pipe sizing calculations are enclosed in the study.

Section-3 Hydrology (Peak Management)

2.1 Site Hydrology:

This parcel is tributary to W. Little Llagas Creek. It seems that historic drainage path has been blocked by the adjoining development to the south. Project will install a gravity collection system with conveyance into the 42" Ø HDPE underground pipe manifold.

Mitigated flows out of the underground pipe manifold shall release with a 4" Ø orifice control at pre-project rates into the adjoining private street with a bubble up drain.

Routing Methodology:

Routing model has been setup using modified rational method. Hydrographs for post-project events are routed through the SCM storage. Model includes a storage structure and outflow structures. Outflow structure is setup with a fixed diameter outlet at a fixed elevation. Storage volumes are entered into the file at incremental elevations. A stage/storage rating curve for the SCM and the rating curve for stage/discharge are included in the routing report.

During the routing, a post project hydrograph of certain rainfall event flows through the SCM, stores the difference of post versus pre project volume and releases at controlled discharge. Orifice size is fine-tuned to keep the release peak discharges at or below pre-project levels.

A typical routing hydrograph graph indicates time increment along the x-axis and inflow runoff along the y-axis. Blue hatched area on the graph between two superimposed curves shows the total volume stored during the full routing. Peak of the outflow hydrograph in red color indicates peak discharge from the SCM with time to peak hour information.

Detention routing analysis through underground pipe manifold is presented in the hydrology section.

Routing summary:

42" Ø Underground pipe manifold	Pre Q (cfs)/Post Q/Routed Q thru 4" Ø Outlet Pipe/Exfiltration/Elev.
95th	0.07/0.15/0.00/0.03/358.14
2YR	0.16/0.26/0.00/0.03/359.98
10YR	0.35/0.46/0.34/0.03/360.81
25YR	0.48/0.60/0.46/0.03/361.34
100YR	0.65/0.76/0.56/0.03/361.95



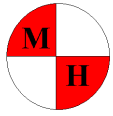
Section-4 Documentation of Drainage Design

See attached storm water management (LID) calculations, pipe sizing analysis and hydrology.

Section-5 Post Construction Storm water Facilities & Maintenance

See Storm Water Runoff Management -O&M

The developer shall retain services of a licensed civil Engineer qualified to design and prepare storm water runoff management plans to inspect and certify the as-built Storm Water Control Measures (SCMs/SCMs) to ensure compliance with the City approved plan for their size, scope, and storage capacity. Such certification shall be submitted to the City in the form of a letter for review prior to final signoff on the SCMs by the City Engineer.



MH engineering Co.

16075 Vineyard Blvd.
Morgan Hill, CA 95037
(408) 779-7381
(408) 226-5712 Fax

APN 767-12-060
270 W. Dunne Ave
PR Certifications

Project Name: DRP Multiple Duplex Development APN#: 767-12-060

Cross Streets: Viewcrest Lane

Applicant/Developer Name: David Robertson, DRP Builders

Project Phase(s): _____ of _____ Engineer: MH Engineering

Project Description: 10 unit duplex development with private access off W. Dunne Avenue. Each unit will have two car garage and 2 parking spaces onsite in the driveway.

Project Watershed/Receiving Water (creek, river): W. Little Nagas Creek

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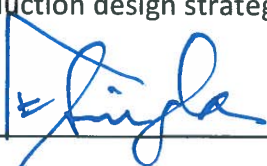
**PERFORMANCE REQUIREMENT NO. 1
SITE DESIGN AND RUNOFF REDUCTION**

CERTIFICATION

DESIGN STRATEGY	INCORPORATED?
1. Limit disturbance of creeks and natural drainage features.	
2. Minimize compaction of highly permeable soils.	/
3. Limit clearing and grading of native vegetation at the site to the minimum area needed to build the project, allow access, and provide fire protection.	/
4. Minimize impervious surfaces by concentrating improvements on the least sensitive areas of the site, while leaving the remaining land in a natural undisturbed state.	/
5. Minimize stormwater runoff by implementing one or more of the following design measures:	
a) Direct roof runoff into cisterns or rain barrels for reuse.	
b) Direct roof runoff onto vegetated areas safely away from building foundations and footings.	/
c) Direct runoff from sidewalks, walkways, and/or patios onto vegetated areas safely away from building foundations and footings.	/
d) Direct runoff from driveways and/or uncovered parking lots onto vegetated areas safely away from building foundations and footings.	/
e) Construct bike lanes, driveways, uncovered parking lots, sidewalks, walkways, and patios with permeable surfaces.	

I, Harry Singla, acting as the Project Engineer for DRP Builders project, located at 270 W. Dunne Ave., hereby state that the Site Design and Runoff Reduction design strategies indicated above have been incorporated into the design of the project.

Signature



Date

4-19-22

SOURCE CONTROL CHECKLIST	
ON-SITE SOURCE CONTROL MEASURES	INCORPORATED?
Wash area/racks, drain to sanitary sewer ¹	☐
Covered dumpster area, drain to sanitary sewer ¹	☐
Sanitary sewer connection or accessible cleanout for swimming pool/spa/fountain ¹	☐
Parking garage floor drains plumbed to sanitary sewer ¹	☒
Fire sprinkler test water/condensate drain lines drain to landscape/sanitary sewer ¹	☒
Interior floor drains/boiler drain lines plumbed to sanitary sewer	☒
Beneficial landscaping/IPM (minimize irrigation, runoff, pesticides and fertilizers; promotes treatment)	☒
Outdoor material storage protection	☐
Covers, drains for loading docks, maintenance bays, fueling areas	☐
Maintenance (pavement sweeping, catch basin cleaning, good housekeeping)	☒
Storm drain labeling	☒
Other ² _____	☐

Notes:

¹ Subject to sanitary sewer authority requirements.

² See CASQA Stormwater BMP Handbook for New Development and Redevelopment for additional BMPs for vehicle service repair facilities, fuel dispensing areas, industrial processes, rooftop equipment and other pollutant generating activities and sources:

<https://www.casqa.org/resources/bmp-handbooks/new-development-redevelopment-bmp-handbook>

PERFORMANCE REQUIREMENT NO. 2: WATER QUALITY TREATMENT

CERTIFICATION

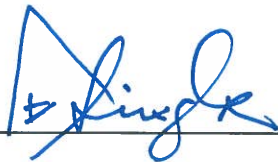
	ON-SITE WATER QUALITY TREATMENT MEASURES (IN ORDER OF PRIORITY)	INCORPORATED?
1.	Low Impact Development (LID) Treatment Systems designed to retain stormwater runoff generated by the 85th percentile 24-hour storm. Stormwater Control Measures implemented (circle all that apply, design documentation is required): • Harvesting and Use, • Infiltration, • Evapotranspiration	✓
2.	Biofiltration Treatment Systems – with the following design parameters: a) Maximum surface loading rate appropriate to prevent erosion, scour and channeling within the biofiltration treatment system itself and equal to 5 inches per hour, based on the flow of runoff produced from a rain event equal to or at least: i. 0.2 inches per hour intensity; or ii. Two times the 85th percentile hourly rainfall intensity for the applicable area, based on historical records of hourly rainfall depth b) Minimum surface reservoir volume equal to the biofiltration treatment system surface area times a depth of 6 inches c) Minimum planting medium depth of 24 inches. The planting medium must sustain a minimum infiltration rate of 5 inches per hour throughout the life of the project and must maximize runoff retention and pollutant removal. A mixture of sand (60%-70%) meeting the specifications of American Society for Testing and Materials (ASTM) C33 and compost (30%-40%) may be used. A Regulated Project may utilize an alternative planting medium if it demonstrates its planting medium is equal to or more effective at attenuating pollutants than the specified planting medium mixture. d) Proper plant selection¹³ e) Subsurface drainage/storage (gravel) layer with an area equal to the biofiltration treatment system surface area and having a minimum depth of 12 inches f) Underdrain with discharge elevation at top of gravel layer g) No compaction of soils beneath the biofiltration facility (ripping/loosening of soils required if compacted) h) No liners or other barriers interfering with infiltration, except for situations where lateral infiltration is not technically feasible	

¹³ Technical guidance for designing bioretention facilities is available from the Central Coast LID Initiative. The guidance includes design specifications and plant lists appropriate for the Central Coast climate: http://www.centralcoastlidi.org/Central_Coast_LIDI/LID_Structural_BMPs.html

3.	Non-Retention Based Treatment Systems – designed to meet at least one of the following hydraulic sizing criteria: (a) Volume Hydraulic Design Basis – Treatment systems whose primary mode of action depends on volume capacity shall be designed to treat stormwater runoff equal to the volume of runoff generated by the 85th percentile 24-hour storm event, based on local rainfall data. (b) Flow Hydraulic Design Basis – Treatment systems whose primary mode of action depends on flow capacity shall be sized to treat: (i) The flow of runoff produced by a rain event equal to at least two times the 85th percentile hourly rainfall intensity for the applicable area, based on historical records of hourly rainfall depths; or (ii) The flow of runoff resulting from a rain event equal to at least 0.2 inches per hour intensity.	
----	--	--

I, Harry Singh, acting as the Project Engineer for DRP Builders project, located at 270 W. Dunne Ave., hereby state that the On-Site Water Quality Treatment Measures indicated above have been incorporated into the design of the project.

Signature



Date

4-19-22

**PERFORMANCE REQUIREMENT NO. 3:
RUNOFF RETENTION**

Design Rainfall Events & Treatment Requirements for WMZs

WMZ¹	Treatment Options & Design Rainfall	Check Applicable WMZs
WMZ 1	Via optimized infiltration ² , prevent offsite discharge from events up to the 95 th percentile 24-hour rainfall event as determined from local rainfall data.	/
WMZ 2	Via storage, rainwater harvesting, infiltration, and/or evapotranspiration, prevent offsite discharge from events up to the 95 th percentile 24-hour rainfall event as determined from local rainfall data.	
WM 4 *	Via optimized infiltration ² , prevent offsite discharge from events up to the 95 th percentile 24-hour rainfall event as determined from local rainfall data.	
WMZ 5	Via optimized infiltration ² prevent offsite discharge from events up to the 85 th percentile 24-hour rainfall event as determined from local rainfall data.	
WMZ 6	Via storage, rainwater harvesting, infiltration, and/or evapotranspiration, prevent offsite discharge from events up to the 85 th percentile 24-hour rainfall event as determined from local rainfall data.	
WMZ 9	Via storage, rainwater harvesting, infiltration, and/or evapotranspiration, prevent offsite discharge from events up to the 85 th percentile 24-hour rainfall event as determined from local rainfall data.	
WMZ 10 *	Via optimized infiltration ² , prevent offsite discharge from events up to the 95 th percentile 24-hour rainfall event as determined from local rainfall data	

Notes:

* Applicable only to those areas that overlay designated Groundwater Basins

1. Includes only those WMZs contained in Santa Clara County.

2. Storage, rainwater harvesting, and/or evapotranspiration may be used when infiltration is optimized.

**PERFORMANCE REQUIREMENT NO. 3:
RUNOFF RETENTION**

LID Site Assessment Checklist

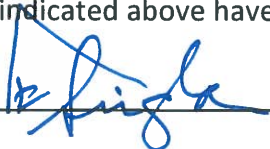
ITEMS TO DOCUMENT:	INCLUDED?
1. Site topography	☒
2. Hydrologic features including contiguous natural areas, wetlands, watercourses, seeps, or springs	☐
3. Depth to seasonal high groundwater	☒
4. Locations of groundwater wells used for drinking water	☐
5. Depth to an impervious layer such as bedrock	☒
6. Presence of unique geology (e.g., karst)	☒
7. Geotechnical hazards	☒
8. Documented soil and/or groundwater contamination	☒
9. Soil types and hydrologic soil groups	☒
10. Vegetative cover/trees	☒
11. Run-on characteristics (source and estimated runoff from offsite which discharges to the project area)	☐
12. Existing drainage infrastructure for the site and nearby areas including the location of municipal storm drains	☒
13. Structures including retaining walls	☒
14. Utilities	☒
15. Easements	☒
16. Covenants	☒
17. Zoning/Land Use	☒
18. Setbacks	☒
19. Open space requirements	☐
20. Other pertinent overlay(s)	☐

**PERFORMANCE REQUIREMENT NO. 3:
RUNOFF RETENTION**

LID Site Design Measures

	DESIGN MEASURE	INCORPORATED?
1.	Defining the development envelope, identifying the protected areas, and identifying areas that are most suitable for development and areas to be left undisturbed	
2.	Identifying conserved natural areas, including existing trees, other vegetation, and soils (shown on the plans)	
3.	Limit the overall impervious footprint of the project	/
4.	Design of streets, sidewalks, or parking lot aisles to the minimum widths necessary, provided that public safety or mobility uses are not compromised	/
5.	Set back development from creeks, wetlands, and riparian habitats	
6.	Design conforms the site layout along natural landforms	/
7.	Design avoids excessive grading and disturbance of vegetation and soils	/

I, Harry Singla, acting as the Project Engineer for DR Builders project, located at 270 W. Dunne Ave, hereby state that LID Site Design Measures indicated above have been incorporated into the design of the project.

Signature 

Date 4-22-22

**PERFORMANCE REQUIREMENT NO. 3:
RUNOFF RETENTION**

Technical Infeasibility Checklist

	Site Conditions	Check If Applicable
1.	Depth to seasonal high groundwater limits infiltration and/or prevents construction of subgrade stormwater control measures ¹⁴	☐
2.	Depth to an impervious layer such as bedrock limits infiltration	☐
3.	Sites where soil types significantly limit infiltration	☐
4.	Sites where pollutant mobilization in the soil or groundwater is a documented concern	☐
5.	Space constraints (e.g., infill projects, some redevelopment projects, high density development)	☐
6.	Geotechnical hazards	☐
7.	Stormwater Control Measures located within 100 feet of a groundwater well used for drinking water	☐
8.	Incompatibility with surrounding drainage system (e.g., project drains to an existing stormwater collection system whose elevation or location precludes connection to a properly functioning treatment or flow control facility)	☐

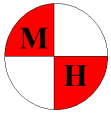
¹⁴ See Santa Clara Valley Water District guidelines for minimum groundwater separation from stormwater infiltration devices (Section 7, Table 6, of this Manual).

APPENDIX B

Stormwater Control Plan Checklist

Stormwater Control Plan Required Contents	PR Level	Done?
1. Project Information	All	
• Project name		✓
• Application number		
• Address and assessor's parcel number		✓
• Name of Applicant		✓
• Project Phase number (if project is being constructed in phases)		
• Project Type (e.g., commercial, industrial, multi-unit residential, mixed-use, public), and description		✓
2. Project Areas	All	
• Total project site area		✓
• Total new impervious surface area		✓
• Total replaced impervious surface area		✓
• Total new pervious area		✓
• Calculation of Net Impervious Area		✓
3. Statement of Performance Requirements that apply to the project:	All	
• Performance Requirement No.1 – Site Design and Runoff Reduction		✓
• Performance Requirement No.2 – Water Quality Treatment		✓
• Performance Requirement No. 3 – Runoff Retention		✓
• Performance Requirement No. 4 – Peak Management		✓
4. Delineation of Drainage Management Areas (DMAs)	All	✓
5. Summary of Site Design and Runoff Reduction Performance Requirement measures selected for the project (see PR-1 checklist)	PR-1	✓
6. Description of Runoff Reduction Measures and Structural Stormwater Control Measures, by Drainage Management Area and for entire site	PR-2, 3, and 4	✓
7. Water quality treatment calculations used to comply with the Water Quality Treatment Performance Requirement and any analysis to support infeasibility determination	PR-2	✓
8. Documentation certifying that the selection, sizing, and design of the Stormwater Control Measures meet the full or partial Water Quality Treatment Performance Requirements (see PR-2 checklist)	PR-2	✓

Stormwater Control Plan Required Contents	PR Level	Done?
9. Statement that Water Quality Treatment Performance Requirement has been met on-site, or, if not achievable: • Documentation of the volume of runoff for which compliance cannot be achieved on-site and the associated off-site compliance requirements • Statement of intent to comply with Water Quality Treatment Performance Requirement through Alternative Compliance	PR-2	/
10. LID Site Assessment Summary (see PR-3 checklist)	PR-3	/
11. LID Site Design Measures Used (see PR-3 checklist)	PR-3	/
12. Supporting calculations used to comply with the applicable Runoff Retention Performance Requirements	PR-3	/
13. Documentation demonstrating infeasibility where Site Design and Runoff Reduction measures and retention-based Stormwater Control Measures cannot retain required runoff volume	PR-3	/
14. Documentation demonstrating percentage of the project's Equivalent Impervious Surface Area dedicated to retention-based Stormwater Control Measures	PR-3	/
15. Statement that Runoff Reduction Performance Requirement has been met on-site, or, if not achievable: • Documentation of the volume of runoff for which compliance cannot be achieved on-site and the associated off-site compliance requirements • Statement of intent to comply with Runoff Retention Performance Requirements through an Alternative Compliance agreement	PR-3	/
16. Supporting calculations used to comply with the applicable Peak Management Performance Requirements	PR-4	/
17. Documentation demonstrating infeasibility where on-site compliance with Peak Management Performance Requirements cannot be achieved	PR-4	
18. Statement that Peak Management Performance Requirement has been met on-site, or, if not achievable: • Documentation of the volume of runoff for which compliance cannot be achieved on-site and the associated off-site compliance requirements • Statement of intent to comply with Peak Management Requirements through an Alternative Compliance agreement		/
19. O&M Plan for all structural SCMs to ensure long-term performance	PR-2, 3, and 4	/
20. Owner of facilities and responsible party for conducting O&M	PR-2, 3, and 4	/

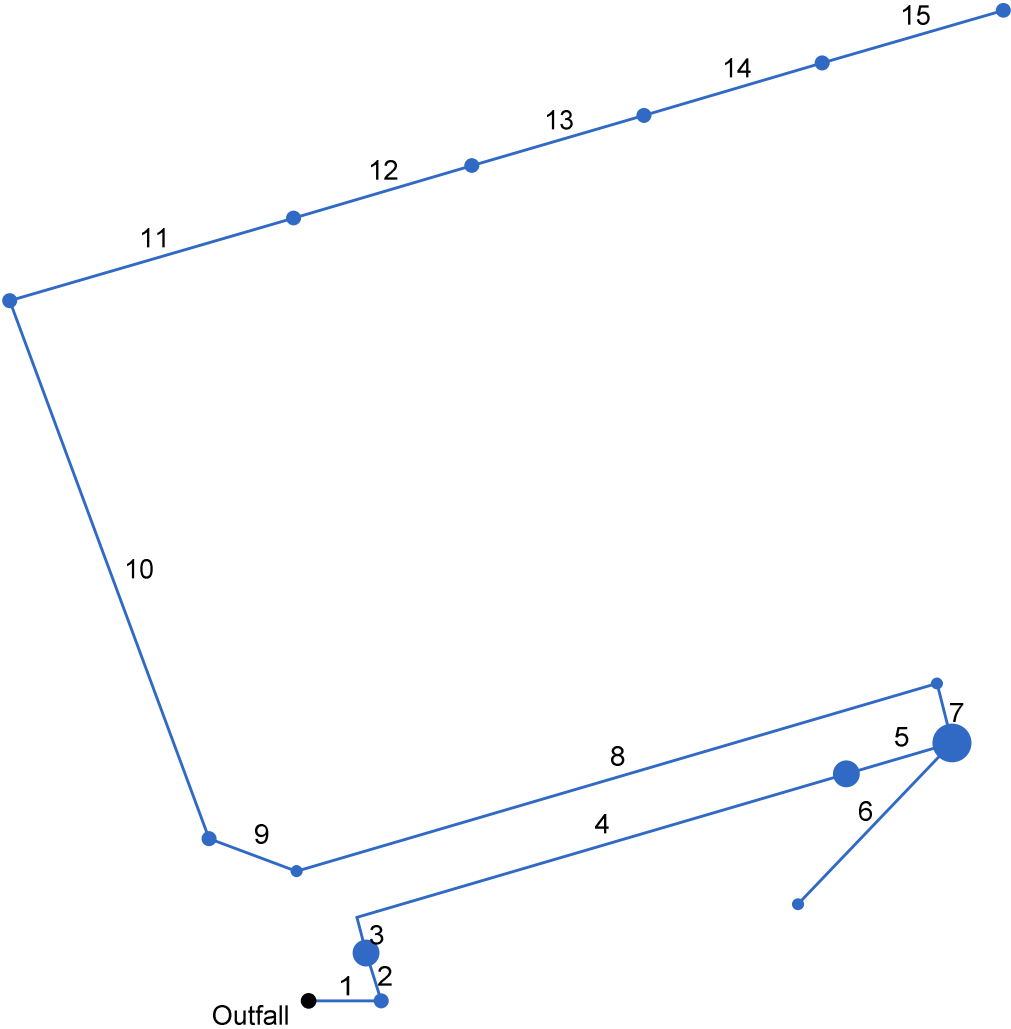


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APN 767-12-060
270 W. Dunne Ave
Pipe Sizing Analysis for 100 Year Event

DPR Construction-270 W. Dunne



Line	To Line	Line Length	Incr. Area	Total Area	Runoff Coeff.	Incr C x A	Total C x A	Inlet Time	Time Conc	Rnfal Int	Total Runoff	Adnl Flow	Total Flow	Capac Full	Veloc	Pipe Size	Pipe Slope	Inv Elev Dn	Inv Elev Up
		(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/ hr)	(cfs)	(cfs)	(cfs)	(cfs)	(ft/ s)	(in)	(%)	(ft)	(ft)
1	Outfall	12.000	0.00	0.93	0.00	0.00	0.69	0.0	62.9	1.3	0.87	0.00	0.87	6.50	1.10	12	3.33	357.10	357.50
2	1	8.000	0.00	0.93	0.00	0.00	0.69	0.0	62.8	1.3	0.87	0.00	0.87	6.10	2.24	12	2.50	359.80	360.00
3	2	6.000	0.00	0.93	0.00	0.00	0.69	0.0	62.0	1.3	0.87	0.00	0.87	44.52	0.10	42	0.17	357.37	357.38
4	3	84.295	0.00	0.93	0.00	0.00	0.69	0.0	51.5	1.4	0.93	0.00	0.93	11.88	0.11	42	0.01	357.38	357.39
5	4	18.323	0.00	0.93	0.00	0.00	0.69	0.0	51.3	1.4	0.94	0.00	0.94	4.94	1.19	12	1.64	358.30	358.60
6	5	36.640	0.23	0.23	0.79	0.18	0.18	14.0	14.0	2.0	0.37	0.00	0.37	0.92	2.48	8	0.49	361.62	361.80
7	5	9.996	0.42	0.70	0.79	0.33	0.51	16.0	51.2	1.4	0.69	0.00	0.69	6.90	0.88	12	3.20	358.60	358.92
8	7	110.113	0.14	0.28	0.79	0.11	0.17	18.0	46.8	1.4	0.24	0.00	0.24	2.27	0.31	12	0.35	358.92	359.30
9	8	15.528	0.00	0.14	0.00	0.00	0.06	0.0	45.6	1.4	0.09	0.00	0.09	2.89	0.16	10	1.48	359.30	359.53
10	9	93.079	0.08	0.14	0.45	0.04	0.06	18.0	38.5	1.5	0.10	0.00	0.10	1.69	0.25	10	0.50	359.53	360.00
11	10	48.668	0.00	0.06	0.00	0.00	0.03	0.0	30.2	1.6	0.04	0.00	0.04	1.67	0.28	10	0.49	360.00	360.24
12	11	30.715	0.00	0.06	0.00	0.00	0.03	0.0	24.9	1.7	0.05	0.00	0.05	1.71	0.87	10	0.52	360.24	360.40
13	12	29.528	0.00	0.06	0.00	0.00	0.03	0.0	21.7	1.8	0.05	0.00	0.05	0.90	1.37	8	0.47	360.40	360.54
14	13	30.962	0.00	0.06	0.00	0.00	0.03	0.0	18.4	1.9	0.05	0.00	0.05	0.94	1.42	8	0.52	360.54	360.70
15	14	30.919	0.06	0.06	0.45	0.03	0.03	15.0	15.0	2.0	0.05	0.00	0.05	0.91	1.43	8	0.49	360.70	360.85

Line	HGL Dn	HGL Up	Gmd/ Rim Dn	Gmd/ Rim Up	Line ID
	(ft)	(ft)	(ft)	(ft)	
1	360.50	360.51	366.43	360.04	L1
2	360.53	360.39	360.04	366.52	L2
3	360.39	360.39	366.52	361.17	L3
4	360.39	360.39	361.17	366.95	L4
5	360.39	360.40	366.95	367.06	L5
6	361.91	362.09	367.06	367.00	L6
7	360.42	360.43	367.06	366.78	L7
8	360.44	360.44	366.78	366.06	L8
9	360.44	360.44	366.06	363.80	L9
10	360.44	360.44	363.80	362.33	L10
11	360.45	360.45	362.33	362.60	L11
12	360.45	360.50	362.60	362.60	L12
13	360.51	360.65	362.60	363.10	L13
14	360.65	360.80	363.10	363.63	L14
15	360.81	360.96	363.63	363.68	L15

Class 2 aggregate base should have an R-Value of at least 78 and conform to the requirements of Section 26-1.02A in the State of California, CALTRANS Standard Specifications, latest edition.

The aggregate base material should be placed in thin lifts in a manner to prevent segregation.

Concrete curbs should be embedded at least two inches below the soil subgrade (below the bottom of the aggregate base section) in any areas where irrigated landscape areas are planned adjacent to AC pavements.

The asphaltic concrete should conform to and be placed in accordance with the requirements of Section 39 in the State of California CALTRANS Standard Specifications, latest edition.

H. Infiltration Testing Results

Two infiltration tests, PERC-1 and PERC-2, were performed in the vicinity of proposed rain tanks at the locations shown on Drawing 5. The approximately six-inch diameter infiltration test holes were drilled to depths of approximately 16 and 10 feet below the adjacent grade, respectively, and the sides and bottom of the hole were scraped and cleared of loose soil. The bottom of the hole was then filled with approximately two inches of pea gravel, a four-inch diameter perforated pipe was placed in the hole, and the annular space around the pipe was backfilled with additional pea gravel. The hole was then “pre-soaked” by filling with water and left over-night. Water level infiltration rates in the hole were subsequently measured the next day to establish the field infiltration rate. The results of our analysis of the field data indicated corrected infiltration rates⁽¹⁾ as shown in the table below.

**Table 2 - Corrected Infiltration Test Results at the 270 West Dunne Avenue,
Five New Residences Project Site in Morgan Hill, California**

Percolation Test Hole	Surface Elevation⁽²⁾	Bottom of Test Hole Elevation⁽²⁾	Percolation Rate (in/hr)⁽¹⁾
PERC-1	371' MSL	355' MSL	10.96
PERC-2	361' MSL	351' MSL	1.50

⁽¹⁾Results corrected for pipe thickness, pipe diameter, hole diameter and pea gravel void ratio.

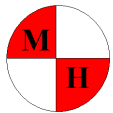
⁽²⁾Elevations based on Preliminary Grading and Drainage Plan prepared by MH Engineering Co., Dated January 2022.

I. Soil Corrosivity

Laboratory resistivity, pH, chloride and sulfate testing was performed on a composite soil sample obtained from the upper three feet of the borings (see Drawing 15, Corrosivity Tests Summary). The testing was performed by Cooper Testing Laboratory for the purpose of evaluating the soils' corrosion potential for use in the design of underground utilities and embedded concrete on this project.

In summary, the test results indicated a minimum resistivity of 2,211 Ohm-Cm, pH of 7.1, chloride content of 8 ppm and water-soluble sulfate content of 18 ppm. Soils with chloride contents of less than 500 ppm and sulfate contents of less than 1500 ppm are considered to be of "low" corrosivity. However, based on the resistivity testing, the soils are considered "mildly corrosive."

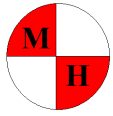
Table 3 below shows the general correlation between resistivity and corrosion potential.



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270 W. Dunne Ave
Detention Routing Analysis

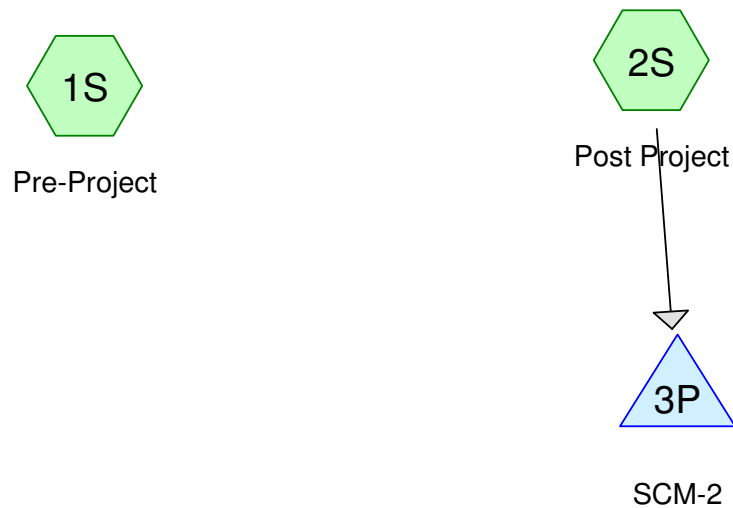


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Hydrology Routing Analysis

270 W. Dunne Ave.
Feb 2023



Pre-Project: Summary

Events for Subcatchment 1S: Pre-Project

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
95th	1.80	0.07	1,176	0.32
2-yr	2.65	0.16	2,934	0.79
10-yr	4.17	0.35	6,970	1.87
25-yr	5.24	0.48	10,194	2.73
100-yr	6.50	0.65	14,223	3.82

95th Storm:

Details

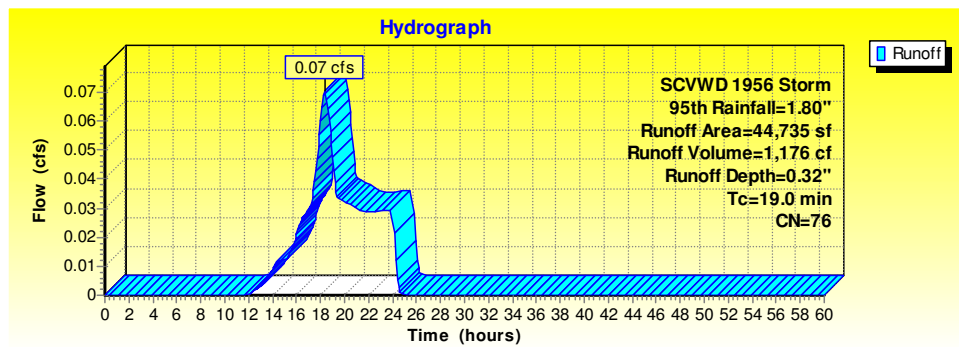
Summary for Subcatchment 1S: Pre-Project

Runoff = 0.07 cfs @ 18.31 hrs, Volume= 1,176 cf, Depth= 0.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.10 hrs
SCVWD 1956 Storm 95th Rainfall=1.80"

Area (sf)	CN	Description
* 44,735	76	
44,735		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.0					Direct Entry,



2year

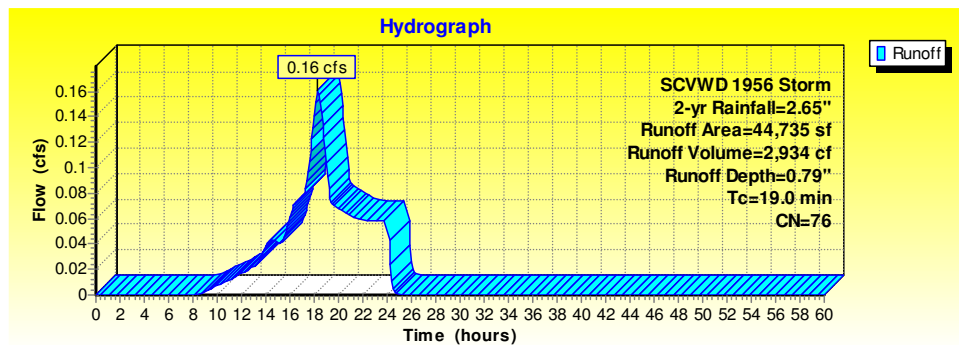
Summary for Subcatchment 1S: Pre-Project

Runoff = 0.16 cfs @ 18.29 hrs, Volume= 2,934 cf, Depth= 0.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.10 hrs
SCVWD 1956 Storm 2-yr Rainfall=2.65"

Area (sf)	CN	Description
* 44,735	76	
44,735		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.0					Direct Entry,



10year

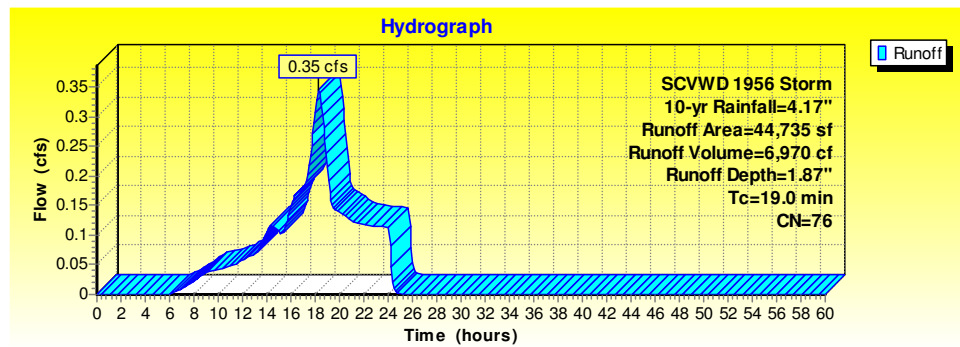
Summary for Subcatchment 1S: Pre-Project

Runoff = 0.35 cfs @ 18.27 hrs, Volume= 6,970 cf, Depth= 1.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.10 hrs
SCVWD 1956 Storm 10-yr Rainfall=4.17"

Area (sf)	CN	Description
* 44,735	76	
44,735		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.0					Direct Entry,



25year

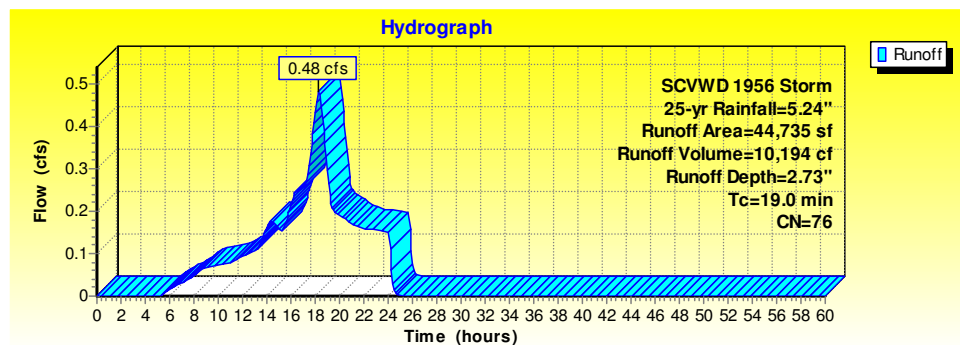
Summary for Subcatchment 1S: Pre-Project

Runoff = 0.48 cfs @ 18.27 hrs, Volume= 10,194 cf, Depth= 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.10 hrs
SCVWD 1956 Storm 25-yr Rainfall=5.24"

Area (sf)	CN	Description
* 44,735	76	
44,735		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.0					Direct Entry,



100 Year

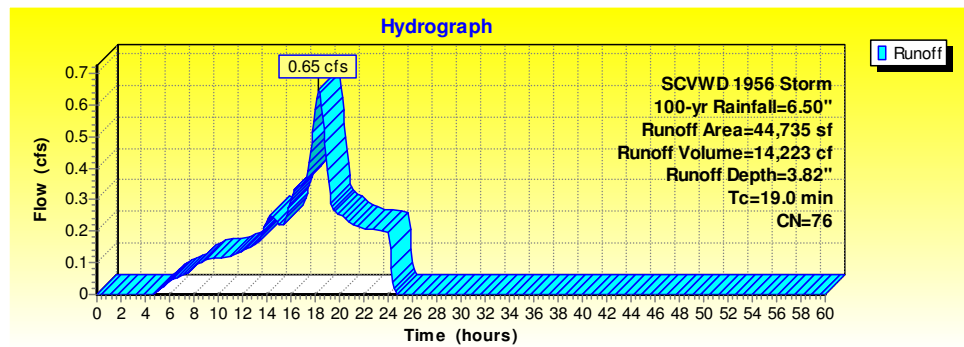
Summary for Subcatchment 1S: Pre-Project

Runoff = 0.65 cfs @ 18.26 hrs, Volume= 14,223 cf, Depth= 3.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.10 hrs
SCVWD 1956 Storm 100-yr Rainfall=6.50"

Area (sf)	CN	Description
* 44,735	76	
44,735		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.0					Direct Entry,



Post-Project: Summary

Events for Pond 3P: SCM-2

Event	Inflow (cfs)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Storage (cubic-feet)
95th	0.15	0.03	0.03	0.00	358.14	1,420
2-yr	0.26	0.03	0.03	0.00	359.98	3,691
10-yr	0.46	0.37	0.03	0.34	360.81	4,519
25-yr	0.60	0.49	0.03	0.46	361.34	4,844
100-yr	0.76	0.59	0.03	0.56	361.95	5,268

42" Ø Pipe Manifold Volume Calculations & Details: N-S Manifold

Pond 3P: SCM-2 - Chamber Wizard N-S Manifold (SCM-2)

Model: Size: Chamber Cost: (\$/ea) Excavation: (\$/cy) Stone: (\$/cy)

ADS N-12® Pipe
 Inside= 41.1"W x 41.1"H => 9.20 sf x 20.00'L = 184.0 cf
 Outside= 48.0"W x 48.0"H => 11.56 sf x 20.00'L = 231.1 cf

☐ Use typical spacing Number of Rows: Chambers per Row:

Row Spacing: (inches) Row Adjustment: (feet) Headers:

Side Stone: (inches)

End Stone: (inches)

Stone Cover: (inches)

Stone Base: (inches)

Side Z: (run/rise)

Field Description:

Stone Voids: (%)

Stone Invert: (feet)

☒ Allow Exfiltration

Additional Materials: ☐ Show Costs

#	Qty	Description	\$ Price
1			
2			
3			

48.0" Wide + 24.0" Spacing = 72.0" C-C Row Spacing
 2 Chambers/Row x 20.00' Long +7.00' Row Adjustment +4.00' Header x 1 = 51.00' Row Length
 2 Rows x 48.0" Wide + 24.0" Spacing x 1 + 12.0" Side Stone x 2 = 12.00' Base Width
 10.0" Stone Base + 48.0" Chamber Height + 10.0" Stone Cover = 5.67' Field Height
 4 Chambers x 184.0 cf +7.00' Row Adjustment x 9.20 sf x 2 Rows + 10.00' Header x 9.20 sf = 956.8 cf Chamber Storage
 4 Chambers x 231.1 cf +7.00' Row Adjustment x 11.56 sf x 2 Rows + 10.00' Header x 11.56 sf = 1,201.9 cf Displacement
 3,467.0 cf Field - 1,201.9 cf Chambers = 2,265.1 cf Stone x 40.0% Voids = 906.1 cf Stone Storage
 Chamber Storage + Stone Storage = 1,862.8 cf = 0.043 af
 Overall Storage Efficiency = 53.7%
 Overall System Size = 51.00' x 12.00' x 5.67'

4 Chambers
 128.4 cy Field
 83.9 cy Stone

E-W Manifold

Pond 3P: SCM-2 - Chamber Wizard E-W Manifold (SCM-2)

Model: ADS N-12 Web Help View Size: 42" Chamber Cost: (\$/ea) 0.00 Excavation: (\$/cy) 0.00 Stone: (\$/cy) 0.00

ADS N-12® Pipe
 Inside= 41.1"W x 41.1"H => 9.20 sf x 20.00'L = 184.0 cf
 Outside= 48.0"W x 48.0"H => 11.56 sf x 20.00'L = 231.1 cf

☐ Use typical spacing Number of Rows: 2 Chambers per Row: 4
 Row Spacing: (inches) 24.0 Row Adjustment: (feet) 4.00 Headers: 2
 Side Stone: (inches) 12.0
 End Stone: (inches) 12.0
 Stone Cover: (inches) 10.0
 Stone Base: (inches) 10.0
 Side-Z: (run/rise) 0.0
 Field Description: E-W Manifold (SCM-2)
 Stone Voids: (%) 40.0
 Stone Invert: (feet) 356.30
☒ Allow Exfiltration

Additional Materials: ☐ Show Costs

#	Qty	Description	\$ Price
1			
2			
3			

48.0" Wide + 24.0" Spacing = 72.0" C-C Row Spacing
 4 Chambers/Row x 20.00' Long + 4.00' Row Adjustment + 4.00' Header x 2 = 92.00' Row Length + 12.0"
 End Stone x 2 = 94.00' Base Length
 2 Rows x 48.0" Wide + 24.0" Spacing x 1 + 12.0" Side Stone x 2 = 12.00' Base Width
 10.0" Stone Base + 48.0" Chamber Height + 10.0" Stone Cover = 5.67' Field Height
 8 Chambers x 184.0 cf + 4.00' Row Adjustment x 9.20 sf x 2 Rows + 10.00' Header x 9.20 sf x 2 = 1,729.6
 cf of Chamber Storage
 8 Chambers x 231.1 cf + 4.00' Row Adjustment x 11.56 sf x 2 Rows + 10.00' Header x 11.56 sf x 2 =
 2,172.6 cf of Displacement
 6,390.2 cf of Field - 2,172.6 cf of Chambers = 4,217.6 cf of Stone x 40.0% Voids = 1,687.0 cf of Stone Storage
 Chamber Storage + Stone Storage = 3,416.6 cf = 0.078 af
 Overall Storage Efficiency = 53.5%
 Overall System Size = 94.00' x 12.00' x 5.67'
 8 Chambers
 236.7 cy Field
 156.2 cy Stone



Details: 95th

Summary for Pond 3P: SCM-2

Inflow Area = 44,735 sf, 0.00% Impervious, Inflow Depth = 0.81" for 95th event
 Inflow = 0.15 cfs @ 18.26 hrs, Volume= 3,008 cf
 Outflow = 0.03 cfs @ 13.40 hrs, Volume= 3,008 cf, Atten= 80%, Lag= 0.0 min
 Discarded = 0.03 cfs @ 13.40 hrs, Volume= 3,008 cf
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
 Routed to nonexistent node 5P

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.10 hrs
 Peak Elev= 358.14' @ 24.22 hrs Surf.Area= 1,740 sf Storage= 1,420 cf

Plug-Flow detention time= 355.3 min calculated for 3,003 cf (100% of inflow)
 Center-of-Mass det. time= 356.1 min (1,410.7 - 1,054.6)

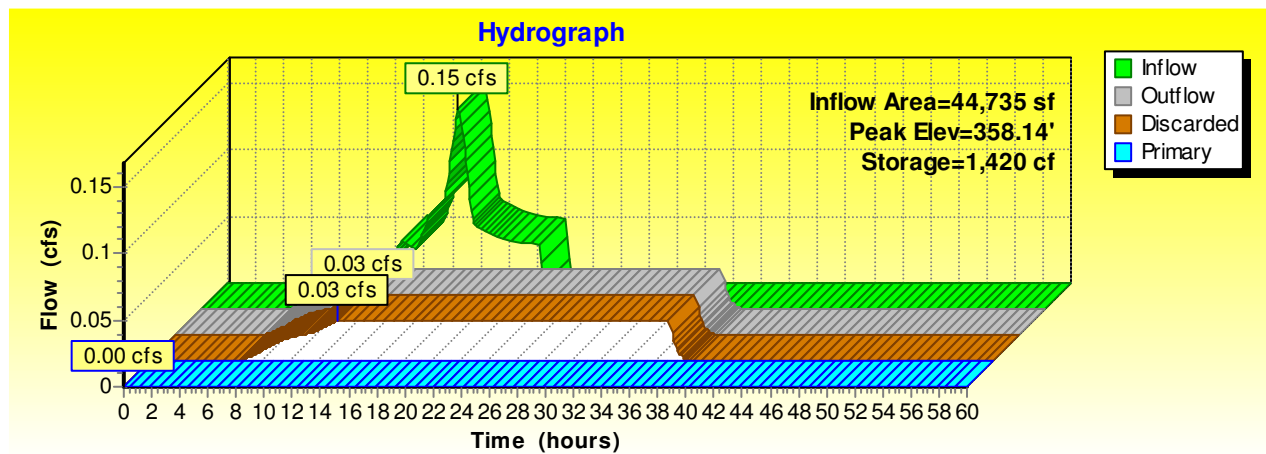
Volume	Invert	Avail.Storage	Storage Description
#1A	356.30'	1,687 cf	12.00'W x 94.00'L x 5.67'H E-W Manifold (SCM-2) 6,390 cf Overall - 2,173 cf Embedded = 4,218 cf x 40.0% Voids
#2A	357.13'	1,730 cf	ADS N-12 42" x 8 Inside #1 Inside= 41.1"W x 41.1"H => 9.20 sf x 20.00'L = 184.0 cf Outside= 48.0"W x 48.0"H => 11.56 sf x 20.00'L = 231.1 cf Row Length Adjustment= +4.00' x 9.20 sf x 2 rows 10.00' Header x 9.20 sf x 2 = 184.0 cf Inside
#3B	356.30'	906 cf	12.00'W x 51.00'L x 5.67'H N-S Manifold (SCM-2) 3,467 cf Overall - 1,202 cf Embedded = 2,265 cf x 40.0% Voids
#4B	357.13'	957 cf	ADS N-12 42" x 4 Inside #3 Inside= 41.1"W x 41.1"H => 9.20 sf x 20.00'L = 184.0 cf Outside= 48.0"W x 48.0"H => 11.56 sf x 20.00'L = 231.1 cf Row Length Adjustment= +7.00' x 9.20 sf x 2 rows 10.00' Header x 9.20 sf x 1 = 92.0 cf Inside
		5,279 cf	Total Available Storage

Storage Group A created with Chamber Wizard
 Storage Group B created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	356.30'	0.750 in/hr Exfiltration over Surface area
#2	Primary	360.00'	4.0" Vert. 4"Ø Orifice on 12"Outlet C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.03 cfs @ 13.40 hrs HW=356.36' (Free Discharge)
 ↑ **1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=356.30' (Free Discharge)
 ↑ **2=4"Ø Orifice on 12"Outlet** (Controls 0.00 cfs)



2Yr:

Summary for Pond 3P: SCM-2

Inflow Area = 44,735 sf, 0.00% Impervious, Inflow Depth = 1.51" for 2-yr event
 Inflow = 0.26 cfs @ 18.25 hrs, Volume= 5,632 cf
 Outflow = 0.03 cfs @ 8.20 hrs, Volume= 5,632 cf, Atten= 88%, Lag= 0.0 min
 Discarded = 0.03 cfs @ 8.20 hrs, Volume= 5,632 cf
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
 Routed to nonexistent node 5P

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.10 hrs
 Peak Elev= 359.98' @ 24.31 hrs Surf.Area= 1,740 sf Storage= 3,691 cf

Plug-Flow detention time= 932.8 min calculated for 5,632 cf (100% of inflow)
 Center-of-Mass det. time= 932.8 min (1,947.8 - 1,015.0)

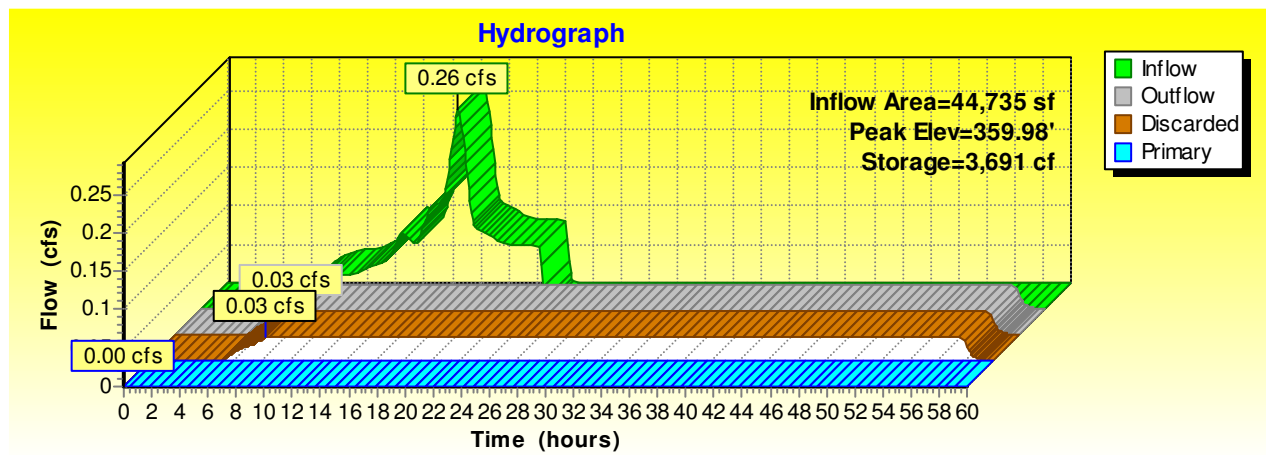
Volume	Invert	Avail.Storage	Storage Description
#1A	356.30'	1,687 cf	12.00'W x 94.00'L x 5.67'H E-W Manifold (SCM-2) 6,390 cf Overall - 2,173 cf Embedded = 4,218 cf x 40.0% Voids
#2A	357.13'	1,730 cf	ADS N-12 42" x 8 Inside #1 Inside= 41.1"W x 41.1"H => 9.20 sf x 20.00'L = 184.0 cf Outside= 48.0"W x 48.0"H => 11.56 sf x 20.00'L = 231.1 cf Row Length Adjustment= +4.00' x 9.20 sf x 2 rows 10.00' Header x 9.20 sf x 2 = 184.0 cf Inside
#3B	356.30'	906 cf	12.00'W x 51.00'L x 5.67'H N-S Manifold (SCM-2) 3,467 cf Overall - 1,202 cf Embedded = 2,265 cf x 40.0% Voids
#4B	357.13'	957 cf	ADS N-12 42" x 4 Inside #3 Inside= 41.1"W x 41.1"H => 9.20 sf x 20.00'L = 184.0 cf Outside= 48.0"W x 48.0"H => 11.56 sf x 20.00'L = 231.1 cf Row Length Adjustment= +7.00' x 9.20 sf x 2 rows 10.00' Header x 9.20 sf x 1 = 92.0 cf Inside
		5,279 cf	Total Available Storage

Storage Group A created with Chamber Wizard
 Storage Group B created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	356.30'	0.750 in/hr Exfiltration over Surface area
#2	Primary	360.00'	4.0" Vert. 4"Ø Orifice on 12"Outlet C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.03 cfs @ 8.20 hrs HW=356.36' (Free Discharge)
 ↳1=Exfiltration (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=356.30' (Free Discharge)
 ↳2=4"Ø Orifice on 12"Outlet (Controls 0.00 cfs)



10yr

Summary for Pond 3P: SCM-2

Inflow Area = 44,735 sf, 0.00% Impervious, Inflow Depth = 2.89" for 10-yr event
 Inflow = 0.46 cfs @ 18.24 hrs, Volume= 10,763 cf
 Outflow = 0.37 cfs @ 18.68 hrs, Volume= 10,756 cf, Atten= 20%, Lag= 26.3 min
 Discarded = 0.03 cfs @ 5.30 hrs, Volume= 5,980 cf
 Primary = 0.34 cfs @ 18.68 hrs, Volume= 4,776 cf
 Routed to nonexistent node 5P

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.10 hrs
 Peak Elev= 360.81' @ 18.68 hrs Surf.Area= 1,740 sf Storage= 4,519 cf

Plug-Flow detention time= 636.4 min calculated for 10,756 cf (100% of inflow)
 Center-of-Mass det. time= 636.2 min (1,610.9 - 974.8)

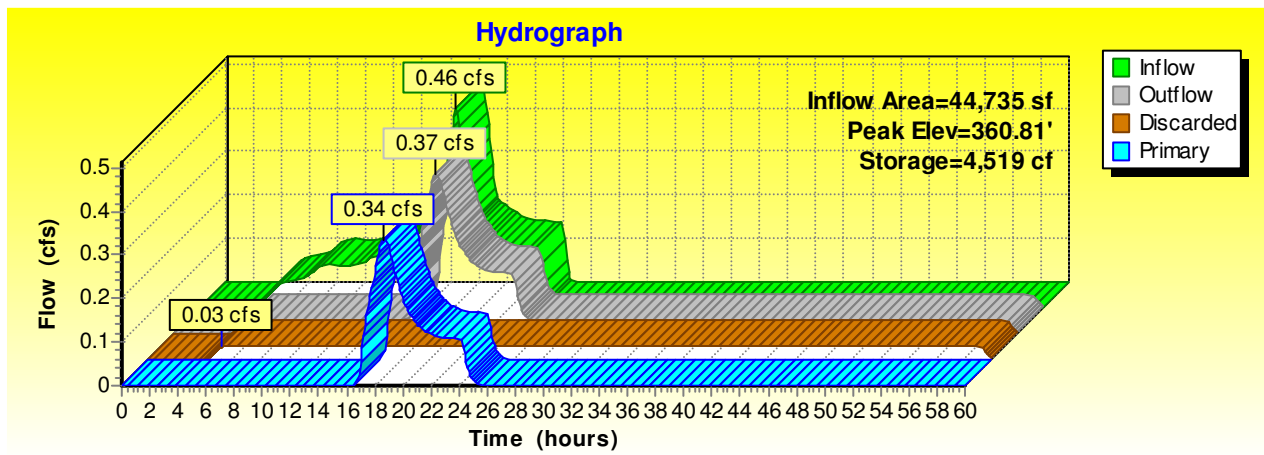
Volume	Invert	Avail.Storage	Storage Description
#1A	356.30'	1,687 cf	12.00'W x 94.00'L x 5.67'H E-W Manifold (SCM-2) 6,390 cf Overall - 2,173 cf Embedded = 4,218 cf x 40.0% Voids
#2A	357.13'	1,730 cf	ADS N-12 42" x 8 Inside #1 Inside= 41.1"W x 41.1"H => 9.20 sf x 20.00'L = 184.0 cf Outside= 48.0"W x 48.0"H => 11.56 sf x 20.00'L = 231.1 cf Row Length Adjustment= +4.00' x 9.20 sf x 2 rows 10.00' Header x 9.20 sf x 2 = 184.0 cf Inside
#3B	356.30'	906 cf	12.00'W x 51.00'L x 5.67'H N-S Manifold (SCM-2) 3,467 cf Overall - 1,202 cf Embedded = 2,265 cf x 40.0% Voids
#4B	357.13'	957 cf	ADS N-12 42" x 4 Inside #3 Inside= 41.1"W x 41.1"H => 9.20 sf x 20.00'L = 184.0 cf Outside= 48.0"W x 48.0"H => 11.56 sf x 20.00'L = 231.1 cf Row Length Adjustment= +7.00' x 9.20 sf x 2 rows 10.00' Header x 9.20 sf x 1 = 92.0 cf Inside
		5,279 cf	Total Available Storage

Storage Group A created with Chamber Wizard
 Storage Group B created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	356.30'	0.750 in/hr Exfiltration over Surface area
#2	Primary	360.00'	4.0" Vert. 4"Ø Orifice on 12"Outlet C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.03 cfs @ 5.30 hrs HW=356.36' (Free Discharge)
 ↳1=Exfiltration (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.34 cfs @ 18.68 hrs HW=360.80' (Free Discharge)
 ↳2=4"Ø Orifice on 12"Outlet (Orifice Controls 0.34 cfs @ 3.85 fps)





25yr

Summary for Pond 3P: SCM-2

Inflow Area = 44,735 sf, 0.00% Impervious, Inflow Depth = 3.90" for 25-yr event
 Inflow = 0.60 cfs @ 18.24 hrs, Volume= 14,529 cf
 Outflow = 0.49 cfs @ 18.65 hrs, Volume= 14,520 cf, Atten= 19%, Lag= 24.8 min
 Discarded = 0.03 cfs @ 4.70 hrs, Volume= 6,053 cf
 Primary = 0.46 cfs @ 18.65 hrs, Volume= 8,467 cf
 Routed to nonexistent node 5P

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.10 hrs
 Peak Elev= 361.34' @ 18.65 hrs Surf.Area= 1,740 sf Storage= 4,844 cf

Plug-Flow detention time= 514.3 min calculated for 14,496 cf (100% of inflow)
 Center-of-Mass det. time= 516.6 min (1,473.5 - 956.9)

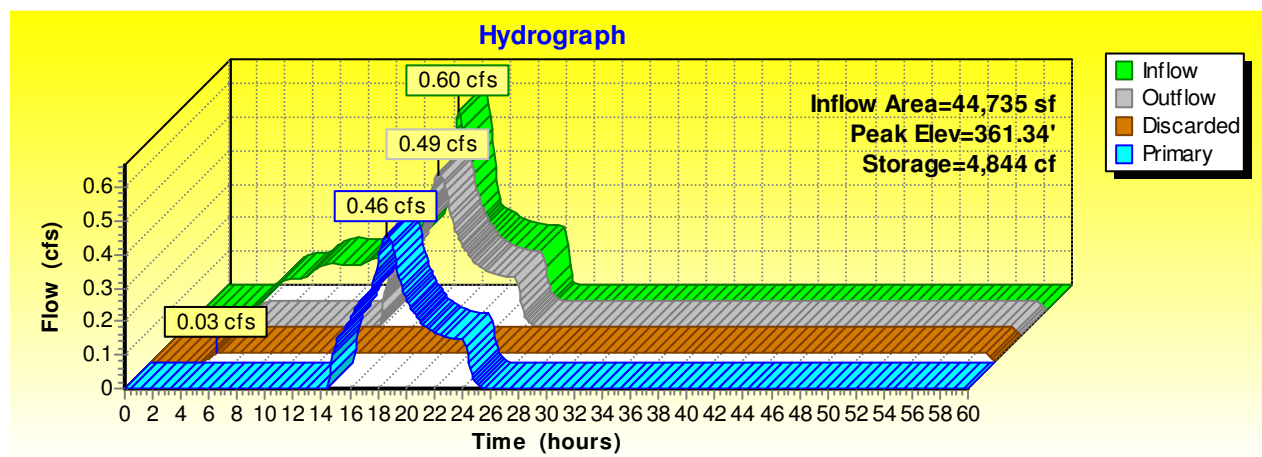
Volume	Invert	Avail.Storage	Storage Description
#1A	356.30'	1,687 cf	12.00'W x 94.00'L x 5.67'H E-W Manifold (SCM-2) 6,390 cf Overall - 2,173 cf Embedded = 4,218 cf x 40.0% Voids
#2A	357.13'	1,730 cf	ADS N-12 42" x 8 Inside #1 Inside= 41.1"W x 41.1"H => 9.20 sf x 20.00'L = 184.0 cf Outside= 48.0"W x 48.0"H => 11.56 sf x 20.00'L = 231.1 cf Row Length Adjustment= +4.00' x 9.20 sf x 2 rows 10.00' Header x 9.20 sf x 2 = 184.0 cf Inside
#3B	356.30'	906 cf	12.00'W x 51.00'L x 5.67'H N-S Manifold (SCM-2) 3,467 cf Overall - 1,202 cf Embedded = 2,265 cf x 40.0% Voids
#4B	357.13'	957 cf	ADS N-12 42" x 4 Inside #3 Inside= 41.1"W x 41.1"H => 9.20 sf x 20.00'L = 184.0 cf Outside= 48.0"W x 48.0"H => 11.56 sf x 20.00'L = 231.1 cf Row Length Adjustment= +7.00' x 9.20 sf x 2 rows 10.00' Header x 9.20 sf x 1 = 92.0 cf Inside
		5,279 cf	Total Available Storage

Storage Group A created with Chamber Wizard
 Storage Group B created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	356.30'	0.750 in/hr Exfiltration over Surface area
#2	Primary	360.00'	4.0" Vert. 4"Ø Orifice on 12"Outlet C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.03 cfs @ 4.70 hrs HW=356.37' (Free Discharge)
 ↳1=Exfiltration (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.45 cfs @ 18.65 hrs HW=361.34' (Free Discharge)
 ↳2=4"Ø Orifice on 12"Outlet (Orifice Controls 0.45 cfs @ 5.21 fps)



100yr

Summary for Pond 3P: SCM-2

Inflow Area = 44,735 sf, 0.00% Impervious, Inflow Depth = 5.11" for 100-yr event
 Inflow = 0.76 cfs @ 18.24 hrs, Volume= 19,044 cf
 Outflow = 0.59 cfs @ 18.71 hrs, Volume= 19,032 cf, Atten= 22%, Lag= 28.0 min
 Discarded = 0.03 cfs @ 4.10 hrs, Volume= 6,119 cf
 Primary = 0.56 cfs @ 18.71 hrs, Volume= 12,913 cf
 Routed to nonexistent node 5P

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.10 hrs
 Peak Elev= 361.95' @ 18.71 hrs Surf.Area= 1,740 sf Storage= 5,268 cf

Plug-Flow detention time= 427.0 min calculated for 19,032 cf (100% of inflow)
 Center-of-Mass det. time= 426.6 min (1,368.2 - 941.5)

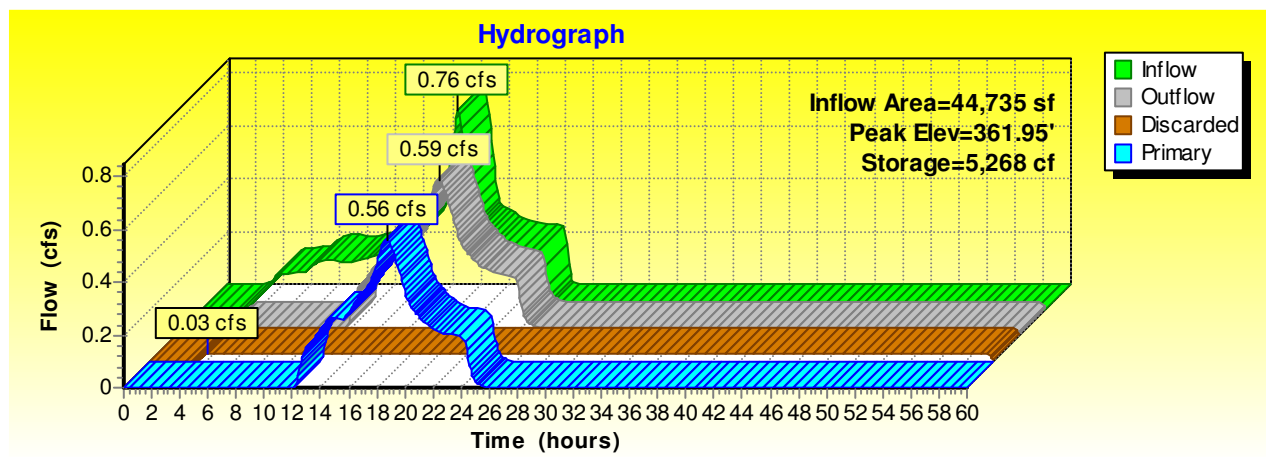
Volume	Invert	Avail.Storage	Storage Description
#1A	356.30'	1,687 cf	12.00'W x 94.00'L x 5.67'H E-W Manifold (SCM-2) 6,390 cf Overall - 2,173 cf Embedded = 4,218 cf x 40.0% Voids
#2A	357.13'	1,730 cf	ADS N-12 42" x 8 Inside #1 Inside= 41.1"W x 41.1"H => 9.20 sf x 20.00'L = 184.0 cf Outside= 48.0"W x 48.0"H => 11.56 sf x 20.00'L = 231.1 cf Row Length Adjustment= +4.00' x 9.20 sf x 2 rows 10.00' Header x 9.20 sf x 2 = 184.0 cf Inside
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		5,279 cf	Total Available Storage

Storage Group A created with Chamber Wizard
 Storage Group B created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	356.30'	0.750 in/hr Exfiltration over Surface area
#2	Primary	360.00'	4.0" Vert. 4"Ø Orifice on 12"Outlet C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.03 cfs @ 4.10 hrs HW=356.36' (Free Discharge)
 ↳1=Exfiltration (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.56 cfs @ 18.71 hrs HW=361.95' (Free Discharge)
 ↳2=4"Ø Orifice on 12"Outlet (Orifice Controls 0.56 cfs @ 6.43 fps)



**GEOTECHNICAL INVESTIGATION
FIVE NEW RESIDENCE BUILDINGS PROJECT
270 WEST DUNNE AVENUE
MORGAN HILL, CALIFORNIA**

for

**DRP Construction
Mr. Dave Robertson, Project Manager
P.O. Box 727299
Morgan Hill, California 95038**

by

**Cleary Consultants, Inc.
560 Division Street
Campbell, California 95008**

May 2022

Christophe A. Ciechanowski, President, GE
Grant F. Foster, Vice-President, GE
J. Michael Cleary, Principal, CEG, GE
May 10, 2022
Project No. 1425.1
Ser. 7085

Mr. Dave Robertson
DRP Construction
P.O. Box 727299
Morgan Hill, California 95038

**RE: GEOTECHNICAL INVESTIGATION
FIVE NEW RESIDENCE BUILDINGS PROJECT
270 WEST DUNNE AVENUE
MORGAN HILL, CALIFORNIA**

Dear Mr. Robertson:

As requested, we have performed a geotechnical investigation for the planned Five New Residence Buildings project at 270 West Dunne Avenue in Morgan Hill, California. The accompanying report presents the results of our field investigation, laboratory testing and engineering analyses. The site and subsurface conditions are discussed and recommendations for the soil and foundation engineering aspects of the project design are presented. The recommendations presented in this report are contingent upon our review of the grading and foundation plans for the proposed new construction and observation/testing of the earthwork and foundation installation phases of the project.

We refer you to the text of the report for detailed findings and recommendations. If you have any questions concerning our findings or the report, please call.

Yours very truly,
CLEARY CONSULTANTS, INC.


Dustin Lettenberger
Civil Engineer 93429




Chris Ciechanowski
Geotechnical Engineer 2584


Grant Foster
Geotechnical Engineer 2662



DL/GF/CC:dl

Copies: Addressee (email)
WM Architects (email) Attn: Charles Weston
MH Engineering Co. (email) Attn: Harinder Singla

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INTRODUCTION

This report presents the results of our geotechnical investigation for the planned Five New Residence Buildings project at 270 West Dunne Avenue in Morgan Hill, California (see Drawing 1, Site Vicinity Map for location). The purpose of this investigation was to explore the soil and foundation conditions in the general locations of the planned new buildings and other site improvements, and to develop recommendations for the geotechnical engineering aspects of the project design. Geologic hazard study and analysis was not within the scope of this investigation.

Based on our review of the project site plan (See Drawing 3, Site Plan) prepared by Weston Miles Architects, dated July 12, 2021, and the preliminary grading plan prepared by MH Engineering Co., dated January 2022, we understand that the project will include the construction of five new two-story, 2,813 square foot homes of wood frame construction with attached garages. Two new residences (Units A and B) situated on the north side of the property, within the area planned to be cut down from the existing grade, will be constructed on level building pads with concrete slab-on-grade floors. Three new residences (Units C through E) situated on the south side of the property, in areas that will receive approximately two to seven feet of fill within building footprints, will be constructed on building pads sloping approximately six percent to the southeast with raised wood floors. The attached garages for all five of the residences will be constructed on level building pads, with finished floor elevations shown to be one foot below the respective finished floor elevations for main residences. Structural loads are expected to be typical for these types of construction.

The project will also include the installation of retaining walls, vehicular asphalt pavement, exterior concrete flatwork and associated underground utilities.

A site geologic hazards investigation and analysis, including but not limited to slope stability analysis, landslide hazard, flooding hazard, liquefaction/seismic settlement, and fault rupture risks was not within our scope of work for this project.

Preliminary geotechnical recommendations for the project were provided in our January 28, 2022 transmittal summary.

SCOPE

As outlined in our proposal agreement dated August 12, 2021, the scope of our services for this investigation has included:

1. A review of relevant published and unpublished geologic literature, maps and geotechnical information for the area.
2. Several reconnaissance visits to the site by our staff.
3. A field subsurface investigation consisting of five (5) exploratory borings.
4. Drilling and testing of two (2) infiltration test holes at the project site.
5. Laboratory testing of samples obtained from the borings.
6. Engineering analysis of the field and laboratory data.
7. Preparation of this geotechnical investigation report using the field and laboratory data. The report includes findings and recommendations for the following:

- a. Geologic and seismic setting of the site and surrounding area, including research and review of available geologic/seismic reports and maps.
- b. 2019 CBC seismic design criteria.
- c. Site preparation, fill placement and grading.
- d. New building foundation type and associated geotechnical engineering design parameters.
- e. Retaining wall foundation engineering and lateral earth pressure design parameters.
- f. Estimated foundation settlements.
- g. Subgrade preparation and aggregate base sections for interior and exterior concrete slabs-on-grade.
- h. Subgrade preparation and aggregate base and asphalt sections for vehicular asphalt pavements.
- i. Treatment of expansive soils (as required).
- j. Backfilling and compaction of utility trenches.
- k. Surface and subsurface drainage.
- l. Infiltration test results.

- m. Any other unusual design or construction conditions encountered in the investigation.

This report has been prepared for the specific use of DRP Construction and its consultants in accordance with generally accepted geotechnical engineering principles and practices. No other warranty, either expressed or implied, is made. In the event that any substantial changes in the nature of the project are planned, the conclusions and recommendations of this report shall not be considered valid unless such changes are reviewed and the conclusions of this report modified or verified in writing. Any use or reliance of this report or the information herein by a third party shall be at such party's sole risk.

It should also be recognized that changes in the site conditions may occur with the passage of time due to environmental processes and/or acts of man, and that changes in building codes, the state of the practice or new information may require modifications in the recommendations presented herein. Accordingly, neither the client, nor any other party should rely on the information or conclusions contained in this report after three years from its date of issuance without the express written consent of Cleary Consultants, Inc.

METHOD OF INVESTIGATION

A. Subsurface Exploration

The subsurface investigation was performed on September 1, 2021, under the guidance of our Staff Geotechnical Engineer, Mr. Dustin Lettenberger. Five (5) borings were drilled using truck-mounted solid flight auger drilling equipment to a maximum depth of 14 feet (due to practical drilling refusal) at the locations shown on Drawing 3, Site Plan.

A key describing the soil classification system and soil consistency terms used in this report is presented on Drawing 4 and the soil sampling procedures are described in Drawing 5. The logs of the borings are presented on Drawings 7 through 11.

The borings were located in the field by surveyor's wheel measurements and interpolation of the features shown on available satellite imagery and the site plan provided to us. These locations should be considered accurate only to the degree implied by the methods used.

B. Laboratory Testing

Samples of the soil materials from the borings were returned to our laboratory for classification and testing. The results of moisture content, percent finer than No. 4 and No. 200 sieves, plasticity index, and free swell testing are shown on the boring logs. The laboratory test procedures followed during this investigation are summarized on Drawing 6. Drawing 12 summarizes the results of the plasticity index testing. The results of R-Value testing performed on untreated and chemically-treated samples of the upper soils are presented on Drawings 13 and 14, respectively. The results of soil corrosivity testing performed on a composite sample of the surficial soils collected from the borings are presented on Drawing 15.

A list of references consulted during the investigation is included at the end of the text.

SITE CONDITIONS

A. Surface

The subject property is an approximately 44,000 square foot terraced lot bordering West Dunne Avenue to the north, Viewcrest Lane to the east, and residential housing to the south and west. The gently southeasterly sloping upper (north) terrace is occupied by a detached garage on the

north side, an irregular shaped single-story residence in the middle, and a two-story residence with an attached garage on the southwest side. We understand that the existing structures will be demolished and removed. A courtyard comprised of an irrigated grass lawn and wood decking is situated in the middle of the existing buildings, and another irrigated grass lawn is situated on the southeast side. Asphalt and concrete driveways are situated on the northeast and northwest sides, respectively, fronting West Dunne Avenue. A gravel-surfaced access road along the east side of the property slopes downward from the northeast driveway to the lower (south) terrace at an approximate gradient of 10 percent.

The southeast side of the upper terrace borders an approximately nine-foot-high 3:1 (Horizontal:Vertical) southeasterly facing, heavily vegetated slope and the southwest side borders an approximately eight-foot-high 5:1 south-southeasterly facing, heavily vegetated slope. Situated between the two slopes are two relatively low CMU retaining walls and stairs leading down to a canopy-covered level bocce ball court. We understand that these structures and improvements will also be demolished and removed. Evidence of slope instability was not observed during our site reconnaissance; however, detailed slope stability analysis was not within our scope of work.

The lower terrace is a gently southeasterly sloping open field sparsely covered with dry grass. A CMU retaining wall, up to approximately six feet in height, is situated along the property line on the west side of the lower terrace. Wooden fencing is mounted on top of the wall, which borders residential properties to the west.

The existing concrete flatwork and asphalt pavements at the property were observed to be in generally good to fair condition at the time our investigation, with occasional longitudinal cracking.

The average elevations of the upper and lower terraces at the project site are approximately 372 feet and 361 feet above Mean Sea Level, respectively, and the overall regional topographic gradient is approximately two percent to the east.

B. Subsurface

Exploratory Boring 1 (EB-1) encountered very dense clayey to silty sand to the maximum depth explored due to practical drilling refusal, nine feet.

EB-2 encountered medium dense to dense silty sand in the upper three and one-half (3½) feet, underlain by very dense clayey sand to the maximum depth explored due to practical drilling refusal, 14 feet.

EB-3 encountered very stiff to hard sandy clay to the maximum depth explored due to practical drilling refusal, nine feet.

EB-4 encountered very stiff to hard sandy clay in the upper seven and one-half (7½) feet, underlain by very dense silty sand to the maximum depth explored due to practical drilling refusal, 14 feet.

EB-5 encountered hard sandy clay to the maximum depth explored due to practical drilling refusal, 14 feet.

The upper soils encountered in the borings are considered to have a moderate to high expansion potential based on their plasticity characteristics (Plasticity Indices of 14 to 26 percent) and the free swell test data (Free Swells of 50 to 100 percent).

The attached boring logs and related information depict subsurface conditions only at the specific locations shown on Drawing 3 and on the particular date designated on the logs. Soil conditions at other locations may differ from conditions occurring at these locations. Also, the passage of time may result in a change of soil conditions at these locations due to environmental changes.

C. Groundwater

Free groundwater was not encountered in the exploratory borings during drilling for this investigation within the maximum depth explored, 14 feet. It should be noted that the borings were only open for a period of a few hours and this may not have been sufficiently long to establish the stabilized water table conditions. It should be noted that fluctuations of localized perched groundwater and the regional groundwater level can occur due to such factors as variations in rainfall, temperature, runoff, irrigation, and other factors not evident at the time our measurements were made and reported herein.

Groundwater elevation data provided by the Santa Clara Valley Water District's Historical Groundwater Elevation Data GIS website indicates that the project site lies within an area where the generalized depth to first groundwater is zero to 10 feet.

The State of California had not as of the date of this report prepared a seismic hazard zone report for the Mount Madonna Quadrangle and information typically provided in such a report on the historically high ground water table was therefore not available.

The California State Water Resources Control Board GeoTracker website, which performs a search for groundwater well records based on the site address and search radius input, provided data from a monitoring well located approximately 1,600 feet northeast of the project site which indicated a high groundwater table of 19.3 feet below the ground surface.

GEOLOGY AND SEISMICITY

The Santa Clara Valley, a broad, sediment-filled basin bordered on the east by the Diablo Range and on the west by the Santa Cruz Mountain Range, is about five miles wide in the vicinity of the subject property, which is situated between the central and southerly portions of the Santa

Clara Valley. Structurally, the Santa Clara Valley has formed as a result of tectonic downwarping controlled by three northwest trending active fault zones: The San Andreas fault on the southwest and the Hayward and Calaveras faults on the northeast. Published geologic mapping by Dibblee (2005) indicates that the site vicinity is underlain by Holocene-age alluvial gravel, sand and clay (Qa). Wentworth, et al (1999) and McLaughlin, et al (2001) map the project site as being underlain by Pleistocene-age alluvial fan deposits (Qpf). The findings of our investigation are consistent with the regional geologic mapping discussed above. We have excerpted portions of two Dibblee (2005) maps to serve as our Local Geologic Map, shown on Drawing 2.

The San Francisco Bay Area is recognized by geologists and seismologists as one of the most active seismic regions in the United States. The three major fault zones that pass through the Bay Area in a northwest direction have produced approximately a dozen earthquakes per century strong enough to cause structural damage. The faults causing these earthquakes are all part of the San Andreas fault system, a major rift in the earth's crust that extends for at least 450 miles along the California Coast and includes the San Andreas, Hayward and Calaveras faults. The project site is located approximately 4.6 miles southwest of the Calaveras fault, 9.6 miles northeast of the San Andreas fault and 25 miles southeast of the Hayward fault. In addition to the above active faults, potentially active faults in the site vicinity include the Coyote Creek, Silver Creek, Calero, Berrocal, Monte Vista-Shannon, Sargent, and Zayante-Vergeles faults, located 2.7 miles northeast, 3.6 miles northeast, 5.5 miles northwest, 5.8 miles southwest, 6.9 miles northwest, 7.0 miles southwest, and 13.0 miles southwest of the project site, respectively (U.S. Geological Survey, 2006; Jennings and Bryant, 2010).

Modeling of earthquake occurrence probabilities over the 30-year period of 2014 to 2043 on both a statewide and regional basis was performed by the 2014 Working Group on California Earthquake Probabilities. The results of the study are presented in the Long-Term Time-Dependent Probabilities for the Third Uniform California Earthquake Forecast (Field, E.H., et. al., 2015). The report indicates a 72 percent probability that one or more earthquakes of magnitude 6.7 or greater will occur in the San Francisco Bay region between 2014 and 2043.

Additionally, the probability of one or more regional earthquakes of magnitude 6.0 or greater over the same time period is indicated to be 98 percent. Likewise, the occurrence of at least one regional earthquake of magnitude 5.0 or greater over this time period is evaluated as being a near certainty.

Therefore, similar to most of the San Francisco Bay Area, it is reasonable to assume that the proposed new residential buildings and associated improvements will be subjected to a moderate to large earthquake from one of the above-mentioned faults during their lifetime. During such an earthquake, strong ground shaking is likely to occur at the site.

CONCLUSIONS AND RECOMMENDATIONS

Based on the findings of our investigation, we judge that there are no geotechnical constraints which would preclude the construction of the planned Five New Residences project at 270 West Dunne Avenue, and conclude from a soil engineering standpoint that the improvements can be constructed as planned provided the recommendations of this report are incorporated into the design and construction of the project.

The upper soils encountered at the project site generally consist of dense to very dense native clayey sand and silty sand, and very stiff to hard sandy clay soils which are considered relatively strong and incompressible under the range of building loads anticipated for this project. Accordingly, the two-story residential buildings in areas of planned cut (Units A and B) can be supported on conventional spread footing foundations obtaining support in undisturbed native soils, as described in Section B, Unit A and B Residential Building Spread Footing Foundations.

The Unit C through E buildings will be underlain by sloping fill ranging from approximately two to seven feet thick within building footprints, overlying the native soils encountered during our investigation. Accordingly, in order to provide suitable support for building loads and minimize differential settlement due to variable fill thicknesses beneath the buildings on the sloped portion

of the site, Units C through E should be supported on drilled pier and grade beam foundation systems obtaining skin friction support in the undisturbed native soils below the planned fill underlying the buildings, as described in Section C, Unit C through E Residential Building Drilled Pier Foundations.

A nominal cushion of Class 2 aggregate baserock should be provided under building slabs and exterior pavements to mitigate expansive soil movements, as described below (see Section F, Slabs-on-Grade and Section G, Flexible Pavements).

The recommendations presented in the remainder of this report are contingent on our review of the earthwork and foundation plans for the project and our observation of the grading, foundation installation, asphalt pavement installation, and concrete slab installation phases of the construction.

A. Earthwork

1. Stripping and Site Preparation

Existing foundations, underground utilities, tree root bulbs, as well as any other site improvements which are to be removed should be cleared from the construction area. Below grade obstructions, such as buried tanks and existing foundations, should then be removed to their full depth and extent and hauled from the site. The building sites and other improvement areas should then be stripped to a sufficient depth to remove any remaining organic laden topsoil. Any areas of loose materials or undocumented fill that are exposed during the grading should also be removed or recompacted, as determined by our representative.

Holes resulting from the removal of underground obstructions (such as abandoned utilities, tree root bulbs or foundation demolition excavations) that extend below the

planned finished grade should be cleared of loose soil and debris, then backfilled with suitable material compacted to the requirements discussed below for engineered fill (see Section A-3, Fill Placement and Compaction).

2. Moisture Conditioning and Recomaction of Surface Soils

After the new construction areas have been cleared, stripped and excavated to the required grade, the exposed soil should be moisture conditioned and recomacted. The upper 12 inches of the exposed subgrade should be processed such that the moisture reaches the approximate laboratory established optimum moisture content, and then compacted to at least 90 percent relative compaction as determined by ASTM Test Designation D1557. The moisture conditioning process should be observed by our representative. Field testing of the moisture content and relative compaction in the upper 12 inches should be performed just prior to placing fill or aggregate base on the recomacted subgrade.

Any loose soil or undocumented fills should be removed and replaced as properly engineered fill.

Compaction should be performed using heavy compaction equipment, such as a self-propelled sheepsfoot roller or segmented wheeled compactor. After the exposed subgrade soils are compacted, any required fill and the required aggregate base material can be placed in lifts not exceeding eight inches in uncompacted thickness, and compacted to the requirements given below for engineered fill.

The subgrade should not be allowed to dry below optimum moisture content prior to placing additional fill or Class 2 aggregate base. This is likely to require periodic sprinkling during the dry season. Should drying of the soils occur, they should again be scarified, moisture conditioned to the proper moisture content and recomacted.

Based on the moisture content of samples obtained from the borings, we anticipate that it may be necessary to adjust the soil moisture content at the time of construction in order to achieve satisfactory compaction in the subgrade and fill soils. This may require that water be added and thoroughly mixed into any soils which are too dry or that repeated scarification and "turning over" of the soils during periods of dry weather be performed in order to aerate and reduce the moisture content of any soils which are too wet.

3. Fill Placement and Compaction

Existing soils having an organic content of less than three percent by volume, and which are free of construction debris, can be used as engineered fill. Fill material should not, however, contain rocks or lumps greater than six inches in greatest dimension with not more than 15 percent larger than 2.5 inches. Imported fill and aggregate baserock placed within the building footprints should be virgin/non-recycled and free of ground-up asphalt.

Engineered fill should be compacted to at least 90 percent relative compaction, as determined by ASTM Test Designation D1557. Fill material should be spread and compacted in lifts not exceeding eight inches in uncompacted thickness. In order to achieve satisfactory compaction in the subgrade and fill soils, it is likely that it will be necessary to adjust the soil moisture content at the time of soil compaction. This may require that water be added and thoroughly mixed into any soils which are too dry, or that repeated scarification and "turning over" of the soils during periods of dry weather will be necessary in order to aerate and reduce the moisture content of any soils which are too wet.

4. Slope Gradients and Fill Placement Over Existing Slopes

New permanent cut slopes, and any fill slopes, should be no steeper than 2:1 (horizontal to vertical). Fill placed on slopes steeper than 6:1 (horizontal to vertical) should be

benched a minimum of two feet horizontally for every two vertical feet of new fill. Any undocumented fill material encountered in new slope construction should be removed and replaced as properly engineered fill. Cut and fill slopes should be planted to minimize erosion and surface runoff should be diverted away from the top of slopes and carried to a suitable drainage collection system.

5. Temporary Cutslopes and Shoring

New retaining walls are expected to be up to six feet high. Temporary slope excavations for the walls in the soils encountered during the site investigation are anticipated to be reasonably stable at an inclination of 1.5:1 (horizontal to vertical), and should be benched every five feet vertical.

There are a number of factors which can influence the stability of temporary excavations, some of which the contractor can control. The contractor, therefore, should be solely responsible for designing and constructing stable temporary excavations and should shore, slope or bench the excavations as required to maintain their stability and comply with all applicable safety standards, including CAL-OSHA requirements. The temporary shoring system design and performance should be the responsibility of the contractor.

6. Utility Trenches

The presently available subsurface information indicates that utility trenches can be excavated with conventional backhoe equipment. Trenches deeper than five feet should be properly braced or sloped in accordance with the current requirements of CAL-OSHA or the local governmental agency, whichever is more stringent.

Utility trenches should be backfilled with engineered fill placed in lifts not exceeding eight inches in uncompacted thickness, except thicker lifts may be used with the approval of our representative provided satisfactory compaction is achieved. If on-site soil is

used, the material should be compacted to at least 90 percent relative compaction by mechanical means only. Imported sand can also be used for backfilling trenches provided it is compacted to at least 90 percent relative compaction. In building, slab, and pavement areas, the upper three feet of trench backfill should be compacted to at least 90 percent relative compaction for on-site soils, and 95 percent where imported clean sand backfill is used.

Water jetting to achieve the required level of backfill compaction should not be permitted.

7. Surface Drainage

Positive surface gradients of at least two percent on porous surfaces and one percent on paved surfaces should be maintained adjacent to the planned buildings so that water does not collect in the vicinity of the foundations. Water from roof downspouts should be collected into closed pipes or discharged onto impermeable surfaces, which carry the runoff away from the structures and discharge into approved drainage facilities.

8. Construction Observation

Grading and earthwork operations should be observed and tested by our representative for conformance with the project plans/specifications and our recommendations. This work includes site preparation, selection of satisfactory fill materials, and placement and compaction of the subgrades and fills. Sufficient notification prior to commencement of earthwork is essential to make certain that the work will be properly observed.

B. Unit A and B Residential Building Spread Footing Foundations

After the building pads have been properly prepared and graded, the planned Unit A and B two-story residences can be supported on conventional continuous and isolated spread footings bearing in undisturbed native soil encountered in exploratory borings. Footings should be founded at least 24 inches below lowest adjacent finished grade and be embedded at least 18 inches into the supporting subgrade. Continuous footings should have a minimum width of 18 inches and isolated footings should be at least 24 inches square. Footings located adjacent to utility trenches should have their bearing surfaces below an imaginary 1.5:1 (horizontal to vertical) plane projected upward from the edge of the bottom of the trench. Care should be taken to keep the footings moist by spraying lightly prior to the concrete pour.

At the above depths, footings can be designed for an allowable bearing pressure of 2000 psf due to dead loads with a one-third increase for dead plus live loads (2667 psf) and a 50 percent increase for total design loads (3000 psf) including wind and seismic. All continuous footings should be provided with adequate top and bottom reinforcement (as specified by the structural engineer) to provide structural continuity and to permit spanning of local irregularities. The steel reinforcement requirements should be determined by the structural engineer.

Lateral loads can be resisted by friction between the foundation bottoms and the supporting subgrade. A friction coefficient of 0.30 is considered applicable. As an alternative, an equivalent fluid pressure of 300 pcf starting one-half foot below the ground surface can be taken against the sides of footings poured neat.

Soil conditions in the foundation excavations should be checked by our representative prior to placing reinforcing steel or concrete. The excavation of footing trenches should be performed so that the trenches are left open for the minimum practical length of time prior to the placement of concrete. Footing trenches should be kept moist so that any drying-shrinkage cracks are closed prior to placement of concrete. Moisture should be added in a light mist spray.

Post-construction settlements of the spread footing foundations under proposed loads are expected to be within tolerable limits.

C. Unit C through E Residential Building Drilled Pier Foundations

We recommend that the Unit C through E two-story residences be supported on cast-in-place, straight shaft friction piers tied together with continuous grade beams in order to provide suitable support for building loads and minimize differential settlement of variable fill thicknesses beneath the buildings. The grade beams should have a minimum width of 12 inches and be embedded a minimum of 12 inches below the lowest adjacent grade. The drilled piers should have a minimum diameter of 18 inches and extend through any fill (two to seven feet of fill expected) to a minimum depth of eight feet into the underlying native soils. The piers should be spaced no closer than approximately three pier diameters center to center and no further than approximately 10 to 12 feet. The actual pier dimensions and spacing should be based on the structural engineer's design requirements.

The drilled piers can be designed on the basis of 350 psf skin friction for vertical loads with a 50 percent increase for wind and seismic conditions. The skin friction may be assumed to start two feet below the original ground surface and below a 2:1 influence zone plane projecting up from any adjacent excavations (such as utility trenches). Point bearing resistance should be neglected. For resistance to lateral loads, an equivalent fluid pressure of 350 pcf up to a maximum of 3500 psf can be assumed to act over 1.5 times the projected area of the individual pier shaft. The passive pressure can be assumed to start two feet below the ground surface. An allowable negative skin friction value of 265 psf within native soil can be used on the pier sidewall to resist uplift forces.

Groundwater was not encountered in the borings during our investigation; however, pockets of loose sandy soils, if encountered, may be susceptible to sloughing. Therefore, it is recommended that reinforcing steel and concrete be placed as soon as practical after drilling to minimize fall-in

of the sidewall soils and possible caving. Any loose soil or accumulated water in the pier holes should be removed prior to concrete placement. Casing of the piers may be required where zones of loose soil are encountered during drilling.

Since the actual lengths of the piers may vary depending on the subsurface conditions encountered in the field, the excavation of piers should be performed under the observation of our soil engineer. Heavy duty drilling equipment in good working condition should be used to drill the pier holes.

Reinforcement of the piers should be provided for their full length. Minimum pier reinforcement should consist of four No. 5 bars tied in a cage. Greater reinforcement may be required as determined by the structural engineer's analysis.

Post-construction settlements of the pier foundations under anticipated building loads are expected to be within tolerable limits for the proposed construction.

D. Site Retaining Walls

Site retaining walls up to six feet in height at the south and east sides of the property are planned as part of the project. The retaining walls can be supported on conventional spread footing foundations bearing in undisturbed native soil encountered in exploratory borings, or a minimum of 18 inches of virgin (non-recycled) Class 2 aggregate baserock compacted to at least 95 percent relative compaction if the footing bottoms are located within a fill area.

The footings can be designed for an allowable bearing pressure of 1000 psf due to dead loads, with a 50 percent increase for total design loads, including wind and seismic. Lateral loads may be resisted by friction between the foundation bottoms and the supporting subgrade. A friction coefficient of 0.30 is considered applicable. As an alternative, a passive resistance equal to an equivalent fluid weighing 300 pounds per cubic foot may be used against the sides of footings

poured neat. Spread footings should be founded at least 24 inches below lowest adjacent finished grade and have a minimum width of 18 inches. Footings located adjacent to utility trenches should have their bearing surfaces below an imaginary 2:1 (horizontal to vertical) plane projected upward from the edge of the bottom of the trench. Footings located adjacent to any cut/fill slope face should bear at a level which provides at least five feet of horizontal confinement.

Permanent retaining walls required for the project must be designed to resist lateral earth pressures and any additional lateral loads caused by surcharge loading.

We recommend that unrestrained walls with level or gently sloping backfill conditions be designed to resist an equivalent fluid pressure of 45 pcf and that restrained walls be designed to resist an equivalent fluid pressure of 45 pcf plus an additional uniform lateral pressure of eight H psf where H = height of backfill above wall foundation in feet. Where backfill slope gradients exceed 3:1, an additional one and one-half pcf per degree of slope gradient exceeding 18 degrees should be added to the above active pressure distribution. Wherever walls will be subjected to surcharge loads, they should be designed for an additional lateral pressure equal to one-third or one-half the anticipated surcharge load depending on whether the wall is unrestrained or restrained, respectively. A seismic component of lateral earth pressure of $10 H^2$ pounds per lineal foot of wall acting 0.6 H up from the bottom of the wall can be used for retaining wall design, if required.

The preceding pressures assume that sufficient drainage is provided behind the retaining walls to prevent the build-up of hydrostatic pressures from surface or subsurface water infiltration. Adequate drainage may be provided by means of clean, 3/4 inch drain rock material enclosed in a filter fabric, such as Mirafi 140, and a four-inch diameter perforated pipe (Schedule 40 or stronger) placed at the base of the wall. The perforated pipe should be tied into a closed pipe and carried to a suitable drainage system.

Backfill material placed behind retaining walls should be non-expansive and compacted to at least 90 percent relative compaction using lightweight compaction equipment. If heavy compaction equipment is used, the walls should be appropriately braced during the backfilling. An 18-inch cap of impervious native clayey soil should be placed over the top of exterior retaining wall backfill to minimize surface water infiltration.

E. Seismic Design Parameters

The OSHPD U.S. Seismic Design Maps online application was used to determine ASCE 7-16 seismic design values. The application analyzed the project site using the site latitude and longitude (37.1230° N, -121.6558° W) and the site classification, which was determined using subsurface information obtained from the exploratory borings.

Based on the results of our investigation, CBC 2019 (Section 1613A), ASCE 7-16 (Chapter 11), and the OSHPD U.S. Seismic Design Maps online application, the following seismic design parameters can be used in lateral force analyses at this site:

Site Class C – Very Dense Soil and Soft Rock Profile (SPT Values of >50 blows/foot)

ASCE 7-16 Values (OSHPD U.S. Seismic Design Maps):

Site Coefficient $F_a = 1.2$

Site Coefficient $F_v = 1.4$

Mapped Spectral Acceleration Values; $S_s = 1.514$, $S_1 = 0.600$

Spectral Response Accelerations; $SM_s = 1.816$, $SM_1 = 0.840$

Design Spectral Response Accelerations; $SD_s = 1.211$, $SD_1 = 0.560$

F. Slabs-on-Grade

Slab-on-grade construction will be used for new Unit A and B residence building slabs, garage slabs and exterior pedestrian flatwork.

Interior slabs should be underlain by a minimum 15 mil vapor retarder of permeance less than or equal to 0.01 perms (as tested by ASTM F1249) placed over six inches of 3/4-inch clean, free draining crushed rock. Care should be taken to prevent wear, punctures and/or tearing of the membrane during the construction phase (such as could result from the placement of rebar) subsequent to its installation; any tears or punctures should be tightly sealed. The drain rock layer should be underlain by an additional six inches (minimum) of virgin Class 2 aggregate baserock placed on the prepared subgrade soil and compacted to at least 90 percent relative compaction.

Exterior concrete flatwork, sidewalks and curb and gutters should be underlain by at least eight inches of Class 2 aggregate baserock placed on the prepared subgrade.

Reinforcement of slabs should be provided in accordance with their anticipated use and loading, but as a minimum, slabs should be reinforced with No. 3 bars at 18 inches on center, both ways, or No. 4 bars at 24 inches on center, both ways. Concrete slabs should be articulated with a maximum joint spacing of ten feet in both directions.

The baserock and upper 12 inches of underlying subgrade should be compacted to at least 90 percent relative compaction, or 95 percent in areas of vehicular traffic.

The moisture content of the compacted subgrade should be maintained at, or slightly above, optimum moisture prior to placing non-expansive fill materials.

Prior to final construction of slabs, the baserock and subgrade surface should be proof rolled to provide a smooth, firm non-yielding surface. The moisture content of the compacted baserock and subgrade should be maintained at, or slightly above, optimum moisture prior to placing non-expansive fill materials.

G. Flexible Pavements

The new vehicular pavements for the project should be designed for the anticipated traffic loadings. The near-surface soils at the site have an untreated R-Value of 10 and a chemically treated R-Value of 53 based on the laboratory test results. The required thickness of the pavement section can be reduced by chemically-treating the pavement subgrade to a depth of 18 inches with a five percent by weight mixture of 50% Hi-Cal Quicklime and 50% Portland cement. Chemical treatment will also mitigate pumping subgrade conditions typically encountered during wet season construction. Utilizing the estimated Traffic Indices presented below, and Design Procedure 301-F of the California Department of Transportation, we have prepared the following minimum alternative flexible pavement sections using an assumed Traffic Index of 6.0 for the planned driveway accessing West Dunne Avenue:

TABLE 1 - Recommended Flexible Pavement Sections

Traffic Condition	Asphaltic Concrete (inches)	Class 2 Aggregate Base (inches)	Chemically-Treated Subgrade Treatment (inches)	Total Thickness (inches)
Fire Lane, Driveways (T.I. = 6.0)	4.0	12.0	- -	16.0
	3.0	6.0	18.0	27.0

The baserock and upper 12 inches of underlying subgrade should be compacted to at least 95 percent relative compaction.

The subgrade should be statically rolled with a heavy, smooth drum roller to provide a smooth firm surface. Any unstable or pumping subgrade areas should be subexcavated and plugged with baserock or overlain with a stabilizing fabric such as Mirafi 600X. Fabric installation should be performed in accordance with the manufacturer's recommendations. The method and extent of any required stabilization work should be approved by our representative.

Class 2 aggregate base should have an R-Value of at least 78 and conform to the requirements of Section 26-1.02A in the State of California, CALTRANS Standard Specifications, latest edition.

The aggregate base material should be placed in thin lifts in a manner to prevent segregation.

Concrete curbs should be embedded at least two inches below the soil subgrade (below the bottom of the aggregate base section) in any areas where irrigated landscape areas are planned adjacent to AC pavements.

The asphaltic concrete should conform to and be placed in accordance with the requirements of Section 39 in the State of California CALTRANS Standard Specifications, latest edition.

H. Infiltration Testing Results

Two infiltration tests, PERC-1 and PERC-2, were performed in the vicinity of proposed rain tanks at the locations shown on Drawing 5. The approximately six-inch diameter infiltration test holes were drilled to depths of approximately 16 and 10 feet below the adjacent grade, respectively, and the sides and bottom of the hole were scraped and cleared of loose soil. The bottom of the hole was then filled with approximately two inches of pea gravel, a four-inch diameter perforated pipe was placed in the hole, and the annular space around the pipe was backfilled with additional pea gravel. The hole was then “pre-soaked” by filling with water and left over-night. Water level infiltration rates in the hole were subsequently measured the next day to establish the field infiltration rate. The results of our analysis of the field data indicated corrected infiltration rates⁽¹⁾ as shown in the table below.

**Table 2 - Corrected Infiltration Test Results at the 270 West Dunne Avenue,
Five New Residences Project Site in Morgan Hill, California**

Percolation Test Hole	Surface Elevation⁽²⁾	Bottom of Test Hole Elevation⁽²⁾	Percolation Rate (in/hr)⁽¹⁾
PERC-1	371' MSL	355' MSL	10.96
PERC-2	361' MSL	351' MSL	1.50

⁽¹⁾Results corrected for pipe thickness, pipe diameter, hole diameter and pea gravel void ratio.

⁽²⁾Elevations based on Preliminary Grading and Drainage Plan prepared by MH Engineering Co., Dated January 2022.

I. Soil Corrosivity

Laboratory resistivity, pH, chloride and sulfate testing was performed on a composite soil sample obtained from the upper three feet of the borings (see Drawing 15, Corrosivity Tests Summary). The testing was performed by Cooper Testing Laboratory for the purpose of evaluating the soils' corrosion potential for use in the design of underground utilities and embedded concrete on this project.

In summary, the test results indicated a minimum resistivity of 2,211 Ohm-Cm, pH of 7.1, chloride content of 8 ppm and water-soluble sulfate content of 18 ppm. Soils with chloride contents of less than 500 ppm and sulfate contents of less than 1500 ppm are considered to be of "low" corrosivity. However, based on the resistivity testing, the soils are considered "mildly corrosive."

Table 3 below shows the general correlation between resistivity and corrosion potential.

Table 3 - Correlation Between Resistivity and Corrosion Potential

Soil Resistivity (ohm-cm)	Soil Classification
Below 500	Very Corrosive
500 to 1,000	Corrosive
1,000 to 2,000	Moderately Corrosive
2,000 to 10,000	Mildly Corrosive
Above 10,000	Progressively Less Corrosive

© National Association of Corrosion Engineers

This condition combined with the slightly basic soil condition encountered at the site could result in reduced life span of buried steel piping and culverts for this project. Thicker gauge pipelines would have greater life spans. For example, the life spans for 18, 16 and 14-gauge steel culverts with a soil resistivity of 2,211 ohm-cm and a pH of 7.1 are estimated to be roughly 24, 31 and 38 years, respectively (California Department of Transportation, 2019).

Based on the resistivity and sulfate testing, for the purposes of design of concrete in contact with the soil against acid and sulfate exposure conditions, there are no cementitious material or water content restrictions (Portland Cement Association, 2002).

PLAN REVIEW AND CONSTRUCTION OBSERVATION

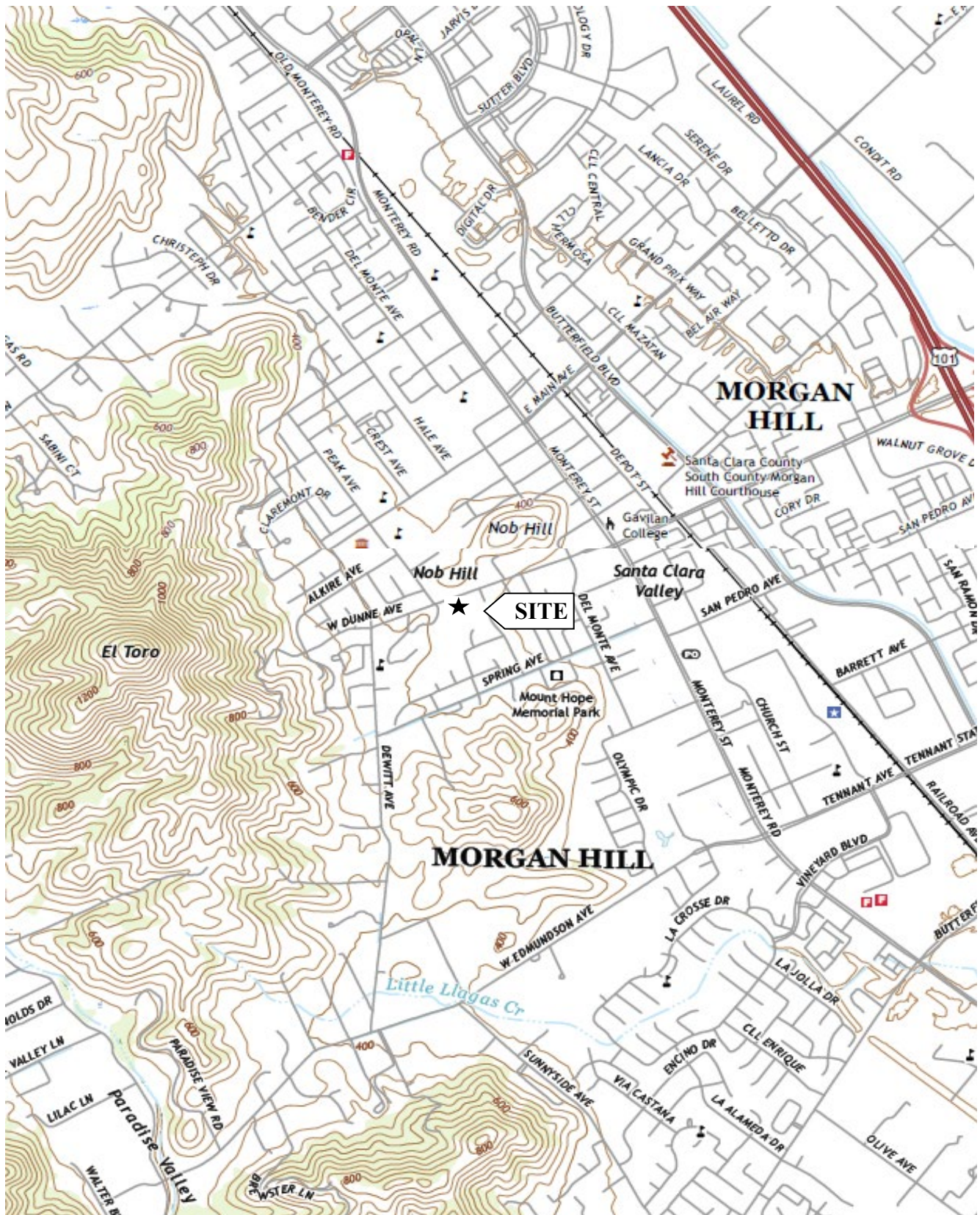
We should be provided the opportunity to review the foundation and grading plans and the specifications for the project when they are available. We should also be retained to provide soil engineering observation and testing services during the grading and foundation installation phases of the project. This will provide the opportunity for correlation of the soil conditions found in our investigation with those actually encountered in the field, and thus permit any necessary modifications in our recommendations resulting from changes in anticipated conditions.

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BASE: U.S. Geological Survey, 2021, Morgan Hill and Mount Madonna 7.5' Quadrangles, Santa Clara County, California

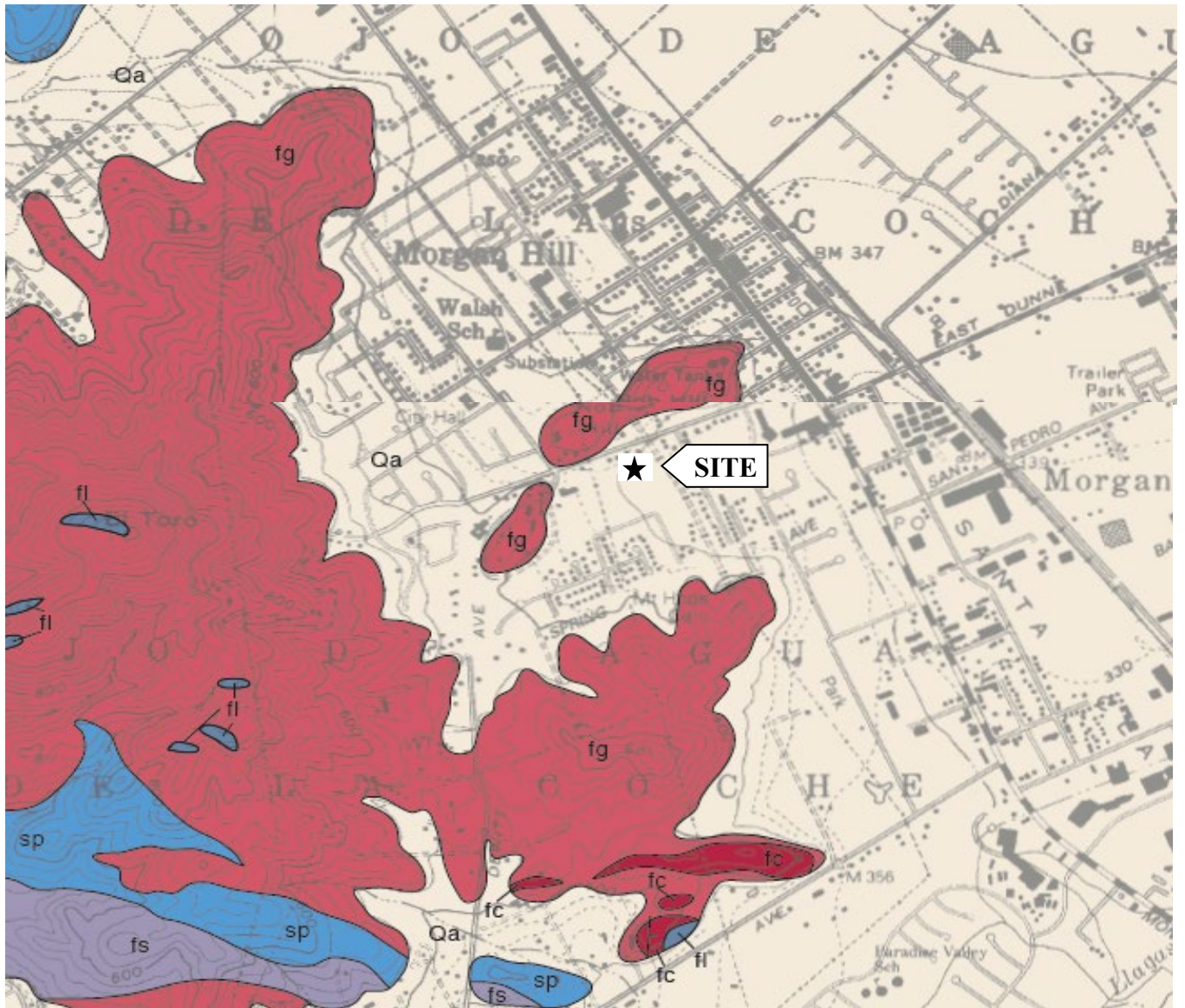
SITE VICINITY MAP



CLEARY CONSULTANTS, INC.
Geotechnical Engineers and Geologists

FIVE NEW RESIDENCE BUILDINGS
270 West Dunne Avenue
Morgan Hill, California

APPROVED BY	SCALE	PROJECT NO.	DATE	DRAWING NO.
GF	1" = 2000'	1425.1	May 2022	1



EXPLANATION

- Qa** Alluvial Gravel, Sand and Clay (Holocene)
sp Serpentinite (Jurassic and Cretaceous)
fg Franciscan Assemblage Greenstone (Jurassic and Cretaceous)
fs Franciscan Assemblage Graywacke Sandstone (Jurassic and Cretaceous)
fc Franciscan Assemblage Chert (Jurassic and Cretaceous)
fl Franciscan Assemblage Limestone (Jurassic and Cretaceous)

BASE: Thomas Dibblee, Jr., 2005, Geologic Map of the Morgan Hill and Mt. Madonna Quadrangles, Santa Clara County, Dibblee Geology Center Maps #DF-159 and DF-168

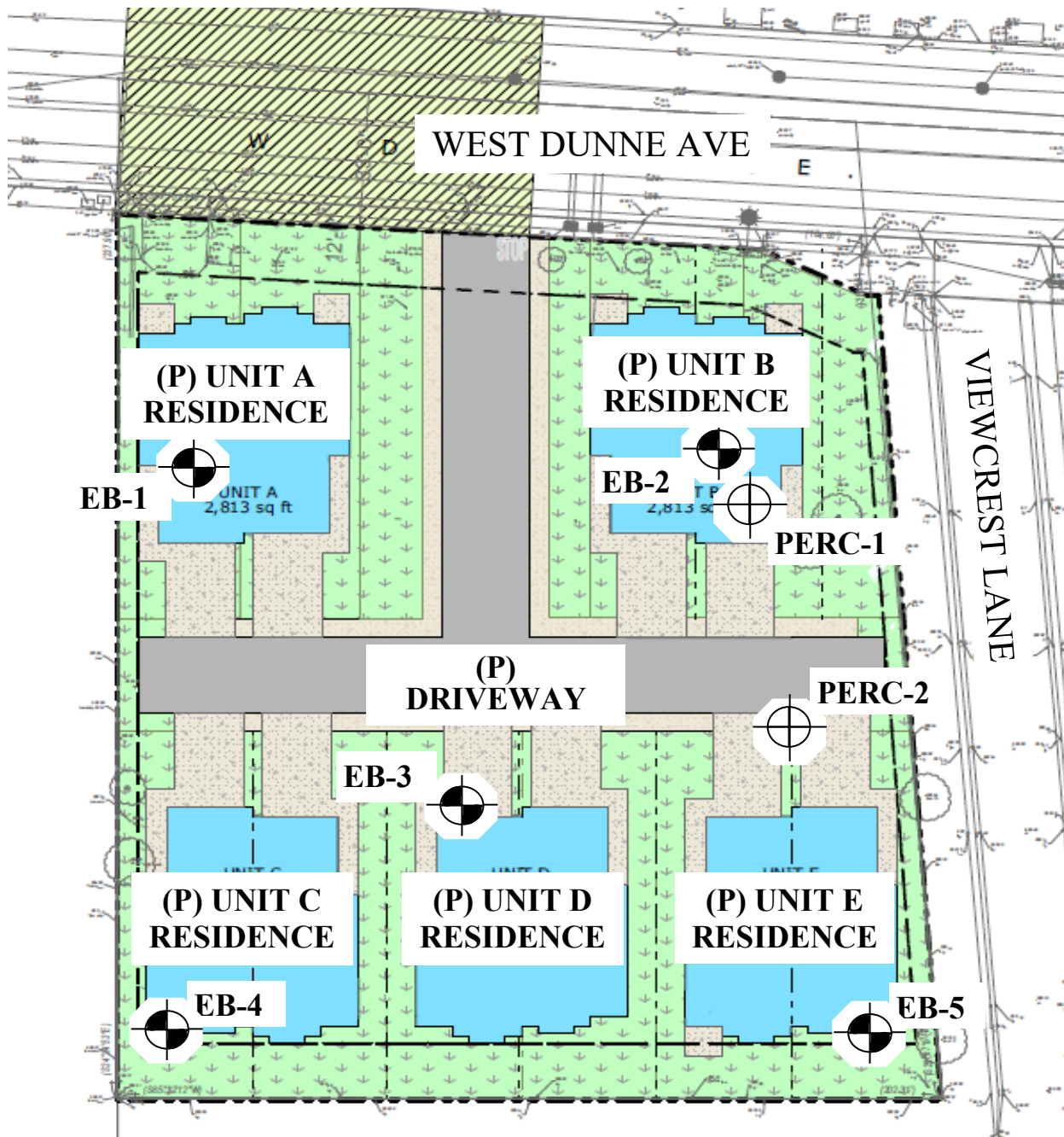
LOCAL GEOLOGIC MAP



CLEARY CONSULTANTS, INC.
Geotechnical Engineers and Geologists

FIVE NEW RESIDENCE BUILDINGS
 270 West Dunne Avenue
 Morgan Hill, California

APPROVED BY	SCALE	PROJECT NO.	DATE	DRAWING NO.
GF	1" = 2000'	1425.1	May 2022	2



EXPLANATION

EB-1  Approximate Location of Exploratory Boring

PERC-1  Approximate Location of Percolation Test Hole

BASE: Prepared by Weston Miles Architects, Dated July 12, 2021

SITE PLAN



CLEARY CONSULTANTS, INC.
Geotechnical Engineers and Geologists

FIVE NEW RESIDENCE BUILDINGS
270 West Dunne Avenue
Morgan Hill, California

APPROVED BY	SCALE	PROJECT NO.	DATE	DRAWING NO.
GF	1" = 40' ±	1425.1	May 2022	3

PRIMARY DIVISIONS			GROUP SYMBOL	SECONDARY DIVISION
COARSE GRAINED SOILS MORE THAN HALF OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVELS MORE THAN HALF OF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE	CLEAN GRAVELS (LESS THAN 5% FINES)	GW	Well graded gravels, gravel-sand mixtures, little or no fines
		GRAVEL WITH FINES	GP	Poorly graded gravels or gravel-sand mixtures, little or no fines
			GM	Silty gravels, gravel-sand-silt mixtures, non-plastic fines
			GC	Clayey gravels, gravel-sand-clay mixtures, plastic fines
	SANDS MORE THAN HALF OF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE	CLEAN SANDS (LESS THAN 5% FINES)	SW	Well graded sands, gravelly sands, little or no fines
		SANDS WITH FINES	SP	Poorly graded sands or gravelly sands, little or no fines
			SM	Silty sands, sand-silt mixtures, non-plastic fines
			SC	Clayey sands, sand-clay mixtures, plastic fines
FINE GRAINED SOILS MORE THAN HALF OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS LIQUID LIMIT IS LESS THAN 50%		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
			OL	Organic silts and organic silty clays of low plasticity
	SILTS AND CLAYS LIQUID LIMIT IS GREATER THAN 50%		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
			CH	Inorganic clays of high plasticity, fat clays
			OH	Organic clays of medium to high plasticity, organic silts
	HIGHLY ORGANIC SOILS			Pt

UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D-2487)

U.S. STANDARD SERIES SIEVE

CLEAR SQUARE SIEVE OPENINGS

200

40

10

4

3/4"

3"

12"

SILTS AND CLAYS	SAND			GRAVEL		COBBLES	BOULDERS
	FINE	MEDIUM	COARSE	FINE	COARSE		

GRAIN SIZES

SANDS AND GRAVELS	BLOWS/FOOT ↕	SILTS AND CLAYS	STRENGTH ☆	BLOWS/FOOT ↕
VERY LOOSE	0 - 4	VERY SOFT	0 - 1/4	0 - 2
LOOSE	4 - 10	SOFT	1/4 - 1/2	2 - 4
MEDIUM DENSE	10 - 30	FIRM	1/2 - 1	4 - 8
DENSE	30 - 50	STIFF	1 - 2	8 - 16
VERY DENSE	OVER 50	VERY STIFF	2 - 4	16 - 32
		HARD	OVER 4	OVER 32

RELATIVE DENSITY

CONSISTENCY

↕ Number of blows of 140 pound hammer falling 30 inches to drive a 2 inch O.D. (1-3/8 inch I.D.) split barrel (ASTM D-1586).

☆ Unconfined compressive strength in tons/sq.ft. as determined by laboratory testing or approximated by the standard penetration test (ASTM D-1586), pocket penetrometer, torvane, or visual observation.

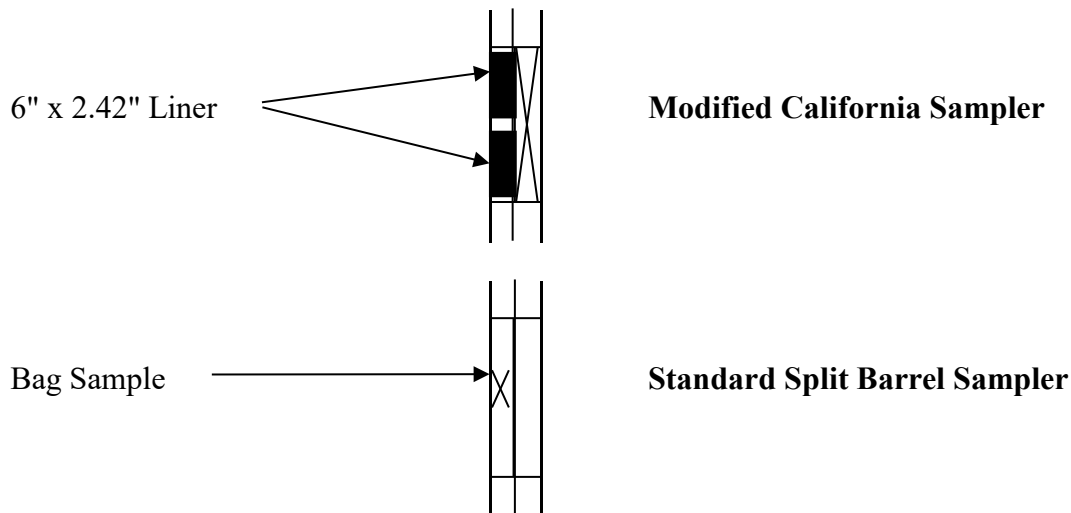
 CLEARY CONSULTANTS, INC. <i>Geotechnical Engineers and Geologists</i>	KEY TO EXPLORATORY BORING LOGS		
	FIVE NEW RESIDENCE BUILDINGS 270 West Dunne Avenue Morgan Hill, California		
	PROJECT NO.	DATE	DRAWING NO.
	1425.1	May 2022	4

FIELD SAMPLING PROCEDURES

The soils encountered in the borings were continuously logged in the field by our representative and described in accordance with the Unified Soil Classification System (ASTM D-2487).

Representative soil samples were obtained from the borings at selected depths appropriate to the soil investigation. All samples were returned to our laboratory for classification and testing.

In accordance with the ASTM D1586 procedure, the standard penetration resistance was obtained by dropping a 140 pound hammer through a 30-inch free fall. The 2-inch O.D. Standard split barrel sampler was driven 18 inches or to practical refusal and the number of blows were recorded for each 6-inch penetration interval. The blows per foot recorded on the boring logs represent the accumulated number of blows, or N-value, required to drive the penetration sampler the final 12 inches. In addition, 3-inch O.D. x 2.42-inch I.D. drive samples were obtained using a Modified California Sampler and 140 pound hammer. Blow counts for the Modified California Sampler were converted to standard penetration resistance by multiplying by 0.6. The sampler type is shown on the boring logs in accordance with the designation below.



Where obtained, the shear strength of the soil samples using either Torvane (TV) or Pocket Penetrometer (PP) devices is shown on the boring logs in the far right hand column.

 CLEARY CONSULTANTS, INC. <i>Geotechnical Engineers and Geologists</i>	SUMMARY OF FIELD SAMPLING PROCEDURES		
	FIVE NEW RESIDENCE BUILDINGS 270 West Dunne Avenue Morgan Hill, California		
	PROJECT NO.	DATE	DRAWING NO.
	1425.1	May 2022	5

LABORATORY TESTING PROCEDURES

The laboratory testing program was directed toward a quantitative and qualitative evaluation of the physical and mechanical properties of the soils underlying the site.

The natural water content was determined on 34 samples of the materials recovered from the borings in accordance with the ASTM D2216 Test Procedure. These water contents are recorded on the boring logs at the appropriate sample depths.

Dry density determinations were performed on 19 samples to measure the unit weight of the subsurface soils in accordance with the ASTM D2937 Test Procedure. The results of these tests are shown on the boring logs at the appropriate sample depths.

Atterberg Limit determinations were performed on seven samples of the subsurface soils in accordance with the ASTM D4318 Test Procedure to determine the range of water contents over which the materials exhibited plasticity. The Atterberg Limits are used to classify the soils in accordance with the Unified Soil Classification System and to evaluate the soil's expansion potential. The results of these tests are presented on Drawing 12, and on the boring logs at the appropriate sample depths.

The percent soil fraction passing the #4 sieve and #200 sieves were determined on 18 samples of the subsurface soils in accordance with the ASTM D1140 Test Procedure to aid in the classification of the soils. The results of these tests are shown on the boring logs at the appropriate sample depths.

Free swell tests were performed on 18 samples of the soil materials to evaluate the swelling potential of the soil. The free swell tests were performed by slowly pouring 10 ml of air-dried soil passing the No. 40 sieve into a 100 ml graduated cylinder filled with approximately 90 ml of distilled water. The suspension was stirred repeatedly to ensure thorough wetting of the soil specimen. The graduated cylinder was then filled with distilled water to the 100 ml mark and allowed to settle until equilibrium was reached (approximately 24 hours). The free swell volume of the soil was then noted. The percent free swell was calculated by subtracting the initial soil volume from the free swell volume, dividing the difference by the initial volume, and multiplying the result by 100 percent. The results of these tests are presented on the boring logs.

R-Value tests were performed by Cooper Testing Laboratory on representative samples of the subgrade soils to provide data for the pavement design. The tests were performed in accordance with California Test Method 301-F on both untreated material and on material chemically-treated with a five percent mixture of 50 percent hi-calcium quicklime and 50 percent Portland cement, and indicated R-Values of 10 and 53, respectively, at an exudation pressure of 300 pounds per square inch. The results of the tests are presented on Drawings 13 and 14.

Corrosion testing was performed on a composite sample of the surficial soil materials from the site. Testing included resistivity, pH, chloride and sulfate testing performed in accordance with ASTM G57, ASTM G51, Caltrans 422 (modified) and Caltrans 417 (modified), respectively. The results of these tests are presented on Drawing 15 and are discussed in Section I. Soil Corrosivity.

DRAWING NO. 6

EQUIPMENT 6" Diameter Solid Flight Auger*		ELEVATION ---		LOGGED BY DL					
DEPTH TO GROUNDWATER Not Enc.		DEPTH TO BEDROCK Not Enc.		DATE DRILLED 9/1/2021					
DESCRIPTION AND CLASSIFICATION				DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	WATER CONTENT (%)	DRY DENSITY (PCF)	SHEAR STRENGTH (KSF)
DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE						
Planter CLAYEY TO SILTY SAND, slightly moist, fine to coarse grained sand, occasional fine subangular to subrounded gravel, weathered sandstone fragments, iron staining @1.5': Liquid Limit = 42% Plasticity Index = 16% Finer Than #4 = 90% Finer Than #200 = 23% Free Swell = 60% @2.0': moist @3.0': Finer Than #4 = 97% Finer Than #200 = 47% Free Swell = 60% @8.5': slightly moist Finer Than #4 = 100% Finer Than #200 = 46% Free Swell = 70%	Yellowish Brown	Very Dense	SC-SM	1		53/10"	4	109	
				2		50/5"	11	117	
				3		45/4"	13		
	Yellowish Brown to Reddish Brown			4		62/6"	19		
				5					
				6					
			SC	7					
				8					
				9		42/5"	9	99	
Bottom of Boring = 9.0' (Practical Drilling Refusal)				10					
					11				
					12				
					13				
					14				
					15				
					16				
					17				
					18				
					19				
					20				
* Drilled with CME-75 Truck Mounted Rig									
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL									
 CLEARY CONSULTANTS, INC. <i>Geotechnical Engineers and Geologists</i>	LOG OF EXPLORATORY BORING NO. 1 FIVE NEW RESIDENCES 270 West Dunne Avenue Morgan Hill, California								
	PROJECT NO.			DATE			DRAWING NO.		
	1425.1			May 2022			7		
	Page 263 of 877								

EQUIPMENT6" Diameter Solid Flight Auger*		ELEVATION---		LOGGED BYDL					
DEPTH TO GROUNDWATERNot Enc.		DEPTH TO BEDROCKNot Enc.		DATE DRILLED9/1/2021					
DESCRIPTION AND CLASSIFICATION				DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	WATER CONTENT (%)	DRY DENSITY (PCF)	SHEAR STRENGTH (KSF)
DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE						
Irrigated Grass Lawn SILTY SAND, moist, fine to occasionally coarse grained sand, occasional fine subangular to subrounded gravel, fine rootlets @1.5': Liquid Limit = 44% Plasticity Index = 17% Finer Than #4 = 90% Finer Than #200 = 36% Free Swell = 50%	Brown to Yellowish Brown	Dense	SM	1		35	15	95	
		Medium Dense		2					
					3		22	10	
CLAYEY SAND, moist, fine to occasionally coarse grained sand, severely weathered sandstone fragments @4.0': Finer Than #4 = 92% Finer Than #200 = 37% Free Swell = 60% @8.5': Finer Than #4 = 98% Finer Than #200 = 47% Free Swell = 70% @14.0': slightly moist	Yellowish Brown to Reddish Brown	Very Dense	SC-SM	4		30/4"	14	109	
				5		52/6"	15		
				6					
			SC	7					
		8							
		9			36/4"	10	126		
		10							
		11							
		12							
		13							
		14			33/4"	6	114		
Bottom of Boring = 14.0' (Practical Drilling Refusal) * Drilled with CME-75 Truck Mounted Rig				15					
				16					
				17					
				18					
				19					
				20					

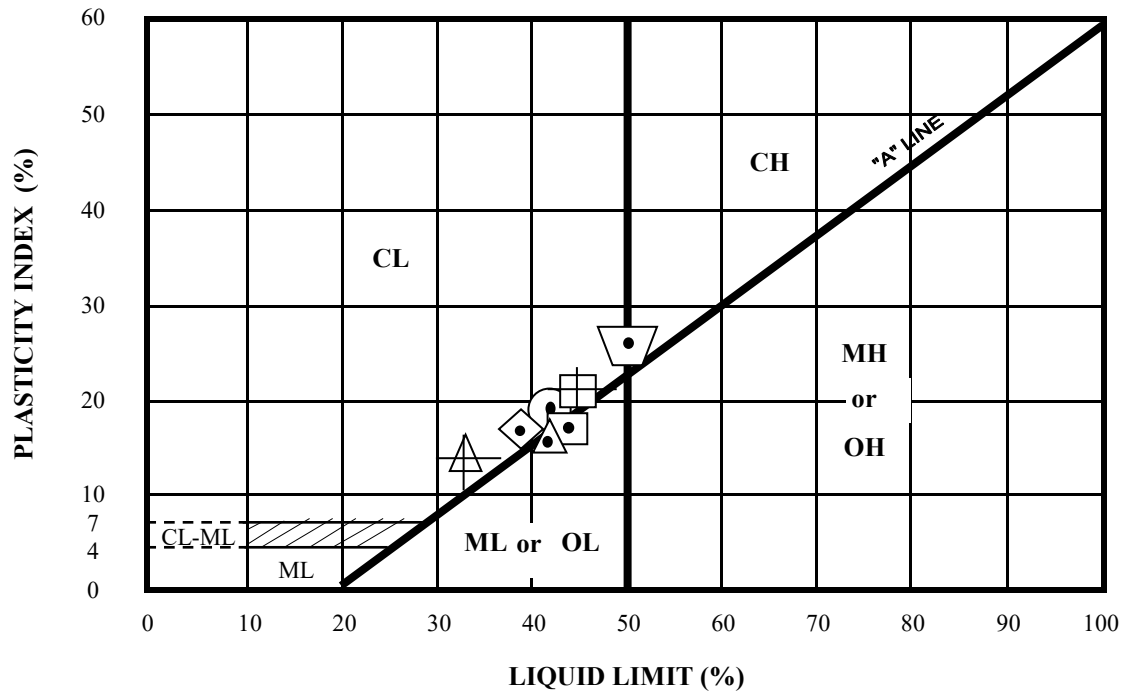
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL

 CLEARY CONSULTANTS, INC. <i>Geotechnical Engineers and Geologists</i>	LOG OF EXPLORATORY BORING NO. 2		
	FIVE NEW RESIDENCES 270 West Dunne Avenue Morgan Hill, California		
	PROJECT NO.	DATE	DRAWING NO.
	1425.1	May 2022	8

EQUIPMENT	6" Diameter Solid Flight Auger*	ELEVATION	---	LOGGED BY		DL									
DEPTH TO GROUNDWATER		Not Enc.		DEPTH TO BEDROCK		Not Enc.		DATE DRILLED		9/1/2021					
DESCRIPTION AND CLASSIFICATION										DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	WATER CONTENT (%)	DRY DENSITY (PCF)	SHEAR STRENGTH (KSF)
DESCRIPTION AND REMARKS				COLOR	CONSIST.	SOIL TYPE									
Soil Landscape SANDY CLAY, slightly moist, fine to coarse grained sand, occasional fine subangular to subrounded gravel, weathered sandstone fragments @1.5': Liquid Limit = 39% Plasticity Index = 17% Finer Than #4 = 95% Finer Than #200 = 57% Free Swell = 60% @3.0': moist Liquid Limit = 50% Plasticity Index = 26% Finer Than #4 = 88% Finer Than #200 = 56% Free Swell = 80% @4.0': Finer Than #4 = 97% Finer Than #200 = 72% Free Swell = 100% @8.5': Finer Than #4 = 100% Finer Than #200 = 61% Free Swell = 70%				Brown to Reddish Brown	Very Stiff	CL	1		32	5	9	83			
							2								
				Yellowish Brown to Reddish Brown	Hard	CL- CH	3		42	13	99				
							4								
							5								
				Yellowish Brown		CL	6		82/11"	16					
							7								
							8		54/5"	10	108				
							9								
				Bottom of Boring = 9.0' (Practical Drilling Refusal) * Drilled with CME-75 Truck Mounted Rig							10				
11															
12															
13															
14															
15															
16															
17															
18															
19															
20															
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL															
 CLEARY CONSULTANTS, INC. Geotechnical Engineers and Geologists				LOG OF EXPLORATORY BORING NO. 3											
				FIVE NEW RESIDENCES 270 West Dunne Avenue Morgan Hill, California											
				PROJECT NO.				DATE				DRAWING NO.			
				1425.1				May 2022				9			

EQUIPMENT	6" Diameter Solid Flight Auger*	ELEVATION	---	LOGGED BY	DL				
DEPTH TO GROUNDWATER	Not Enc.	DEPTH TO BEDROCK	Not Enc.	DATE DRILLED	9/1/2021				
DESCRIPTION AND CLASSIFICATION				DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	WATER CONTENT (%)	DRY DENSITY (PCF)	SHEAR STRENGTH (KSF)
DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE						
Soil Landscape SANDY CLAY, slightly moist, fine to coarse grained sand, occasional fine subangular to subrounded gravel, iron staining @1.5': Liquid Limit = 42% Plasticity Index = 19% Finer Than #4 = 91% Finer Than #200 = 55% Free Swell = 70% @4.5': Finer Than #4 = 98% Finer Than #200 = 60% Free Swell = 60%	Brown to Reddish Brown	Very Stiff Hard	CL	1 2 3 4 5 6 7		25 32 59 75	7 12 12 13 13	98 103	
SILTY SAND, moist, fine to occasionally coarse grained sand, weathered sandstone fragments @8.5': Finer Than #4 = 97% Finer Than #200 = 16% Free Swell = 30% @13.5': friable	Yellowish Brown	Very Dense	SM	8 9 10 11 12 13 14		45/6" 60/5"	11 8	117 107	
Bottom of Boring = 14.0' (Practical Drilling Refusal) <									

EQUIPMENT6" Diameter Solid Flight Auger*		ELEVATION---		LOGGED BYDL					
DEPTH TO GROUNDWATERNot Enc.		DEPTH TO BEDROCKNot Enc.		DATE DRILLED9/1/2021					
DESCRIPTION AND CLASSIFICATION				DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	WATER CONTENT (%)	DRY DENSITY (PCF)	SHEAR STRENGTH (KSF)
DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE						
Soil Landscape SANDY CLAY, slightly moist, fine to coarse grained sand, occasional fine subangular to subrounded gravel, weathered sandstone fragments, iron staining @1.0': Finer Than #4 = 95% Finer Than #200 = 56% Free Swell = 60% @2.5': Liquid Limit = 33% Plasticity Index = 14% Finer Than #4 = 97% Finer Than #200 = 59% Free Swell = 50% @3.5': moist @5.0': Liquid Limit = 45% Plasticity Index = 21% Finer Than #4 = 86% Finer Than #200 = 52% Free Swell = 70% @9.5': Finer Than #4 = 91% Finer Than #200 = 56% Free Swell = 100% @13.5': Finer Than #4 = 100% Finer Than #200 = 59% Free Swell = 80%	Brown to Reddish Brown	Hard	CL	1		43/6"	10	107	
				2		45	9		
				3					
				4		34/5"	17	111	
				5		66	14		
				6					
				7					
				8					
				9		62	18	104	
				10			19	117	
				11					
				12					
				13					
				14		48/6"	12	118	
Bottom of Boring = 14.0' (Practical Drilling Refusal) 									



KEY SYMBOL	BORING NO.	SAMPLE DEPTH (feet)	NATURAL WATER CONTENT %	LIQUID LIMIT %	PLASTICITY INDEX %	PASSING NO. 200 SIEVE %	LIQUIDITY INDEX	UNIFIED SOIL CLASSIFICATION SYMBOL
	1	1.5	11	42	16	23	-0.9	SC - SM*
	2	1.5	11	44	17	36	-0.9	SM*
	3	1.5	9	39	17	57	-0.8	CL
	3	3.0	27	50	26	56	0.1	CL - CH
	4	1.5	12	42	19	55	-0.6	CL
	5	2.5	9	33	14	59	-0.7	CL
	5	5.0	14	45	21	52	-0.5	CL

*Classified as coarse-grained soil since less than 50% passes #200 sieve

PLASTICITY CHART

FIVE NEW RESIDENCE BUILDINGS

270 West Dunne Avenue

Morgan Hill, California

PROJECT NO.

1425.1

DATE

May 2022

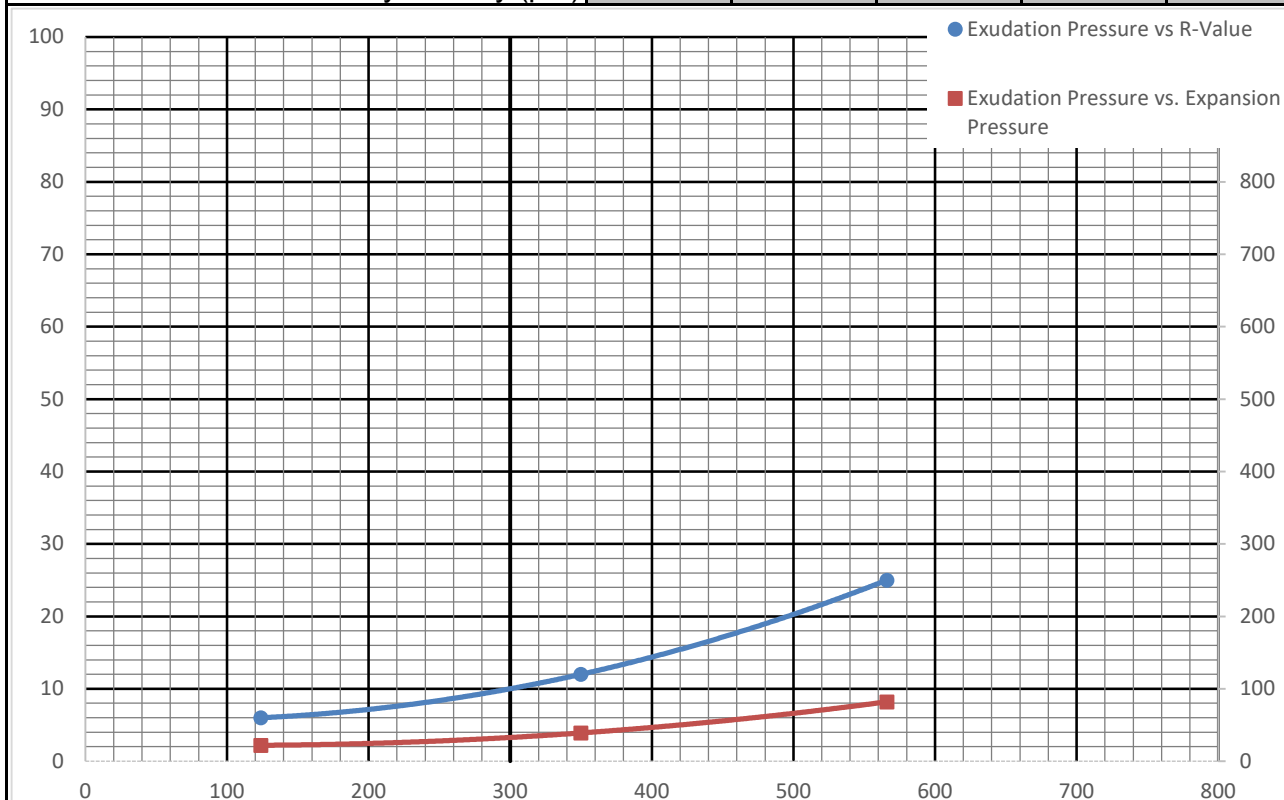
DRAWING NO.

12



R-Value CTM 301

CTL Job No.:	018-1096	Boring:	1-5	Reduced By:	RU
Client:	Cleary Consultants, Inc.	Sample:		Checked By:	PJ
Project Number:	1425.1	Depth:	0.5-3.0	Date:	11/2/2021
Project Name:	270 West Dunne Ave, Five New Residence Buildings			R-Value	10
Soil Description:	Reddish Brown Clayey Sand			Expansion Pressure	35
Remarks:					
Specimen Designation	A	B	C	D	E
Compactor Foot Pressure (psi)	90	70	230		
Exudation Pressure (psi)	350	124	566		
Exudation Load (lbf)	4398	1558	7113		
Height After Compaction (in)	2.67	2.49	2.43		
Expansion Pressure (psf)	39	22	82		
Stabilometer @ 2000	130	138	110		
Turns Displacement	4.80	5.98	3.26		
R-value	11	6	26		
Corrected R-Value	12	6	25		
Moisture Content (%)	20.3	22.3	18.4		
Wet Density (pcf)	130.9	130.5	134.2		
Dry Density (pcf)	108.8	106.7	113.4		

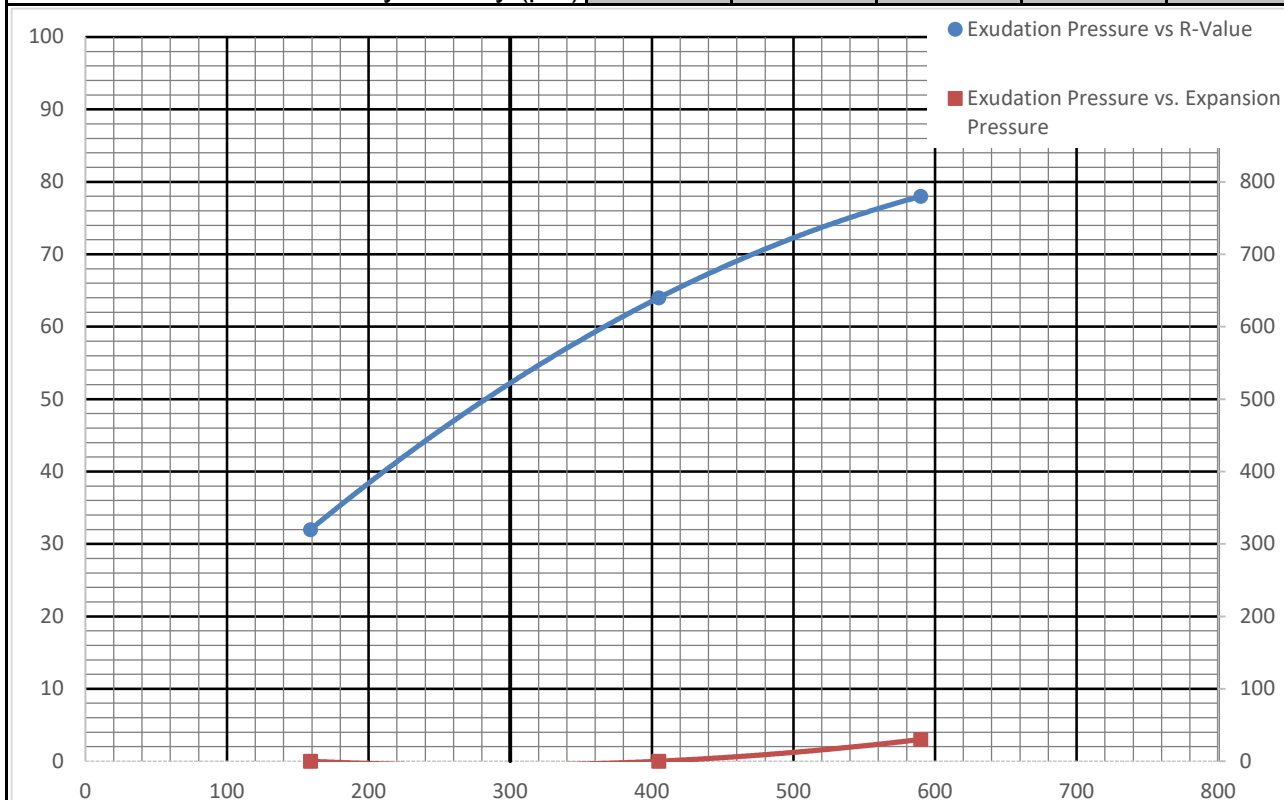


DRAWING NO. 13



R-Value CTM 301

CTL Job No.:	018-1096	Boring:	1-5	Reduced By:	RU
Client:	Cleary Consultants, Inc.	Sample:		Checked By:	PJ
Project Number:	1425.1	Depth:	0.5-3.0	Date:	11/3/2021
Project Name:	270 West Dunne Ave, Five New Residence Buildings			R-Value	53
Soil Description:	Reddish Brown Clayey Sand (+5% QLP)			Expansion Pressure	0
Remarks:					
Specimen Designation	A	B	C	D	E
Compactor Foot Pressure (psi)	220	250	250		
Exudation Pressure (psi)	159	405	590		
Exudation Load (lbf)	1998	5089	7414		
Height After Compaction (in)	2.51	2.44	2.54		
Expansion Pressure (psf)	0	0	30		
Stabilometer @ 2000	98	44	26		
Turns Displacement	3.36	3.56	3.58		
R-value	32	65	78		
Corrected R-Value	32	64	78		
Moisture Content (%)	23.9	22.9	22.4		
Wet Density (pcf)	125.5	127.3	127.9		
Dry Density (pcf)	101.3	103.6	104.5		

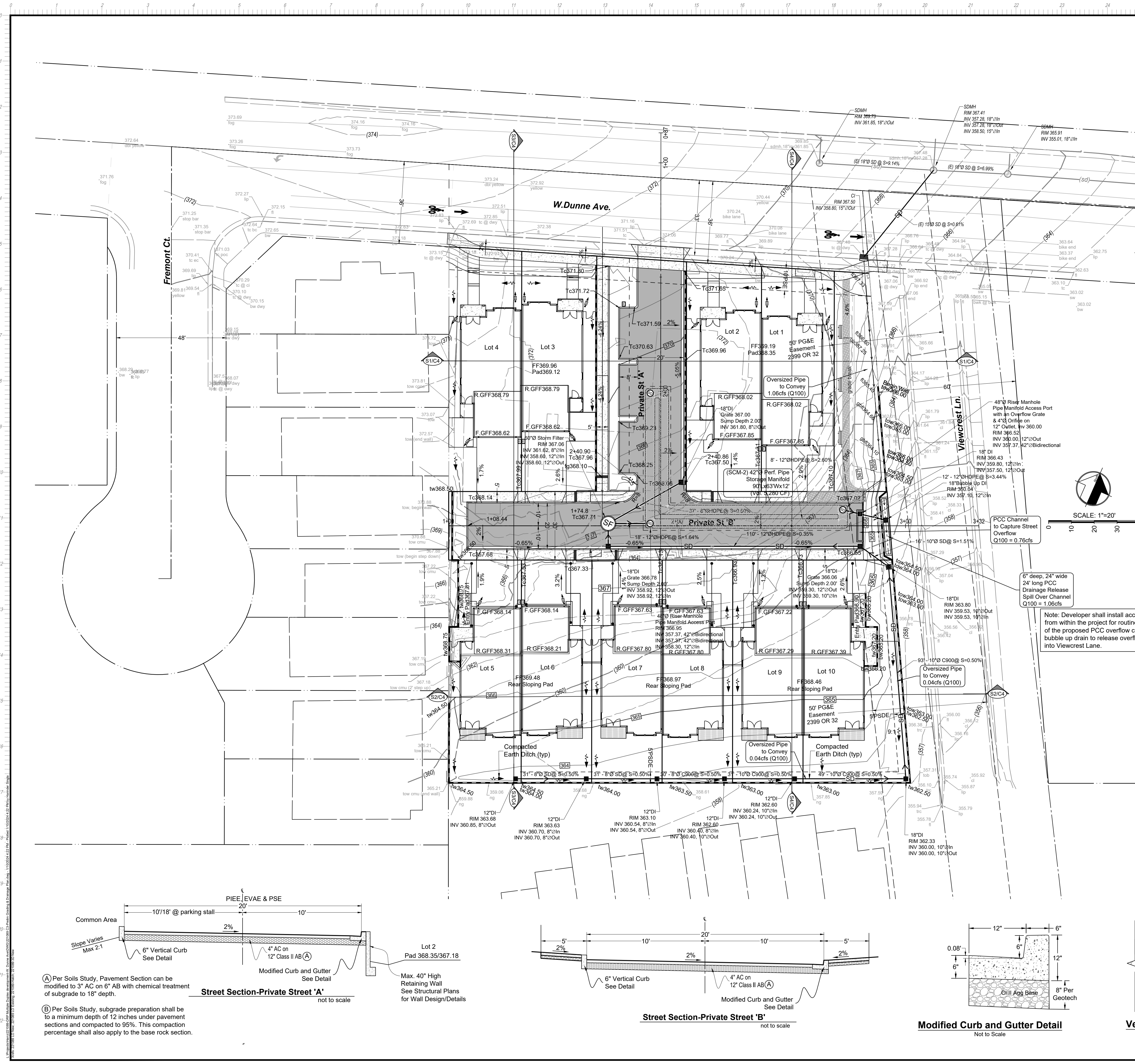


DRAWING NO. 14



Checked:	PJ
Proj. No:	1425.1

DRAWING NO. 15
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- GRADING AND SITE PREPARATION NOTES:**
- ALL AREAS TO RECEIVE FILL SHALL BE STRIPPED TO A DEPTH DETERMINED BY THE SOILS ENGINEER. ANY A.C. OR P.C.C. PAVING SHALL BE SCARIFIED & REMOVED & SUBGRADE PREPARED & COMPACTED PER SOILS ENGINEER'S RECOMMENDATIONS PRIOR TO ANY FILLING.
 - ALL MATERIAL TO BE USED AS FILL WITHIN BUILDING PAD AREAS & PARKING OR DRIVEWAY AREAS TO BE FREE OF ALL VEGETATION & FOREIGN MATTER AND SHALL BE APPROVED BY SOILS ENGINEER.
 - BUILDING PADS & DRIVEWAY SUBGRADE SHALL BE COMPACTED PER RECOMMENDATIONS MADE BY THE SOILS ENGINEER.
 - BUILDING PADS SHALL BE LEVEL SIDE-TO-SIDE AND FRONT-TO-REAR, UNLESS OTHERWISE SHOWN.
 - STRIPPINGS MAY BE PLACED IN PLANTING AREA OR BURIED IN DESIGNATED PARK AREAS; ALL EXCESS STRIPPINGS SHALL BE HAULED AWAY. PAVING DEBRIS SHALL BE HAULED AWAY TO AN APPROVED DISPOSAL SITE.
 - ALL WORK SHOWN OR NOTED ON THESE PLANS SHALL BE DONE IN STRICT ACCORDANCE WITH THE RECOMMENDATIONS OF THE SOILS ENGINEER, ALL LOCAL, STATE, AND FEDERAL MINIMUM STANDARDS AND THE LATEST EDITION OF THE UNIFORM BUILDING CODE. NOTIFY SOILS ENGINEER 2 WORKING DAYS PRIOR TO BEGINNING OF ANY GRADING. REFER TO SOILS STUDY BY Cleary Consultants (Project No. 1425.1, Dated May 2022).
 - CONNECTIONS TO EXISTING PUBLIC UTILITIES SHALL BE DONE WITH APPROVAL & IN ACCORDANCE WITH THE UTILITY COMPANY'S REQUIREMENTS.
 - CONTRACTOR SHALL PROTECT ALL EXISTING SITE IMPROVEMENTS NOT SCHEDULED FOR REMOVAL DURING CONSTRUCTION. THEY SHALL REPAIR ANY DAMAGE TO NEW CONDITION AT THEIR EXPENSE.
 - VERIFY ALL EXISTING SITE CONDITIONS, SITE DIMENSIONS AND GRADES PRIOR TO START OF WORK.
 - CONFORM TO THE RECOMMENDATIONS OF THE DRAWINGS, DETAILS AND SITE SOILS REPORT FOR COMPACTION, STRIPPING, GRADING, PAVING AND UTILITY TRENCHES.
 - SOIL COMPACTION TESTS SHALL BE PAID FOR BY THE OWNER/DEVELOPER AS PER NOTE 3.
 - ALL GRADING AND RELATED WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY OF MORGAN HILL AND THE RECOMMENDATION OF THE SOILS ENGINEER.
 - CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING SERVICES AND UNDERGROUND UTILITIES & SEWERS. LOCATIONS SHOWN ON THE PLAN ARE APPROXIMATE AND SHOWN FOR GENERAL INFORMATION ONLY. CONTRACTOR SHALL CALL U.S.A. AT 800-227-2600 48 HOURS PRIOR TO UNDERGROUND WORK FOR FIELD LOCATOR SERVICE.
 - CONTRACTOR SHALL VERIFY THE LOCATIONS OF THE BUILDING AND PARKING IMPROVEMENTS FROM THE ARCHITECT'S DIMENSIONED DRAWING.
 - FOUNDATIONS AND FOOTING DETAILS SHOWN ARE FOR GRADING RELATIONSHIPS ONLY. CONTRACTOR SHALL REFER TO DIMENSIONED STRUCTURAL OR ARCHITECTURAL PLANS FOR ACTUAL DIMENSIONED DETAILS.
 - ANY VOIDS CREATED BY STRUCTURE REMOVAL, TREE REMOVAL, SEPTIC TANK AND LEACH LINE REMOVAL MUST BE BACKFILLED WITH PROPERLY COMPACTED NATIVE SOILS THAT ARE FREE OF ORGANICS & OTHER DELETERIOUS MATERIALS OR WITH APPROVED IMPORT FILL & COMPACTED TO THE SOILS ENGINEER'S RECOMMENDATIONS.
 - IT SHALL BE THE RESPONSIBILITY OF THE GRADING CONTRACTOR, DURING GRADING OPERATION, IN COOPERATION WITH MH ENGINEERING TO VERIFY QUANTITIES OF EARTHWORK. QUANTITIES SHOWN HAVE BEEN DILIGENTLY ESTIMATED BY THE ENGINEER, BASED UPON AVAILABLE INFORMATION. IN ORDER TO ASSIST THE CONTRACTOR, THE GROUND TOPOGRAPHY ELEVATIONS & CONTOURS WERE FURNISHED BY MH Engineering, dated June 2021. MH Engineering DOES NOT GUARANTEE CURRENT ACCURACY OF THE GROUND ELEVATIONS. CONTRACTOR SHALL FIELD VERIFY FOR HIMSELF THAT NO ADDITIONAL GRADING, IMPORTING OR EXPORTING OF EARTH HAS TAKEN PLACE SINCE THE TOPO SURVEY OF PROPERTY.
 - THE EARTHWORK QUANTITIES SHOWN ARE PROVIDED AS A COURTESY AND CONVENIENCE TO THE CONTRACTOR. THE CUT & FILLS SHOWN ARE APPROXIMATE CALCULATED QUANTITIES BASED ON THE DIFFERENCE BETWEEN EXISTING GROUND ELEVATIONS (CONTOURS) & ROUGH GRADE ELEVATIONS. THE CALCULATION MAKES NO PROVISION FOR SCARIFICATION & COMPACTION WORK OR FILLS. FOR THIS REASON & BECAUSE OF VARIABLES SUCH AS COMPACTION, SHRINKAGE & THE CONTRACTOR'S METHOD OF OPERATION, THE VOLUME OF DIRT ACTUALLY MOVED IN THE FIELD WILL PROBABLY VARY TO SOME EXTENT FROM THE CALCULATED VOLUME. FOR THE PURPOSE OF APPROXIMATING THE SHRINKAGE, 12% WAS USED FOR THE FILL VOLUMES.
 - THE CONTRACTOR'S EARTHWORK BID REFLECTS HIS OWN CALCULATION OF THE EARTHWORK COMPACTED & COMPLETE IN PLACE TO THE DETAILS, LINE, AND GRADE SHOWN ON THE PLANS.

Earthwork Summary-----10" Slab Section

Description	Cut	Fill
Strippings loss (2" depth)	Typically Absorbed Onsite	
Streets & Site grading (incl. 12% compaction)	4,079	7,943
Underground Pipe manifold excavation Spoils	200	
Trench Spoils (wet & dry)	900	
Hardscape & Fine Grading-estimate	250	
Net volume	5,429	7,943

Estimated Import 2,514±

Note: all unusable strippings shall be hauled offsite as part of the site clearing and grubbing item of work.

A) Per Soils Study, Pavement Section can be modified to 3" AC on 6" AB with chemical treatment of subgrade to 18" depth.

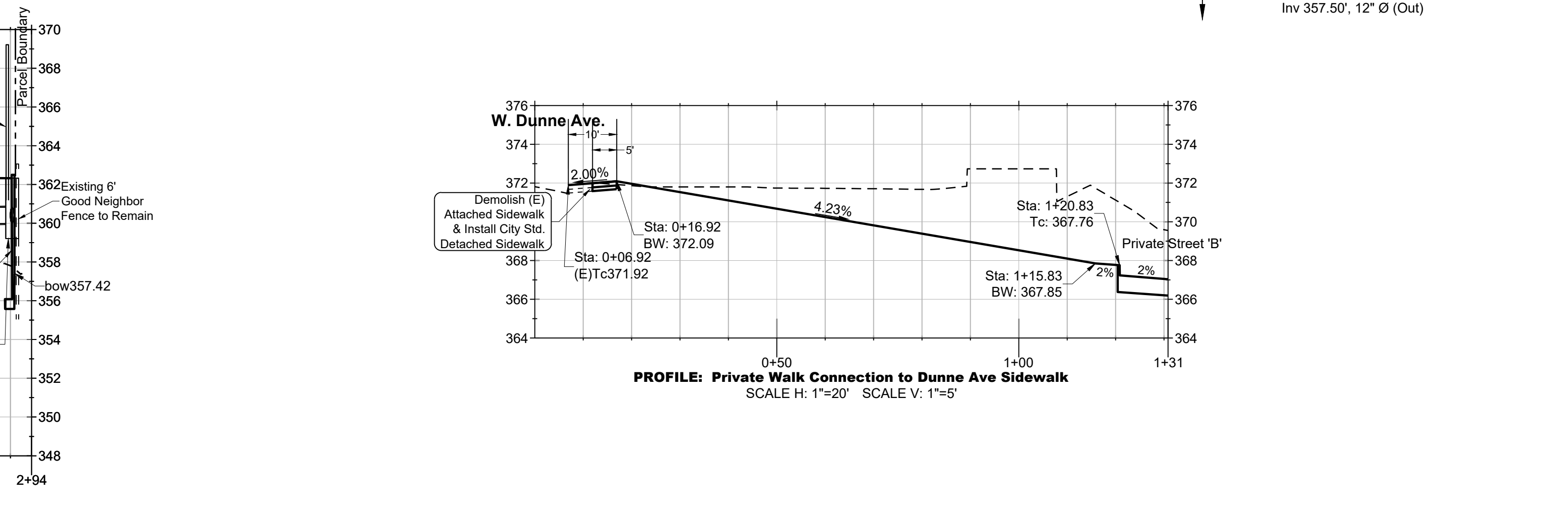
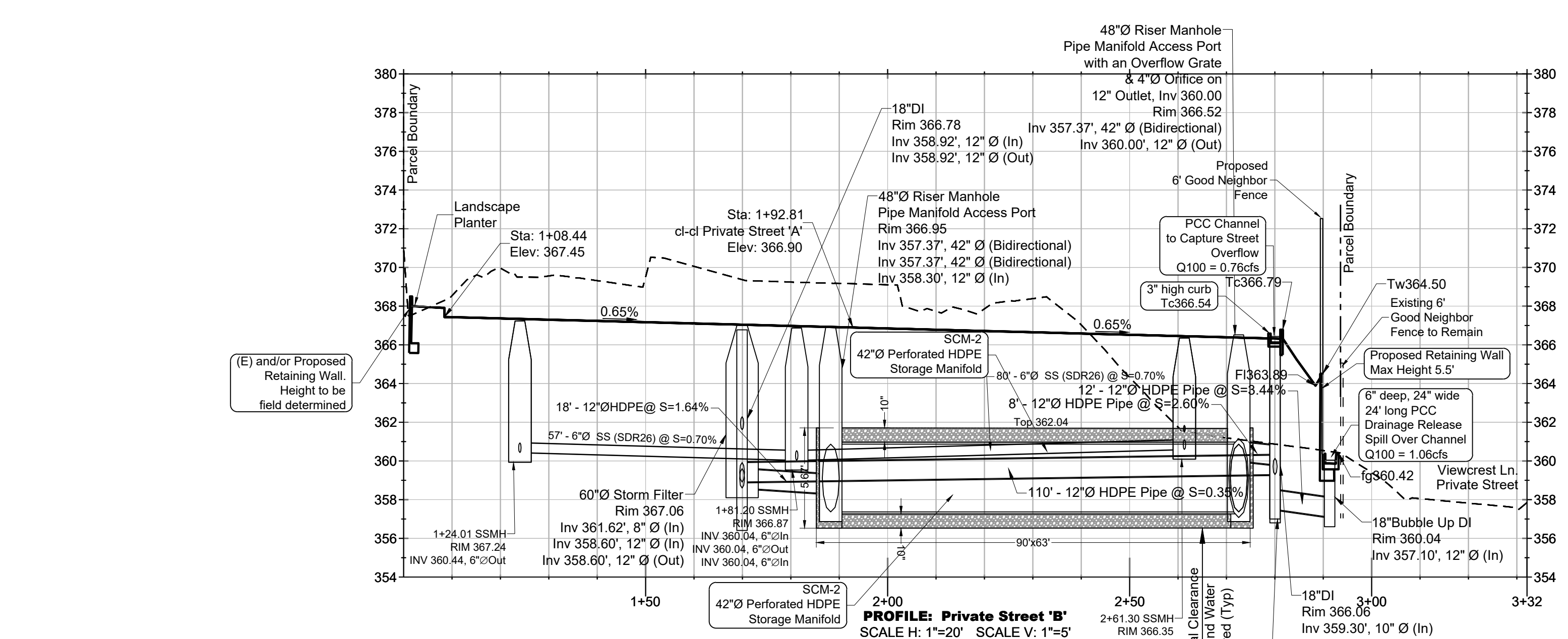
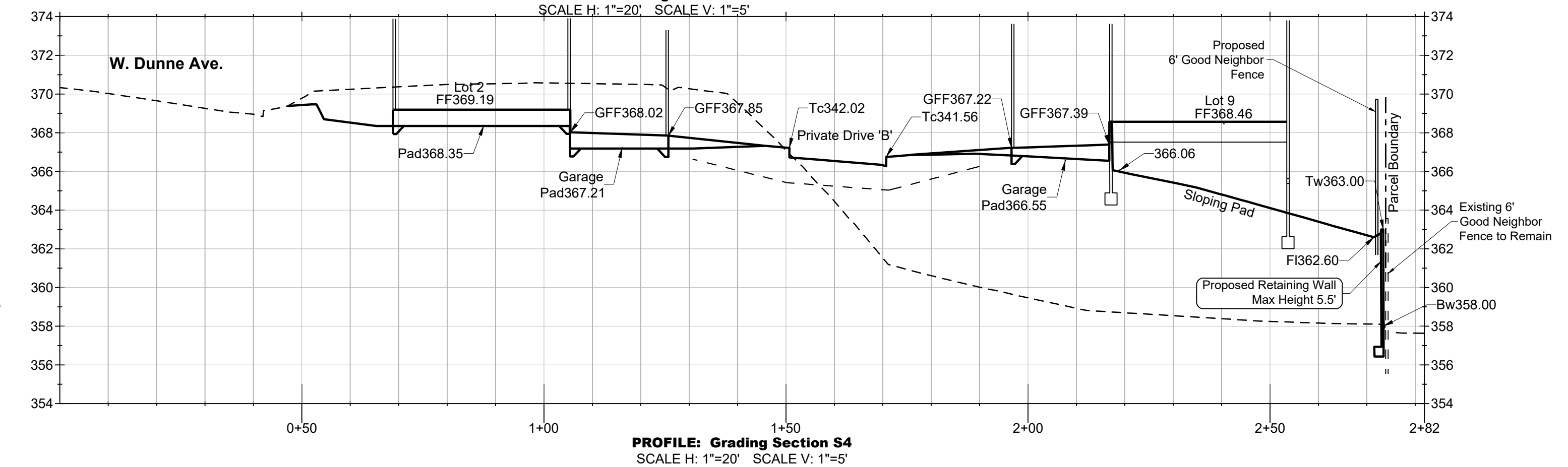
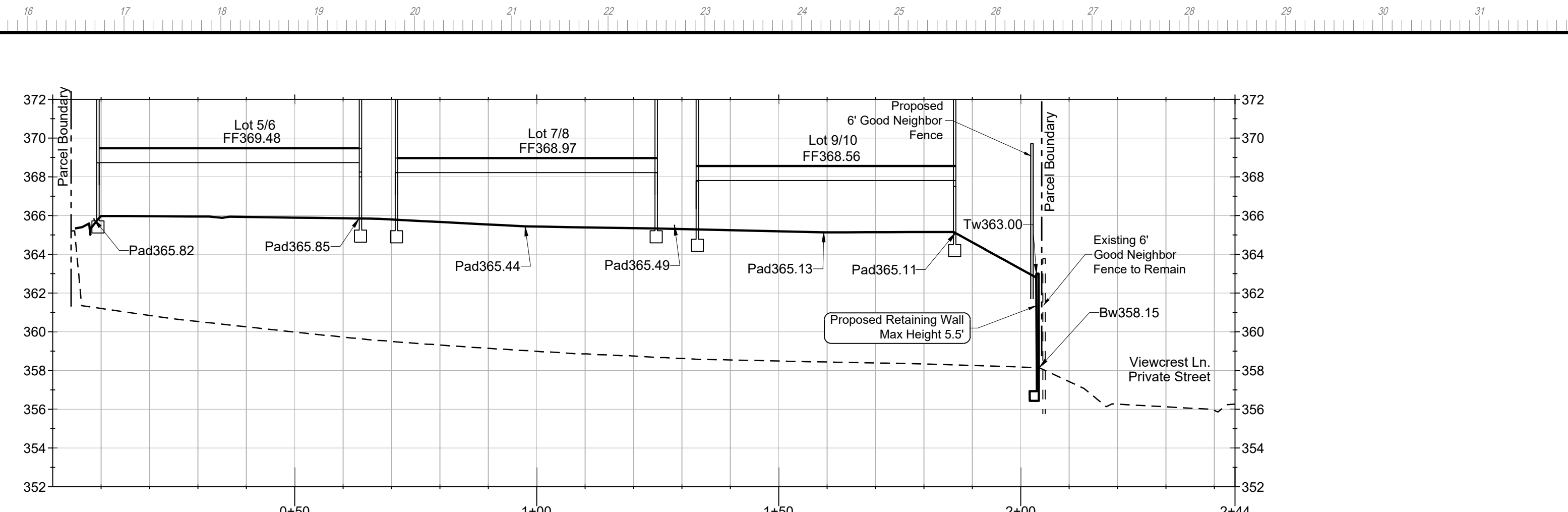
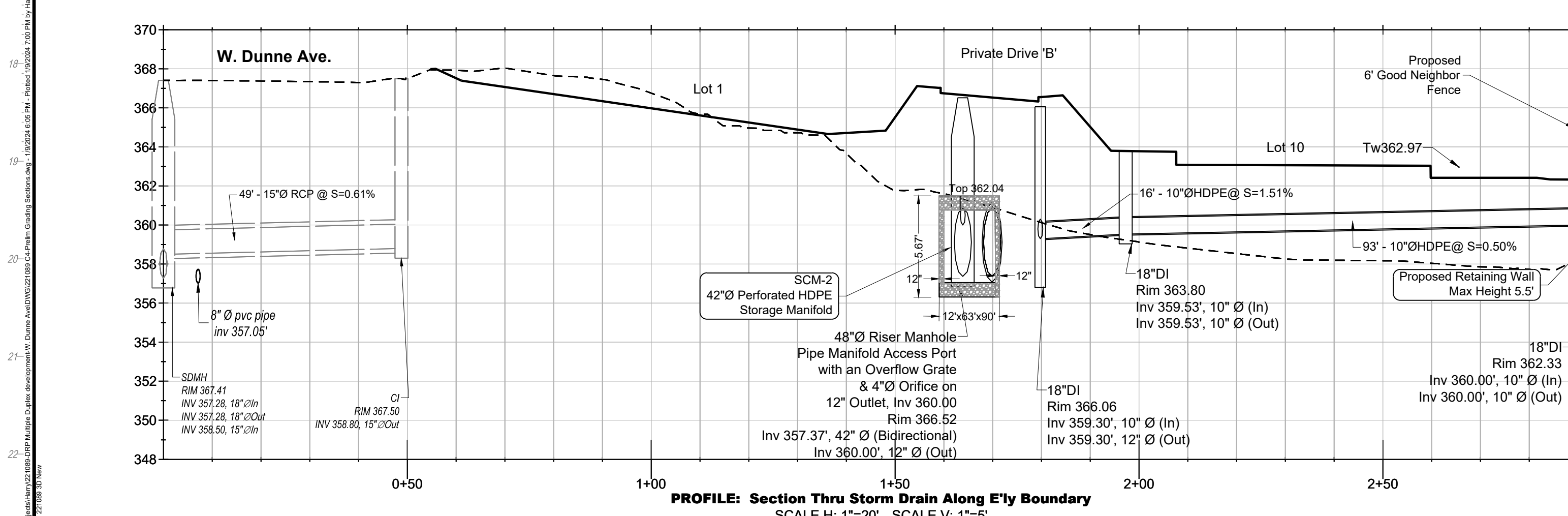
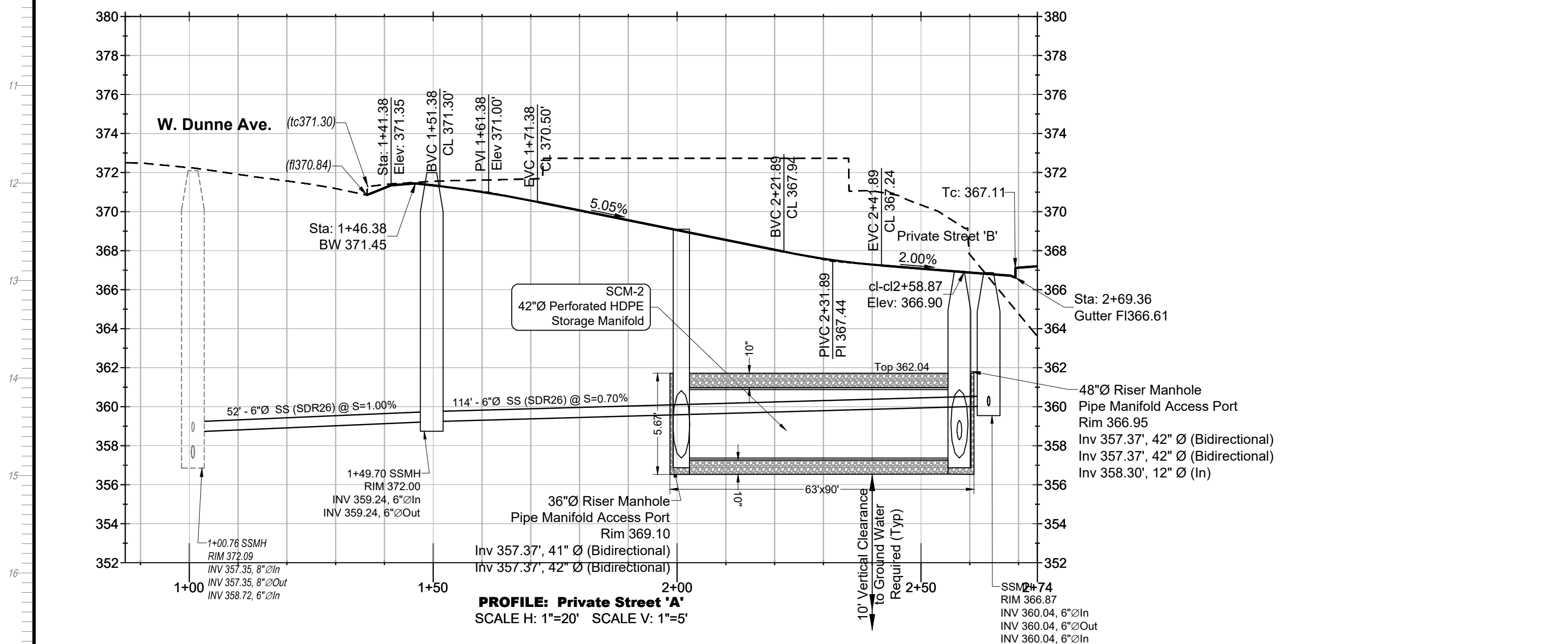
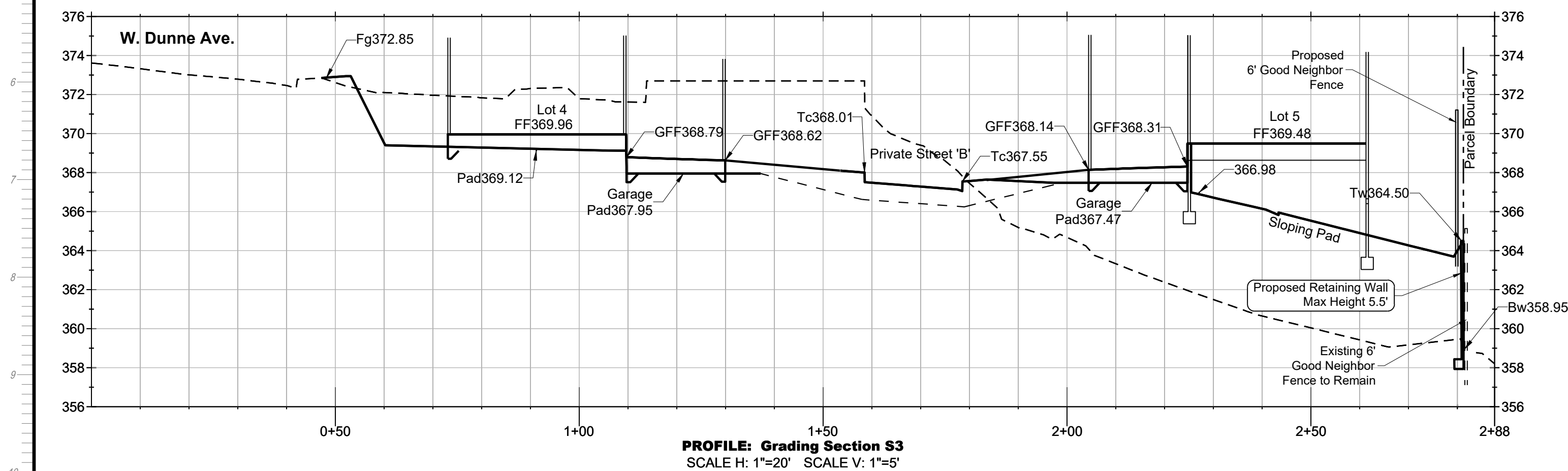
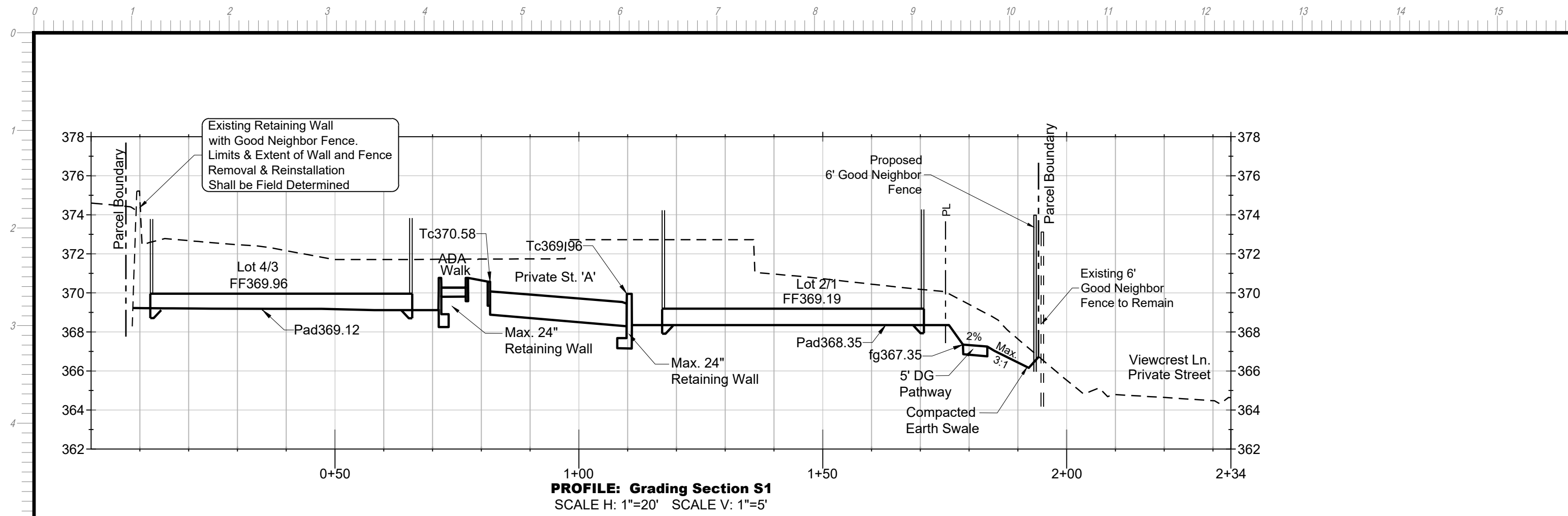
B) Per Soils Study, subgrade preparation shall be to a minimum depth of 12 inches under pavement sections and compacted to 95%. This compaction percentage shall also apply to the base rock section.

Street Section-Private Street 'A'
not to scale

Street Section-Private Street 'B'
not to scale

Modified Curb and Gutter Detail
Not to Scale

Vertical Curb Detail
Not to Scale



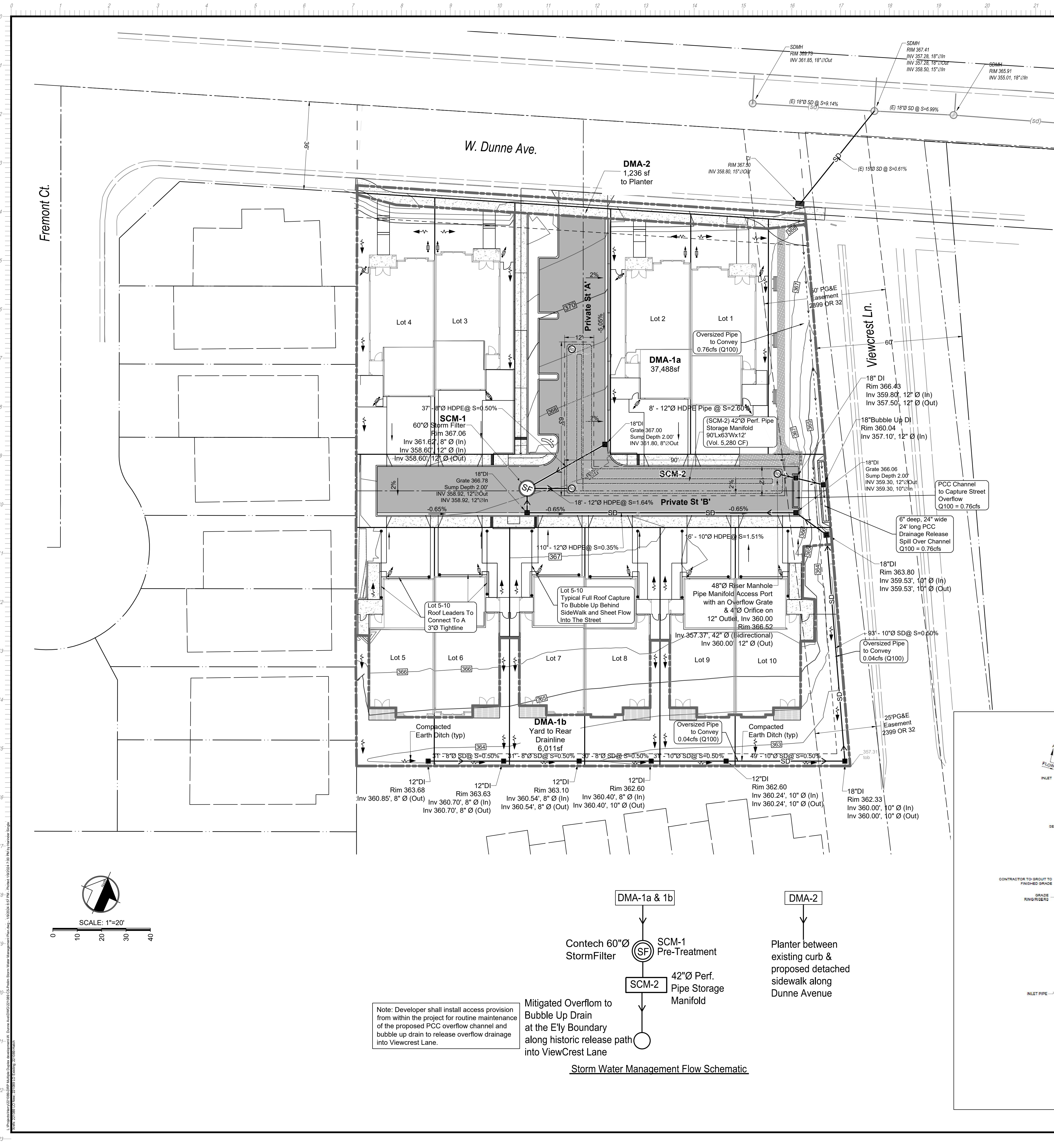
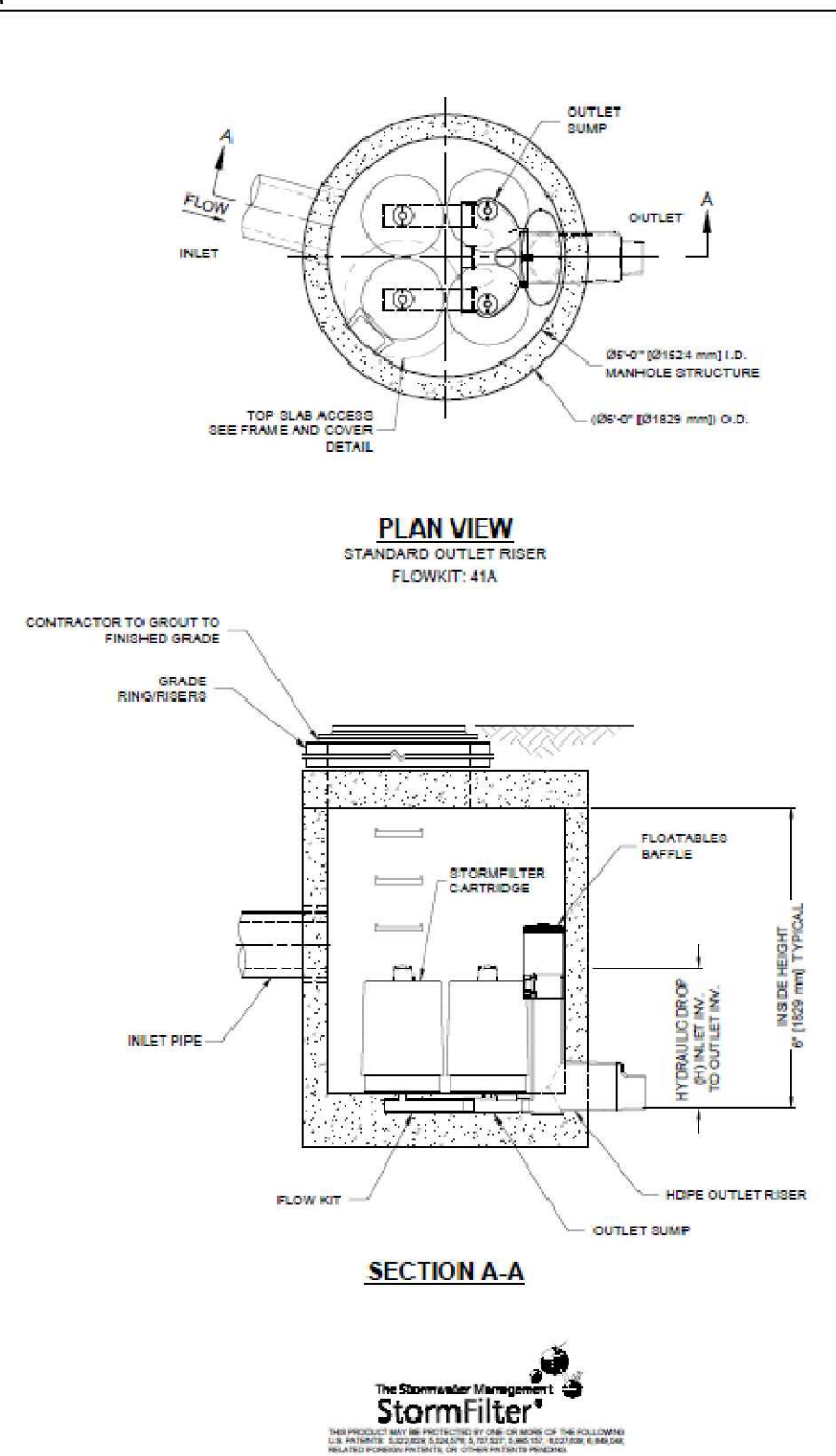


Table 1: Project Data

Project Name/Number	Robertson (SR2022-0023)
Application Submittal Date	Nov. 2022
Project Location	270 W. Dunne Avenue
APN#	767-12-060
Project Type and Description	Residential Project comprising of 10 townhome style attached units and related Access Street improvements
Total Project Site Area (acres)	44,735 sf
Total New Impervious Surface Area	28,314 sf
Total Replaced Impervious Surface Area	1,087 sf
Total Pre-Project Impervious Surface Area	9,608 sf
Total Post-Project Pervious Surface Area	16,421 sf
Net Impervious Area (Exhibit shall be provided to justify net impervious area results)	28,314 sf
Watershed Management Zone(s)	WMZ 1
85 th Design Storm	1.15 inch
95 th Design Storm	1.80 inch

270 W. Dunne Ave - Project LID Area Tabulation					
DMA	DMA area (sf)	DMA Impervious Area (I.A.) sf			Pervious Area (sf)
		Public Hardscape	Roofs, Onsite Driveways & Yard	Private Street & Walks	
1a	37,488	0	19,710	7,517	10,261
1b	6,011	0	0	0	6,011
2	1,236	972	0	0	1,087
Total Area	44,735	972	19,710	7,517	28,314
Total Project Site Gross Area					44,735
Total New Impervious Area					28,314
Total Replaced Impervious Area (Public Sidewalk & Drive Approach)					1,087
Total New Pervious Area					16,421
Net Impervious Area					28,314-22,500 (Tier 4 Project)



STORMFILTER DESIGN NOTES

STORMFILTER TREATMENT CAPACITY IS A FUNCTION OF THE CARTRIDGE SELECTION AND THE NUMBER OF CARTRIDGES. THE STANDARD MANHOLE STYLE IS SHOWN WITH THE MAXIMUM NUMBER OF CARTRIDGES (4). VOLUME SYSTEM IS ALSO AVAILABLE WITH MAXIMUM 4 CARTRIDGES. SEE OF 124 (P) FOR MANHOLE STORMFILTERS. PEAK HYDRAULIC CAPACITY IS 1.0 CFS PER 1.0 L.S.U. IF THE SITE CONDITIONS EXCEED 1.0 CFS PER 1.0 L.S.U. AN UPSTREAM BYPASS STRUCTURE IS REQUIRED.

CARTRIDGE SELECTION	21" (888 mm)	18" (688 mm)	LOW DROP
CARTRIDGE HEIGHT	21" (888 mm)	18" (688 mm)	18" (688 mm)
RECOMMENDED HYDRAULIC DRAINAGE	2.1 (30)	1.67 (1.08)	1.0 (0.65)
SPECIFIC FLOW RATE (gpm/sq ft)	2.1 (30)	1.67 (1.08)	1.0 (0.65)
CARTRIDGE FLOW RATE (gpm/sq ft)	2.1 (30)	1.67 (1.08)	1.0 (0.65)

1.15" gpm/sq ft (1.0 L.S.U.) SPECIFIC FLOW RATE IS APPROVED WITH PROPHOCON® (PFC) MEDIA ONLY.

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID	WATER QUALITY FLOW RATE (GPM)	PEAK FLOW RATE (GPM)	RETURN PERIOD OF PEAK FLOW (YRS)	CARTRIDGE HEIGHT (SEE TABLE ABOVE)	NUMBER OF CARTRIDGES REQUIRED	CARTRIDGE FLOW RATE	MEDIA TYPE (SEE TABLE ABOVE)

PIPE DATA	PIPE	MATERIAL	DIAMETER
INLET PIPE			
OUTLET PIPE			
PIPE ELEVATION			

ANTI-POLLUTION BALLAST

WIDTH	HEIGHT

NOTES (SPECIAL REQUIREMENTS):

PER ENGINEER OF RECORD

GENERAL NOTES

- CONTRACTOR TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
- CONNECTIONS MARKED WITH 1 ARE REFERENCE CONNECTIONS. ACTUAL DIMENSIONS MAY VARY.
- FOR SITE SPECIFIC DRAWINGS WITH DETAILED UNITS DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTRACT ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.contech.com
- STORMFILTER WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
- STRUCTURE SHALL BE SET ASHIFT HORIZ. LOAD RATING, ASSUMING EARTH COVER OF 2' IF 18" DIA. PIPE AND GROUNDWATER ELEVATION AT OR BELOW THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL BEET ASHIFT HORIZ. LOAD RATING.
- FILTER CARTRIDGES SHALL BE MEDIA FILLED, PASSIVE, SPHON ACTUATED, RADIAL FLOW, AND SELF-CLEANING. RADIAL MEDIA DEPTH SHALL BE 18" (457 mm). FILTER MEDIA CONTACT TIME SHALL BE AT LEAST 30 SECONDS.
- SPECIFIC FLOW RATE IS EQUAL TO THE FILTER TREATMENT CAPACITY (GPM) DIVIDED BY THE FILTER CONTACT SURFACE AREA (SQ. FT.).
- STORMFILTER STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-778 AND ASHIFT LOAD FACTOR DESIGN METHOD.

INSTALLATION NOTES

- ANTI-SUBMERSE BACKFILL DEPTH, AND/OR ANTI-POLLUTION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
- CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STORMFILTER STRUCTURE.
- CONTRACTOR TO PROVIDE, INSTALL, AND GROUT INLET/OUTLET PIPES.
- CONTRACTOR TO PROVIDE AND INSTALL CONNECTOR TO THE OUTLET RISER TUBE. STORMFILTERS EQUIPPED WITH A DUAL DIAMETER HOPE OUTLET TUBE AND SAND COLUMN. IF OUTLET PIPE IS LARGER THAN 8 INCHES (203 mm), CONTRACTOR TO REMOVE THE 8 INCH (203 mm) OUTLET TUBE AT HOPE-UP CUT LINE. COUPLING BY FRISCO OR EQUAL AND PROVIDED BY CONTRACTOR.
- CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT CARTRIDGES FROM CONSTRUCTION-RELATED EROSION RUNOFF.

CONTECH
ENGINEERED SOLUTIONS LLC
www.contech.com
1021 CRENSHAW BLVD., SUITE 100, CHICAGO, IL 60628
800-538-1122 616-545-7000 616-545-7993 FAX

SFMH60
STORMFILTER
STANDARD DETAIL

REGISTERED PROFESSIONAL ENGINEER
HARDY UNDER STREET
C49717
STATE OF CALIFORNIA

MH engineering Co.
Morgan Hill, CA 95037
16075 Vineyard Boulevard

Preliminary Storm Water Management Plan
270 W. Dunne Avenue

DATE: Jan 2024
SCALE: 1"=20'
DRAWN BY: RS
CHECKED BY: HS

JOB NO.
221089

SHEET
5
OF
6

Appendix C

Historic Evaluation of the Residence at 270 West Dunne Avenue in the City of Morgan Hill (HRE)

Archaeological Resource Management

*Robert R. Cartier, Ph.D.
496 North 5th Street
San Jose, CA 95112
Telephone (408) 295-1373
Fax (408) 286-2040
email: armcartier@netscape.net*

Rebekah Robertson
PO Box 664
Genoa, NV 89411

April 19, 2024

RE: HISTORIC EVALUATION OF THE RESIDENCE AT 270 W. DUNNE AVENUE IN
THE CITY OF MORGAN HILL

Dear Ms. Robertson,

As per your request our firm is submitting the enclosed historical evaluation of the property at 270 W. Dunne Avenue in the City of Morgan Hill. Based upon the requirements of the City of Morgan Hill, a methodology was designed which included the following services:

- a visual description of the structure including general appearance, condition, and architectural style
- photography of the structure
- documentation of property ownership history
- an evaluation of the structure using the criteria of the National Register of Historic Places, the California Register, and the City of Morgan Hill
- State Historic Resources Evaluation forms (DPR) 523 for the structure

Based upon the results of this investigation, it was determined that the property is not currently listed on the California Register of Historic Resources (CRHR), the National Register of Historic Places (NRHP), or the City of Morgan Hill Historical Inventory. The structure does not appear eligible for listing in any of these registers. Thus, it is determined that the structure is not historically significant, and no further recommendations are being made.

Sincerely,



Robert Cartier, Ph.D.
Principal Investigator

RC/dj

PRIMARY RECORD

Primary # _____

HRI # _____

Trinomial _____

NRHP Status Code _____

Other Listings _____

Review Code _____ Reviewer _____ Date _____

Page 1 of 27

Resource Name or # 270 W. Dunne Avenue

P1. Other Identifier: _____

P2. Location: _____ Not for Publication ☒ Unrestricted *a. County Santa Clara

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

*b. USGS 7.5' Quad: Mt. Madonna, CA Date: 2021 T ; R ; 1/4 of 1/4 of Sec ; BM

c. Address: 270 W. Dunne Avenue City: Morgan Hill, CA Zip: 95037

d. UTM: 10S 6 19 476mE/41 09 414mN

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate)

APN: 767-12-060

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries.)

The primary structure at 270 W. Dunne Avenue is a single story ranch style residence in fair condition, although heavily altered from its original form. The structure is of frame construction and built in a roughly "L" shaped configuration, with the longer leg of the L being an addition to the original residence. The roof is hipped and of shallow pitch, surfaced with composition shingles. The eaves are broad and open, with exposed rafters, characteristic of the Ranch style of architecture. Exterior walls are surfaced with stucco, painted light gray. Fenestration throughout the structure consists primarily of vinyl clad windows, likely replacing original aluminum framed windows. The southern facade includes a square glass block window along the patio.

See Continuation Sheet, Page 4

*P3b. Resource Attributes: (List attributes and codes.) HP02: SFR

*P4. Resources Present: ☒ Building ☐ Structure ☐ Object District ☐ Element of District ☐ Site ☐ Other

P5a. Photo or drawing (Photo required for buildings, structures, objects.)



*P5b. Description of Photo: (View, date, accession #)

View of the front facade of 270 W. Dunne Avenue from the northwest

*P6. Date Constructed/Age and Sources

Historic ☒ Prehistoric ☐ Both ☐

Constructed 1953 based on County of Santa Clara Assessor's data.

*P7. Owner and Address:

Richard Borello
PO Box 448
Genoa, NV 89411

*P8. Recorded by:

Robert Cartier
Archaeological Resource Management
496 North 5th Street
San Jose, CA 95112

*P9. Date Recorded: 4/19/2024

*P10. Survey Type: Intensive

*P11. Report Citation: (Cite Survey Report and other sources, or enter "none.")

none

* Attachments: ☐ None ☒ Location Map ☐ Sketch Map ☒ Continuation Sheet ☒ Building, Structure, and Object Record
☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact
Record ☐ Photographic Record ☐ Other (List):

BUILDING, STRUCTURE, AND OBJECT RECORD

Page 2 of 27

*NRHP Status Code _____

*Resource Name or # (Assigned by recorder) 270 W. Dunne Avenue

B1. Historic Name: Ralph & Helen Slauter Residence

B2. Common Name: 270 W. Dunne Avenue

B3. Original Use: residence B4. Present Use: residence

*B5. Architectural Style: Ranch

*B6. Construction History: (Construction date, alterations, and date of alterations)

Based on County of Santa Clara Assessor's property records, the residence at 270 W. Dunne Avenue was constructed in 1953 and at that time appears to have included only what is now the eastern wing of the structure (making up the short leg of the overall "L" shape of the residence. Other modifications made include replacement of the majority of the original windows, and reroofing of the residence. Permitted improvements to the property include an electrical permit in 1986 (MH BP# 86-12), the construction of the deck and arbor in 1986 (MH BP#86-134), construction of the carport in 1990 (MH BP# 90-0685), enclosure of the existing porch and a kitchen remodel also in 1990 (MH BP# 90-1263), grading of 100 cubic yards for a new driveway in 1991 (MH BP# 91-0443), and construction of the driveway and parking pad (MH BP# 91-0532), construction of an RV storage and shop building (later converted for use as a secondary residence) in 1991 (MH BP# 91-0695), and the western wing addition to the residence in 1998 (MH BP# 98-1250).

*B7. Moved? ☒ No ☐ Yes ☐ Unknown Date: _____ Original Location: _____

*B8. Related Features:

Also present on the property is a garage, a modern secondary residence, a portable trailer building, a small shed, and a covered bocce ball court. These structures are described in more detail below.

See Continuation Sheet, Page 4

B9a. Architect: unknown b. Builder: unknown

*B10. Significance: Theme Com. Growth & Development Area Morgan Hill, CA

Period of Significance Post-War (1953) Property Type private residential Applicable Criteria N/A

The property at 270 W. Dunne Avenue is located within the *Rancho Ojo de Agua de la Coche*, originally granted to Juan Maria Hernandez in 1835. In 1845 the rancho was purchased by Martin Murphy Senior. He granted the property to his son Bernard Murphy, who married Catherine O'Toole, originally of Canada, in 1851. The land passed to their infant son Martin J.C. Murphy in 1853 after Bernard's death. Catherine was later married to James Dunne. Martin J. C. Murphy died at the age of 19, at which point the property passed to his mother, now known as Catherine Dunne.

See Continuation Sheet, Page 5

B11. Additional Resource Attributes: (List attributes and codes) N/A

*B12. References:

See continuation sheet, Page 7.

B13. Remarks:

*B14. Evaluator: Robert R. Cartier

*Date of Evaluation: 4/19/2024

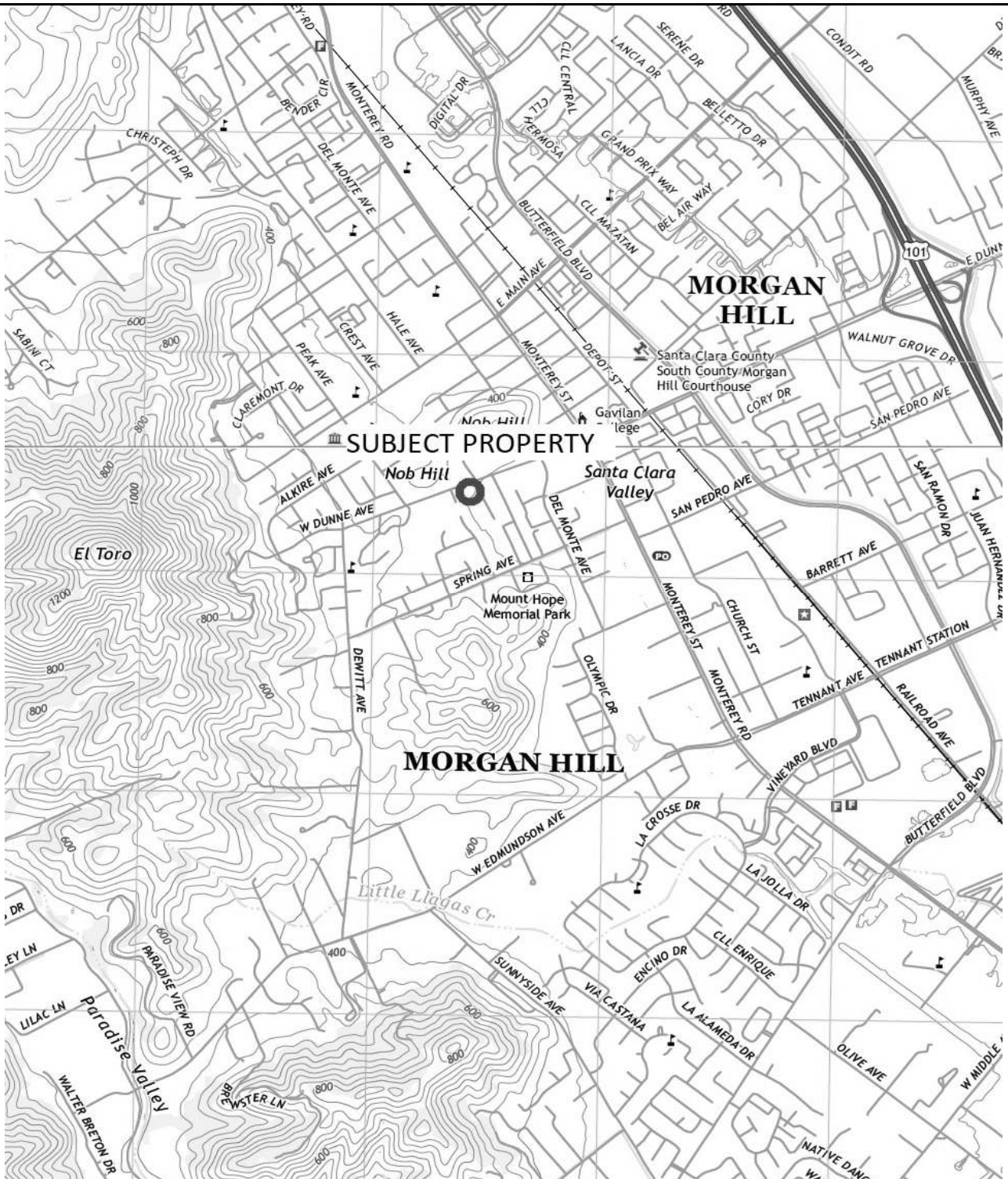
(This space reserved for official comments.)



LOCATION MAP

Primary # _____
HRI # _____
Trinomial _____

Page 3 of 27 Resource Name or # (Assigned by recorder) 270 W. Dunne Avenue
*Map Name: Mt. Madonna, CA *Scale: 7.5 minute *Date of Map: 2021



CONTINUATION SHEET

Primary # _____

HRI # _____

Trinomial _____

Page 4 of 27

*Resource Name or # (Assigned by recorder)

270 W. Dunne Avenue

*Recorded by Archaeological Resource Management

Date 4/19/2024

X Continuation

Update

Continued from P3a:

The original front entry is dis-used, and a newer entry porch has been added at the northeast corner of the front facade. This porch is entered via a long accessible ramp. A semi-detached garage is connected to the residence via a covered carport and creates a sheltered courtyard. A covered patio is located within the interior corner of the "L" within this courtyard.

Continued from B8:

Garage

The semi-detached garage has connected living space and is attached to the residence by a covered carport. The roof of this structure is hipped, with an extending gable at a slightly lower elevation above the carport. The roof is surfaced with wooden shingles. The eaves are somewhat broad and open, with exposed rafters. The exterior walls are surfaced with stucco, painted light gray. This structure appears to have been constructed roughly contemporaneously with the primary residence. The attached covered carport was constructed in 1990 based upon City of Morgan Hill permits.

Secondary Residence

The secondary residence on the property was originally constructed as a workshop and RV storage building in 1991 based upon City of Morgan Hill permits. This two-story structure features a saltbox roof above the front portion, with a gabled roof of moderate pitch to the rear. The roof is surfaced with composition shingles. The eaves are somewhat broad and open, with exposed rafters. Fenestration consists of modern vinyl frame windows in a variety of configurations.

Portable Trailer

This informal and portable structure is used as an office/storage building and is of relatively recent construction. The structure is rectangular in form, with a flat roof. The exterior walls are surfaced with flush vertical wooden paneling. The single front entry door is flanked at either end of the structure by square windows in a sliding configuration.

Shed

The storage shed on the property appears to be prefabricated. It features a front gabled roof, surfaced with composition shingles, and open eaves with exposed rafters. The exterior walls are surfaced with flush vertical wooden siding. A smaller utility structure sits to the rear of the shed. These structures appear to be of comparatively recent construction.

Bocce-ball Court

Situated along the edge of the flat area below the primary residence, the bocce-ball court is delineated on the northern side by a cinderblock retaining wall. The court is lined with sand and covered by a simple shed-roof awning of corrugated aluminum supported by undecorated wooden posts and braces. This structure is of relatively recent construction.

CONTINUATION SHEET

Primary # _____

HRI # _____

Trinomial _____

Page 5 of 27

*Resource Name or # (Assigned by recorder)

270 W. Dunne Avenue

*Recorded by Archaeological Resource Management

Date 4/19/2024

X Continuation

Update

Continued from B10:

By 1876 the land made up a portion of the over 15,000 acre property of Catherine Dunne (Thompson & West, 1876), which included much of the southern area of present day Morgan Hill, and included large portions of the aforementioned *Rancho Ojo de Agua de la Coche* as well as *Rancho las Uvas*. After Catherine's death, the ranch was subdivided. The subject property consists of a portion of Lot 22, as shown on the map of "Catherine Dunne Ranch No. 3, Being Burbank & Devendorf's Subdivision of Parts of the Rancho Ojo de Agua de la Coche and Rancho Las Uvas" recorded May 11, 1894 (Book H of Maps, Page 64 & 65).

A review of available USGS Topographic Maps for the subject property shows the residence first present on the 1956 7.5 Minute Map of Mount Madonna, CA. On the 1917, 1931, and 1941 maps the subject property is shown as vacant land. The 1941 map also shows the subject property and much of the surrounding area were developed as orchards at that time. By 1956 the residence appears to be present, and is shown on all subsequent maps through 1996, after which the topo maps cease to show individual structures.

Based upon visual evaluation and available documentation, the residence on the property was originally constructed in 1953. By 1948 the property was owned by Charles W. and Evah E. Greene. On March 13, 1948 they granted the property to Ralph W. and Helen L. Slauter (Book 1585 OR, Page 598). Ralph William Slauter was born on August 21, 1910 in Vacaville, California. He married Helen Lucille Tanner (born June 17, 1913 in Washington State) on March 12, 1936. Based upon US Census records for 1950, Ralph Slauter was employed as a publisher and printer, and owned his own shop. Based on Library of Congress Newspaper data, R. W. Slauter was the publisher of the Morgan Hill Times and the San Martin News from 1947 until his retirement. He was also elected as a constable for the City of Morgan Hill during the mid 1940's and is listed as such in a City Directory listing in 1950. In that year the Slauters were living in Morgan Hill, at an address along Monterey highway. The Slauter's constructed the residence on the subject property in 1953. In 1966 the neighborhood was again subdivided, and the subject property was described as Parcel A as shown on the "Record of Survey, Being a Portion of lot 22, Catherine Dunne Ranch N. 3" filed October 3, 1966 (Book 215 of Maps, Page 9). During the 1960's, city directories list Ralph Slauter as being employed at the Morgan Hill Times. By 1971 he is listed as retired. Ralph W. Slauter died on may 8, 1984. The family retained ownership of the property until after his wife Helen's death on April 5, 1985. On October 25, 1985 the property was granted by decree of distribution to their son and daughter in-law Joey Ralph and Dee Ann Slauter (Book J498 OR, Page 849). That same day, they granted the property to Vito Pileggi (Book J498 OR, Page 858). Mr. Pileggi owned the property until April 7, 1989, when it was granted to Francis V. and Ruth Borello (Book K905 OR, Page 1915). Francis Virgil Borello was born January 19, 1927 in San Jose, California, the son of Sebastian G (or J.) and Louiga (or Louisa) P. Borello (AKA Borella). His father had come to the US from Italy in 1913 and purchased the former Ira O. Rhoades Ranch property on Cochrane Road (totaling 142 acres) in 1942 (Urban Programmers 2012). Francis followed into the family business as an orchardist and rancher. His wife Ruth was born December 22, 1926. On July 29, 1992 the Borello's placed the property in a family trust (Book M303 OR, Page 2055). Francis V. Borello died on September 24, 2020. The property remains under the ownership of Borello family members through the family trust to the present day.

State of California - The Resources Agency DEPARTMENT OF PARKS AND RECREATION CONTINUATION SHEET	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Primary #</td> <td style="border-bottom: 1px solid black; width: 70%;"></td> </tr> <tr> <td>HRI #</td> <td style="border-bottom: 1px solid black;"></td> </tr> <tr> <td>Trinomial</td> <td style="border-bottom: 1px solid black;"></td> </tr> </table>	Primary #		HRI #		Trinomial	
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Page	<u>6</u>	of	<u>27</u>	*Resource Name or # (Assigned by recorder)	<u>270 W. Dunne Avenue</u>
*Recorded by	Archaeological Resource Management			Date	08/01/22
				X Continuation	Update

California Register of Historic Resources Criteria

A cultural resource is considered "significant" if it qualifies as eligible for listing in the California Register of Historic Resources (CRHR). Properties that are eligible for listing in the CRHR must meet one or more of the following criteria:

1. Association with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States;
2. Association with the lives of persons important to local, California, or national history;
3. Embodying the distinctive characteristics of a type, period, region, or method of construction, or representing the work of a master, or possessing high artistic values; or
4. Has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

A property may be automatically listed in the CRHR if it is formally determined eligible for the National Register of Historic Places. Properties that are formally determined eligible for the NRHP are those that are designated as such through one of the federal preservation programs administered by the California Office of Historic Preservation (i.e., the National Register, Tax Certification, and Section 106 review of federal undertakings).

The CRHR interprets the integrity of a cultural resource based upon its physical authenticity. An historic cultural resource must retain its historic character or appearance and thus be recognizable as an historic resource. Integrity is evaluated by examining the subject's location, design, setting, materials, workmanship, feeling, and association. If the subject has retained these qualities, it may be said to have integrity. It is possible that a cultural resource may not retain sufficient integrity to be listed in the National Register of Historic Places yet still be eligible for listing in the CRHR. If a cultural resource retains the potential to convey significant historical/scientific data, it may be said to retain sufficient integrity for potential listing in the CRHR.

The property at 270 W. Dunne Avenue is not currently listed on the CRHR. In addition, it does not appear to be potentially eligible for listing in this register. The property is not associated with significant historic events, thus it does not appear to be eligible for listing under criterion 1. The first owners of the residence were Ralph and Helen Slauter. Ralph was the publisher of the local papers, The Morgan Hill Times and the San Martin News. He also served as a Constable for the City of Morgan Hill in the 1940's. Thus Ralph Slauter appears to have some local significance in the City of Morgan Hill. However, the subject property is not closely associated with his work for the newspapers, and thus the property does not appear to be eligible for listing under criterion 2. The structure is an example of Ranch style architecture, however it is not a notable example of this style, and has been somewhat altered from its original form. Thus the structure does not appear to be eligible for listing under criterion 3. In addition, the structure does not appear likely to yield important historical information. Thus it does not appear eligible for listing under criterion 4.

State of California - The Resources Agency DEPARTMENT OF PARKS AND RECREATION CONTINUATION SHEET	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Primary #</td> <td style="border-bottom: 1px solid black; width: 70%;"></td> </tr> <tr> <td>HRI #</td> <td style="border-bottom: 1px solid black;"></td> </tr> <tr> <td>Trinomial</td> <td style="border-bottom: 1px solid black;"></td> </tr> </table>	Primary #		HRI #		Trinomial	
Primary #							
HRI #							
Trinomial							

Page	7	of	27	*Resource Name or # (Assigned by recorder)	270 W. Dunne Avenue
*Recorded by	Archaeological Resource Management			Date	4/19/2024
				X Continuation	Update

National Register Criteria

The National Register of Historic Places was first established in 1966, with major revisions in 1976. The register is set forth in 36 CFR 60 which establishes the responsibilities of the State Historic Preservation Officers (SHPO), standards for their staffs and review boards, and describes the statewide survey and planning process for historic preservation. Within this regulation guidelines are set forth concerning the National Register of Historic Places (36 CFR 60.6). In addition, further regulations are found in 36 CFR 63-66, 800, and Bulletin 15 which define procedures for determination of eligibility, identification of historic properties, recovery, reporting, and protection procedures. The National Register of Historic Places was established to recognize resources associated with the accomplishments of all peoples who have contributed to the country's history and heritage. Guidelines were designed for Federal and State agencies in nominating cultural resources to the National Register. These guidelines are based upon integrity and significance of the resource. Integrity applies to specific items such as location, design, setting, materials, workmanship, feeling, and association. Quality of significance in American history, architecture, archaeology, engineering and culture is present in resources that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and meet at least one of the following criteria:

- a. that are associated with events that have made a significant contribution to broad patterns of our history;
- b. that are associated with the lives of persons significant in our past;
- c. that embody distinctive characteristics of type, period, or method of construction, or that represent the work of master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction;
- d. that have yielded, or are likely to yield, information important in prehistory or history.

Integrity is defined in Bulletin 15: How to Apply the National Register Criteria for Evaluation, (U.S. Department of the Interior, National Park Service 1982) as:

the authenticity of a property's historic identity, evidenced by the survival of physical characteristics that existed during the property's historic or prehistoric period. If a property retains the physical characteristics it possessed in the past then it has the capacity to convey association with historical patterns or persons, architectural or engineering design and technology, or information about a culture or peoples.

There are also seven aspects of integrity which are used. These aspects are:

- | | |
|--------------|----------------|
| 1. location | 5. workmanship |
| 2. design | 6. feeling |
| 3. setting | 7. association |
| 4. materials | |

The property at 270 W. Dunne Avenue is not currently listed on the National Register of Historic Places. In addition, the structure does not appear to be potentially eligible for listing in this register. The structure is not associated with significant historical events. Thus it does not appear to be potentially eligible for listing under criterion a. The first owners of the residence were Ralph and Helen Slauter. Ralph was the publisher of the local papers, The Morgan Hill Times and the San Martin News. He also served as a Constable for the City of Morgan Hill in the 1940's. Thus Ralph Slauter appears to have some local significance in the City of Morgan Hill. However, the subject property is not closely associated with his work for the newspapers, and does not appear to be potentially eligible for listing under criterion b. Although the structure is an example of Ranch style architecture, it is not a notable example of this style. Thus it does not appear to qualify as potentially eligible under criterion c. The structure does not appear to be likely to yield information important in prehistory or history, thus it does not appear to qualify as potentially eligible under criterion d. In addition, the structure has been somewhat modified from its original form.

State of California - The Resources Agency DEPARTMENT OF PARKS AND RECREATION CONTINUATION SHEET	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Primary #</td> <td style="border-bottom: 1px solid black; width: 70%;"></td> </tr> <tr> <td>HRI #</td> <td style="border-bottom: 1px solid black;"></td> </tr> <tr> <td>Trinomial</td> <td style="border-bottom: 1px solid black;"></td> </tr> </table>	Primary #		HRI #		Trinomial	
Primary #							
HRI #							
Trinomial							

Page	<u>8</u>	of	<u>27</u>	*Resource Name or # (Assigned by recorder)	270 W. Dunne Avenue
*Recorded by	Archaeological Resource Management			Date	4/19/2024
				X Continuation	Update

Local Historic Context and Criteria

The City of Morgan Hill Municipal Code (Chapter 18.60) describes the process of identifying, recording, and preserving historic resources within the City of Morgan Hill. Section 18.60.020 (Definitions) identifies Historic Significance under the Criteria of the NRHP as described above. Section 18.60.030 notes that “ A resource must be associated with an important historical context and retain integrity of those features necessary to convey that significance.”

The Historic Context Statement for the City of Morgan Hill was completed by CIRCA in 2006. This document provides a series of historical contexts through which individual structures within the City of Morgan Hill may be contextualized and examined. The subject property does not appear to qualify as significant under any of the historic contexts identified in this document. The original construction date of 1953 precludes significance under Historic Context Theme 1: Pre-Rancho Settlement and Theme 2: Pioneering Settlers. Historic Context Theme 3: Community Growth and Development is perhaps the broadest category, however, the structure’s construction date (1953) also places it outside of the temporal timeframe of the associated property types identified in the Historic Context Statement. Although Francis Borello was involved with ranching and agricultural activities, the structure does not appear significant under Historic Context themes 4 (Agribusiness) or 5 (Commercial Development). Although the two most recent owners of the property may be of Italian descent (Vito Pileggi from 1985 to 1989 and the Borello family from 1989 to the present), neither appear to have played a significant role in Italian American cultural life within a local context. Thus, the property does not appear significant under Historic Context Theme 6: Ethnic and Religious Groups.

The subject structure was originally constructed in 1956, which, as identified in the Historic Context Statement Matrix (CIRCA 2006, Appendix A), places the structure within the Post WWII Period (1946 to 1957). Generally speaking, the property is characteristic of this period, reflecting themes of the post-war era such as expanding suburban residential development, and the ranch style of domestic architecture. However, it is not a notable example of either of these themes.

CONTINUATION SHEET

Page 9 of 27

*Resource Name or # (Assigned by recorder) 270 W. Dunne Avenue

*Recorded by Archaeological Resource Management

Date 4/19/2024

X Continuation

Update

Continued from B12:

Ancestry.com

1900-1988 City Directories for Morgan Hill/San Jose/Santa Clara County. Accessed via ancestry.com.

Assessor's Office, County of Santa Clara

1988-2022 Assessor's property records for the property at 270 W. Dunne Avenue.

Circa Historic Property Development

2006 Historic Context Statement for the City of Morgan Hill.

Douglas, J.

1993 Historical Footnotes of Santa Clara Valley. San Jose Historical Museum Association, San Jose.

Gilroy Dispatch

2020 Obituary for Frank Borello in the Gilroy Dispatch, October 2, 2020.

Hoover, M. et al

1966 *Historic Spots in California*. Stanford University Press, Stanford California.

McAlester, V. and L. McAlester

1997 *A Field Guide to American Houses*. Alfred A. Knopf, New York.

Sawyer, E.

1922 History of Santa Clara County, California. Historical Record Company, Los Angeles

Thompson & West

1876 Historical Atlas of Santa-Clara County, California. Thompson & West, San Francisco.

Urban Programmers

2012 Historical and Architectural Evaluation for the Parcel Located at 2280 Cochrane Road, Morgan Hill, CA 95037

US Department of the Interior

1990 The Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings

US Department of the Interior

1982 Bulletin 15 - "How to Apply the National Register Criteria for Evaluation.

Whiffen, Marcus

1992 American Architecture since 1780, Revised Edition. The MIT Press, Cambridge Mass.

CONTINUATION SHEET

Primary # _____

HRI # _____

Trinomial _____

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*Resource Name or # (Assigned by recorder)

270 W. Dunne Avenue

*Recorded by Archaeological Resource Management

Date 4/19/2024

Continuation x Update



Photo 1: View of the primary residence from the east.



Photo 2: View of the front facade from the southeast.

CONTINUATION SHEET

Primary # _____

HRI # _____

Trinomial _____

Page 11 of 27

*Resource Name or # (Assigned by recorder)

270 W. Dunne Avenue

*Recorded by Archaeological Resource Management

Date 4/19/2024

Continuation x Update



Photo 3: View of the original entry area of the residence.



Photo 4: View of the entry and porch.

CONTINUATION SHEET

Primary # _____

HRI # _____

Trinomial _____

Page 12 of 27

*Resource Name or # (Assigned by recorder)

270 W. Dunne Avenue

*Recorded by Archaeological Resource Management

Date 4/19/2024

Continuation x Update



Photo 5: View of the porch showing exposed rafters.



Photo 6: Oblique view of the newer corner entry.

CONTINUATION SHEET

Primary # _____

HRI # _____

Trinomial _____

Page 13 of 27

*Resource Name or # (Assigned by recorder)

270 W. Dunne Avenue

*Recorded by Archaeological Resource Management

Date 4/19/2024

Continuation x Update



Photo 7: View along the northern facade of the residence.



Photo 8: View of the covered carport connecting the residence and garage.

CONTINUATION SHEET

Primary # _____

HRI # _____

Trinomial _____

Page 14 of 27

*Resource Name or # (Assigned by recorder)

270 W. Dunne Avenue

*Recorded by Archaeological Resource Management

Date 4/19/2024

Continuation x Update



Photo 9: View of the courtyard area from the west.



Photo 10: View of covered deck and arbor (circa 1986) in courtyard

CONTINUATION SHEET

Primary # _____

HRI # _____

Trinomial _____

Page 15 of 27

*Resource Name or # (Assigned by recorder)

270 W. Dunne Avenue

*Recorded by Archaeological Resource Management

Date 4/19/2024

Continuation x Update



Photo 11: View of the rear portion of the residence.



Photo 12: oblique view of the southwest corner of the residence.

CONTINUATION SHEET

Primary # _____

HRI # _____

Trinomial _____

Page 16 of 27

*Resource Name or # (Assigned by recorder)

270 W. Dunne Avenue

*Recorded by Archaeological Resource Management

Date 4/19/2024

Continuation x Update



Photo 13: View of the southern facade along southern patio.



Photo 14: Detail of glass block window on southern facade.

CONTINUATION SHEET

Primary # _____

HRI # _____

Trinomial _____

Page 17 of 27

*Resource Name or # (Assigned by recorder)

270 W. Dunne Avenue

*Recorded by Archaeological Resource Management

Date 4/19/2024

Continuation x Update



Photo 15: View of garage door beneath covered carport.



Photo 16: Detail of gate connecting the residence and garage.

CONTINUATION SHEET

Primary # _____

HRI # _____

Trinomial _____

Page 18 of 27

*Resource Name or # (Assigned by recorder)

270 W. Dunne Avenue

*Recorded by Archaeological Resource Management

Date 4/19/2024

Continuation ☒ Update



Photo 17: View of the garage with attached living space.



Photo 18: View of rear portion of the garage.

CONTINUATION SHEET

Primary # _____

HRI # _____

Trinomial _____

Page 19 of 27

*Resource Name or # (Assigned by recorder)

270 W. Dunne Avenue

*Recorded by Archaeological Resource Management

Date 4/19/2024

Continuation x Update



Photo 19: View of portable trailer on the property.



Photo 20: View of the modern secondary residence from the northeast.

CONTINUATION SHEET

Primary # _____

HRI # _____

Trinomial _____

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*Resource Name or # (Assigned by recorder)

270 W. Dunne Avenue

*Recorded by Archaeological Resource Management

Date 4/19/2024

Continuation x Update



Photo 21: View along the eastern wall of the secondary residence.



Photo 22: View of the eastern facade of the secondary residence.

CONTINUATION SHEET

Primary # _____

HRI # _____

Trinomial _____

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*Resource Name or # (Assigned by recorder)

270 W. Dunne Avenue

*Recorded by Archaeological Resource Management

Date 4/19/2024

Continuation x Update



Photo 23: View of storage shed and adjacent utility shed.



Photo 24: View of the southern side of the storage shed.

CONTINUATION SHEET

Primary # _____

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Trinomial _____

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*Resource Name or # (Assigned by recorder)

270 W. Dunne Avenue

*Recorded by Archaeological Resource Management

Date 4/19/2024

Continuation x Update



Photo 25: View of the covered bocce ball court from the patio.



Photo 26: View of the length of the covered bocce ball court.

CONTINUATION SHEET

Primary # _____

HRI # _____

Trinomial _____

Page 23 of 27

*Resource Name or # (Assigned by recorder)

270 W. Dunne Avenue

*Recorded by Archaeological Resource Management

Date 4/19/2024

Continuation ☒ Update



Photo 27: View of the bocce ball court and open yard area.



Photo 28: View of the large open yard south of the residence.



Photo 29: 1941 USGS Topographic Map, approximate project boundaries shown, note no structures on the subject property.

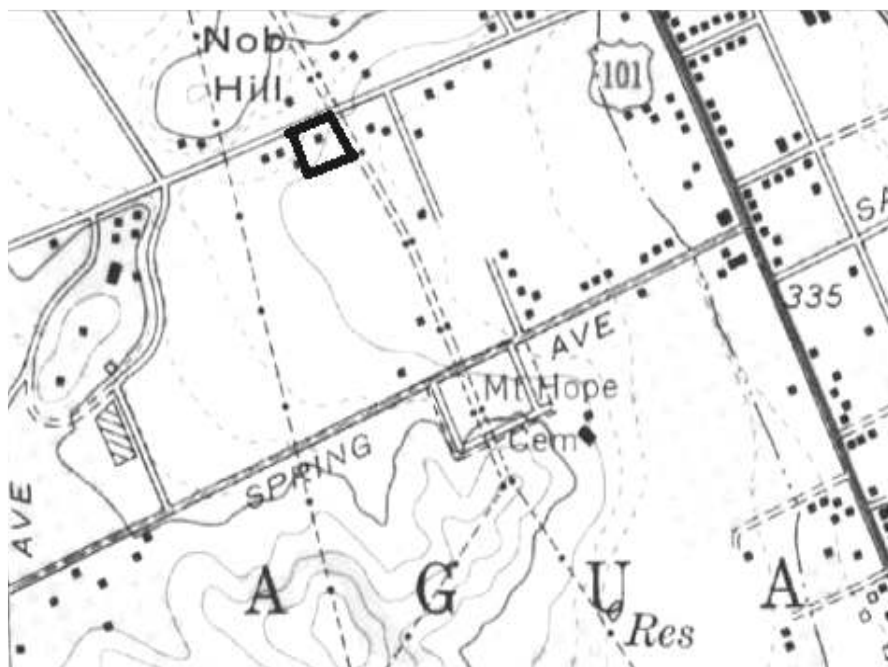


Photo 30: 1956 USGS Topographic Map, note structure on the subject property.

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # _____
HRI # _____
Trinomial _____

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*Recorded by Archaeological Resource Management Date 08/01/22 Continuation ☒ Update

POLITICS

Anxious Days Begin For Office Holders

By BILL GOULD

Now is the anxious period of waiting in which County office-holders wonder if there is to be any opposition, and if so, who the opponents will be. Candidates have until March 26 to file for the June primary election.

The following incumbents already had filed for re-election this

MORE FILE

Candidates who filed this morning included Roy P. Emerson, tax collector; Paul D. Bean, justice of the peace, San Jose District No. 2; C. W. Cobb, justice of the peace, Saratoga; and constables, Henry O. Liston, Santa Clara District 1; John D. Truax, Santa Clara District 2;

Jose Dept. 2, position being made vacant by the retirement of Chester W. Moore, Asst. Dist. Atty. John P. Dempsey had filed this morning, with two other candidates anticipated.

For Sheriff, made vacant by the resignation of William J. Emig, the first of several anticipated candidates had filed—Lloyd W. Skeels.

Constable Edward V. Harris, San Jose Dept. 2, filed for election and is opposed by Anthony Katon, private investigator.

Thomas E. Rosa filed for Constable in the Burnett Township (Morgan Hill), where the incumbent, Ralph Slauter, is expected to seek reelection.

TWO OPPONENTS

Photo 31: March 7, 1946 article in the San Jose Evening News, noting Ralph Slauter as an incumbent in an electoral race for constable.

SERIAL NUMBER		1. NAME (Print)			ORDER NUMBER		
2029		Ralph William Slauter			1974		
		(First)	(Middle)	(Last)			
2. ADDRESS (Print)							
787 Miller St. San Jose Santa Clara Calif							
(Number and street or R. F. D. number) (Town) (County) (State)							
3. TELEPHONE		4. AGE IN YEARS		5. PLACE OF BIRTH		6. COUNTRY OF CITIZENSHIP	
San Jose		30		Vacaville		U. S.	
		DATE OF BIRTH		(Town or county)			
Ballard 1063J		August 21 1910		Calif			
(Exchange) (Number)		(Mo) (Day) (Yr)		(State or country)			
7. NAME OF PERSON WHO WILL ALWAYS KNOW YOUR ADDRESS							
Mrs. Helen Lucille Slauter							
(Mr., Mrs., Miss) (First) (Middle) (Last)							
8. RELATIONSHIP OF THAT PERSON							
Wife							
9. ADDRESS OF THAT PERSON							
787 Miller St. San Jose Santa Clara Calif.							
(Number and street or R. F. D. number) (Town) (County) (State)							
10. EMPLOYER'S NAME							
Globe Printing Co.							
11. PLACE OF EMPLOYMENT OR BUSINESS							
1445 So. First St. San Jose Santa Clara Calif.							
(Number and street or R. F. D. number) (Town) (County) (State)							
I AFFIRM THAT I HAVE VERIFIED ABOVE ANSWERS AND THAT THEY ARE TRUE.							
REGISTRATION CARD D. S. S. Form 1		10-17105		Ralph William Slauter			
(over)				(Registrant's signature)			

Photo 32: WWII Draft card of Ralph William Slauter.

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # _____
HRI # _____
Trinomial _____

Page 26 of 27 *Resource Name or # (Assigned by recorder) 270 W. Dunne Avenue
*Recorded by Archaeological Resource Management Date 08/01/22 Continuation ☒ Update



Photo 33: Undated photograph of Ralph and Helen Slauter holding the Morgan Hill Times.

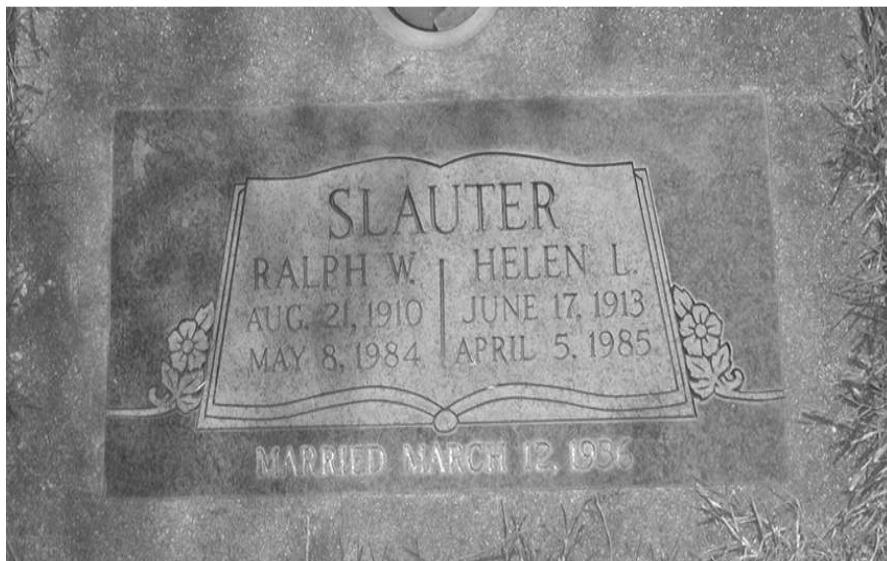


Photo 34: Memorial Stone of Ralph W. and Helen L. Slauter, Mount Hope Cemetery, Morgan Hill.

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
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Primary # _____
HRI # _____
Trinomial _____

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*Recorded by Archaeological Resource Management Date 08/01/22 Continuation ☒ Update

591

VETERAN

FORM APPROVED
Budget Bureau No. 33-R012-42

REGISTRATION CARD (Men born on or after July 1, 1924, and on or before December 31, 1924)
(Also for the registration of men as they reach the 18th anniversary of the date of their birth on or after January 1, 1943.)

SERIAL NUMBER W 591	1. NAME (Print) Francis V. Borello (First) (Middle) (Last)	ORDER NUMBER 13893
------------------------	---	-----------------------

2. PLACE OF RESIDENCE (Print)
Rt. 3-Box 299- San Jose' Santa Clara- Calif.
(Number and street) (Town, township, village, or city) (County) (State)

[THE PLACE OF RESIDENCE GIVEN ON LINE 2 ABOVE WILL DETERMINE LOCAL BOARD JURISDICTION; LINE 2 OF REGISTRATION CERTIFICATE WILL BE IDENTICAL]

3. MAILING ADDRESS
Same as above
(Mailing address if other than place indicated on line 2. If same, insert word same)

4. TELEPHONE Bal. 309 J 2 (Exchange) (Number)	5. AGE IN YEARS 18 DATE OF BIRTH (Mo.) (Day) (Yr.)	6. PLACE OF BIRTH San Jose' (Town or county) (State)
--	---	---

7. NAME AND ADDRESS OF PERSON WHO WILL ALWAYS KNOW YOUR ADDRESS
(Father)- Rt. 3-Box 299- San Jose', California

8. EMPLOYEE'S NAME AND ADDRESS
Mr. S. G. Borello (Father) - Farmer

9. PLACE OF EMPLOYMENT OR BUSINESS
On 4 Different Ranches
(City and street or R. F. D. number) (Town) (County) (State)

I AFFIRM THAT I HAVE VERIFIED ABOVE ANSWERS AND THAT THEY ARE TRUE.

DSS Form 1 (Rev. 11-16-62) 16-21630-4 (OVER) Francis V. Borello
(Registrant's signature)

Photo 35: March 7, 1946 article in the San Jose Evening News, noting Ralph Slauter as an incumbent in an electoral race for constable.



Photo 36: Francis (Frank) Borello, from obituary website:
<https://www.legacy.com/us/obituaries/gilroydispatch/name/francis-borello-obituary?id=7419567>

Appendix D

HRE Peer Review and Desktop Analysis



Rincon Consultants, Inc.

449 15th street, Suite 303
Oakland, California 94612
510-834-4455

March 14, 2024
Project No: 23-15020

Joey Dinh, Associate Planner
City of Morgan Hill
Development Services Center
17575 Peak Avenue
Morgan Hill, California 95037
Via email: joey.dinh@morganhill.ca.gov

Subject: Historic Resource Evaluation Peer Review – West Dunne – Roberston Residential Project, Morgan Hill, Santa Clara County, California

Dear Mr. Dinh:

Rincon Consultants, Inc. (Rincon) was retained by the City of Morgan Hill, Development Services Center (City) to conduct a peer review of the Historic Evaluation of the Residence at 270 West Dunne Avenue in the City of Morgan Hill (subject Historic Resource Evaluation [HRE]). The subject HRE was prepared by Robert R. Cartier of Archaeological Resource Management in 2022 (Cartier 2022) and consists of a cover letter with attached State of California Department of Parks and Recreation 523 Series Forms (DPR forms). The subject HRE recorded and evaluated the residence at 270 West Dunne Avenue (subject property) for eligibility for listing in the National Register of Historic Places (NRHP) and the California Register of Historical Resources (CRHR).

This letter report summarizes the results of a peer review of the subject HRE conducted by Rincon. The project would involve demolition of an existing historic-period residence and construction of 10 single-family attached units on the subject property. The peer review summarized herein assessed the adequacy of the subject HRE to support a California Environmental Quality Act (CEQA) Class 32 Categorical Exemption for the project. It additionally provides recommendations aimed at strengthening the subject HRE's defensibility in support of the project's Class 32 Categorical Exemption from CEQA.

Rincon Consultants Architectural Historian Ashley Losco, MHP, conducted this peer review, with oversight provided by Cultural Resources Program Manager, Rachel Perzel, MA. Ms. Losco is the primary author of this peer review letter report, which was additionally reviewed by Principal Architectural Historian Shannon Carmack for quality assurance/quality control. Ms. Losco, Ms. Perzel, and Ms. Carmack exceed the Secretary of the Interior's (SOI) Professional Qualification Standards (PQS) for architectural history and history (36 Code of Federal Regulations [CFR] Part 61).

Historic Resource Evaluation Summary

The subject HRE was prepared by Robert R. Cartier of Archaeological Resource Management for Weston Miles Architects, in August 2022. The purpose of the subject HRE was to evaluate the historic resource eligibility of the residence located at 270 West Dunne Avenue in the city of Morgan Hill, Santa Clara County, California (Santa Clara County Assessor's Parcel Number 767-12-060). The evaluation was presented on DPR forms and included a description of the subject property, photos, location and sketch maps, documentation of the subject property's history, and evaluation of the residence on the property for listing in the NRHP and the CRHR. The DPR forms also included a list of referenced materials. Mr. Cartier recommended the residence ineligible for listing in the NRHP and CRHR under all criteria (A, B, C, D and 1, 2, 3, 4).

Peer Review Methods

This peer review assessed the accuracy and adequacy of the subject HRE to support CEQA analysis and in line with industry-accepted standards and guidelines provided by the National Park Service (NPS) and the California Office of Historic Preservation (OHP) (California OHP 1995; NPS 1995). The peer review was limited to a review of the subject HRE, which is presented on DPR forms attached to a cover letter. No additional field work, substantial background or archival research, or supplemental analysis of the subject property were conducted by Rincon.

Peer Review

The methods implemented in preparation of the subject HRE appropriately included a field survey and archival research of the subject property. While Rincon concurs with the subject HRE's findings, several areas have been identified which are not specifically consistent with industry-accepted best standards and guidelines provided by the California OHP and the NPS. Rincon recommends the following actions to increase the subject HRE's defensibility in support of the project's Class 32 Categorical Exemption from CEQA.

Recommendations

- The subject HRE is focused on the residence on the subject property. However, the proposed project would result in the demolition of several buildings and features on the subject property, including but not limited to a garage, secondary residence, and shed. While some of these buildings may not date to the historic period, the subject HRE does not state as much definitively. The HRE did not include a review of building permits through the City of Morgan Hill. Therefore, the subject HRE, in particular the “*P3a. Description” and “*B6. Construction History” sections of the DPR forms, should be reframed to address the entirety of the subject property; specific recommendations include the following:
 - In *Instructions for Recording Historical Resources*, the California OHP provides the following guidance related to describing a resource on DPR forms: “Provide a concise, well-organized description of the resource. Describe its physical characteristics and appearance and summarize any features that are associated with it. Where possible, note all aspects of the resource you observe, even if some of those elements are not recorded in detail.” (California OHP 1995:7). The same guidance document goes on to state that descriptions of buildings should identify construction details, include information on the nature and extent of alterations, and note a boundary description, however brief, in addition to describing resource's setting (California OHP 1995:7). In accordance with these guidelines, Rincon recommends that a more holistic description of the subject property be included in the subject HRE. The updated description should document the entire subject property including all buildings, structures, objects, in addition to their alterations, and setting.
 - The subject HRE provides property history including review of previous owners and occupants. However, the property history lacks a thorough construction and alteration history. The subject HRE includes a construction date only for the property's primary residence and did not include review of building permits or historical aerials. According to California OHP guidelines, a resource's construction history must list all alterations which substantially affect architectural integrity (California OHP 1995). Rincon therefore recommends review of property building permits and historical aerials and that additional detail be presented in section “*B6. Construction History” section to address the construction history of the entire subject property.



- According to NPS National Register Bulletin 15 *How to Apply the National Register Criteria for Evaluation*, three steps should be followed when evaluating a property's potential historical significance: determine the nature and origin of the property, identify the historic context with which it is associated, and evaluate the property's history to determine whether it is associated with the historic context in an important way (NPS 1995:7). The subject HRE does not present adequate historic context to support a finding of ineligibility under Criteria A/1 (events) or C/3 (architecture). Rincon therefore recommends that additional historic context, for example Post World War II residential development of Morgan Hill and/or Ranch-style architecture, be presented or referred to so that the property's potential significance may be further understood. DPR forms should minimally note which contexts the property's potential significance was considered within. Consideration should be given to referencing the *City of Morgan Hill Historic Context Statement* prepared by Circa in 2006 (Circa 2006). Additionally, the evaluation should succinctly explain why the property is not significant under each of the identified historic contexts.
- As defined in Public Resources Code Section 21084.1, a historical resource includes those listed in, or determined eligible for listing in the CRHR or a local register of historical resources. In its summary of findings, the cover letter included in the subject HRE states that the subject property is ineligible for listing in the NRHP, CRHR, in addition to the City of Morgan Hill Historical Inventory. However, the DPR forms present a regulatory context related only to the NRHP and CRHR and the evaluation does not address local criteria. Therefore, Rincon recommends that the City's local designation criteria (as defined by Chapter 18.60 of the City of Morgan Hill Municipal Code) be included in the regulatory context section and addressed in the evaluation.

Conclusions

In summary, Rincon did not identify specific evidence that would reverse the conclusions outlined in the subject HRE. However, to provide further defensibility of the project's CEQA review, Rincon recommends that additional work be completed prior to completion of the CEQA document to help strengthen and bolster the arguments presented in support of the project's Class 32 Categorical Exemption from CEQA.

Should you have any questions regarding this peer review letter, please do not hesitate to contact Ms. Perzel at 805-947-4817 or rperzel@rinconconsultants.com.

Sincerely,

Rincon Consultants, Inc.

Ashley Losco, MHP
Architectural Historian

Rachel Perzel, MA
Senior Architectural Historian, Cultural
Resources Program Manager

Shannon Carmack
Cultural Resources Principal



References

California Office of Historic Preservation (OHP)

1995 *Instructions for Recording Historical Resources*. Sacramento.
<https://scic.sdsu.edu/resources/docs/manual95.pdf>. Accessed February 2024.

Cartier, Robert

2022 Historic Evaluation of the Residence at 270. W. Dunne Avenue in the City of Morgan Hill.
Archaeological Resource Management, August 1, 2022.

Circa

2006 Historic Context Statement for the City of Morgan Hill. Final Report, Morgan Hill, California.
October 2006. <https://www.morganhill.ca.gov/DocumentCenter/View/2607/Historic-Context-Statement?bidId=>. Accessed February 2024.

Morgan Hill, City of

2024 Code of Ordinances. Updated on February 23, 2024.
https://library.municode.com/ca/morgan_hill/codes/code_of_ordinances. Accessed March 2024.

National Park Service (NPS)

1995 *National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation*.
Washington D.C.: U.S. Department of the Interior.
https://www.nps.gov/subjects/nationalregister/upload/NRB-15_web508.pdf. Accessed February 2024.

May 16, 2024

Project No: 23-15020

Joey Dinh, Associate Planner
City of Morgan Hill
Development Services Center
17575 Peak Avenue
Morgan Hill, California 95037
Via email: joey.dinh@morganhill.ca.gov

Subject: Cultural Resources Desktop Analysis for the West Dunne – Robertson Residential Project, Morgan Hill, Santa Clara County, California

Dear Mr. Dinh:

Rincon Consultants, Inc. (Rincon) was retained by the City of Morgan Hill, Development Services Center (City) to conduct a Cultural Resources Desktop Analysis in support of the West Dunne – Robertson Residential Project (project) located at 270 West Dunne Avenue in the city of Morgan Hill, Santa Clara County, California. Rincon understands the City currently anticipates a Class 32 Categorical Exemption will be the appropriate California Environmental Quality Act (CEQA) documentation for the project. Categorical Exemptions may not be used if a project would result in the substantial adverse change in the significance of a historical resource, which can include built environment and archaeological resources eligible for the National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR) or local register. The purpose of this desktop analysis is to identify the potential for archaeological resources to occur within the project site and for the project to result in impacts to archaeological resources that may be considered historical resources under CEQA. A historical resource evaluation for the extant historic-period residence within the project site has previously been prepared by Robert R. Cartier of Archaeological Resource Management in 2022, which recorded and evaluated the residence for inclusion in the NRHP and the CRHR (Cartier 2022). Rincon conducted a separate peer review to address the adequacy of the historical resource evaluation; therefore, built-environment historical resources will not be discussed further in this report (Losco et al. 2024).

This desktop analysis is based on the results of a cultural resources records search of the California Historical Resources Information System (CHRIS), a Sacred Lands File (SLF) search conducted by the Native American Heritage Commission (NAHC), a review of historical maps and aerial imagery, and a review of the geotechnical report prepared for the project.

Project Location and Description

The 1.03-acre project site is located at 270 West Dunne Avenue in the city of Morgan Hill and is identified as Assessor's Parcel Number 767-12-060 (Attachment 1: Figure 1 and Figure 2). Specifically, the proposed project encompasses portions of Section 28 of Township 9 South, Range 3 East on the *Mt. Madonna, California* United States Geological Survey (USGS) 7.5-minute topographic quadrangle.

The project site is currently developed with one primary residence, one secondary residence, a detached garage, two small storage sheds, and a covered bocce ball court. The project would involve demolition of the existing residence, removal of existing trees, and the subsequent construction of 10 duet single-family attached units with two-car garages, and internal roadways. The project would



require approval of a vesting tentative subdivision map and design permit for the development of the 10 units.

California Historical Resources Information System

A records search of the CHRIS, Northwest Information Center (NWIC) located at Sonoma State University was completed on March 26, 2024. The NWIC is the official state repository for cultural resources records and reports for Santa Clara County. The purpose of the records search was to identify previously conducted cultural resource studies and previously recorded archaeological resources within a 0.5-mile buffer extending from the project site. The records search results were used to determine the general archaeological resources sensitivity of the project site and surrounding area and inform this desktop analysis.

The CHRIS records search (NWIC File No. 23-1134) did not identify any previously recorded archaeological resources within or adjacent to the project site (Attachment 2). No archaeological resources were identified in the 0.5-mile search radius. Further, Rincon completed a review of the NRHP, CRHR, the Archaeological Determinations of Eligibility list, and the California Historical Landmarks list, none of which include any listed archaeological resources within or adjacent to the project site.

The CHRIS records search identified one previous cultural resource study (S-010838) partially overlapping the project site and 36 previous cultural resource studies within the 0.5-mile search radius. It does not appear that the project site has been systematically surveyed for archaeological resources. It appears that approximately 30 percent of the 0.5-mile radius has been surveyed for archaeological resources.

Study S-053380, *Cultural Resources Study of the Morgan Hill Water Tank Project, Cingular Wireless Site No. SNFCCA2007B, 100 W. Third Street, Morgan Hill, Santa Clara, California 95037*, was prepared by Historic Resource Associates in 2006. The study included a records search of the CHRIS, NWIC staff review of historical maps and literature for Santa Clara County, and a mixed windshield and pedestrian field survey for proposed collocation of antennas and other cellular equipment (Historic Resources Associates 2006). Study S-053380 covers approximately 15 percent of the project site's northeastern corner, however, a windshield survey method was employed for this area and it was not subject to pedestrian survey. Study S-053380 did not identify archaeological resources within its study area (Historic Resources Associates 2006).

Of the 36 previous studies, one is located immediately adjacent to the project site (S-010838), Study S-010838, *Cultural Resource Evaluation for a Parcel (APN 767-12-05) on W. Dunne Avenue in the City of Morgan Hill, County of Santa Clara* (Cartier 1989), was conducted by Archaeological Resource Management in 1989. The study included a records search of the CHRIS, a review of maps and records on file at the Morgan Hill Historical Museum, and a pedestrian survey. Study S-010838 did not identify archaeological resources within its study area (Cartier 1989).

Sacred Lands File Search

Rincon contacted the NAHC on February 14, 2024, to request a search of the SLF, as well as a contact list of Native Americans culturally affiliated with the project site. On April 8, 2024, the NAHC responded to Rincon's SLF and contact list request, stating that the results of the SLF search were positive. The NAHC response did not provide details regarding the nature or exact location of the positive result. The NAHC recommended contacting the tribes on the attached list for additional information. See Attachment 3 for the NAHC response and tribal contact list. On April 24, 2024, the City contacted the 19 NAHC-listed tribes requesting additional information regarding the positive SLF search. One round

of follow up outreach calls were conducted on May 1, 2024. As a result of the outreach effort, one response was received from Chairperson Irene Zwierlein of the Amah Mutsun Tribal Band of Mission San Juan Bautista on April 29, 2024 (Attachment 4). Chairperson Zwierlein did not provide additional information regarding the nature or location of the positive SLF search, but recommended cultural resources sensitivity training for construction personnel, as well as archaeological and Native American monitoring during ground disturbing activities associated with the project.

Historical Topographic Map and Aerial Imagery Review

A review of available historical topographic maps and aerial imagery was conducted to ascertain the development history of the project site. Historical topographic maps show the project site as undeveloped land in 1917 with Little Llagas Creek observed approximately 0.27 miles to the east (USGS 1917). A topographic map from 1939 depicts the project site as an agricultural field (USGS 1939). Aerial imagery from 1939 shows the project site as graded undeveloped land that was once utilized for agricultural activity, evidenced by visible orchard rows and subsequent tree removals (UCSB 1939). Adjacent parcels surrounding the project site to the north, south, east and west were also utilized for agricultural activities during this time and West Dunne Avenue is observed as a dirt road in its current location. By 1948, the project site remains undeveloped with much of the surrounding agricultural fields having decreased in size (NETR Online 2024). The existing single-family residence located within the project site is first observed in aerial imagery from 1953, with the surrounding setting largely unchanged from 1948 (NETR Online 2024). The construction of this residence is also seen in historical topographic maps from 1955 (USGS 1955). Additional earth movement is seen in imagery from 1957, with darker soil surrounding the existing residence and an earthen berm lining the southeastern edge of the driveway (UCSB 1957). In 1968, an additional building (detached garage) to the north of the primary residence has been constructed and residential development in the area surrounding the project site is present (UCSB 1968). Additional development within the project site is observed in 1993 and 2009, with the addition of a secondary residence and a bocce ball court, respectively (NETR 2024). Residential development surrounding the project site continues from 1971 through 2020 (NETR 2024). Review of historical aerials suggests the project site has been subject to repeated soil disturbance (e.g., through discing or other means and residential development).

Geotechnical Investigation Review

The geotechnical report, *Geotechnical Investigation, Five New Residence Buildings Project, 270 West Dunne Avenue, Morgan Hill, California* (Cleary Consultants, Inc. 2022), addresses subsurface conditions within the project site. The report details the results of five exploratory borings (EB-1 through EB-5) ranging from a depth of 9 to 14 feet below ground surface (bgs) within the project site. These subsurface investigations were completed on September 1, 2021, and placed in the proposed development locations throughout the project site, as shown in Attachment 1, Figure 3.

According to the geotechnical report, the soils encountered include: (EB-1) very dense clayey to silty sand to a maximum depth of 9 feet; (EB-2) medium dense to dense silty sand from 0 to 3.5 feet bgs underlain by very dense clayey sand from 3.5 to 14 feet bgs; (EB-3) very stiff to hard sandy clay from 0 to 9 feet bgs; (EB-4) very stiff to hard sandy clay from 0 to 7.5 feet bgs underlain by very dense silty sand from 7.5 to 14 feet bgs; (EB-5) hard sandy clay from 0 to 14 feet bgs.

The geotechnical report recommends that Unit A and B residential buildings be supported on conventional continuous and isolated spread footings in undisturbed native soils, and that the footings be embedded at least 18 inches into the supporting subgrade. The report further recommends that Unit C through E residential buildings be supported on cast-in-place straight shaft friction piers, and that the drilled piers should extend through any fill to a minimum depth of 8 feet into underlying native



soils. Thus, all of the proposed locations for residential development within the project site will need foundational support within undisturbed native soils.

Conclusions and Recommendations

No known archaeological resources were identified within the project site. However, the SLF search conducted by the NAHC was positive. The NAHC did not provide details on the nature or exact location of the positive result, but recommended contacting tribes for more information. The City contacted the 19 NAHC-listed tribes. One response was received from Chairperson Irene Zwierlein of the Amah Mutsun Tribal Band of Mission San Juan Bautista. While Chairperson Zwierlein did not provide information regarding the nature or location of the positive results, she did recommend cultural resources sensitivity training for construction personnel, as well as archaeological and Native American monitoring during ground disturbing activities associated with the project. The City's Standard Condition of Approval for development projects includes procedures to follow in the event of an unanticipated discovery, cultural resources sensitivity training for construction personnel, full-time Native American monitoring of all ground-disturbing activities by a member of the Tamien Nation, and retention of an archaeologist to respond to discoveries as needed, which is consistent with this request.

The subsurface archaeological sensitivity of the project site is considered moderate. While no archaeological resources have been documented within the project site or a 0.5-mile radius, only approximately 30 percent of the records search radius has been surveyed for archaeological resources. In addition, the project site's proximity to Little Llagas Creek elevates the sensitivity for archaeological resources by providing access to a freshwater source, a vital resource for prehistoric peoples, both as drinking water and as an attractant for wildlife. Prehistoric resources commonly found in proximity to water sources include village locations, temporary camps, and groundstone (milling) sites where food resources were procured and processed. While previous and modern disturbances may have disturbed shallowly buried resources, if any once existed onsite, proposed project-related ground disturbance will extend below disturbed soils or fill materials and into underlying native soils, and it is possible that subsurface archaeological materials may be encountered.

Rincon recommends inclusion of the City's Standard Condition of Approval for development projects. Compliance with existing state regulations would also be required in the event of an unanticipated discovery of human remains.

Should you have any questions regarding this cultural resources desktop analysis, please do not hesitate to contact Ms. Pfeiffer at 805-947-4816 or mpfeiffer@rinconconsultants.com.

Sincerely,

Rincon Consultants, Inc.

A handwritten signature in black ink, appearing to read "MPfeiffer".

Mary Pfeiffer, BA
Archaeologist and Project Manager

A handwritten signature in black ink, appearing to read "Hannah Haas".

Hannah Haas, MA, RPA
Senior Archaeologist and Program Manager

A handwritten signature in black ink, appearing to read "Candace Ehringer".

Candace Ehringer, MA, RPA
Cultural Resources Principal



Attachments

- Attachment 1 Figures
- Attachment 2 California Historical Resources Information System Records Search Results
- Attachment 3 Native American Heritage Commission Sacred Lands File Search Results
- Attachment 4 Amah Mutsun Tribal Band of San Juan Bautista Tribal Outreach Response



References

Cartier, Robert

- 2004 State of California Department of Parks and Recreation 523 series form for P-43-001801. Record on file at the Northwest Information Center, Sonoma State University.
- 2022 Historic Evaluation of the Residence at 270. W. Dunne Avenue in the City of Morgan Hill. Archaeological Resource Management, August 1, 2022.

Clearly Consultants, Inc.

- 2022 Geotechnical Investigation Five New Residence Buildings Project, 270 West Dunne Avenue, Morgan Hill, California.

Historic Resource Associates

- 2006 *Cultural Resources Study of the Morgan Hill Water Tank Project, Cingular Wireless Site No. SNFCCA2007B, 100 W. Third Street, Morgan Hill, Santa Clara County, California 95037.* Study S-053380 on file at the Northwest Information Center, Sonoma State University.

Losco, Ashley, Rachel Perzel and Shannon Carmack

- 2024 Historic Resource Evaluation Peer Review – West Dunne – Robertson Residential Project, Morgan Hill, Santa Clara County, California.

Nationwide Environmental Title Research (NETR)

- 2024 Historic Aerials of 270 West Dunne Avenue. <https://www.historicaerials.com/viewer>. (Accessed March 2024).

United States Geological Survey (USGS)

- 1917 Historical Topographic Map Explorer. Morgan Hill, California, 1:62,500 topographic map. <https://livingatlas.arcgis.com/topoexplorer/index.html>. (Accessed March 2024).
- 1939 Historical Topographic Map Explorer. Morgan Hill, California, 1:62,500 topographic map. <https://livingatlas.arcgis.com/topoexplorer/index.html>. Accessed March 2024).
- 1955 Historical Topographic Map Explorer. Mt. Madonna, California, 1:24,000 topographic map. <https://livingatlas.arcgis.com/topoexplorer/index.html>. (Accessed March 2024).

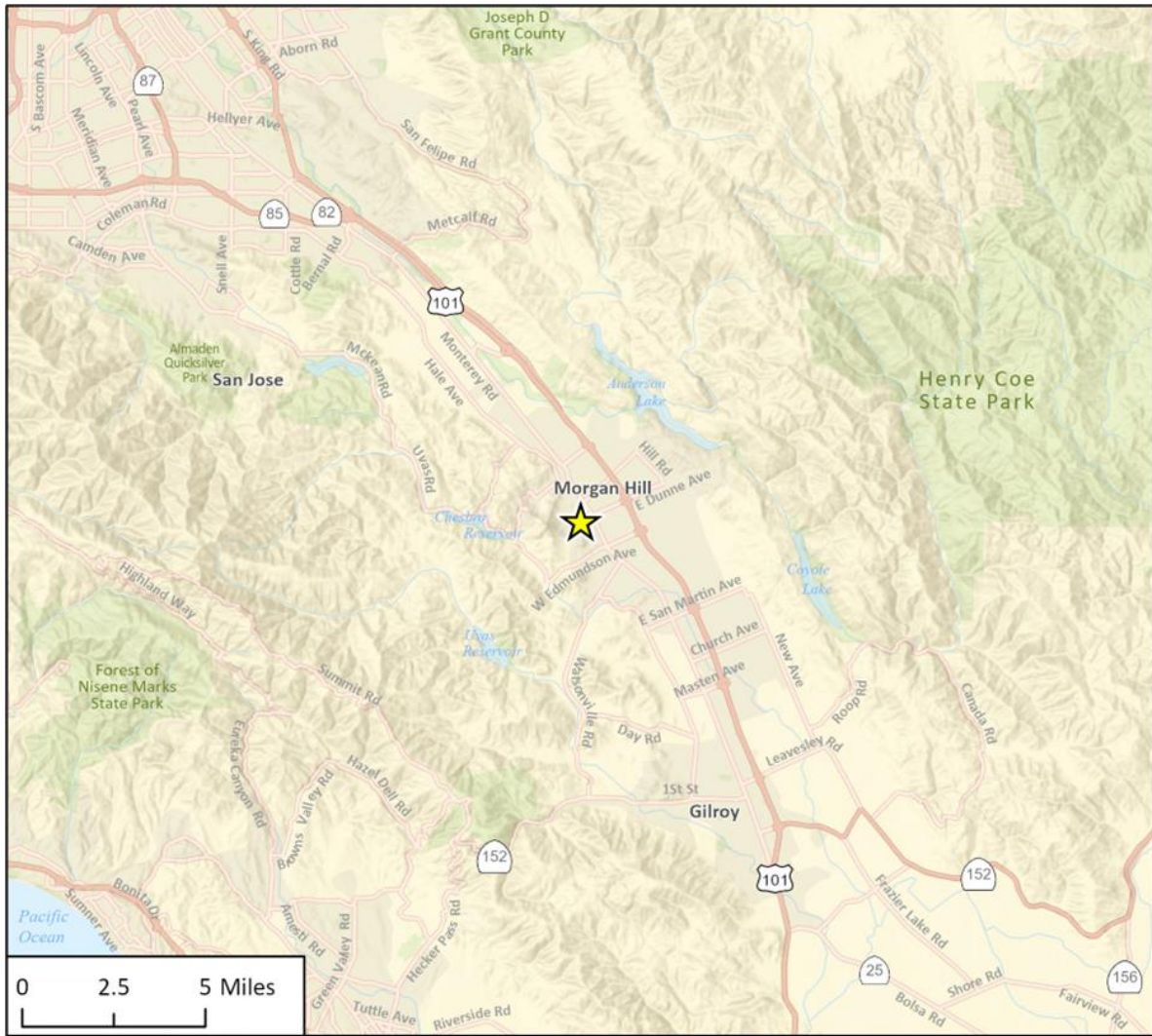
University of California, Santa Barbara (UCSB)

- 1939 FrameFinder. [historical aerial photograph online database]. Flight C_5750, Frame 239-15. https://mil.library.ucsb.edu/ap_indexes/FrameFinder/. (Accessed March 2024).
- 1957 FrameFinder. [historical aerial photograph online database]. Flight CAS_1957, Frame Morgan-Hill. https://mil.library.ucsb.edu/ap_indexes/FrameFinder/. (Accessed March 2024).
- 1968 FrameFinder. [historical aerial photograph online database]. Flight CAS_2310, Frame 3-109. https://mil.library.ucsb.edu/ap_indexes/FrameFinder/. (Accessed March 2024).

Attachment 1

Figures

Figure 1 Regional Location Map



★ Project Location

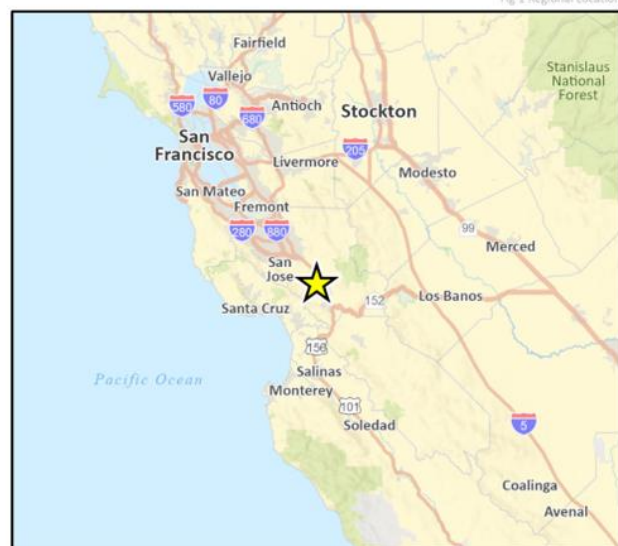


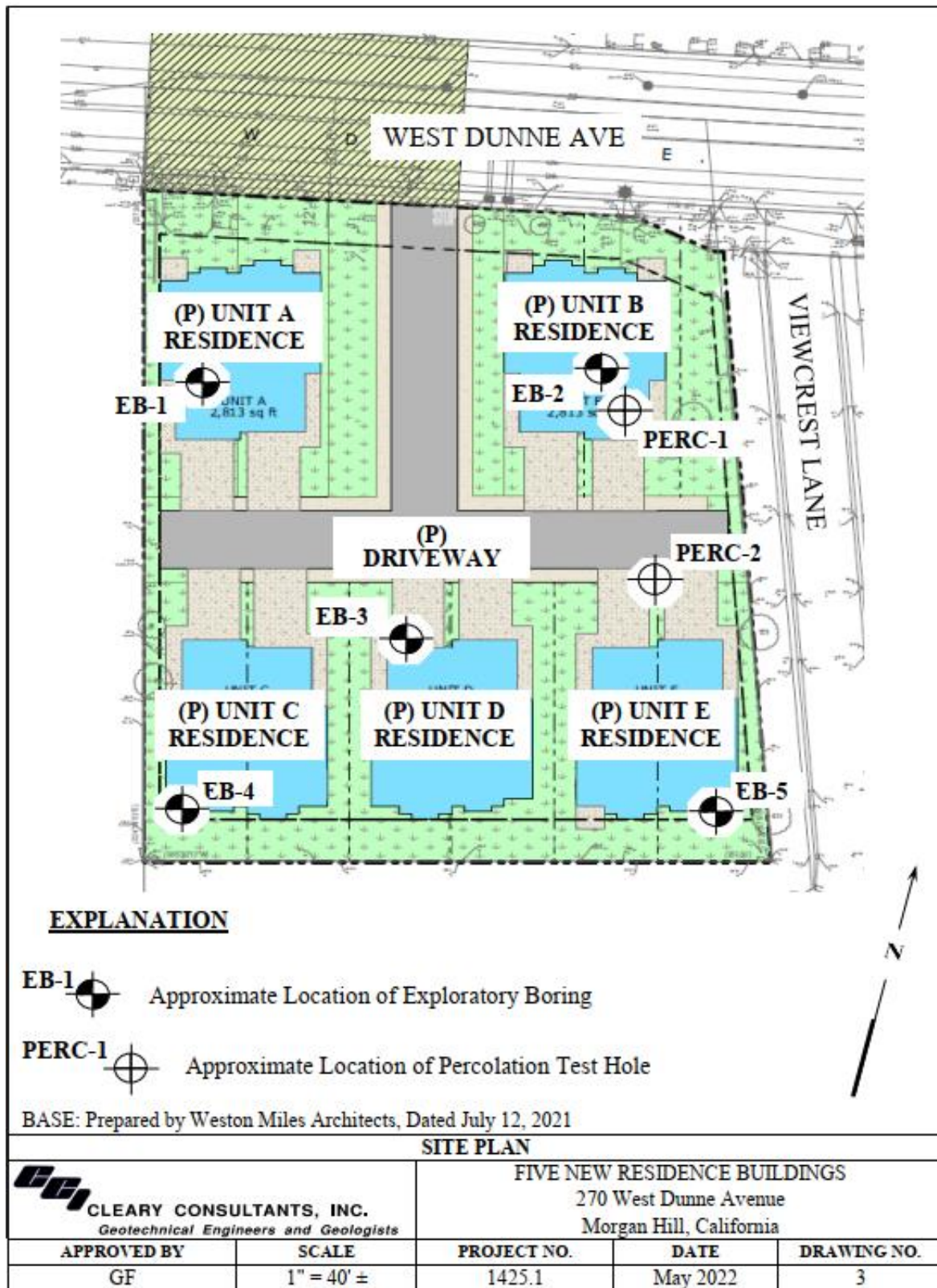
Figure 2 Project Location Map



Imagery provided by Microsoft Bing and its licensors © 2024.

23-15020 EPS
Fig 2 Project Location

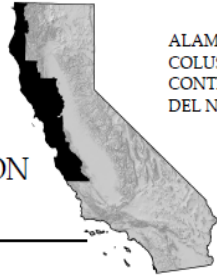
Figure 3 Boring Locations of Geotechnical Investigation (Cleary Consultants, Inc. 2022)



Attachment 2

California Historical Resources Information System Records Search Results

CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEM



ALAMEDA
COLUSA
CONTRA COSTA
DEL NORTE

HUMBOLDT
LAKE
MARIN
MENDOCINO
MONTEREY
NAPA
SAN BENITO

SAN FRANCISCO
SAN MATEO
SANTA CLARA
SANTA CRUZ
SOLANO
SONOMA
YOLO

Northwest Information Center
Sonoma State University
1400 Valley House Drive, Suite 210
Rohnert Park, California 94928-3609
Tel: 707.588.8455
nwwic@sonoma.edu
http://nwwic.sonoma.edu

3/26/2024

NWIC File No.: 23-1134

Debbie Balam
Rincon Consultants, Inc.
180 N. Ashwood Avenue
Ventura, CA 93003

Re: West Dunne Avenue Project/ Project No. 23-15020

The Northwest Information Center received your record search request for the project area referenced above, located on the Mt. Madonna, Morgan Hill USGS 7.5' quad(s). The following reflects the results of the records search for the project area and a 0.5 mi. radius:

Resources within project area:	None listed
Resources within 0.5 mi. radius:	[12] Please see attached list, page 3
Reports within project area:	S-10838, 53380
Reports within 0.5 mi. radius:	[38] Please see attached list, page 4

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:

[within]

☒ enclosed ☐ not requested ☐ nothing listed

OHP Built Environment Resources 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

GLO and/or Rancho Plat Maps:

☐ enclosed ☒ not requested ☐ nothing listed

Historical Maps:

☐ enclosed ☒ not requested ☐ nothing listed

Local Inventories:☐ enclosed ☒ not requested ☐ nothing listed**Caltrans Bridge Survey:**☐ enclosed ☒ not requested ☐ nothing listed**Ethnographic Information:**☐ enclosed ☒ not requested ☐ nothing listed**Historical Literature:**☐ enclosed ☒ not requested ☐ nothing listed**Shipwreck Inventory:**☐ enclosed ☒ not requested ☐ nothing listed

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. Requests made after initial invoicing will result in the preparation of a separate invoice.

Thank you for using the California Historical Resources Information System (CHRIS).

Sincerely,

Annette Neal

Researcher

Resources In 0.5 mi. Buffer

PrimCo	PrimNo
P-43-	000996
P-43-	001054
P-43-	001801
P-43-	002632
P-43-	002633
P-43-	002634
P-43-	002635
P-43-	002636
P-43-	002637
P-43-	002638
P-43-	002639
P-43-	003041

Reports in 0.5 mi. Buffer

DocCo	DocNo
S-	004237
S-	004286
S-	004312
S-	007739
S-	007840
S-	008237
S-	008478
S-	008483
S-	008706
S-	008711
S-	009350
S-	009900
S-	010379
S-	010729
S-	010802
S-	010839
S-	011673
S-	011674
S-	012173
S-	014755
S-	015124
S-	015650
S-	016695
S-	016700
S-	018299
S-	018391
S-	018393
S-	022619
S-	022819
S-	025322
S-	029657
S-	031428
S-	031436
S-	033061
S-	037010
S-	049126
S-	053037
S-	053565

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
S-004237	Voided - E-97 SCL	1974	Joseph C. Winter	Archaeological Resources of the Proposed Edmundson Ave. Park, Morgan Hill		
S-004286	Voided - E-149 SCL	1973	Thomas F. King and Patricia P. Hickman	Archaeological Impact Evaluation: The Llagas Creek Project		43-000071, 43-000233, 43-000406, 43-000408
S-004312	Voided - E-178 SCL	1975	Katherine S. Flynn	Archaeological Impact Evaluation, Proposed Construction of Seventeen Miles of Right-of-Way along the Proposed Santa Teresa Expressway by the County of Santa Clara Transportation Agency	Archaeological Resource Service	43-000173, 43-000174
S-007739		1985	Stephen A. Dietz	Morgan Hill Post Office Archaeological Reconnaissance (letter report).	Archaeological Consulting and Research Services, Inc.	
S-007840	IC Record Search Nbr - 6080-86-030	1986	Robert Cartier	Cultural Resource Evaluation of a Parcel on W. Dunne Avenue in the Town of Morgan Hill, County of Santa Clara	Archaeological Resource Management	
S-008237		1986	Betty Schmucker	A Cultural Resource Evaluation of the Gilroy Cogeneration Project Area, Gilroy, California.	Woodward-Clyde Consultants	
S-008478	Agency Nbr - Soil Conservation Service #0494; Voided - E-985 SCL; Voided - S-5018; Voided - S-5019	1981	Robert Cartier, Glory Anne Laffey, Charlene Detlefs, and Peter Johnson	Cultural Resources Evaluation of the Llagas Creek Watershed	Archeological Resource Management	43-000112, 43-000406, 43-000407, 43-000408, 43-000453
S-008478a		1981	Robert Cartier, Charlene Detlefs, and Glory Laffey	Addendum to the Llagas Creek Watershed Cultural Resources Evaluation: Identification and Evaluation of Potentially Significant Bridge Structures Within Reaches 2, 3 and 9	Archeological Resource Management	
S-008478b		1981	Robert Cartier and Charlene Detlefs	Addendum to the Llagas Creek Watershed Cultural Resources Evaluation: Identification and Evaluation of Potentially Significant Bridge and Culvert Structures Within Reaches 7a, 7b, 8a, and 11a	Archeological Resource Management	
S-008483	Other - #0623; Voided - E-991 SCL	1981		Cultural Resource Evaluation of a Parcel on West Dunne Avenue in the City of Morgan Hill, Santa Clara County.	Archaeological Resource Management	
S-008706	Submitter - ARS Project #86-14	1986	William Roop	Archaeological survey of the proposed Evergreen Park, Morgan Hill, CA, ARS project number 86-14 (letter report)	Archaeological Resource Service	

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
S-008711	Submitter - ARS 86-49	1986	Katherine Flynn	Archaeological evaluation of 3 lots located at 17485 Monterey Street at West First Street, Morgan Hill (APN 767-7-27, 28, & 29) (letter report)	Archaeological Resource Management	
S-009350		1987	Larry Bourdeau	Results of Phase I Archaeological Reconnaissance with Recommendations for Cultural Resource Management, Chargin Heights Project Parcel, Application SD-87-07, City of Morgan Hill, Santa Clara County, California	Pacific Museum Consultants	
S-009900	Submitter - ARS 88-27	1988	Katherine Flynn	Archaeological survey of the proposed location of the Parkwood Apartments, W. Dunne Ave. at Del Monte Ave., Morgan Hill (letter report)	Archaeological Resource Service	
S-010379		1988	Larry Bourdeau	Results of Phase I Archaeological Reconnaissance with Recommendations for Cultural Resource Management, Greg Mussallem Project Parcel, APN 764-16-08, West Main Avenue at Del Monte Avenue, Morgan Hill, Santa Clara County, California	Pacific Museum Consultants	43-001054
S-010729		1989	Larry Bourdeau	Results of Phase I Cultural Resource Evaluation and Archaeological Reconnaissance with Recommendations for Cultural Resource Management, Shelle' Thomas Project Parcel, APN 764-16-15, 50 Keystone Avenue, Morgan Hill, Santa Clara County, California	Pacific Museum Consultants	
S-010802		1989	Miley Paul Holman	Archival and Field Inspection of the 12 Proposed Caltrain Extensions between San Jose and Gilroy, Santa Clara County, California (letter report)	Holman & Associates	43-001217
S-010839	IC Record Search Nbr - 6080-89-240	1989	Robert Cartier	Cultural Resource Evaluation for a Parcel (APN 767-12-24/25) on W. Dunne Avenue in the City of Morgan Hill, County of Santa Clara	Archaeological Resource Management	
S-011673	IC Record Search Nbr - 6080-89-269	1990	Robert Cartier	Cultural Resource Evaluation for 65-85 W. First Street in the City of Morgan Hill, County of Santa Clara	Archaeological Resource Management	
S-011674	IC Record Search Nbr - 6080-89-269	1990	Robert Cartier	Cultural Resource Evaluation for the Epperson Project, 140 W. Main Avenue in the City of Morgan Hill, County of Santa Clara	Archaeological Resource Management	

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
S-012173		1990	Larry Bourdeau	Results of Phase II Archaeological Investigations with Recommendations for Cultural Resource Management: the Will Bone House, Historic Archaeological Site CA-SCL-670H, Greg Mussallem Project Parcel, APN 764-16-08, West Main Avenue at Del Monte Avenue, Morgan Hill, Santa Clara County, California	Pacific Museum Consultants	43-001054
S-014755		1992	Robert Cartier	Cultural Resource Evaluation of the Shelle' Thomas Property, City of Morgan Hill, Santa Clara County	Archaeological Resource Management	
S-015124		1993		Cultural Resource Evaluation of Nob Hill Terrace Properties, City of Morgan Hill, Santa Clara County	Archaeological Resource Management	
S-015650	Submitter - AC Project 2155	1993	Anna Runnings and Gary S. Breschini	Preliminary Cultural Resources Reconnaissance for Road Widening on East Dunne Avenue in Morgan Hill, Santa Clara County, California	Archaeological Consulting	
S-016695		1994		Cultural Resource Evaluation of Coast Federal Bank Property, City of Morgan Hill, Santa Clara County	Archaeological Resource Management	
S-016700		1994		Cultural Resource Evaluation of Skeel's Building Site, APN 767-07-50, City of Morgan Hill	Archaeological Resource Management	
S-018299		1996	Colin I. Busby	Cultural Resources Assessment, Santa Teresa Boulevard Plan Line, City of Morgan Hill and Unincorporated areas, Santa Clara County, California	Basin Research Associates, Inc.	43-000996
S-018391	IC Record Search Nbr - 60800-95-414	1995	Robert Cartier	Cultural Resource Evaluation of 6.0 Acres Adjacent to the East Side of De Witt Avenue, North of Spring Avenue, in the City of Morgan Hill, Santa Clara County	Archaeological Resource Management	
S-018393		1995		Cultural Resource Evaluation of a Parcel of Land Located at 225 Spring Avenue in the City of Morgan Hill, County of Santa Clara	Archeological Resource Management	
S-022619	IC Record Search Nbr - 60800-99-789	1999		Cultural Resources Evaluation of the Villa Ciolino Project in the City of Morgan Hill	Archaeological Resource Management	

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
S-022819		2000	Wendy J. Nelson, Maureen Carpenter, and Julia G. Costello	Cultural Resources Survey for the Level (3) Communications Long Haul Fiber Optics Project, Segment WS05: San Jose to San Luis Obispo	Far Western Anthropological Research Group, Inc.; Foothill Resources, Ltd.	27-001191, 27-001219, 27-001243, 27-001889, 27-002242, 27-002322, 35-000024, 35-000036, 35-000111, 43-000106, 43-000109, 43-000141, 43-000455, 43-000573, 43-000575, 43-001071
S-025322	OHP PRN - FCC001127A-D	2000	John A. Nadolski	Archaeological Investigations for the Nob Hill Cell Tower Site	Pacific Legacy, Inc.	
S-025322a		2000	John A. Nadolski	Archaeological Reports for Cell Tower Sites	Pacific Legacy, Inc.	
S-025322b		2000	Daniel Abeyta	Telecommunication Facilities; FCC001127A- D: CA-1109, adjacent to Canyon Road near American Canyon Road and Interstate 80, Napa, CA; 100 West Third Street, Morgan Hill, CA; 9055 South Gate Ridge Road, San Ramon, CA; 2210 West College Avenue, Santa Rosa, CA (Concurrence Letter)	Office of Historic Preservation	

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
S-029657	OHP PRN - FTA021021A; Voided - S-37863; Voided - S-42672; Voided - S-43525	2002	Wendy J. Nelson, Tammara Norton, Larry Chiea, and Reinhard Pribish	Archaeological Inventory for the Caltrain Electrification Program Alternative in San Francisco, San Mateo, and Santa Clara Counties, California	Far Western Anthropological Research Group, Inc.	38-000015, 38-004498, 38-004756, 38-004820, 38-004962, 38-005084, 38-005456, 38-005457, 38-005458, 38-005459, 38-005460, 38-005461, 38-005462, 41-000009, 41-000105, 41-000165, 41-000169, 41-000230, 41-000231, 41-000281, 41-000310, 41-000311, 41-000312, 41-000318, 41-000410, 41-000498, 41-000534, 41-000632, 41-000640, 41-000808, 41-001135, 41-001136, 41-001137, 41-001138, 41-001406, 41-002116, 41-002353, 41-002433, 41-002434, 41-002435, 41-002437, 41-002438, 41-002439, 41-002440, 41-002441, 41-002442, 41-002443, 41-002444, 41-002447, 41-002462, 41-002463, 41-002464, 41-002465, 43-000028, 43-000042, 43-000050, 43-000449, 43-000566, 43-000619, 43-000669, 43-000881, 43-000928, 43-001071, 43-001739, 43-002653, 43-002867, 43-002868, 43-002869, 43-002871, 43-002873, 43-002877, 43-002878, 43-003025, 43-003026, 43-003027, 43-003028, 43-003029, 43-003030, 43-003031, 43-003032, 43-003033, 43-003034, 43-003035, 43-003036, 43-003037, 43-003038, 43-003039, 43-003040, 43-003041, 43-003042, 43-003043, 43-003044
S-029657a		2002	Rand F. Herbert	Finding of No Adverse Effect, Caltrain Electrification Program, San Francisco, San Mateo, and Santa Clara Counties, California	JRP Historical Consulting Services	
S-029657b		2002		Historic Property Survey for the Proposed Caltrain Electrification Program, San Francisco, San Mateo, and Santa Clara Counties, California	Parsons; JRP Historical Consulting Services; Far Western Anthropological Research Group, Inc.	
S-029657c		2002	Knox Mellon	FTA021021A; Caltrain Electrification Program, San Francisco, San Mateo, and Santa Clara Counties	Office of Historic Preservation	
S-029657d		2003	Meta Bunse	Final Finding of Effect Amendment, Caltrain Electrification Project, San Francisco, San Mateo, and Santa Clara Counties, California	JRP Historical Consulting Services	

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
S-029657e		2001	Rand F. Herbert	Draft Finding of No Adverse Effect, Caltrain Electrification Program, San Francisco, San Mateo, and Santa Clara Counties, California	JRP Historical Consulting Services	
S-029657f		2008	Sharon A. Waechter, Jack Meyer, and Laura Leach-Palm	Cultural Resources Addendum for the Caltrain Electrification Program Alternative: San Francisco, San Mateo, and Santa Clara Counties, California	Far Western Anthropological Research Group, Inc.	
S-029657g		2008	Meta Bunse	Addendum Finding of Effect, Caltrain Electrification Program, San Francisco to San Jose (MP 0.0 to 52.0); San Francisco, San Mateo, and Santa Clara Counties, California	JRP Historical Consulting, LLC	
S-029657h		2002		Inventory and Evaluation of Historic Resources, Caltrain Electrification Program, San Francisco to Gilroy (MP 0.0 to 77.4) (Draft)	JRP Historical Consulting Services	
S-031428	Voided - S-31469	2004		Historical Evaluation of the Property at 16835 Monterey Road in the City of Morgan Hill	Archaeological Resource Management	43-001801
S-031436	IC Record Search Nbr - RY048-1328-03-617	2004	Robert Cartier	Revised Cultural Resource Evaluation of the Dewitt Avenue Sewer Replacement Project Area in the City of Morgan Hill	Archaeological Resource Management	
S-033061	Submitter - SWCA Cultural Resources Report Database No. 06-507; Submitter - SWCA Report No. 10715-180	2006	Nancy Sikes, Cindy Arrington, Bryon Bass, Chris Corey, Kevin Hunt, Steve O'Neil, Catherine Pruet, Tony Sawyer, Michael Tuma, Leslie Wagner, and Alex Wesson	Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project, State of California	SWCA Environmental Consultants	01-000027, 01-000040, 01-000087, 01-000088, 01-000089, 01-000090, 07-000138, 27-000802, 27-001191, 27-001207, 28-000467, 43-000106, 43-000141, 43-000449, 43-000573, 43-000575, 43-000754, 43-000928, 43-001071, 48-000208, 48-000211, 48-000214, 48-000441, 48-000549, 49-001583, 57-000194, 57-000198, 57-000297, 57-000301, 57-000307
S-033061a		2006		Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project, State of California	SWCA Environmental Consultants	
S-033061b		2007	Nancy E. Sikes	Final Report of Monitoring and Findings for the Qwest Network Construction Project (letter report)	SWCA Environmental Consultants	
S-037010	Submitter - CML-5152 (016); Voided - S-37012	2008	Miley Paul Holman	Archaeological Survey Report for the Third Street Promenade Project, City of Morgan Hill, Santa Clara County, CML-5152 (016)	Holman & Associates	43-002632, 43-002633, 43-002634, 43-002635, 43-002636, 43-002637, 43-002638, 43-002639

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
S-037010a		2008	Sheila McElroy	Historic Resource Evaluation Report (HRER) for City of Morgan Hill Third Street Promenade Project, 2007 Proposed Third Street Promenade Project: Between Monterey Road and Depot Street in Morgan Hill, California, Federal Identification Number (FIN): CML-5152 (016)	Circa: Historic Property Development	
S-049126	Agency Nbr - FA# STPL-5152(021)	2016	Judith Marvin	Historic Property Survey Report, City of Morgan Hill proposal to resurface two sections of Monterey Road, 4-SCL STPL-5152(021)	Foothills Resources, Ltd.	43-000469
S-049126a		2016	Ian Patrick, Melinda Pacheco Patrick, and Judith Marvin	Archaeological Survey Report for the City of Morgan Hill Monterey Road Preservation Project, Santa Clara County, California.	Patrick GIS Group, Inc.; Foothill Resources, Ltd.	
S-053037	Submitter - 17-115S; Submitter - UHC 00661 Morgan Hill	2017	Eileen Barrow	A Cultural Resources Study of APNs 817-36-032 and 817-36-033, Monterey Road, Morgan Hill, Santa Clara County, California	Tom Origer & Associates	
S-053565	OTIS Report Number - COE_2016_0216_001; Submitter - Project No. 30523030	2013	Joshua Peabody	A Cultural Resources Inventory for the Upper Llagas Creek Flood Protection Project, Project No. 30523030	Cardno Entrix	43-000406, 43-000407, 43-000408, 43-000453, 43-000469, 43-000996, 43-002028
S-053565a		2016	Aaron O. Allen	COE_2016_0216_001, Section 106 Consultation for the Construction of Flood-Protection Features and Environmental Restoration along Llagas Creek	U.S. Army Corps of Engineers	

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
S-010838	IC Record Search Nbr - 6080-89-240	1989	Robert Cartier	Cultural Resource Evaluation for a Parcel (APN 767-12-05) on W. Dunne Avenue in the City of Morgan Hill, County of Santa Clara	Archaeological Resource Management	
S-053380		2006	Dana E. Supernowicz	Cultural Resources Study Of The Morgan Hill Water Tank Project, Cingular Wireless Site No. SNFCCA2007B, 100 W. Third Street, Morgan Hill, Santa Clara County, California 95037	Historic Resource Associates	

Resource List

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-43-000996		Resource Name - 205 & 205A West Main Avenue; OHP PRN - 5037-0112-0000; OHP Property Number - 013799	Building	Historic	HP02	1979 ([none], [none]); 1996 (Ward Hill, [none])	S-018299, S-027985, S-053565
P-43-001054	CA-SCL-000670H	Resource Name - Will Bone House; OHP Property Number - 013784; OHP PRN - 5037-0097-0000	Building	Historic	AH04; HP02	1979 (Larry Scettrini, MH Historical Society); 1988 (Larry Bourdeau, Pacific Museum Consultants)	S-010379, S-012173, S-027985
P-43-001801		Resource Name - 16835 Monterey (Street)	Building	Historic	HP02; HP06	2004 (Robert Cartier, Archaeological Resource Management)	S-031428
P-43-002632		Resource Name - APE map reference number 30; OHP PRN - 5037-0014-0000; Other - Morgan Hill Times Building; Other - Boutell Building; OHP Property Number - 013702	Building	Historic, Unknown	HP06	1979 (Larry Scettrini, MH Historical Society); 2006 (Sheila McElroy, Circa: Historic Property Development)	S-037010, S-037012
P-43-002633		Resource Name - APE map reference number 35; OHP PRN - 5037-0015-0000; Other - Block 18, Lot 2; Other - Aiken House; OHP Property Number - 013703	Building	Historic	HP02	1979 (Larry Scettrini, MH Historical Society); 2006 (Sheila McElroy, Circa: Historic Property Development)	S-037010, S-037012
P-43-002634		Resource Name - APE map reference number 45; OHP PRN - 5037-0016-0000; Other - Sumi's Beauty Shop; Other - Swope Residence; OHP Property Number - 013704; Other - 45 E 3rd Street	Building	Historic	HP02	1979 (Larry Scettrini, MH Historical Society); 2006 (Sheila McElroy, Circa: Historic Property Development)	S-037010, S-037012
P-43-002635		Resource Name - APE map reference number 55; OHP PRN - 5037-0017-0000; Other - Block 18, Lot 19; Other - F.M. Phelps Residence; OHP Property Number - 013705	Building	Historic	HP02	1979 (Larry Scettrini, MH Historical Society); 2006 (Sheila McElroy, Circa: Historic Property Development)	S-037010, S-037012

Resource List

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-43-002636		Resource Name - APE map reference number 57; OHP PRN - 5037-0018-0000; Other - Block 18, Lot 18; Other - Kate Robinson Bungalow; OHP Property Number - 013706; Other - 57 E. 3rd St.	Building	Historic	HP02	1979 (Larry Scettrini, MH Historical Society); 2006 (Sheila McElroy, Circa: Historic Property Development)	S-037010, S-037012
P-43-002637		Resource Name - APE map reference number 65; OHP PRN - 5037-0019-0000; Other - Block 18, Lot 17; Other - John and Annabelle Allen House; Other - Glenwood Lumber Co. House; OHP Property Number - 013707	Building, Element of district	Historic	HP02	1979 (Larry Scettrini, MH Historical Society); 2006 (Sheila McElroy, Circa: Historic Property Development)	S-037010, S-037012
P-43-002638		Resource Name - APE map reference number 75; OHP PRN - 5037-0020-0000; Other - Block 18, Lot 16; Other - Lindsay House; Other - I.B. Briscoe House; OHP Property Number - 013708	Building	Historic	HP02	1979 (Larry Scettrini, MH Historical Society); 2006 (Sheila McElroy, Circa: Historic Property Development)	S-037010, S-037012
P-43-002639		Resource Name - APE map reference number 95; OHP PRN - 5037-0021-0000; Other - Block 18, Lots 5, 6, 7 and 15; Other - Old Dee-Hi Plant (95 E 3rd Street); Other - Original Farmer's Union Store; OHP Property Number - 013709; Other - Original Farmers Union Store; Other - Old Dee-Hi Plant	Building	Historic	HP06	1979 (Larry Scettrini, MH Historical Society); 2006 (Sheila McElroy, Circa: Historic Property Development)	S-037010, S-037012
P-43-003041		Resource Name - Hale's Lumber; Other - MP 67.70	Building	Historic	HP06	2001 (Theresa Rogers, JRP Historical Consulting Services)	S-029657, S-043525

Attachment 3

Native American Heritage Commission Sacred Lands File Search Results



NATIVE AMERICAN HERITAGE COMMISSION

April 8, 2024

Mary Pfeiffer
Rincon Consultants, Inc.Via Email to: mpfeiffer@rinconconsultants.com

Re: West Dunne - Robertson Residential Project, Santa Clara County

To Whom It May Concern:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information submitted for the above referenced project. The results were positive. Please contact the tribes on the attached list for information. Please note that tribes do not always record their sacred sites in the SLF, nor are they required to do so. A SLF search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with a project's geographic area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites, such as the appropriate regional California Historical Research Information System (CHRIS) archaeological Information Center for the presence of recorded archaeological sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. Please contact all of those listed; if they cannot supply information, they may recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: Cody.Campagne@nahc.ca.gov.

Sincerely,

Cody Campagne
Cultural Resources Analyst

Attachment

CHAIRPERSON
Reginald Pagaling
ChumashVICE-CHAIRPERSON
Buffy McQuillen
Yokayo Pomo, Yuki,
NomlakiSECRETARY
Sara Dutschke
MiwokPARLIAMENTARIAN
Wayne Nelson
LuiseñoCOMMISSIONER
Isaac Bojorquez
Ohlone-CostanoanCOMMISSIONER
Stanley Rodriguez
KumeyaayCOMMISSIONER
Laurena Bolden
SerranoCOMMISSIONER
Reid Milanovich
CahuillaCOMMISSIONER
Bennae Calac
Pauma-Yuima Band of
Luiseño IndiansEXECUTIVE SECRETARY
**Raymond C.
Hitchcock**
Miwok, NisenanNAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov

Native American Heritage Commission
Native American Contact List
Santa Clara County

County	Tribe Name	Fed (F) Non-Fed (N)	Contact Person	Contact Address	Phone #	Fax #	Email Address	Cultural Affiliation	Counties	Last Updated
Santa Clara	Amah Mutsun Tribal Band	N	Ed Ketchum, Vice-Chairperson		(530) 578-3864		aerieways@aol.com	Costanoan Northern Valley Yokut	Alameda,Calaveras,Contra Costa,Fresno,Madera,Mariposa,Merced,Monterey,San Benito,San Francisco,Santa Clara,Santa Cruz,Stanislaus	7/20/2023
	Amah Mutsun Tribal Band	N	Valentin Lopez, Chairperson	P.O. Box 5272 Galt, CA, 95632	(916) 743-5833		vjltestingcenter@aol.com	Costanoan Northern Valley Yokut	Alameda,Calaveras,Contra Costa,Fresno,Madera,Mariposa,Merced,Monterey,San Benito,San Francisco,Santa Clara,Santa Cruz,Stanislaus	7/20/2023
	Amah MutsunTribal Band of Mission San Juan Bautista	N	Irene Zwierlein, Chairperson	3030 Soda Bay Road Lakeport, CA, 95453	(650) 851-7489	(650) 332-1526	amahmutsuntribal@gmail.com	Costanoan	Alameda,Contra Costa,Merced,Monterey,San Benito,San Francisco,San Mateo,Santa Clara,Santa Cruz,Stanislaus	
	Costanoan Ohlone Rumsen-Mutsen Tribe	N	Patrick Orozco, Chairman	644 Peartree Drive Watsonville, CA, 95076	(831) 728-8471		yanapvoic97@gmail.com	Ohlone	Alameda,Contra Costa,Merced,Monterey,San Benito,San Francisco,San Mateo,Santa Clara,Santa Cruz,Stanislaus	4/4/2024
	Costanoan Rumsen Carmel Tribe	N	Desiree Munoz, Tribal Liaison		(909) 491-8254		ohlonesisters@gmail.com	Costanoan	Alameda,Contra Costa,Merced,Monterey,San Benito,San Francisco,San Mateo,Santa Clara,Santa Cruz,Stanislaus	8/18/2023
	Costanoan Rumsen Carmel Tribe	N	Carla Munoz, Tribal Council	604 W Fernleaf Ave Pomona, CA, 91766	(415) 690-3110		carlamarieohlone@gmail.com	Costanoan	Alameda,Contra Costa,Merced,Monterey,San Benito,San Francisco,San Mateo,Santa Clara,Santa Cruz,Stanislaus	8/18/2023
	Indian Canyon Mutsun Band of Costanoan	N	Ann Marie Sayers, Chairperson	P.O. Box 28 Hollister, CA, 95024	(831) 637-4238		ams@indiancanyons.org	Costanoan	Alameda,Contra Costa,Merced,Monterey,San Benito,San Francisco,San Mateo,Santa Clara,Santa Cruz,Stanislaus	3/15/2024
	Indian Canyon Mutsun Band of Costanoan	N	Kanyon Sayers-Roods, MLD Contact	1615 Pearson Court San Jose, CA, 95122	(408) 673-0626		kanyon@kanyonkonsulting.com	Costanoan	Alameda,Contra Costa,Merced,Monterey,San Benito,San Francisco,San Mateo,Santa Clara,Santa Cruz,Stanislaus	3/15/2024
	Muwekma Ohlone Tribe of the SF Bay Area	N	Charlene Nijmeh, Chairperson	1169 S. Main Street, Ste. 336 Manteca, CA, 95377	(408) 464-2892		cnijmeh@muwekma.org	Costanoan	Alameda,Contra Costa,Marin,Merced,Napa,Sacramento,San Francisco,San Joaquin,San Mateo,Santa Clara,Santa Cruz,Stanislaus	3/28/2024
	Muwekma Ohlone Tribe of the SF Bay Area	N	Richard Massiatt, Councilmember/MLD Tribal Rep.	1169 S. Main Street, Ste. 336 Manteca, CA, 95377	(209) 321-0372		rmassiatt@muwekma.org	Costanoan	Alameda,Contra Costa,Marin,Merced,Napa,Sacramento,San Francisco,San Joaquin,San Mateo,Santa Clara,Santa Cruz,Stanislaus	3/28/2024
	Ohlone/Costanoan-Esselen Nation	N	Christanne Najera, Vice Chairperson	519 Viejo Gabriel Soledad, CA, 93960	(831) 235-4590		chris.johntmenold@gmail.com	Costanoan Esselen	Alameda,Contra Costa,Merced,Monterey,San Benito,San Francisco,San Mateo,Santa Clara,Santa Cruz,Stanislaus	6/12/2023
	Ohlone/Costanoan-Esselen Nation	N	Louise Miranda-Ramirez, Chairperson	P.O. Box 1301 Monterey, CA, 93942	(408) 629-5189		ramirez.louise@yahoo.com	Costanoan Esselen	Alameda,Contra Costa,Merced,Monterey,San Benito,San Francisco,San Mateo,Santa Clara,Santa Cruz,Stanislaus	6/12/2023
	Tamien Nation	N	Quirina Luna Geary, Chairperson	PO Box 8053 San Jose, CA, 95155	(707) 295-4011		qgeary@tamien.org	Costanoan	Alameda,San Mateo,Santa Clara,Stanislaus	4/11/2023
	Tamien Nation	N	Lillian Camarena, Secretary	336 Percy Street Madera, CA, 93638	(559) 363-5914		Lcamarena@tamien.org	Costanoan	Alameda,San Mateo,Santa Clara,Stanislaus	4/11/2023
	Tamien Nation	N	Johnathan Wasaka Costillas, THPO	10721 Pingree Road Clearlake Oaks, CA, 94523	(925) 336-5359		thpo@tamien.org	Costanoan	Alameda,San Mateo,Santa Clara,Stanislaus	4/11/2023

Native American Heritage Commission
Native American Contact List
Santa Clara County

County	Tribe Name	Fed (F) Non-Fed (N)	Contact Person	Contact Address	Phone #	Fax #	Email Address	Cultural Affiliation	Counties	Last Updated
	The Ohlone Indian Tribe	N	Andrew Galvan, Chairperson	P.O. Box 3388 Fremont, CA, 94539	Phone: (510) 882-0527	(510) 687-9393	chochenyo@AOL.com	Bay Miwok Ohlone Patwin Plains Miwok	Alameda, Contra Costa, San Francisco, San Mateo, Santa Clara	7/24/2023
	The Ohlone Indian Tribe	N	Vincent Medina, Cultural Leader	17365 Via Del Rey San Lorenzo, CA, 94580	(510) 610-7587		vincent.d.medina@gmail.com	Bay Miwok Ohlone Patwin Plains Miwok	Alameda, Contra Costa, San Francisco, San Mateo, Santa Clara	7/24/2023
	The Ohlone Indian Tribe	N	Desiree Vigil, THPO	259 Winwood Avenue Pacifica, CA, 94044	(650) 290-0245		dirwin0368@yahoo.com	Bay Miwok Ohlone Patwin Plains Miwok	Alameda, Contra Costa, San Francisco, San Mateo, Santa Clara	11/30/2023
	Wuksachi Indian Tribe/Eshom Valley Band	N	Kenneth Woodrow, Chairperson	1179 Rock Haven Ct. Salinas, CA, 93906	(831) 443-9702		kwood8934@aol.com	Foothill Yokut Mono	Alameda, Calaveras, Contra Costa, Fresno, Inyo, Kings, Madera, Marin, Mariposa, Merced, Mono, Monterey, San Benito, San	6/19/2023

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed West Dunne - Robertson Residential Project, Santa Clara County.

Record: PROJ-2024-001906
Report Type: List of Tribes
Counties: Santa Clara
NAHC Group: All

Attachment 4

Amah Mutsun Tribal Band of San Juan Bautista Tribal Outreach Response

***The Amah Mutsun Tribal Band of San Juan Bautista
&
A.M.T.B. Inc.***

Letter of Response

To whom it may concern:

It is our pride and privilege to be of service for any Native American Cultural Resource Monitoring, Consulting and/ or Sensitivity Training you may need or require. We take our Heritage and History seriously and are diligent about preserving as much of it as we can. Construction is a constant in the Bay Area and with that new discoveries are bound to happen. If you choose our services, we will gladly guide all personnel through proper procedures to safely protect and preserve: Culture, Heritage, and History.

It is highly recommended, if not previously done, to search through Sacred Lands Files (SLF) and California Historical Resource Information Systems (CHRIS) as well as reaching out to the Native American Heritage Commission (NAHC) In order to determine whether you are working in a Cultural and/ or Historic sensitivity.

If you have received any positive cultural or historic sensitivity within 1 mile of the project area here are A.M.T.B Inc's and Amah Mutsun Tribal Band of San Juan Bautista's recommendations:

- All Crews, Individuals and Personnel who will be moving any earth be Cultural Sensitivity Trained.
- A Qualified California Trained Archaeological Monitor is present during any earth movement.
- A Qualified Native American Monitor is present during any earth movement.

If further Consultation, Monitoring or Sensitivity Training is needed please feel free to contact A.M.T.B. Inc. or Myself Directly. A.M.T.B. Inc. 650 851 7747

Irenne Zwiierlein

Irenne Zwiierlein



3030 Soda Bay Road, Lakeport
CA 95453
amtbtnc21@gmail.com
(650)851-7447

***Amah Mutsun Tribal Band of San Juan Bautista
&
AMTB Inc.***

3030 Soda Bay Road Lakeport, CA 95453

Our rates for 2024 are

\$275.00 per hour.

4 hours minimum

Cancellations not 48 hours (about 2 days) prior will be charged as a 4-hour minimum. There is a round trip mileage charge if canceled after they have traveled to site.

Anything over 8 hours a day is charged as time and a half.

Weekends are charged at time and a half.

Holidays are charged at double the time.

For fiscal year (FY) 2024, standard per diem rate of \$412. (\$333. lodging, \$79 M&IE).

M&IE Breakdown FY 2023

M&IE Total¹	Continental Breakfast/ Breakfast²	Lunch²	Dinner²	Incidental Expenses	First & Last Day of Travel³
\$79.00	\$18.00	\$20.00	\$36.00	\$5.00	\$59.25

Beginning 2024, the standard mileage rates for the use of a car round trip (also vans, pickups or panel trucks) will be: \$.67 cents per mile driven for business use or what the current federal standard is at the time.

Our Payment terms are 5 days from date on invoice.

Our Monitors are Members of the Amah Mutsun Tribal Band of Mission San Juan Bautista.

If you have any questions, please feel free to contact the A.M.T.B. Inc. at the below contact information.

Sincerely,

Irenne Zwierlein

Irenne Zwierlein

3030 Soda Bay Rd, Lakeport
CA 95453
amtbinc21@gmail.com
(650)851-7747

PLANNING COMMISSION STAFF REPORT

MEETING DATE: September 10, 2024

PREPARED BY:

Roshni Saxena, Assistant Planner

APPROVED BY: Jennifer Carman

SD2023-0003/EA2023-0008: E. DUNNE – SERENE HILLS: REQUEST FOR A TENTATIVE SUBDIVISION MAP OF AN EXISTING 8.37 ACRE-SITE FOR THE DEVELOPMENT OF SEVEN LOTS TO CONSTRUCT SEVEN DETACHED SINGLE-FAMILY RESIDENCES. THE PROPERTIES, IDENTIFIED BY ASSESSOR PARCEL NUMBERS 728-02-002 AND 728-02-003, ARE LOCATED ON 2275 EAST DUNNE AVENUE, NORTH OF SADDLEBACK DRIVE; (SERENE HILLS, LLC., APPLICANT). CEQA: MITIGATED NEGATIVE DECLARATION.

RECOMMENDATION(S)

1. Open/close public hearing; and
2. Adopt a Resolution approving a Mitigated Negative Declaration and a Tentative Subdivision Map for the future development of a single-family detached residential project consisting of 7 custom lots.

LOCATION MAP/PROJECT INFORMATION:



- | | | |
|----|---------------|--|
| 1. | Location: | North of East Dunne and Saddleback Drive (APNs: 728-02-002 and -003) |
| 2. | Site Area: | 8.37 |
| 3. | General Plan: | Residential Estate (RE) |
| 4. | Zoning: | Residential Estate 1-Acre (RE-1) |

5. Request: Tentative Subdivision Map approval and Adopt Mitigated Negative Declaration

BACKGROUND:

On September 25, 2018, a General Plan Amendment, Zoning Amendment, and Environmental Assessment (GPA2018-0001/ZA2018-0001/EA2018-0001) was presented to the Planning Commission for the request to amend the land use designation from Residential Estate (RE) to Residential Detached Low (RDL) with corresponding zoning classification from Residential Estate one-acre to Residential Detached Low (RDL-12,000) on the 8.34-acre site. The Planning Commission found the requested amendments to be inconsistent with General Plan Policies CNF 9.1 Density Feathering and CNF 11.3 Appropriate Residential Transitions, and stated the physical site constraints render 12,000 square foot lots unsuitable for the area. At the same meeting, the Commission unanimously recommended approval of the Mitigated Negative Declaration, in support of a less intense project that may contain 20,000 square foot lot minimums.

The applicant revised the zoning amendment proposal to reflect the Planning Commission's recommendation on the Mitigated Negative Declaration and presented the project to City Council at the February 6, 2019 meeting. After much discussion and deliberation, the Council denied (unanimous) the revised General Plan Amendment, Zoning Amendment, and Mitigated Negative Declaration.

On April 12, 2022, a Preliminary Plan Review was presented to the Planning Commission for preliminary input on a proposed General Plan Amendment. The applicant requested a Preliminary Plan Review to consider a General Plan Amendment for an 8.34-acre site to increase the density from Residential Estate (RE) minimum one-acre lots to Residential Detached Low (RDL) up to four units to the acre. A specific development plan was not proposed; however, a conceptual plan was provided demonstrating the ability to subdivide the site into thirteen lots greater than 20,000 square feet with associated park and roadway improvements. The Planning Commission provided feedback regarding the request; no decision was made as part of the Preliminary Plan Review request.

PROJECT DESCRIPTION:

The property owner is requesting consideration of a Tentative Subdivision Map (Attachment 1) for the existing 8.37-acre project site to be subdivided into seven parcels ranging from approximately 43,571 square feet (sf) to 51,890 sf. The project request includes consistency with the current General Plan (RE) and Zoning Designation (RE-1).

To develop the site as proposed, the following would be required:

- Tentative Subdivision Map
- Design Permit
- Environmental Assessment

Site Description

The approximately 8.37-acre project site, identified by Assessor's Parcel Numbers (APNs) 728-02-002 and -003, is located at 2275 East Dunne Avenue, north of the terminus of Saddleback Drive in Morgan Hill, California. The project site consists primarily of disced grassland and contains two existing Pacific Gas and Electric Co. (PG&E) easements, an existing well and well tank, and 18 trees, located primarily on the eastern half of the site. A drainage swale crosses the project site from the northeast to the southwest. Surrounding land uses include large-lot single-family residences and undeveloped parcels to the north, a single-family residential subdivision to the south, and undeveloped land to the east and west.

Surrounding Uses

	General Plan Land Use	Zoning	Existing Use
Project Site	Residential Estate	RE-1	Rural Residential
North	Residential Estate	RE-1	Rural Residential
East	Open Space	OS	Undeveloped Land
South	Residential Detached Medium	RDM-7,000 RDM-9,000	Single-Family Residential Detached and Attached
	Residential Attached Low	RAL-3,500	
West	Residential Estate	RE-1	Rural Residential

PROJECT ANALYSIS AND FINDINGS:**ANALYSIS**

The proposed project was analyzed with respect to conformance with: 1) Morgan Hill 2035 General Plan; 2) Zoning Ordinance 3) Findings and 4) California Environmental Quality Act.

1. General Plan Land Use Consistency

General Plan Policies that would apply to this project include:

Policy CNF-9.1 – Density Feathering from High to Low Densities. Encourage feathering from higher urban densities to lower rural densities to occur within the City limits. Feathering should begin as development nears the urban Growth Boundary.

The subject site has a land use designation of Residential Estate. The lot sizes to the north and west range from 3,500 square feet to 9,000 square feet. The proposed subdivision would result in lot sizes ranging from 43,571 sf to 51,890 sf, and is consistent with the RE-1 Zoning Designation.

Policy CNF-10.4– Single-Family Housing Supply. Support actions to maintain an adequate supply of single-family housing throughout the community, including provisions of affordable single-family housing to those persons who work within the community.

The proposed subdivision would allow for the future development of 7 single-family housing units and will pay into the housing in-lieu fee to support the future production of housing affordability.

Policy CNF-11.3 – Appropriate Residential Transitions. Provide for an acceptable transition in lot size and density between adjacent residential areas.

The project proposes consistency with the Residential Estate 1-acre land use and is an acceptable residential transitional land use between the adjacent Residential Detached Medium, Residential Estate and Open Space land use designated areas.

2. Zoning Ordinance Consistency

The proposed subdivision will allow a future project to construct a maximum of 7 housing units,

including lot sizes that are consistent with the Residential Estate (RE-1) Zoning Designation.

3. Housing Crisis Act of 2019

California Senate Bill 330 (SB 330) established the “Housing Crisis Act of 2019”, effective January 1, 2020, making changes to the local approval process – this law supersedes City requirements. The law also suspends the City’s Residential Development Control System (RDCS) which was a housing development pacing tool the City utilized for nearly 40 years prior to the new legislation. SB 330 allows development to the General Plan land use density if zoning is inconsistent with the General Plan.

Inclusionary Housing Ordinance

The Inclusionary Housing Ordinance (IHO) is the mechanism that produces the City’s rental and ownership Below Market Rate (BMR) units. The IHO requires projects outside the Downtown area to restrict 15% of the proposed units as income-restricted affordable (BMR Obligation). The IHO allows the developer to construct a minimum of 50% of the required BMR units and 'buyout' up to 50% of the requirement through an in-lieu fee. There are circumstances in which an applicant may buy out 100% of their obligation. The City’s IHO “Buyout” Policy allows 100% buy out of custom lot projects, between 2 and 99 units, where a developer creates lots for purchase, and the residential units are built separately by individual owners. The requirement can be satisfied by each purchaser of a lot by paying an in-lieu fee before the issuance of a building permit based on the per habitable square feet of the residential building area to be built. In this case, each purchaser will pay a fee.

For this 7-unit single-family custom residential development, the conditions of approval included with this first approval of the residential project require that prior to the recordation of the final map, the applicant shall enter into an Inclusionary Affordable Housing In-Lieu Fee Agreement prepared by the city attorney, approved by the City Manager, and recorded against the property upon which the residential project will be developed.

CONCLUSION:

The project has been found to be consistent with the General Plan and Zoning Code. Staff recommends the Planning Commission approve the Tentative Subdivision Map and the Initial Study/Mitigated Negative Declaration/Mitigation Monitoring and Reporting Plan.

CEQA (California Environmental Quality Act):

Raney Planning and Management, Inc. prepared a revised Mitigated Negative Declaration to supplement the Initial Study that was prepared for the project by David J. Powers pursuant to the California Environmental Quality (CEQA) for the 2018 iteration of the project (Attachment 2). The 2018 project included a General Plan Amendment and Rezoning, while the current proposed project is a less intense project including only seven housing units and is consistent with the General Plan and Zoning Designation.

With implementation of mitigation measures in accordance with the City’s General Plan and Municipal Code, and other applicable plans, policies, regulation, and ordinances, future development allowed with the subdivision would not result in significant geology and soils, hazards and hazardous materials, hydrology and water quality, or public services impacts and would not contribute to cumulative impacts to these resources.

The project would not impact agricultural and forestry resources or mineral resources; therefore, it would not contribute to a significant cumulative impact on these resources. The 2018 Initial Study considered the anticipated effects of future residential development allowed by the General Plan and Zoning amendments and concluded that the proposed amendments would not result in any significant unavoidable environmental impacts. A revised Mitigated Negative Declaration and

Mitigation Monitoring and Reporting Program have prepared for the 2024 project.

The draft Initial Study was circulated for public review for 30 days, from August 9, 2024 through September 9, 2024. A total of 1 comment letter was received by the City during the Initial Study public review period (Attachment 3).

CEQA Guidelines Sections §15073, 15073.5, and 15074 provide direction on the public review of a draft MND, when a draft MND must be recirculated for additional public review, and the process for consideration and adoption of an MND, respectively. In contrast with the more exhaustive EIR public review process requirements (pursuant to CEQA Guidelines Section §15088) that mandate the lead agency must provide written responses to comments received involving environmental issues, written responses are not mandated for public comments received on a draft MND. No specific requirements are placed on a lead agency as to how to address issues raised in public comments received on the draft MND, other than to be vigilant for the presence of substantial evidence in support of a fair argument the project at issue may result in a significant impact, as discussed in the preceding section.

The primary issue raised with the project by the comment received included opposition to the creation of more housing units within the City. Based on staff review of the comment, it has been determined that the comment received on the draft Initial Study/MND does not warrant recirculation to provide for additional public review, nor does the comment introduce substantial evidence in support of a fair argument that the proposed subdivision may result in a significant impact to the environment. Therefore, the Initial Study/MND is eligible for consideration and adoption by the City as part of its deliberations involving the proposed Tentative Subdivision Map.

COMMUNITY ENGAGEMENT:

The Morgan Hill community was informed about the proposed project through public notification including newspaper notice and direct mail to property owners within 300 feet of the project. A webpage for the project was also created on the Morgan Hill website with project materials posted for the public to review.

ATTACHMENTS:

1. Serene Hills Resolution
2. Serene Hills Tentative Map
3. Serene Hills IS/MND
4. 2275 East Dunne MMRP
5. Serene Hills Dunne MND Public Comment

RESOLUTION NO. 24-10

A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF MORGAN HILL APPROVING A 7-LOT TENTATIVE SUBDIVISION MAP ON A 8.37-ACRE SITE, FOR PROPERTY LOCATED ON NORTH OF EAST DUNNE AND SADDLEBACK DRIVE (728-02-002 & 728-02-003)

WHEREAS, on, August 9, 2023, Serene Hills, LLC., submitted an application for a 7-lot Tentative Subdivision Map to develop 7-custom single-family residential units on an approximately 8.37-acres site (SD2023-0003/EA2023-0008: E. Dunne – Serene Hills; and

WHEREAS, such request was considered by the Planning Commission at their regular meeting of September 10, 2024; and

WHEREAS, the project has been reviewed in compliance with the California Environmental Quality Act (CEQA); and

WHEREAS, testimony received at a duly-noticed public hearing, along with exhibits and drawings and other materials have been considered in the review process.

**NOW, THEREFORE, THE MORGAN HILL PLANNING COMMISSION DOES
RESOLVE AS FOLLOWS:**

SECTION 1. Recitals

The Planning Commission has considered the full record before it, which may include but not limited to such things as the staff report, public testimony, and other materials and evidence submitted or provided. Furthermore, the recitals set forth above are found to be true and correct and are incorporated herein by reference.

SECTION 2. California Environmental Quality Act Finding

Finding: A Modified Initial Study/Mitigated Negative Declaration prepared for the Project has been completed in compliance with CEQA Guidelines Section 15183 and is consistent with state and local guidelines implementing CEQA.

SECTION 3. Tentative Subdivision Map Finding

Finding: The Planning Commission finds that the proposed subdivision, together with its provisions for its design and improvements, is consistent with applicable general or specific plans adopted by the city.

The Tentative Subdivision Map entitled “Serene Hills Site Development Plan” submitted by MH Engineering dated March 20, 2023, attached as Exhibit A has been designed consistent with the City’s General Plan, considering neighborhood circulation patterns and providing future connections.

SECTION 4. The Planning Commission approves the Tentative Subdivision Map and the Mitigated Negative Declaration with Mitigation Monitoring and Reporting Program described as SD2023-0003/EA2023-0008: Dunne – Serene Hills. The subdivision shall be expressly conditioned in conformance with conditions incorporated herein and as attached as Exhibit “B”.

PASSED AND ADOPTED THIS 10th DAY OF SEPTEMBER 2024, AT A REGULAR MEETING OF THE PLANNING COMMISSION BY THE FOLLOWING VOTE:

AYES: COMMISSIONERS:

NOES: COMMISSIONERS:

ABSTAIN: COMMISSIONERS:

ABSENT: COMMISSIONERS:

ATTEST:

APPROVED:

JENNA LUNA, Deputy City Clerk

LIAM DOWNEY, Chair

A F F I D A V I T

We, _____, applicants, hereby agree to accept and abide by the terms and conditions specified in this resolution.

By: _____

Date: _____

EXHIBIT "A"
VESTING TENTATIVE MAP

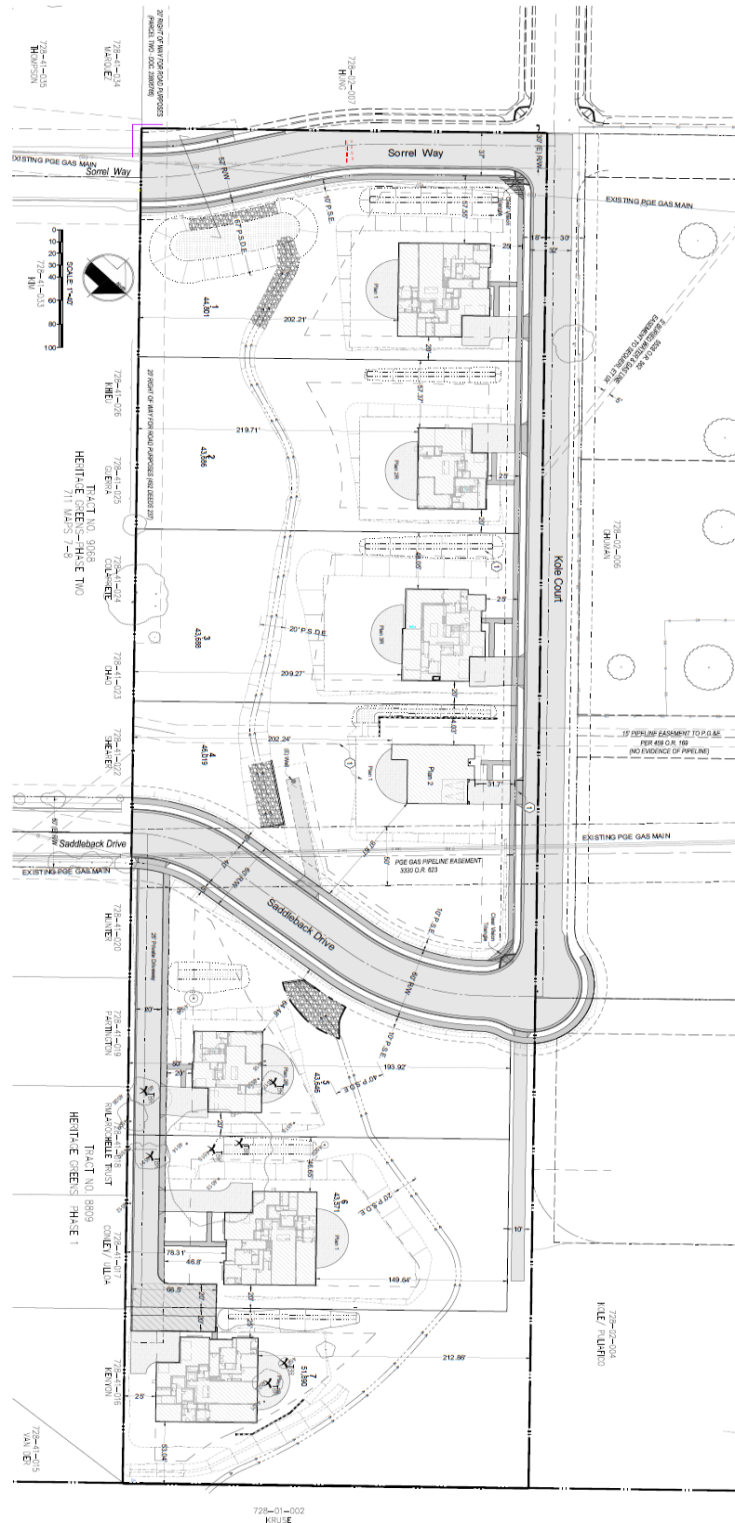


EXHIBIT "B"
STANDARD CONDITIONS

APPLICATION NO: SD2023-0003/EA2023-0008 (Dunne – Serene Hills)

THE FOLLOWING APPROVAL REQUIREMENTS AND ANY SPECIAL CONDITIONS SHALL BE APPLIED THROUGH THE DEVELOPMENT APPROVAL PROCESS.

Legend

MHMC= Morgan Hill Municipal Code
MHARH= Morgan Hill Architectural Review Handbook
CMH= City of Morgan Hill
CFC= California Fire Code

I. PROJECT DESCRIPTION

The project includes the development of the Serene Hills residential project that consists of 7-custom lots to include detached single-family dwellings on an approximately 8.37 site.

The project shall comply with all requirements of related project approvals granted by the City, including all of the following:

- A. Tentative Subdivision Map SD2023-0003
- B. Environmental Assessment EA2023-0008

II. PROJECT CONDITIONS OF APPROVAL

This Subdivision approval is limited to the plan set date stamped September 10, 2024 on file (File Number: SD2023-0003) with the Development Services Department. These documents show the location and dimensions of all vehicle and pedestrian circulation ways (ingress/egress) and other easement areas.

PLANNING DIVISION

DEFENSE AND INDEMNITY

- A. As part of, and in connection, with this application to the City of Morgan Hill, Applicant agrees to defend, indemnify, and hold harmless the City of Morgan Hill, its officers, agents, employees, officials and representatives (Indemnitees) from and against any and all claims, actions, or proceedings arising from any suit for damages or for equitable or injunctive relief which is filed against City to attack, set aside, void or annul its approval of this application or any related decision, or the adoption of any environmental documents which relates to said approval. The City shall promptly notify the Applicant of any such claim, action or proceeding

and the City shall cooperate fully in the defense thereof. In the event that Applicant is required to defend Indemnitees in connection with the proceeding, Indemnitees shall retain the right to approve (a) the counsel to so defend Indemnitees; (b) all significant decisions concerning the manner in which the defense is conducted; and (c) any and all settlements, which approval shall not be unreasonably withheld. This indemnification shall include, but is not limited to, (a) all pre-tender litigation costs incurred on behalf of the City, including City's attorney's fees and all other litigation costs and expenses, including expert witnesses, required to defend against any lawsuit brought as a result of City's approval or approvals; (b) reasonable internal City administrative costs, including but not limited to staff time and expense spent on the litigation, after tender is accepted; and (c) all damages, costs, expenses, attorney fees or expert witness fees that may be awarded to the prevailing party arising out of or in connection with the approval of the application or related decision. City may, in its sole discretion, participate in the defense of such action; but such participation shall not relieve Applicant of its obligations under this condition. The undersigned hereby represents that they are the Applicant or are fully empowered by the Applicant as their agent to agree to provide the indemnification, defense and hold harmless obligations, and the signature below represents the unconditional agreement by Applicant to be bound by such conditions.

TIME LIMITS

- A. **Term:** The Tentative Parcel Map approval granted pursuant to this Approval Certificate shall remain in effect for two years to September 10, 2026. Failure to apply for Final Map approval with the City Engineer within this term shall result in expiration of approval unless an extension of time is granted by the Development Services Department prior to the expiration date. **(MHMC 17.20.170; 17.24.110)**

SITE DEVELOPMENT

- A. **Final Site Development Plans:** Final site development plans shall be reviewed for conformance with SD2023-0003. All such plans shall include:
1. Detail depicting all concrete curbs as full formed.
 2. Provision of catalogue drawings depicting the proposed parking area lighting fixtures. Exterior lighting of the building and site shall be designed so that lighting is not directed onto adjacent properties and light source is shielded from direct off-site viewing.
 3. Ramps, special parking spaces, signing and other physical features for the disabled, shall be provided throughout the site for all publicly used facilities.
 4. All mechanical equipment, including electrical and gas meters, post indicator valve, backflow prevention devices, etc., shall be architecturally

screened from view or located interior to the building. All ground mounted utility appurtenances such as transformers shall not be visible from any public right-of-way and shall be adequately screened through the use or combination of concrete or masonry walls, berming, and landscaping. **(MHARH p.20, 45, 79)** For additional screening, backflow preventers shall be painted dark green, except the fire connection which shall be painted yellow.

5. All existing on-site overhead utilities shall be placed underground in an approved conduit from the service connection at the street or at the property line to the service connection at the building.
- C. **Street Names:** Street names, private or otherwise, used to identify building locations shall be submitted at building permit stage to the Planning Division for approval. Proposed street names shall comply with the Street Naming Policy approved by City Council (Resolution No. 4601).
- D. **Tree Protection:** Unless tree removal has been previously approved, all trees located within 25 feet of any site disturbance shall be protected using the following minimum protection measures (these guidelines shall be included with all site development plans):
1. Mark all trees to be saved with a survey flag or ribbon. Do not nail or staple directly to the tree.
 2. Erect a temporary fence enclosing an area equal to at least the dripline of the tree (or as far from the trunk as possible). This tree protection zone shall not be used for parking, storage of building materials, or other equipment or the placement of temporary or permanent fill. Signs should be posted identifying the restriction of uses in the tree protection zone.
 3. Locate structures, grade changes, and other ground or surface disturbances (e.g. concrete pours) as far as feasible from the “dripline” area of the tree.
 4. Avoid root damage through grading, trenching, and compaction, at least within an area 1.5 times the dripline area of the tree. Where root damage cannot be avoided, roots encountered over 1 inch in diameter should be exposed approximately 12 inches beyond the area to be disturbed (towards the tree stem), by hand excavation, or with specialized hydraulic or pneumatic equipment, cut cleanly with hand pruners or power saw and immediately back-filled with soil. Avoid tearing or otherwise disturbing that portion of the roots to remain.
 5. The addition of plant or other landscaping materials shall remain outside of the dripline of all trees.

6. All trees proposed to be removed from the project site shall be replaced at a 1:1 ratio. Replacement trees shall be consistent with the City of Morgan Hill Master Street Tree. All replacement trees shall be a minimum of 15-gallons in size. All mitigation/replacement trees shall be shown on the landscape plans and approved by the Development Services Director prior to the issuance of the building/grading permit.
7. Any tree subject to Chapter 12.32 Restrictions On Removal Of Significant Trees of the Morgan Hill Municipal Code requires approval from the Planning Division. The applicant shall request approval prior to removing any significant trees.

HABITAT PLAN

- A. **Fees:** The approved project is covered pursuant to the Santa Clara Valley Habitat Plan (Habitat Plan) and subject to fees and conditions contained in the Habitat Plan.
- B. **Application Package:** Prior to issuance of a grading permit, the project shall complete and submit a Habitat Plan Application Package. All fees shall be paid prior to issuance of a grading permit. **(MHMC 18.132)**
- C. **Conditions:** Any additional conditions or mitigations required by the Habitat Plan shall be clearly stated on all plans that involve any ground disturbing activity (i.e. grading plans, improvement plans, paving plans, demolition plans or other plans for site clearing or temporary stockpile of dirt). **(MHMC 18.132)**

AIR QUALITY

- A. **Dust, Noise, Vibration and Materials Management Plan:** A management plan detailing strategies for control of noise, dust and vibration, and storage of hazardous materials during construction of the project shall be submitted for review prior issuance of a grading permit and requirements shall be included on all site development and grading plans. The intent of this condition is to minimize construction related disturbance of residents of the nearby or adjacent properties. **(MHMC 18.76)**
1. **Basic Construction Mitigation Measure (BCMMs) Related to Dust Suppression.** The following measures shall be implemented with the project:
 1. All exposed surfaces (e.g. parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
 2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
4. All vehicle speeds on unpaved roads shall be limited to 15 mph.
5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of [CCR]). Clear signage shall be provided for construction workers at all access points.
7. All construction equipment shall be maintained and properly tuned in accordance with the manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.
8. Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

BAAQMD strongly encourages projects to implement enhanced best management practices to control fugitive dust emissions.:

1. All exposed surfaces shall be watered at a frequency adequate to maintain minimum soil moisture of 12 percent. Moisture content can be verified by lab samples or moisture probe.
2. All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.
3. Wind breaks (e.g., trees, fences) shall be installed on the windward side(s) of actively disturbed areas of construction. Wind breaks should have at maximum 50 percent air porosity.
4. Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established.
5. The simultaneous occurrence of excavation, grading, and ground-disturbing construction activities on the same area at any one time shall

be limited. Activities shall be phased to reduce the amount of disturbed surfaces at any one time.

6. All trucks and equipment, including their tires, shall be washed off prior to leaving the site.
7. Site accesses to a distance of 100 feet from the paved road shall be treated with a 6 to 12-inch compacted layer of wood chips, mulch, or gravel.
8. Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from sites with a slope greater than one percent.
9. Minimizing the idling time of diesel-powered construction equipment to two minutes.
10. The project shall develop a plan demonstrating that the off-road equipment (more than 50 horsepower) to be used in the construction project (i.e., owned, leased, and subcontractor vehicles) would achieve a project wide fleet-average 20 percent NOX reduction and 45 percent PM reduction compared to the most recent ARB fleet average. Acceptable options for reducing emissions include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as such become available.
11. Use low VOC (i.e., ROG) coatings beyond the local requirements (i.e., Regulation 8, Rule 3: Architectural Coatings).
12. Requiring that all construction equipment, diesel trucks, and generators be equipped with Best Available Control Technology for emission reductions of NOx and PM.
13. Requiring all contractors use equipment that meets CARB's most recent certification standard for off-road heavy-duty diesel engines.

CULTURAL RESOURCES

- A. **Significant historic or archaeological materials:** A moderate potential exists for unrecorded historic-period archaeological resources to be within the project area. The developer shall enter into written contracts with an archaeologist and the Tamien Nation Tribe, and pay all fees associated with the activities required by this condition. The following policies and procedures for treatment and disposition of inadvertently discovered human remains or archaeological materials shall apply:

1. Prior to start of grading or earthmoving activity on the "first day of

construction", the archaeologist and Tamien Nation Tribal Monitor shall hold a pre-construction meeting for the purposes of "cultural sensitivity training" with the general contractor and subcontractors.

2. A Tamien Nation Tribal Monitor shall be present on-site to monitor all ground-disturbing activities and an archaeologist shall be on-call. Where historical or archaeological artifacts are found, work in areas where remains or artifacts are found will be restricted or stopped until proper protocols are met, as described below:
 - a. Work at the location of the find will halt immediately within fifty feet of the find. If an archaeologist is not present at the time of the discovery, the applicant shall contact an archaeologist for evaluation of the find to determine whether it qualifies as a unique archaeological resource as defined by this chapter;
 - b. If the find is determined not to be a Unique Archaeological Resource, construction can continue. The archaeologist will prepare a brief informal memo/letter in collaboration with a tribal representative that describes and assesses the significance of the resource, including a discussion of the methods used to determine significance for the find;
 - c. If the find appears significant and to qualify as a unique archaeological resource, the archaeologist will determine if the resource can be avoided and will detail avoidance procedures in a formal memo/letter; and
 - d. If the resource cannot be avoided, the archaeologist in collaboration with a tribal representative shall develop within forty-eight hours an action plan to avoid or minimize impacts. The field crew shall not proceed until the action plan is approved by the Development Services Director. The action plan shall be in conformance with California Public Resources Code 21083.2.
3. The following policies and procedures for treatment and disposition of inadvertently discovered human remains or archaeological materials shall apply. If human remains are discovered, it is probable they are the remains of Native Americans,
 - a. If human remains are encountered, they shall be treated with dignity and respect as due to them. Discovery of Native American remains is a very sensitive issue and serious concern. Information about such a discovery shall be held in confidence by all project personnel on a need to know basis. The rights of Native Americans to practice ceremonial observances on sites, in labs and around artifacts shall be upheld.

- b. Remains should not be held by human hands. Surgical gloves should be worn if remains need to be handled.
 - c. Surgical mask should also be worn to prevent exposure to pathogens that may be associated with the remains.
4. In the event that known or suspected Native American remains are encountered, or significant historic or archaeological materials are discovered, ground-disturbing activities shall be immediately stopped. Examples of significant historic or archaeological materials include, but are not limited to, concentrations of historic artifacts (e.g., bottles, ceramics) or prehistoric artifacts (chipped chert or obsidian, arrow points, ground stone mortars and pestles), culturally altered ash stained midden soils associated with pre-contact Native American habitation sites, concentrations of fire-altered rock and/or burned or charred organic materials and historic structure remains such as stone lined building foundations, wells or privy pits. Ground-disturbing project activities may continue in other areas that are outside the exclusion zone as defined below.
5. An "exclusion zone" where unauthorized equipment and personnel are not permitted shall be established (e.g., taped off) around the discovery area plus a reasonable buffer zone by the contractor foreman or authorized representative, or party who made the discovery and initiated these protocols, or if on-site at the time of discovery, by the monitoring archaeologist and tribal representative (typically twenty-five to fifty feet for single burial or archaeological find).
6. The discovery locale shall be secured (e.g., 24-hour surveillance) as directed by the City or County if considered prudent to avoid further disturbances.
7. The Contractor Foreman or authorized representative, or party who made the discovery and initiated these protocols shall be responsible for immediately contacting by telephone the parties listed below to report the find and initiate the consultation process for treatment and disposition:
 - The City of Morgan Hill Development Services Director (408) 779-7247
 - The Contractor's Point(s) of Contact
 - The Coroner of the County of Santa Clara (if human remains found) (408) 793-1900
 - The Native American Heritage Commission (NAHC) in Sacramento (916) 653-4082
 - The Amah Mutsun Tribal Band (916) 481-5785 (H) or (916) 743-5833 (C)

- The Tamien Nation (707)295-4011 (office) and (925)336-5359 (THPO)
8. The Coroner has two working days to examine the remains after being notified of the discovery. If the remains are Native American the Coroner has 24 hours to notify the NAHC.
 9. The NAHC is responsible for identifying and immediately notifying the Most Likely Descendant (MLD). (Note: NAHC policy holds that the Native American Monitor will not be designated the MLD.)
 10. Within 24 hours of their notification by the NAHC, the MLD will be granted permission to inspect the discovery site if they so choose.
 11. Within 24 hours of their notification by the NAHC, the MLD may recommend to the City's Development Services Director the recommended means for treating or disposing, with appropriate dignity, the human remains and any associated grave goods. The recommendation may include the scientific removal and non-destructive or destructive analysis of human remains and items associated with Native American burials. Only those osteological analyses or DNA analyses recommended by the appropriate tribe may be considered and carried out.
 12. If the MLD recommendation is rejected by the City of Morgan Hill the parties will attempt to mediate the disagreement with the NAHC. If mediation fails then the remains and all associated grave offerings shall be reburied with appropriate dignity on the property in a location not subject to further subsurface disturbance.

NOISE

- A. **Construction Hours:** The project shall comply with Chapter 8.28 of the Morgan Hill Municipal Code which prohibits construction activities between 8:00 PM and 7:00 AM, Monday through Friday, and between 6:00 PM and 9:00 AM on Saturdays. Construction activities may not occur on Sundays or federal holidays.

GENERAL

- A. **Mitigation Fee Act:** Notice is hereby given that, pursuant to the Mitigation Fee Act, the City of Morgan Hill charges certain fees (as such term is defined in Government Code Section 66000) in connection with approval of this development project for the purpose of defraying all or a portion of the cost of public facilities related to this development project (Mitigation Fee Act Fees). These fees do not include fees for processing applications for governmental regulatory actions or approvals. The Mitigation Fee Act Fees applying to this project are described below in the General Engineering Conditions, section G. Notice is also hereby given that the Developer has an opportunity to protest the imposition of the Mitigation Fee Act Fees within 90 days of the approval or

conditional approval of this development project and that the 90-day protest period has begun.

- B. **Covenants, Conditions and Restrictions:** The applicant shall provide a set of Covenants, Conditions and Restrictions (CC&R's), Bylaws and Articles of Incorporation, for review and approval by the Development Services Director prior to final occupancy or recordation of a final map. All such CC&Rs shall include the following:

1. The Owners recognize that the use, modification and proper maintenance of the Common Area and public right-of-way(s)* are for the benefit of all citizens of the City of Morgan Hill (City) and that the City is an intended third party beneficiary of these covenants, conditions and restrictions and may, upon notice of hearing as set forth below, exercise the same powers of enforcement as the Association.

*Public right-of-way: Exclusive of streets dedicated to and accepted by the City of Morgan Hill.

2. The City may, by mail or personal delivery, give written notice of the breach of any maintenance obligation to the Association with a demand that such breach be remedied. If such breach is not remedied within thirty (30) days of the mailing or delivery of such notice, the City shall have standing and the right (but not the obligation) to bring a court action against the Association and Owners to enforce such provision. In addition, the City shall be entitled to recover reasonable attorneys' fees and costs incurred in such action.
3. The Notice may also contain a date for a hearing on the matter before a City employee designated by the City (which hearing shall be held no sooner than fifteen (15) days after mailing of such notice), and if after such hearing the City determines that there has been inadequate maintenance, the City shall have the right (but not the obligation) to undertake the maintenance of the Common Area or public right-of-way in question. Any and all costs incurred by the City in so maintaining the Common Area or public right-of-way shall be a lien against all the properties included with the Project and shall be the personal responsibility of the Owners and the Association.
4. The entire Project and all of the properties located thereon shall be subject to the conditions and restrictions of all subdivision and other Project approvals by the City, with respect to the Project. Any changes and/or modifications to the Project and/or any Unit, including but not limited to changes to the exterior of any Unit, may be subject to review and approval of the City of Morgan Hill as may be determined by review of the Project approvals by the City of Morgan Hill.

5. This section may not be amended without the prior written consent of the Development Services Director for the City. Nothing contained in this section shall limit any other right or remedy which the City may have under its ordinances or state law.
 6. For the purposes of this section, the question of whether there has been a breach of a maintenance obligation or adequate maintenance shall be determined by the provisions of the original Declaration as first recorded with the County Recorder for Santa Clara County and by any amendment thereto, but only to the extent that such maintenance obligation or duty of maintenance is increased by such amendment.
- C. **SIGNED COPIES OF APPROVAL CERTIFICATE:** Submit two (2) signed copies of the approval certificate to the Planning Division prior to issuance of a building permit.

ENGINEERING DIVISION

Project Specific Conditions

- A. The following items previously listed on the September 8, 2023 letter will be required to demonstrate conformance or conditioned on the project:
1. Tentative Map:
 - a. Revise the plan to state that the existing 30' ingress and egress easement and PSE (7210 OR 177) within the new Sorrel Way street dedication alignment shall be quitclaimed by the project.
 - b. Revise the plan to state that the existing 20' right of way for road purposes (492 Deeds 237) within the new Sorrel Way street dedication alignment and along the rear boundaries of Lots 1 through 3 shall be quitclaimed by the project.
 - c. Revise the plan to show the extension of the existing 54' wide PG&E Pipeline Easement (1814 OR 433 as referenced on the Heritage Greens Tract Map No. 9068) over the project's parcel and along the new Sorrel Way and Kole Court street dedication alignments.
 - d. Revise the proposed Public Service Easement (PSE) dedication to provide a 14' wide PSE along the east side of Sorrel Way and south side of Kole Court street frontages. The project was allowed to have reduced street right-of-way dedications to the City in order to meet the minimum lot requirements for the project; the widened PSE dedications shall include the remaining width of detached sidewalks and 10' space behind the detached sidewalks.
 - e. Revise the location of the proposed 67' wide Private Storm Drain Easement (PSDE) to not overlap with the proposed 14' PSE along the Sorrel Way frontage.
 - f. Revise the location of the proposed 36' wide PSDE to not overlap with the proposed with the proposed 14' PSE along the Sorrel Way and Kole Court frontages.

- g. Revise the plan callout on Kole Court for the “30’ (E) R/W to be rededicated” to call out the existing 30’ Ingress, Egress, and PUE (E851 OR 456) within the new Kole Court street dedication alignment shall be quitclaimed by the project.
 - h. Revise the plan to state the portion of the existing 10’ PG&E Pole Line Easement (8111 OR 264) within the new Kole Court street dedication alignment shall be vacated/quitclaimed by the project.
 - i. Revise the plan state the portion of the existing 5’ Buried Water and Gas Line Easement (5528 OR 562) within the new Kole Court street and PSE dedication alignment shall be quitclaimed by the project.
 - j. Revise the plan to show the new location of the proposed 10’ Private Waterline Easement perpendicular crossing along Kole Court from the existing well site on Lot 4.
 - k. Revise the plan to state the portion of the existing 15’ PG&E Pipeline Easement (459 OR 169) within the new Kole Court street and PSE dedication alignment shall be vacated/quitclaimed by the project.
 - l. Clarify if the existing 10’ waterline easement (7210 OR 168) extends through the new Kole Court street dedication alignment (APN #728-02-006). If there is an existing easement, revise the plan to state that the portion of the existing 10’ waterline easement within the new Kole Court street and PSE dedication alignment shall be quitclaimed by the project.
 - m. Revise the plan to state the portion of the existing 30’ Ingress, Egress, and PUE (Doc No. 10716780 as referenced on M521 P5-6) within the new Kole Court street and PSE dedication alignment shall be quitclaimed by the project.
 - n. Revise the plan to state the portion of the existing 30’ Ingress, Egress, and PUE (Doc No. 24992115) within the new Kole Court street and PSE dedication alignment shall be quitclaimed by the project.
 - o. Revise the plan to show the existing 15’ PG&E Pipeline easement (457 OR 208) on APN #728-05-004. Provide the easement deed for and clarify the project’s intent or any conflicts with the proposed Kole Court street alignment or if the project intends to vacate/quitclaim the easement.
2. Site Development Plan:
- a. Revise the plan to provide the curve and/or radius information for the proposed street knuckle at the Saddleback Drive/Kole Court intersection.
 - b. Revise the plan to provide Kole Court street driveway access to 2275 E Dunne Avenue (APN #728-02-006), 2275 E Dunne Avenue C (APN #728-02-005), and APN #728-02-004.
3. Grading Plan:
- a. Revise the location of the proposed stormwater control and detention facilities within Lot 1 by relocating the facilities completely out of the proposed 14’ wide PSE along the Sorrel Way and Kole Court frontages.

- b. The existing sidewalk on Sorrel Way is an attached sidewalk; revise the plans to show the project's detached sidewalk transition to the existing attached sidewalk.
- c. The existing sidewalk on Saddleback is an attached sidewalk; revise the plans to show the project's detached sidewalk transition to the existing attached sidewalk.
- d. The Landscaping plans callout decorative pervious pavers. Revise the driveways for Lots #1-4 to provide standard hot mix asphalt concrete pavement within the 14' PSE
- e. Identify the decorative paver hatch on the plan legend.

1. Utility Plan:

- a. Revise the plan to call out the locations/areas of the overhead utility lines/facilities that will be undergrounded by the project.:
 - i Along rear southeastern property boundary that includes Sorrel Way, Lots 1 through 4, Saddleback Drive, and the private driveway for Lots 5 through 7.
 - ii Along the centerline of Kole Court.
 - iii Along the eastern property boundary
 - iv On the Kole Court knuckle (on APN #728-02-004).
- b. Revise the plan to show the existing overhead utilities/facilities adjacent to the project.
- c. Revise the plan to relocate the existing private well site and distribution well piping out of the proposed public right-of-way and proposed residential lots.
- d. The project will not be allowed to install the project's 517' public or private storm drain extension through the existing "20' Right of Way for Road Purposes" on 2045 E Dunne (APN #728-02-007). Revise the proposed storm drain connection/extension along Sorrel Way to connect to the existing City storm drain system along E. Dunne Ave.
- e. Provide the size of the existing PG&E gas transmission main.

B. **Final Map:** The project's Final Map shall be approved by the City Council prior to issuance of a grading permit. **(MHMC 17.20.390; 17.24.210)**

1. Roadway Dedications:

- a. The project shall dedicate approximately 52' street right-of-way along the proposed public street that extends from Sorrel Way to the City in fee. The length of this street dedication is approximately 79' from the connection to the existing Sorrel Way public street.
 - i For the remaining 230' length of Sorrel Way, the project shall dedicate approximately 38' street right-of-way to the City in fee. The 38' wide street dedication is the 'half-street'

- b. The project shall dedicate approximately 60' street right-of-way along the proposed public street that extends from Saddleback Drive to the City in fee.
2. Public Service Easement (PSE) Dedications:
 - a. The project shall dedicate a 14' wide PSE along the east side of the Sorrel Way frontage.
 - b. The project shall dedicate a 14' wide PSE along the south side of the Kole Court frontage.
 - c. The project shall dedicate a 10' wide PSE along the north side of the Kole Court frontage.
 - d. The project shall dedicate a 10' wide PSE along the south side of the Kole Court frontage.
 - e. The project shall dedicate a 10' wide PSE along the both sides of the Saddleback Drive frontage.
3. The project shall provide the following easements on site: Public Service Easement (PSE), Emergency Vehicle Access Easement (EVAE), Private Access Easement (PRAE), and Landscape Easement (LSE).
4. Existing 30' Ingress and Egress and PSE (7210 OR 177): The project shall record an easement quitclaim deed for the portion of the easement that is within the new Sorrel Way street right-of-way and PSE dedication areas. The quitclaim deed shall be recorded PRIOR to Final Map approval by the City.
5. Existing 20' Right of Way for Road Purposes (492 Deeds 237): The project shall record an easement quitclaim deed for the portion of the easement that is within the new Sorrel Way street right-of-way and PSE dedication areas and along the rear boundaries of Lots 1 through 3. The quitclaim deed shall be recorded PRIOR to Final Map approval by the City.
6. Existing 30' Ingress, Egress, and PUE (E851 OR 456): The project shall record an easement quitclaim deed(s) for the portion of the easement that is within the new Kole Court street right-of-way and PSE dedication areas. The quitclaim deed shall be recorded PRIOR to Final Map approval by the City.
7. Existing 10' PG&E Pole Line Easement (8111 OR 264): The project shall record a summary vacation for the portion of the easement that is within the new Kole Court street right-of-way and PSE dedication areas. The summary vacation shall be recorded PRIOR to Final Map approval by the City.
8. Existing 5' Buried Water and Gas Line Easement (5528 OR 562): The project shall record an easement quitclaim deed for the portion of the easement that is within the new Kole Court street right-of-way and PSE dedication areas and Lots 3 through 4. The quitclaim deed shall be recorded PRIOR to Final Map approval by the City.
9. Existing 15' PG&E Pipeline Easement (459 OR 169): The project shall record a summary vacation for the portion of the easement that is within the new Kole Court street right-of-way and PSE dedication areas. The summary vacation shall be recorded PRIOR to Final Map approval by the City.
10. Existing 30' Ingress, Egress, and PUE (Doc No. 10716780 as referenced on M521 P5-6): The project shall record an easement quitclaim deed for the portion of the easement that is within the new Kole Court street and PSE

dedication areas. The quitclaim deed shall be recorded PRIOR to Final Map approval by the City.

11. Existing 30' Ingress, Egress, and PUE (Doc No. 24992115): The project shall record an easement quitclaim deed for the portion of the easement that is within the new Kole Court street and PSE dedication areas. The quitclaim deed shall be recorded PRIOR to Final Map approval by the City.

C. Encroachment Agreements Required:

1. 5' Private Buried Water and Gas Line (Kole Court).
2. Private Storm Drain (Saddleback Drive).

D. Parkland Dedication/Parkland Fee In-Lieu: This project is subject to the Parkland Dedication and Parkland Fee In-Lieu requirements (**MHMC 17.28**).

1. The developer shall pay fees, in-lieu of parkland dedication, at the time of filing of the project's final map to meet the parkland obligation. The project's parkland obligation will be calculated using the formula shown in MHMC Section 17.28.060 and is estimated to be **\$147,337** for the proposed lots.

E. Sewer System Improvements:

1. **Private Sanitary Sewer Maintenance Agreement:** Prior to Final Map approval/building permit issuance, the Owner(s) shall enter into a Private Sanitary Sewer Maintenance Agreement with the City for maintenance of all private sanitary sewer facilities which includes the private sewer mains, sewer laterals, force main and lift station (if necessary), and any other appurtenances. The Agreement shall be recorded at the County Recorder's Office prior to building Final.

F. Stormwater Infrastructure/Stormwater Management: The project is located within the jurisdiction of the Central Coast RWQCB (Region 3) through an NPDES permit (State Water Resources Control Board Water Quality Order No. 2013-0001-DWQ; National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000004) and the City's Residential Development Design and Development Standards require that the project comply with the Central Coast (Region 3) requirements as documented by the Stormwater Management Guidance Manual for Low Impact Development and Post-Construction Requirements ("Stormwater Guidance Manual").

1. At improvement plan/building permit stage, the project shall address the following:
 - a. Submit the final Stormwater Runoff Management Plan and final Stormwater Control Plan (SWCP)/Report that comply with the Central Coast RWQCB Post-Construction Requirements' Resolution No. R2-2013-0032 and Stormwater Guidance Manual.
2. The proposed subsurface infiltration systems shall comply with Chapter 6.5, "Subsurface Infiltration System" and Appendix A of the SCVURPPP C.3

Stormwater Handbook and the Santa Clara Valley Water District's (SCVWD) Guidelines for Stormwater Infiltration Devices.

3. Maintenance Access to Stormwater Facilities: All stormwater management control measures shall be accessible at any given time for the purpose of operation, maintenance, and inspections. At improvement plan/building permit stage, the developer/owner(s) shall provide the inspection and equipment access details in the Stormwater Facility Maintenance section of the SWCP and in the Stormwater BMP Operation and Maintenance Agreement.

Engineering Standard Conditions

I. GENERAL

- A. **Final Map**: The applicant shall have a Final Map prepared by a registered engineer (licensed prior to 01/01/1982: registration number 33,965 or lower) or licensed land surveyor delineating all parcels and easements created. There shall be concurrence in writing by PG & E, Telephone, Cable TV and any other affected agencies to all improvements and easements which are applicable to them. The number and locations of monuments shall be set as required by the City Engineer. **(MHMC 17.20.200 A; 17.20.290; 17.24.010)**
- B. **Public and Private Improvements**: The applicant shall cause the construction of all public and private improvements in accordance with the latest City Standard Drawings and Specifications. **(MHMC 12.02.090 A; 17.32.010 A)**
- C. **Improvement Plans**: The applicant shall submit as part of the improvement plans for the project, profiles of all improvements in the subdivision and typical cross-sections of all streets and details of curbs, gutters, and sidewalks, to be accomplished to the satisfaction of the City Engineer prior to submittal of Final Map. **(MHMC Sec 17.32.060 B; 17.32.070; 17.32.080 A)**
 1. Improvement plans are to show water lines, sanitary sewer, storm drain system, pavement widths, curve radius, and existing utilities.
- D. **Guidelines and Standards for Land Use Near Streams**: The project shall comply with the City's adopted Santa Clara Valley Water Resource Protection Collaborative's "Guidelines and Standards for Land Use Near Streams. A copy of the guidelines and standards can be found at <https://www.valleywater.org/contractors/doing-businesses-with-the-district/permits-for-working-on-district-land-or-easement/guidelines-and-standards-for-land-use-near-streams>."
- E. **Encroachment Permits**: Obtain an encroachment permit from the City of Morgan Hill and provide guarantees covering off-site improvements. **(MHMC 12.08.040 A; 12.08.090)**

- F. **Subdivision Improvements Agreement:** Enter into a Subdivision Improvements Agreement with the City of Morgan Hill to cover required improvements. **(MHMC 12.02.150; 17.32.010 B; 17.32.160)**
- G. **Impact Fees & Fee Increases:** The City of Morgan Hill, pursuant to MHMC Chapter 3.56, has established impact fees to finance the cost of improvements required by new development. MHMC Section 3.56.050 provides for automatic annual (January 15th) adjustment of those fees in existence utilizing the Engineering News Record Index for the preceding twelve months. The City maintains historical records on the Engineering News Record Index. These records are available for inspection during normal business hours. **(MHMC 3.56.010; 3.56.030; 3.56.050)**
1. The developer shall pay all applicable impact fees and other engineering review fees (fees other than impact fees are automatically adjusted annually on July 1st). Engineering review fees and Stormdrain impact fees are due prior to Final Map approval, and the balance of the impact fees are on a pro-rata basis per unit prior to final occupancy of each unit. The fees shall be based on the Public Works Fee Schedule prepared by Land Development Engineering. The estimated total amount of impact fees and engineering review fees for this project based on the Fee Schedule currently in effect is **\$510,500**.
 2. The project will be subject to the updated Water Capacity fees, which became effective May 15, 2023. Information related to the City's impact and development fees are available on the City's Finance Department webpage at: <https://www.morganhill.ca.gov/1572/Fee-Schedules>.

II. STREET IMPROVEMENTS

- A. **Public and Private Streets:** The applicant shall cause the design and construction of all new public and private streets serving the project. The design of all new public and private streets shall be consistent with the General Plan Land Use and Circulation Element as well as the Street Standard Details as contained within the Public Works Standards Details. The construction of the streets shall be undertaken to the lines and grades and in a manner satisfactory to the City Engineer. All street improvements shall be constructed to the satisfaction of the City Engineer. The timing of the improvements will be determined by the City. **(MHMC 12.02.010; 12.02.090; 17.32.060 B; CMH General Plan; CMH Design Standards and Standard Details for Construction)**
- B. **Installation and Dedication of Streets:** The project shall install and dedicate street improvements including, but not limited to, curb and gutter, sidewalk, compaction, street paving, oiling, storm drainage facilities, sewer and water, fire

protection, undergrounding of utilities and street lighting in conformance with City of Morgan Hill requirements. **(MHMC 12.02.010; 12.02.50; 12.02.080; 12.02.100; 17.28.010; 17.32.060)**

- C. **Underground Existing Utilities:** All existing overhead utilities adjacent to any site boundary or along any street frontage of the site shall be placed underground in accordance with City standards and affected utility company guidelines. **(MHMC 12.02.090 B; 17.32.020 E.1)**
- D. **Street Trees:** The proposed street trees shall comply with the street tree species and spacing listed under the applicable zone in the Master Street Tree List of the City's Master Street Tree Plan.

III. SANITARY SEWER SYSTEM

- A. **Design of Sewer Improvements:** The applicant shall cause to be undertaken the design and construction of sanitary sewer improvements including, but not limited to installation of sewer line extension on the proposed public street(s) or private street(s)/drive aisle(s). The sanitary collection system shall include, but not be limited to manholes with manhole frames and covers, cleanouts, wye-branches and laterals, and separate sewer taps to each lot. These are to be installed by the developer. **(MHMC 13.20.355; 17.32.020 C; CMH Sewer System Master Plan; CMH Design Standards and Standard Details for Construction)**
- B. **Sewer Connection:** All existing and future sewer lines shall be tied into the City's system and existing septic systems shall be abandoned in accordance with City requirements. **(MHMC 13.24.060; 17.32.20 C)**

IV. STORM DRAIN SYSTEM

- A. **Storm Drainage Study:** A complete storm drainage study of the proposed development must be submitted showing amount of run-off, and existing and proposed drainage structure capacities. This study shall be subject to review and approval by the City Engineer. All needed improvements will be made by the applicant. No overloading of the existing system will be permitted. **(MHMC 17.32.020 B; 17.32.090; CMH Design Standards and Standard Details for Construction)**
- B. **Storm Drainage Design:** The applicant shall cause the design and construction to be undertaken for a storm drainage collection system shown on the Tentative Map/Design Review plans. All storm drain improvements shall be constructed to the satisfaction of the City Engineer. **(MHMC 17.32.020 A & B)**
- C. **Storm Drainage Capacity:** Collection system shall be designed to be capable of handling a 10-year storm without local flooding. Streets shall be designed to

carry 100-year storm. Items of construction shall include, but not be limited to installation of storm line extension on proposed public street(s), surface and subsurface storm drain facilities, manholes with manhole frames and covers, catch basins and laterals. Note: the project may be required to **retain** stormwater runoff as part of resolution R3-2013-0032 prior to releasing discharge rates at pre-development flows. **(MHMC 17.32.020 B; 18.74.440; CMH Design Standards and Standard Details for Construction; CMH Storm Drainage System Master Plan)**

- D. **Storm Drainage General Requirements:** Prior to issuance of a grading permit, the applicant shall complete the following to the satisfaction of the City Engineer.
1. Storm drain calculations to determine detention/retention pond sizing and operations.
 2. Plan describing how material excavated during construction will be controlled to prevent this material from entering the storm drain system.
 3. Water Pollution Control Drawings (WPCD) for Sediment and Erosion Control. **(CMH Design Standards and Standard Details for Construction)**
- E. **NPDES Construction Activity General Permit/SWPPP Requirements:** As required by the State Water Resources Control Board (SWRCB) Order No. 2009-0009-DWQ, construction activity resulting in a land disturbance of one (1) acre or more of soil, or whose projects are part of a larger common plan of development that in total disturbs more than one (1) acre, are required to obtain coverage under the National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000002 for Discharges of Storm Water Associated with Construction Activity (General Permit). To be permitted with the SWRCB under the General Permit, owners must file a complete Notice of Intent (NOI) ONLINE at: <http://smarts.waterboards.ca.gov/smarts/faces/SwSmartsLogin.jsp> and develop a Storm Water Pollution Prevention Plan (SWPPP) Manual in accordance with the General Permit. The SWPPP Manual shall follow the CASQA SWPPP template/format at <https://www.casqa.org/store/products/tabid/154/p-167-construction-handbookportal-initial-subscription.aspx> and shall be approved by Public Works Engineering. A Waste Discharger Identification (WDID) number to be issued to the construction site after the SWRCB receives and verifies the submitted ONLINE NOI information. The WDID number and approved SWPPP Manual shall be provided to Public Works and the Building Department prior to any approval of grading activities **(SWRCB NPDES General Permit CA000002)**.
- F. **NPDES General Permit Site SWPPP Inspections and Compliance:**
1. ALL project onsite and offsite construction activity shall have the site inspected by a **qualified third party SWPPP Inspector (QSD or QSP or RCE)**.
 2. SWPPP Inspections shall occur weekly during the rainy season (September 15th thru May 1st).
 3. SWPPP Inspections shall occur bi-weekly during the non-rainy season.

4. 48 hours prior to and following a forecasted rain event, SWPPP Inspections shall occur in addition to those of items 2 or 3 above.
5. Per each of the inspection conditions 2, 3, or 4, SWPPP inspection reports, and when applicable, Rain Event Action Plans (REAPS) shall be e-mailed to: sw.construction@morganhill.ca.gov no later than 12:00 PM each Monday for the previous week's inspections with a brief statement whether the site is in compliance or non-compliant.
6. Prior to rain events, BMPs not in compliance will need to be corrected immediately.
7. Illicit discharges per the NPDES General Permit, non-compliance of tracking control, and inlet protection within the public right-of-way shall be addressed immediately.
8. Other non-compliance issues need to be addressed within a 24-hour period.
9. Non-compliance issues which have been corrected shall be verified by NPDES SWPPP Inspector by a follow-up inspection.
10. BMP maintenance/inspections shall include tree protection, if applicable.

V. WATER SYSTEM

- A. **Domestic Water System:** The applicant shall cause the design and construction to be undertaken of a domestic water system to the satisfaction of the City Engineer. The water system improvements shall be constructed within public easements or street rights-of-way to the satisfaction of the City Engineer and dedicated to the City. **(MHMC 17.32.020 A & D; CMH Design Standards and Standard Details for Construction; CMH Water System Master Plan)**
- B. **Water Meters:** Provide separate water services and meters for each lot. These are to be installed by developer. **(MHMC 17.32.020 D)**

VI. OTHER CONDITIONS

- A. **Easement Dedications:** The owner shall dedicate all necessary utility easements. **(MHMC 12.02.080 D; 17.28.010 A)**
- B. **Undergrounding New Utilities:** The applicant shall cause the design and construction required to underground all electric, gas, Cable TV and communication lines within the development. Such design and construction shall be to the satisfaction of the affected utilities and the City Engineer. **(MHMC 17.32.020 E.1)**
- C. **Landscaping and Irrigation Systems:** Landscaping and irrigation systems serving common areas that are required to be installed in the public right-of-way on the perimeter of this project shall be continuously maintained by the property owner or designated maintenance entity.

- D. **Final Landscape Plans:** Final landscape plans shall be submitted with and included as part of the improvement plans for the project. **(MHMC 17.08.090)**
- E. **Pre-construction Meeting:** Prior to the approval of any Building Permit for grading activity, the developer shall schedule a pre-construction meeting with the Public Works Inspection Division with the following project team members:
 - 1. Civil Engineer of record
 - 2. Geotechnical Engineer of record
 - 3. Third Party QSD/QSP SWPPP Inspector
 - 4. General Contractor
 - 5. Sub-Contractors
- F. **As-Built Submittal Standards:** The developer shall submit digital as-builts of the project's Final Map, Grading Plan, and Improvement Plans which adhere to the City's updated GIS/CAD Developer Submittal Standards.

VII. NPDES STORMWATER MANAGEMENT DEVELOPMENT STANDARDS

- A. **Stormwater Post Construction Requirements (PCRs):** Project shall comply with the California Regional Water Quality Control Board Central Coast Region Resolution No. R3-2013-0032 as documented by the **Stormwater Management Guidance Manual for Low Impact Development and Post-Construction Requirements** (developed from Resolution No. R-2013-0032 Attachment 1 and 2 at: http://www.waterboards.ca.gov/centralcoast/water_issues/programs/stormwater/docs/lid/lid_hydromod_charette_index.shtml). A copy of the Guidance Manual can be obtained from the City's Land Development Engineering webpage. Project shall provide Stormwater Runoff Management Plan, Stormwater Control Plan and Checklist, and applicable calculations per the Guidance Manual. Project shall meet the applicable Post-Construction Requirements:
 - 1. Performance Requirement 1: Site Design and Runoff Reduction
 - 2. Performance Requirement 2: Water Quality Treatment
 - 3. Performance Requirement 3: Runoff Retention
 - 4. Performance Requirement 4: Peak Management
- B. **Peak Storm Water Runoff Discharge Rates:** Post-development peak storm water runoff discharge rates shall not exceed the estimated pre-development rate for developments where the increased peak storm water discharge rate will result in increased potential for downstream erosion. Note: the project may be required to **retain** stormwater runoff as part of resolution R3-2013-0032 prior to releasing discharge rates at pre-development flows.
- C. **Storm Drain System Stenciling and Signage:** All storm drain inlets and catch basins within the project area must be stenciled with prohibitive language (such as: "NO DUMPING – DRAINS TO CREEK") and/or graphical icons to discourage illegal dumping. Signs and prohibitive language and/or graphical icons, which

prohibit illegal dumping, must be posted at public access points along channels and creeks within the project area. Legibility of stencils and signs must be maintained.

- D. Design Standards for Structural or Treatment Control BMPs:** The post-construction treatment control BMPs shall incorporate, at a minimum, either a volumetric or flow- based treatment control design standard, or both, as identified below to mitigate (infiltrate, filter or treat) storm water runoff:
1. **Volumetric Treatment Control BMP**
 - a. The 85th percentile 24-hour runoff event determined as the maximized capture storm water volume for the area, from the formula recommended in Urban Runoff Quality Management, WEF Manual of Practice No. 23/ASCE Manual of Practice No. 87, (1998); or
 - b. The volume of annual runoff based on unit basin storage water quality volume, to achieve 80 percent or more volume treatment by the method recommended in California Stormwater Best Management Practices Handbook – Industrial/ Commercial, (2003); or
 - c. The volume of runoff produced from a historical-record based reference 24-hour rainfall criterion for “treatment” that achieves approximately the same reduction in pollutant loads achieved by the 85th percentile 24-hour runoff event.
 2. **Flow Based Treatment Control BMP**
 - a. The flow of runoff produced from a rain event equal to at least two times the 85th percentile hourly rainfall intensity for the area; or
 - b. The flow of runoff produced from a rain event that will result in treatment of the same portion of runoff as treated using volumetric standards above.
- E. Stormwater Runoff Management Plan (SWRMP):** The Stormwater Runoff Management Plan shall include sufficient information to evaluate the environmental characteristics of affected areas, the potential impacts of the proposed development on water resources, and the effectiveness and acceptability of measures (post construction BMPs) proposed for managing stormwater runoff.
1. The Stormwater Runoff Management Plan shall be prepared under the direction of a professional civil engineer registered in the State of California. The responsible professional civil engineer shall stamp and sign the approved Stormwater Runoff Management Plan.
 2. The developer shall provide a signed certification from the civil engineer responsible for preparing the Stormwater Runoff Management Plan that all stormwater best management practices have been designed to meet the requirements of this chapter.
 3. Each certifying civil engineer shall establish to the City's satisfaction that such person has been trained on the design of stormwater quality best management practices not more than three years prior to the certification signature date.

4. Qualifying training shall be conducted by an organization with stormwater quality management expertise, such as a university, the Bay Area Stormwater Management Agencies Association, the American Society of Civil Engineers, the American Public Works Association, or the California Water Environment Association.

F. Stormwater BMP Operation, Maintenance, and Replacement Responsibility

1. Prior to building final, the property owner shall submit a signed certification (with signature, date & license number/seal) certifying that all post-construction stormwater management/BMP facilities shown on the as-built drawings were inspected by the civil engineer (or by a qualified third party stormwater inspector hired by the permittee/owner) and have been constructed in accordance with the approved plans and specifications.
2. All on-site stormwater management facilities shall be operated and maintained in good condition and promptly repaired/replaced by the property owner(s), an owners' or homeowners' association or other legal entity approved by the City.
3. Any repairs or restoration/replacement and maintenance shall be in accordance with City-approved plans.
4. The property owner(s) shall develop a maintenance schedule for the life of any stormwater management facility and shall describe the maintenance to be completed, the time period for completion, and who shall perform the maintenance. This maintenance schedule shall be included with the approved Stormwater Runoff Management Plan.

G. Stormwater BMP Operation and Maintenance Agreement (SWBOMA):

1. Prior to the issuance of any building permit requiring stormwater management BMPs, the owner(s) of the site shall enter into a formal written Stormwater BMP Operation and Maintenance Agreement with the City. The City shall record this agreement, against the property or properties involved, with the County of Santa Clara and it shall be binding on all subsequent owners of land served by the storm water management BMPs. The City standard Stormwater BMP Operation and Maintenance Agreement will be provided by Land Development Engineering at building permit/improvement plan stage.
2. The Stormwater BMP Operation and maintenance agreement shall require that the BMPs not be modified and BMP maintenance activities not alter the designed function of the facility from its original design unless approved by the city prior to the commencement of the proposed modification or maintenance activity.
3. The stormwater BMP operation and maintenance agreement shall provide that in the event that maintenance or repair is neglected, or the stormwater management facility becomes a danger to public health or safety, the city shall have the authority to perform maintenance and/or repair work and to recover the costs from the owner.

H. Stormwater BMP Inspection Responsibility

1. The property owner(s) shall be responsible for having all stormwater management facilities inspected for condition and function by a **certified Qualified Stormwater Practitioner (QSP)**.
2. Unless otherwise required by the City Engineer or designee, stormwater facility inspections shall be done at least twice per year (April 15th and September 15th) by the QSP. Written records shall be kept of all inspections and shall include, at minimum, the following information:
 - a. Site address;
 - b. Date and time of inspection;
 - c. Name of the person conducting the inspection;
 - d. List of stormwater facilities inspected;
 - e. Condition of each stormwater facility inspected;
 - f. Description of any needed maintenance or repairs; and
 - g. As applicable, the need for site re-inspection.
3. Upon completion of each inspection, an inspection report shall be submitted to Land Development Engineering and Environmental Services Department.

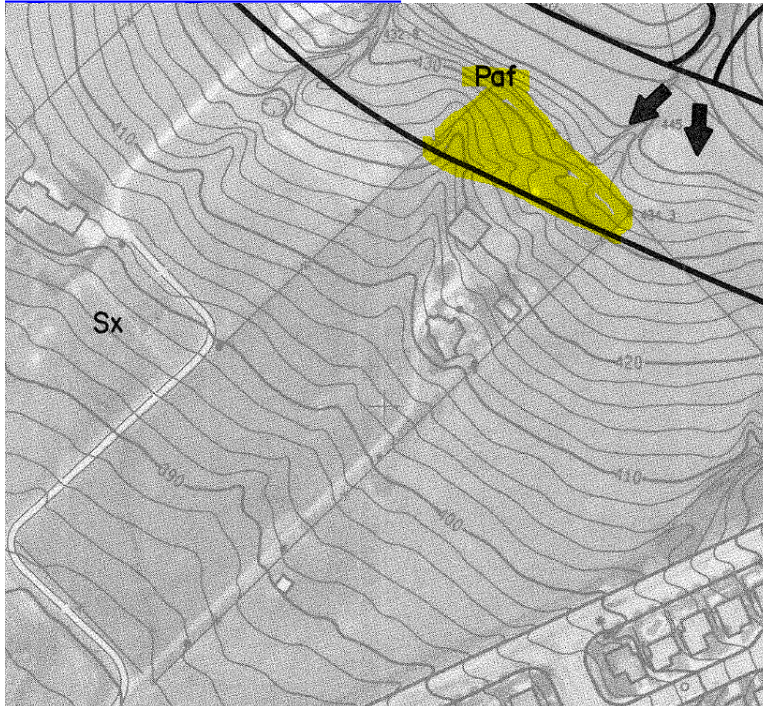
I. Records of Maintenance and Inspection Activities: On or before April 15th and September 15th of each year, the party responsible for the operation and maintenance of on-site stormwater management facilities under the BMP Operation and Maintenance Agreement shall provide the City Engineer or designee with records of all inspections, maintenance and repairs.

J. Annual Certification of SWRMP: On or before September 30th of each year, a Registered Civil Engineer (RCE) shall provide written certification that the project's stormwater quality design standards are properly maintained and functioning as required by the SWRMP.

BUILDING DIVISION

1. Portion of Lot 7 is in a Geological Hazard Area. If a structure is located within the designated area, then it shall comply with MHMC 18.70. A Geologic Report from a Engineering Geologist or Register Geotechnical Engineer shall be provided. A review will be required by the City contract Geologist, this review will require additional fees and time.

https://library.municode.com/ca/morgan_hill/codes/code_of_ordinances?nodeId=TIT18ZO_DIVIZOCO_CH18.70GEHA



2. Project shall be designed to comply with the edition of the California Codes of Regulations as amended by the Morgan Hill Municipal Code Title 15 that is in effect at time of Building Permit Application submittal.
3. Project shall comply with the Morgan Hill Municipal Code (MHMC) including but not limited to:
 - a. MHMC 15.65 Sustainable Building Regulations. **(Build It Green Points required)**
https://library.municode.com/ca/morgan_hill/codes/code_of_ordinances?nodeId=TIT15BUCO_CH15.65SUBURE
 - b. MHMC 15.62 Electric Vehicle Charging Infrastructure
https://library.municode.com/ca/morgan_hill/codes/code_of_ordinances?nodeId=TIT15BUCO_CH15.62ELVECHIN
 - c. MHMC 15.40 Building Security
https://library.municode.com/ca/morgan_hill/codes/code_of_ordinances?nodeId=TIT15BUCO_CH15.40BUSE

- d. MHMC 18.148 Water Conservation
https://library.municode.com/ca/morgan_hill/codes/code_of_ordinances?nodeId=TIT18ZO_DIVIIDECO_CH18.148WACO
 - e. MHMC 15.63 Prohibition of Natural Gas Infrastructure in New Buildings (**No Gas**)
https://library.municode.com/ca/morgan_hill/codes/code_of_ordinances?nodeId=TIT15BUCH15.38WATHPR
4. When submitting to Building the Building Permit Plan submittal shall comply with the Building Divisions electronic plan review format requirements: [Electronic Format Requirements](#)

FIRE DIVISION

1. Project shall comply with the City of Morgan Hill's Fire Prevention Division Standard Details and Specifications:
<https://www.morganhill.ca.gov/DocumentCenter/View/10668/Fire-Details-and-Specs?bidId=>
2. Plan dimensions for private driveway show 18', Provide compliance per standard 11-B.
3. Provide dimensions for fire truck turnaround on private drive in compliance with standard 11-E.

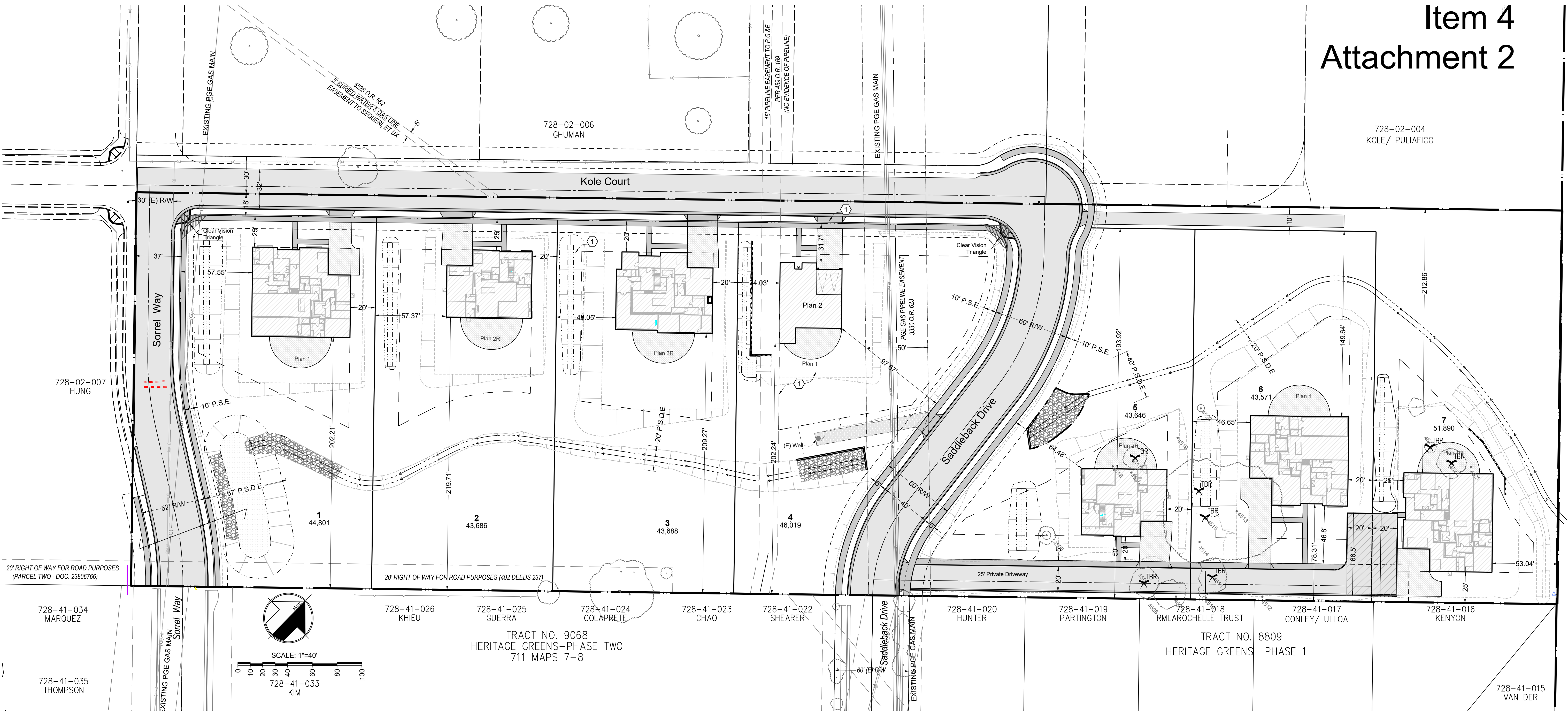
HOUSING DIVISION

- A. Pursuant to the City's Inclusionary Housing Ordinance (Morgan Hill Municipal Code Title 14, Chapter 14.04), developers of residential projects in the City are required to either construct a specified percentage of affordable housing units on-site within the project or comply with the Inclusionary Housing Ordinance by satisfying an alternative means of compliance as set forth in Section 14.04.070 of the Ordinance. City Manager or his or her designee have determined that for this residential rental project, a housing in lieu housing fee may be paid in-lieu of building inclusionary units. The 2024 in-lieu housing fee for residential projects outside of downtown for which there is a fifteen-percent inclusionary housing requirement is twenty-three dollars and four cents per habitable square foot of the residential building area of market-rate housing. In-lieu fees shall be paid prior to issuance of building permits for the market-rate units in this residential project. If building permits are issued for only part of a residential project, the fee amount shall be based only on the number of units then permitted. Developer must execute an Inclusionary Housing Fee Agreement before Final Map recordation. The Inclusionary Housing Fee Agreement shall provide that the applicant shall be required to reimburse the city for its attorneys' fees incurred in connection with the preparation of the Inclusionary Housing Fee Agreement. Please contact the Housing Department for calculation of final housing in-lieu fee based on project habitable square footage listed on SB330 Submittal Title Sheet, to begin draft copy of Inclusionary Housing Fee Agreement.

ENVIRONMENTAL SERVICES

1. Add these notes with signatures to the Landscaping Cover Sheet (L0):
 - a. Add a note that states with the signature of the owner/developer → “After installation of landscaping on property, I agree to have an irrigation audit, landscape audit, irrigation schedule, and maintenance schedule conducted by a Certified Irrigation Auditor and submit it to the City for final project sign off”.
 - b. Add a note that states with the signature of the owner/developer → “The developer will submit receipts and/or invoices for all compost and mulch purchases to Environmental Services Division after final construction”.
 - c. Add note to state if any of the slopes on the property are greater than 25%. If none, state that there are no slopes greater than 25%.
2. All plants and trees shall be categorized as low or very low water use.
 - Next to the plant selection of “Achillea Millefolium”, please **add a note that these are to be “CA Native Cultivators only”**. (*CA native cultivators are Low, while non-native hybrids are Moderate.*)
3. See comment on the ESD Checklist attached for item 18.64.060 – B – 7. The ‘Notes’ on page L4 note #3 state the item directly above (#6 on the checklist), but #7 is missing from the ‘Notes’. Please update this to include the note of “separate valves for turf, non-turf, and berm areas”.
4. Project Shall address Morgan Hill Municipal Code (MHMC) 18.148 – Water Conservation and MHMC 18.64 Landscaping and complete/submit the provided ESD Checklist.

Item 4
Attachment 2



Building Coverage Calculations			
Lot #	Lot Area (SF)	Building Area (SF)	Building Coverage (%)
1	44,801	5300	11.83%
2	43,686	3463	7.93%
3	43,688	4631	10.60%
4	46,019	5300	11.52%
5	43,646	3463	7.93%
6	43,571	5300	12.16%
7	51,890	5300	10.21%

Applicant/Owner:

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Engineer:

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Planner:

Vince Burgos
2424 Calle Galicia
Santa Barbara, CA 93109
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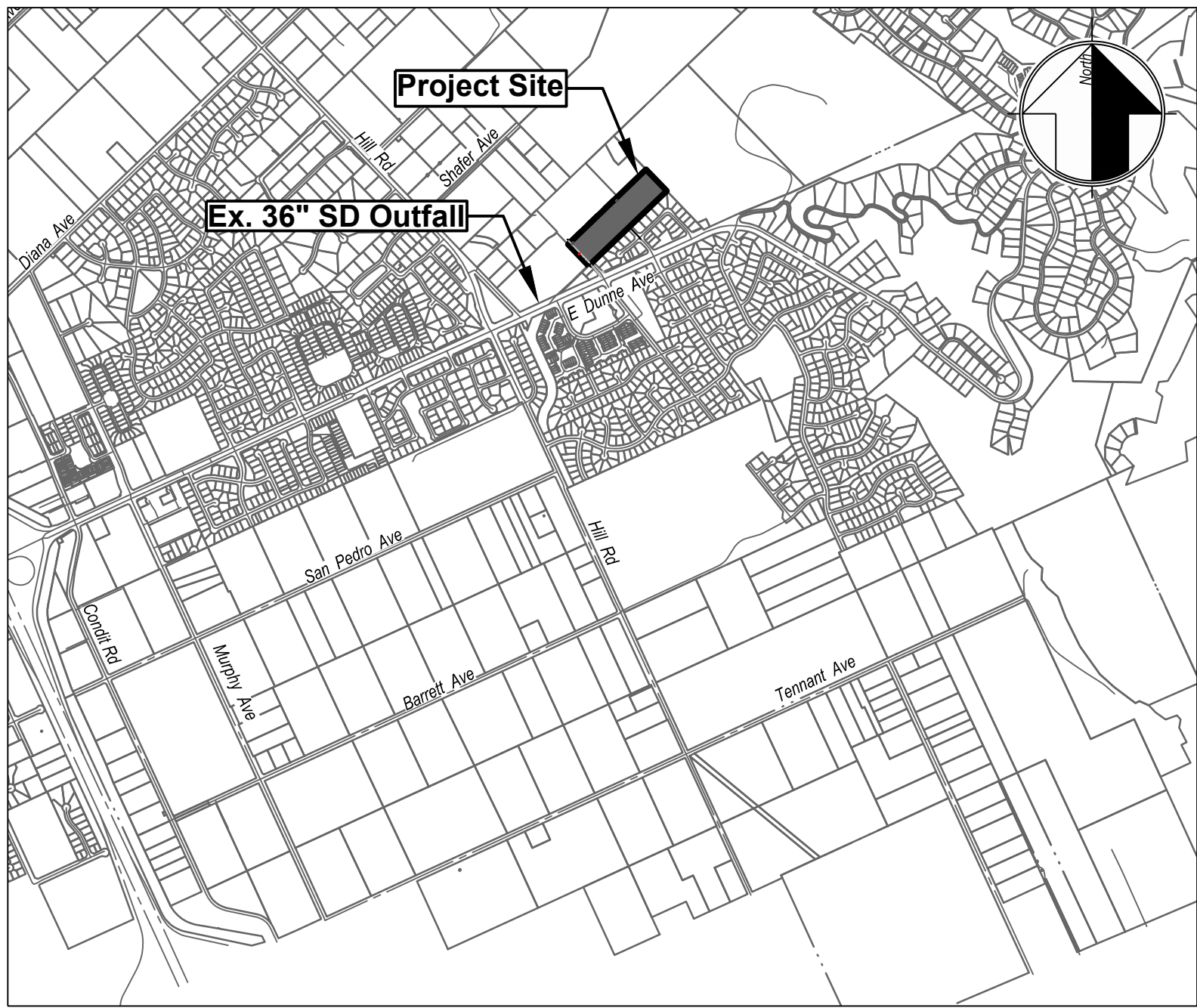
Project Information:

APN: 728-02-003
Present Use: Residential / Open
Proposed Use: Residential Estate (RE 1)
Present Zoning: Residential (RE 1)
Proposed Zoning: Residential (RE 1)
Sanitary Sewer: City of Morgan Hill
Gas and Electric: PG&E
Water: City of Morgan Hill
Telephone: Verizon
Existing Improvements: As Shown
Area: 8.37 ac

Legend:

- TBR Existing tree to be removed
- Building Setback Line
- Relocate (E) Water Lines and Easements

Vicinity Map



Sheet Index

#	Sheet Title
1	Site Development Plan
2	Tentative Map
3	Preliminary Grading Plan
4	Preliminary Grading Cross Sections
5	Preliminary Utility Plan
6	Preliminary Stormwater Control Plan

MH engineering Co.
16075 Vineyard Boulevard
Morgan Hill, CA 95037

DATE: 3/20/23 DRAWN: RS CHECKED: WJM

Sheet

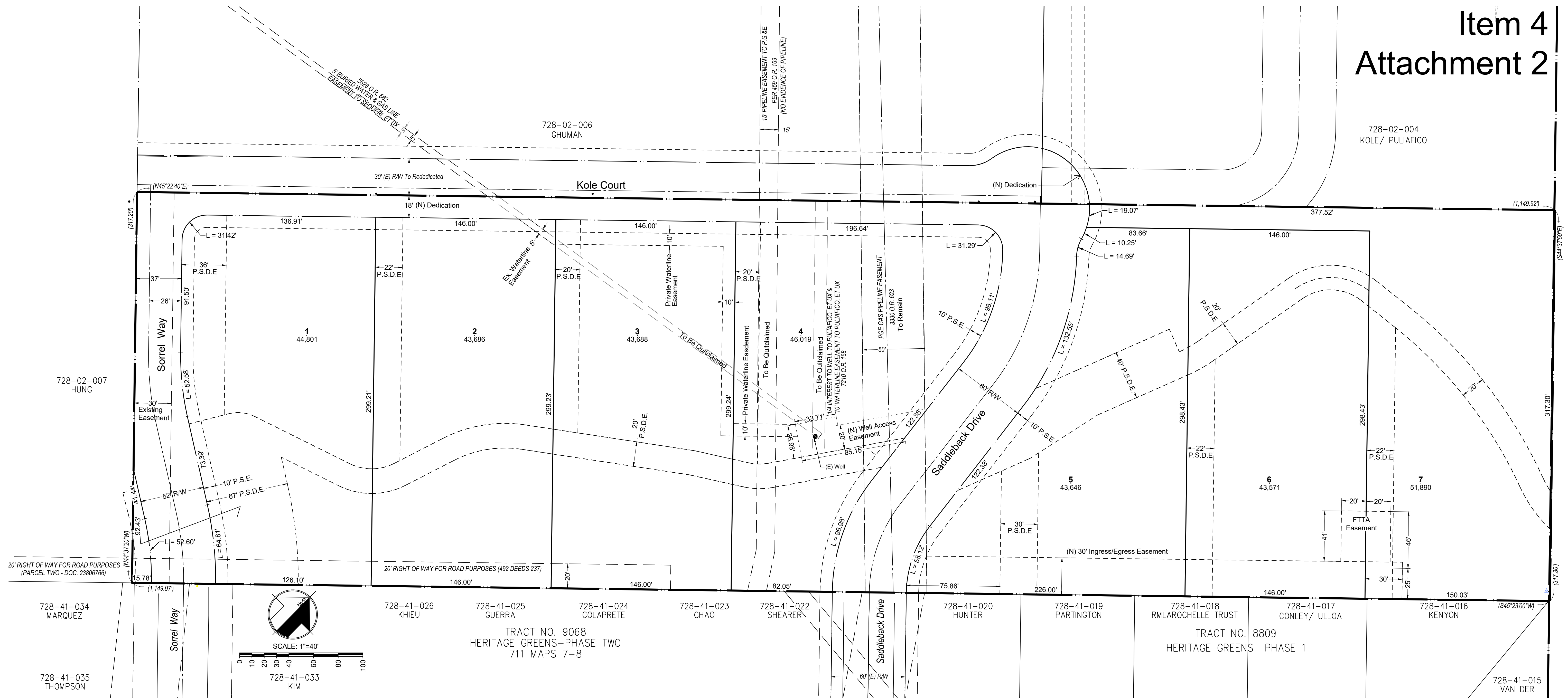
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Serene Hills
Site Development Plan

Item 4 Attachment 2



Applicant/Owner:
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(408) 779-7381
billm@mhengineering.com

Planner:
Vince Burgos
220 Live Oak Drive
Danville, CA 94506
(408) 421-2695

Project Information:

APN: 728-02-003
Present Use: Residential / Open
Proposed Use: Residential
Present Zoning: Residential Estate (RE 1)
Proposed Zoning: Residential (RE 1)
Sanitary Sewer: City of Morgan Hill
Gas and Electric: PG&E
Water: City of Morgan Hill
Telephone: Verizon
Existing Improvements: As Shown
Area: 8.37 ac

Serene Hills

Tentative Map

MH engineering Co.
16075 Vineyard Boulevard
Morgan Hill, CA 95037

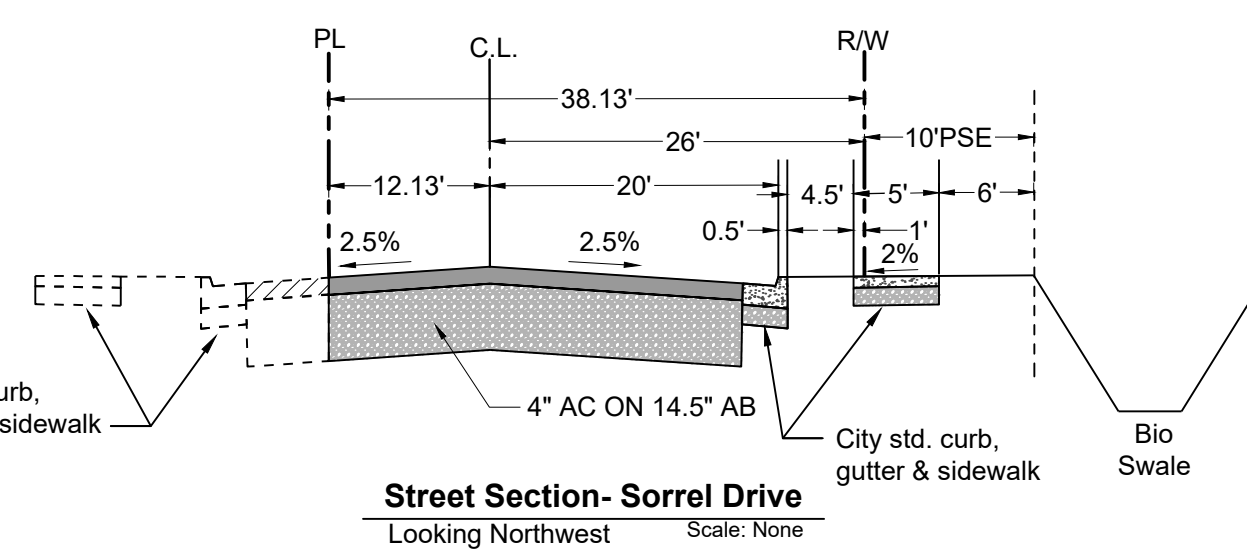
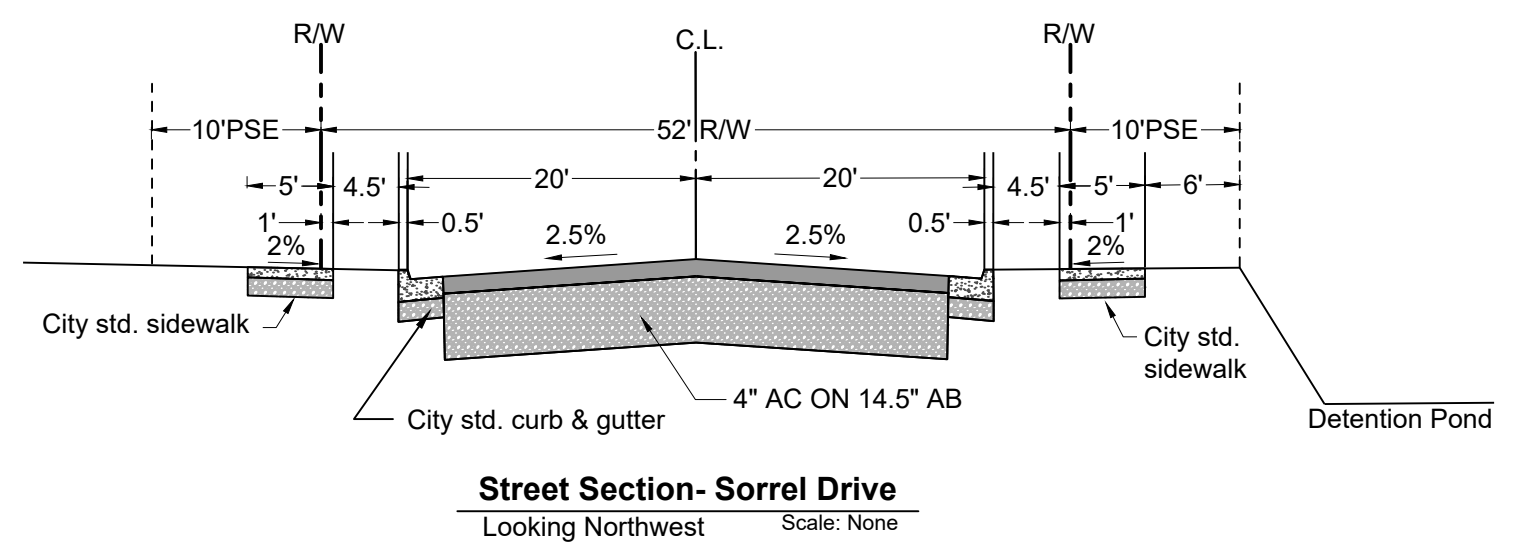
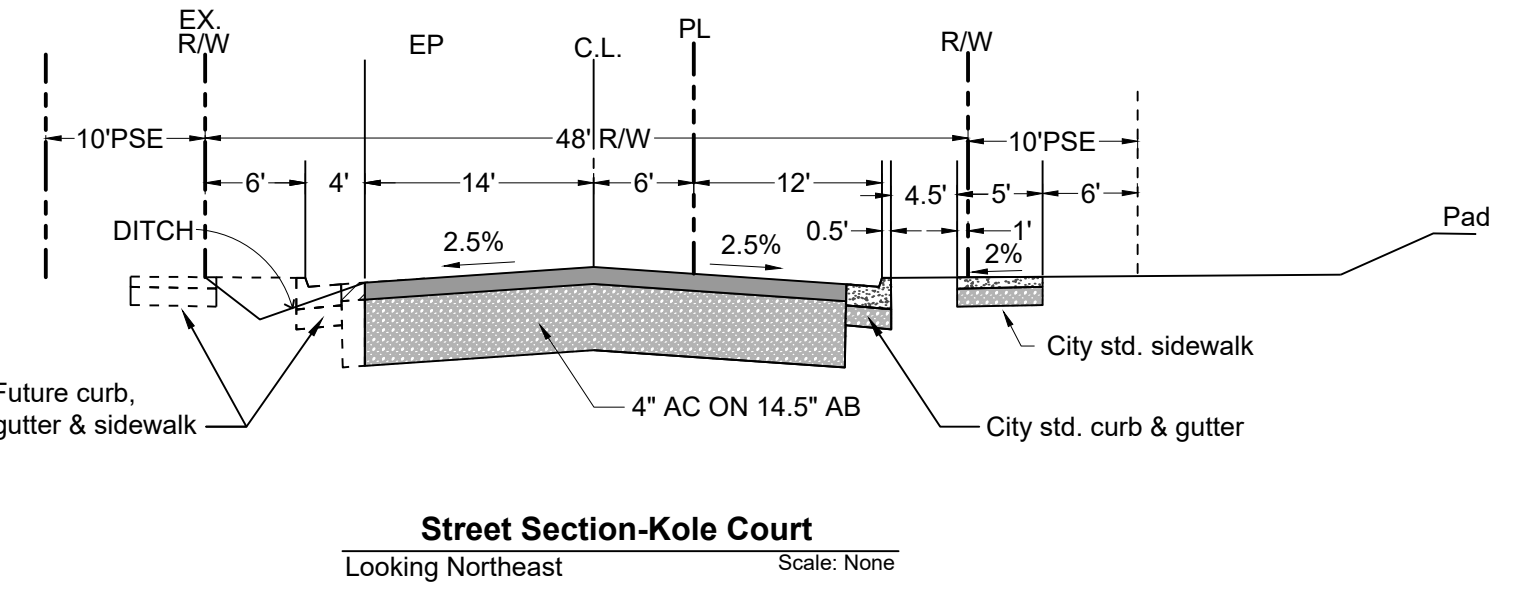
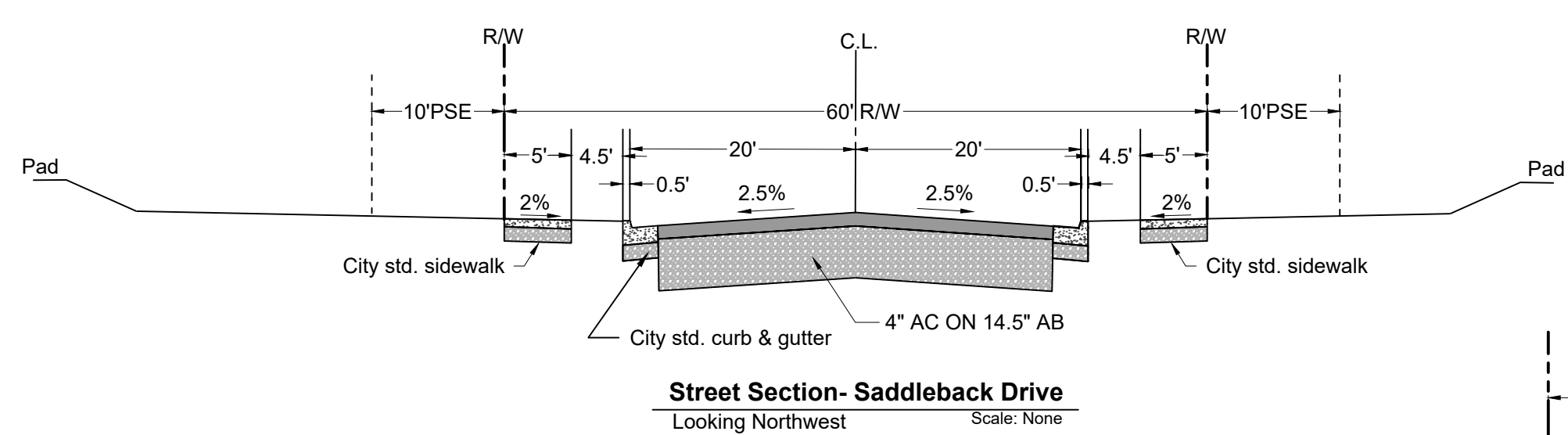
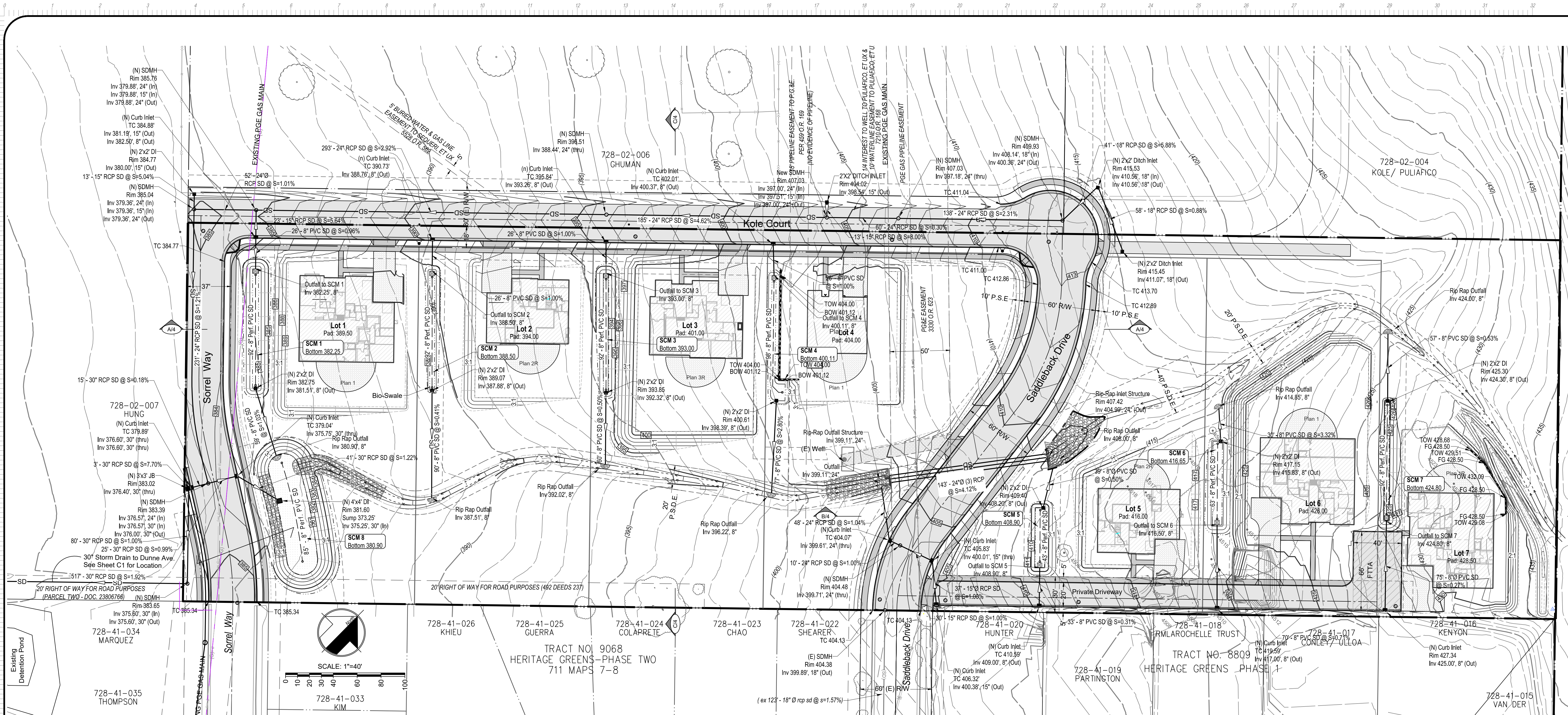
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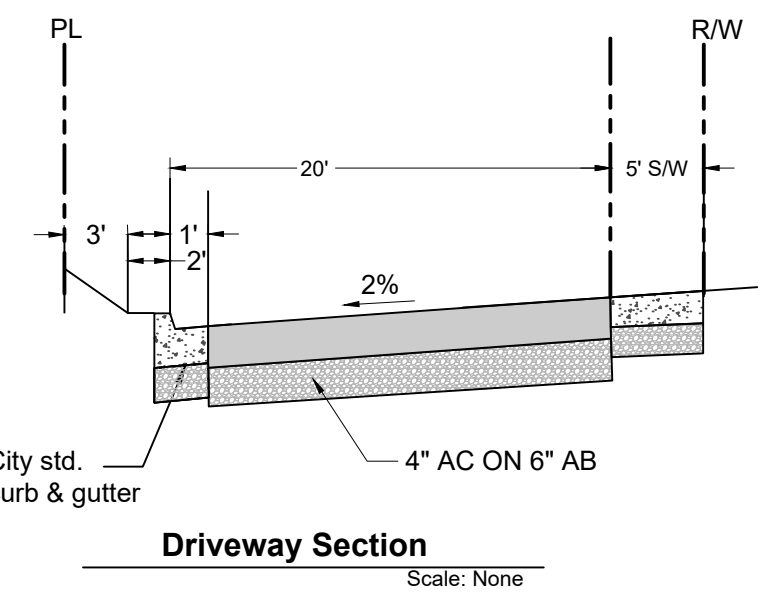
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Grading Quantities		
	Cut (CY)	Fill (CY)
Rough Grading	4990	7754
Import		2,764 CY



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Serene Hills

Preliminary Grading Plan

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Broadband Standards

CITY OF MORGAN HILL

For Broadband connectivity, a project is required to install conduits in all the public rights-of-way fronting the project site to accommodate multiple broadband providers. The following standards apply:

A. Design Plans

- The project is required to submit design plans to include an engineering plan and profile of each street showing the location of existing underground utilities in the proposed path of the broadband conduit installation.
- The design plans shall also include the approximate locations and dimensions for surface restoration.

B. Broadband Conduit

- Provide a minimum of two (2) conduits each with at least two pull cables. At least one conduit shall remain empty and reserved for use by a potential future broadband service provider.
- Each conduit shall be a 4" diameter PVC pipe, non-pressure type but has adequate stiffness for direct burial usage without encasement in concrete. The type of pipe shall be consistent with industry standards and be orange in color.
- Broadband system designers shall field-verify the locations of existing utilities and surface features along and adjacent to the proposed conduit alignment.
- The preferred horizontal conduit alignment is at centerline of sidewalk or as approved by the City Engineer.
 - For conduits allowed in the street: Locate new conduit 3' from face of curb. Conduits shall be located parallel to the street centerline, where practicable, and shall not meander along the street. Street crossings shall be perpendicular to the street centerline.
- Horizontal Clearance:
 - Minimum 1' horizontal clearance from new conduit to other existing utilities, excluding water mains, gas lines, and electric lines.

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- Minimum 3' horizontal clearance from new conduit to existing water main.

- The applicant is responsible for checking with owners of adjacent non-City utilities (ex. gas and electric lines) to verify their required horizontal separation requirements.

- All conduits shall be installed underground using directional boring method or open trench.

a. For Directional Bore Design

- Plans shall include a layout plan and profile sheets for directional bores. All existing utilities must be shown to scale on the plan and profile views.

- Vertical Clearance: Provide 3' minimum vertical clearance from all utilities. This includes minor services, such as water services and sewer laterals. For deep crossings, provide a minimum of 5' clearance from utilities and structures. The applicant is responsible for checking with owners of adjacent non-City utilities (ex. gas and electric lines) to verify their required vertical separation requirements.

- Boring and Receiving Pits: Show the length, width, depth, and location of the boring and receiving pits on the plans and profiles. The pits are to be located to minimize the construction impact to the adjacent properties and streets. Pits should not be in front of existing driveways, restaurants, bus stops, fire hydrants, and within street intersections.

- Conflicts with Trees: If trees are in the way of the directional bore, the conduit shall be bored 8' to 12' underneath the tree roots rather than around the tree.

b. For Trench Design

- For open-trench construction in the street: Conduit shall have a minimum cover of 36" above the top of the conduit and allow at least 6" between the top of the conduit and the bottom of the street structural pavement section.

- For a trench outside the street section: Conduit shall have a minimum cover of 30".

- Open trenches deeper than 60" must comply with Cal/OSHA standards, requiring protective systems, such as shoring.

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- Vertical Clearance: Provide 12" minimum vertical clearance from all other utility lines and services, including other telecommunication lines.

- Tracer Wire: The conduits shall be installed with a tracer wire.

- Install tracer wire in the trench or bore with all underground conduits. Ensure the tracer wire provides end-to-end electrical continuity for electronically locating the underground conduit system.

- In a trenching operation, install the tracer wire no more than 3" above the conduit.

- In a boring operation, install the tracer wire in an encasement.

C. Pullboxes

- Indicate locations of all pullboxes, other service boxes and manholes on the design plans.
- Pullboxes shall be a No. 8 pullbox per City of Morgan Hill Standard E-6.
- Pullboxes and splice boxes shall be located within the park strip/planter strip or at the back of sidewalk unless the City Engineer approves an alternative location.
- The maximum distance between any two pull boxes shall not exceed 1,200 feet. Within the 1,200-feet distance, provide pullboxes at locations wherever the cumulative change of direction of the conduit exceeds 180 degrees.
- The minimum bending radius for conduit shall be 3 feet.
- Pullboxes shall be located a minimum of 12 inches from all structures.

D. Manholes

- A detail of the manhole must be shown on the plans.
- Manholes for broadband conduit shall not be allowed in the street unless an exception is granted by the City Engineer.

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6/26/2020

- Manholes allowed to be in the street must have cast iron frames and covers.

- Manholes that are in sidewalks shall have a concrete polymer frame and cover that matches the color and texture of the sidewalk.

- Manholes shall not be placed within a driveway approach or within the curb return at intersections.

- All manholes must be rated for a minimum H-20 wheel load.

- The name "BROADBAND" shall be permanently cast into or engraved on the manhole covers.

E. Related Work

Refer to the City's Design Standards and Standard Details for Construction for pavement materials, trench limits of restoration, backfill for boring, and backfill for trenching.

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Legend

Proposed	Description	Existing
	Project Property Boundary	
	Centerline	
	Easement, as noted	
	Curb and Gutter	
	Driveway Approach	
	Storm Drain	
	Perforated Storm Drain	
	Sanitary Sewer	
	Water Main	
	Irrigation Line	
	Fire Service	
	Gas Main	
	Underground Electric	
	Overhead Electric	
	Telephone	
	Overhead Telephone	
	Joint Trench/Broadband	
	Chainlink Fence	
	Wood Fence	
	Street Barricade	
	Major Contour	
	Minor Contour	
	Benchmark	
	Monument, Type as shown	
	Revision	
	Section	
	Swale Slope	
	Storm Drain Manhole	
	Curb Inlet	
	Drop Inlet	
	Sanitary Sewer Manhole	
	Fire Hydrant	
	Cleanout	
	Gate Valve	
	Utility Pole	
	Electroliner	
	Sewer Service	
	Water Service	
	AC Pavement	
	AB Areas	
	PCC walks/driveways	
	Structures	
	Bio-Retention Area	
	Decorative Pavers	

* existing features are labeled in italics and parenthesis, typical

Serene Hills

Preliminary Grading Cross Sections

Applicant/Owner:

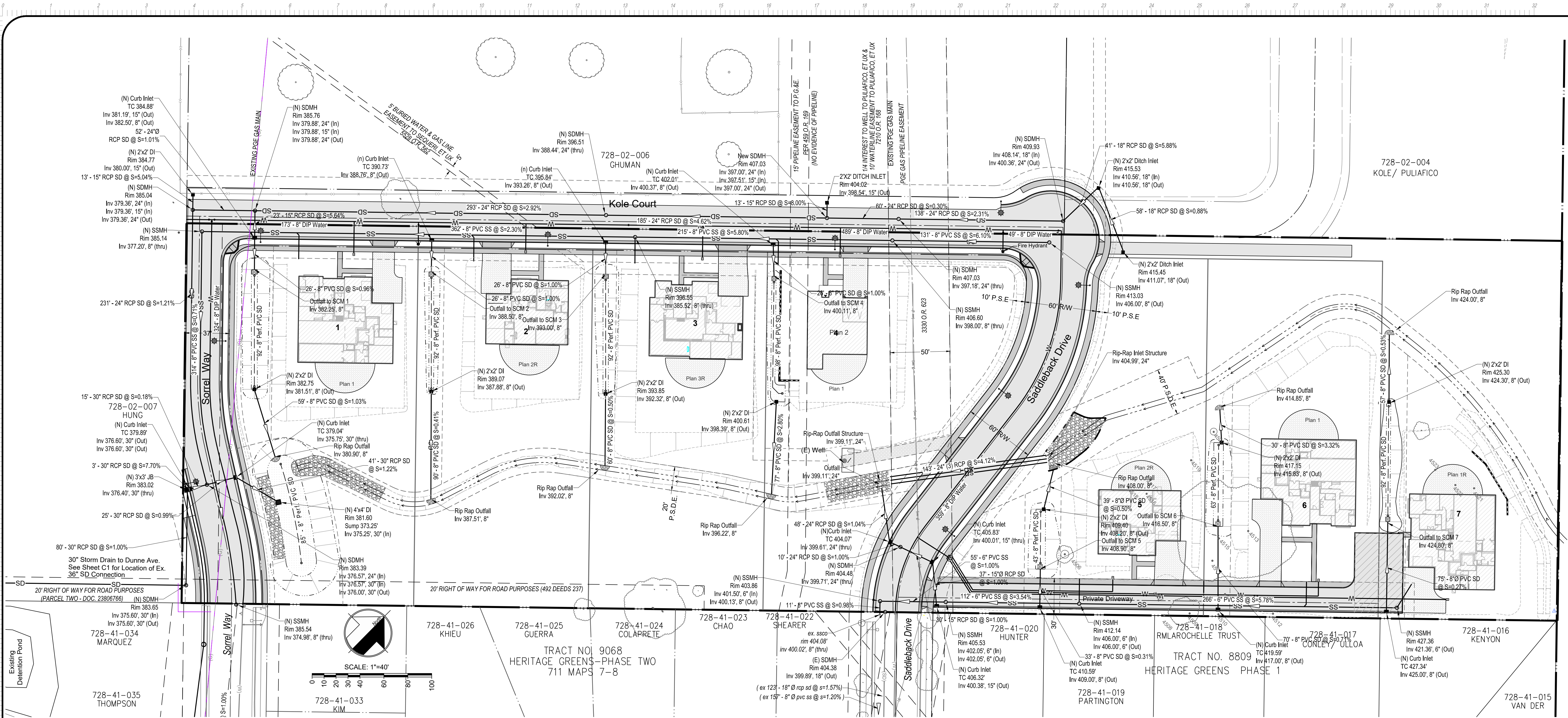
Serene Hills LLC
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Planner:

Vince Burgos
2424 Calle Galicia
Santa Barbara, CA 93109
(408) 421-2695



Fire Hydrant Location Identifier:
Prior to project final inspection, the general contractor shall ensure that an approved ("Blue Dot") fire hydrant location identifier has been placed in the roadway, as directed by the fire department.

Utility Note:
Underground all existing overhead utilities along Kole Court and within the project boundary in accordance with city standards and affected utility company standards.

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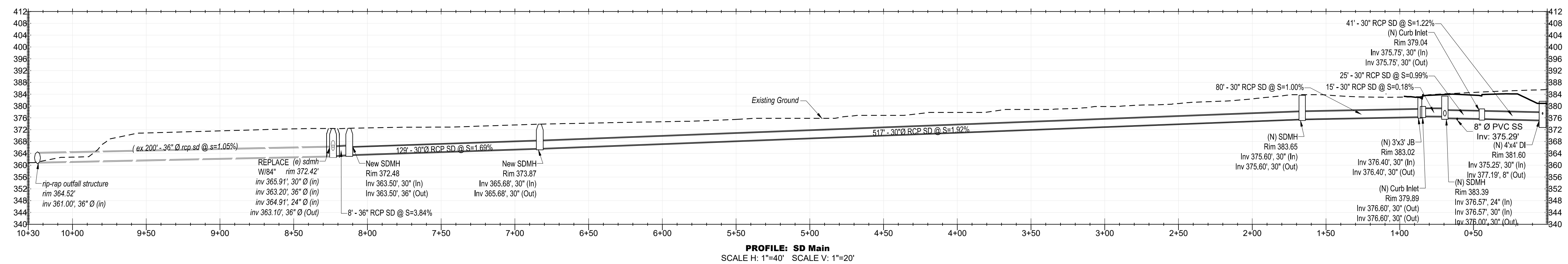
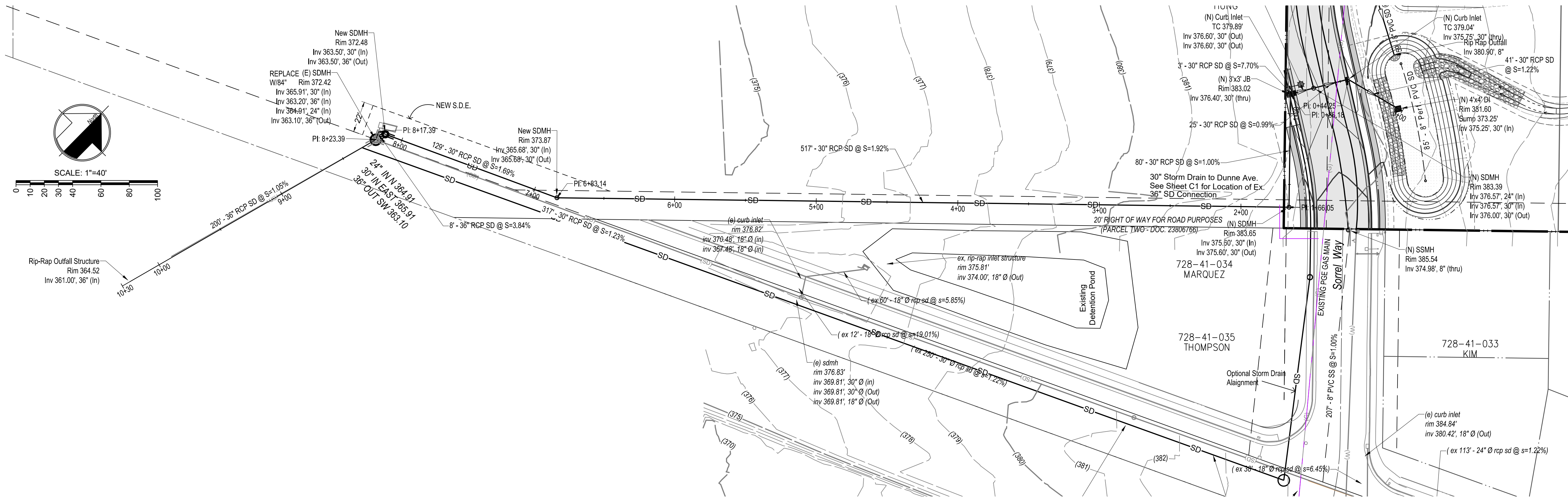
Serene Hills

Preliminary Utility Plan

MH engineering Co.
16075 Vineyard Boulevard
Morgan Hill, CA 95037

Sheet
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23117.5

DATE: 3/20/23 DRAWN: RS CHECKED: WJM



Applicant/Owner:
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Serene Hills

Plan-Profile - Storm Drain Extension

MH engineering Co.
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Morgan Hill, CA 95037

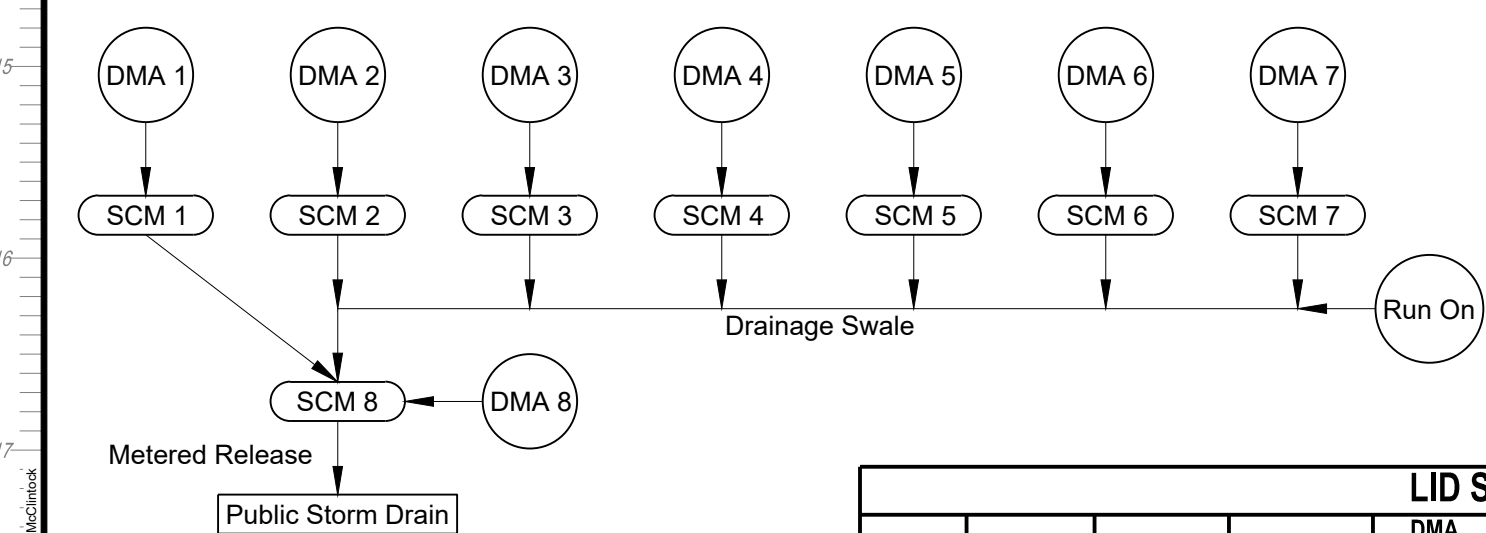
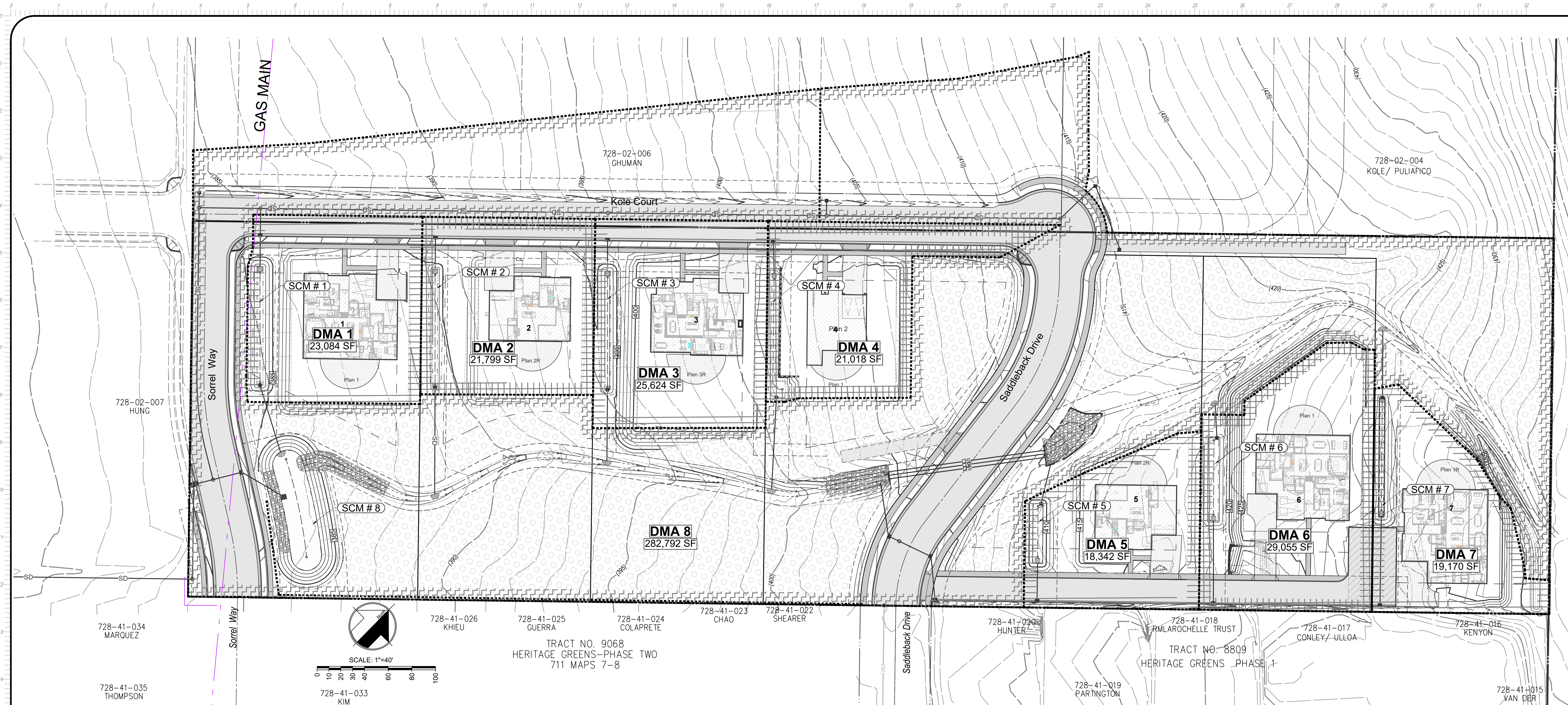
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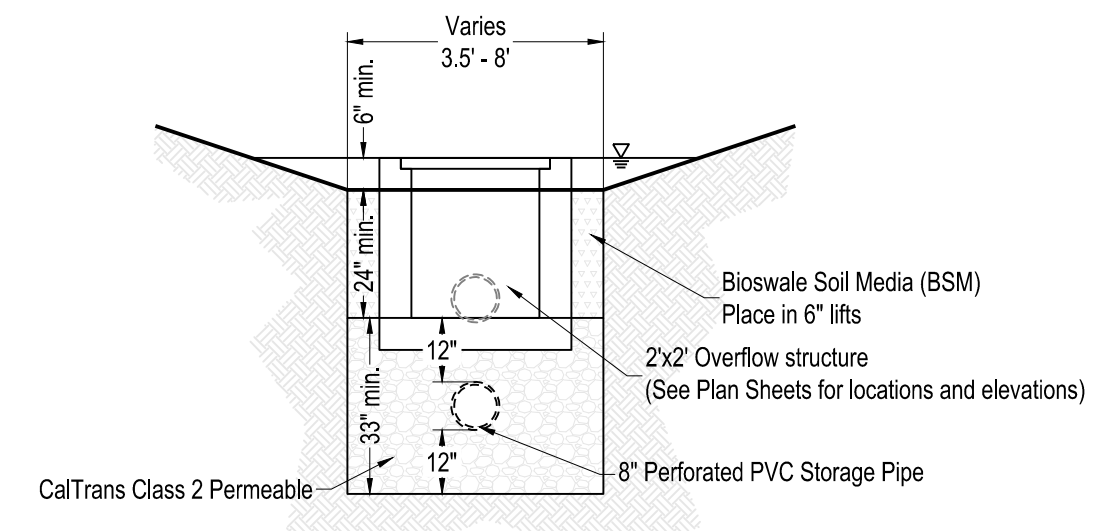
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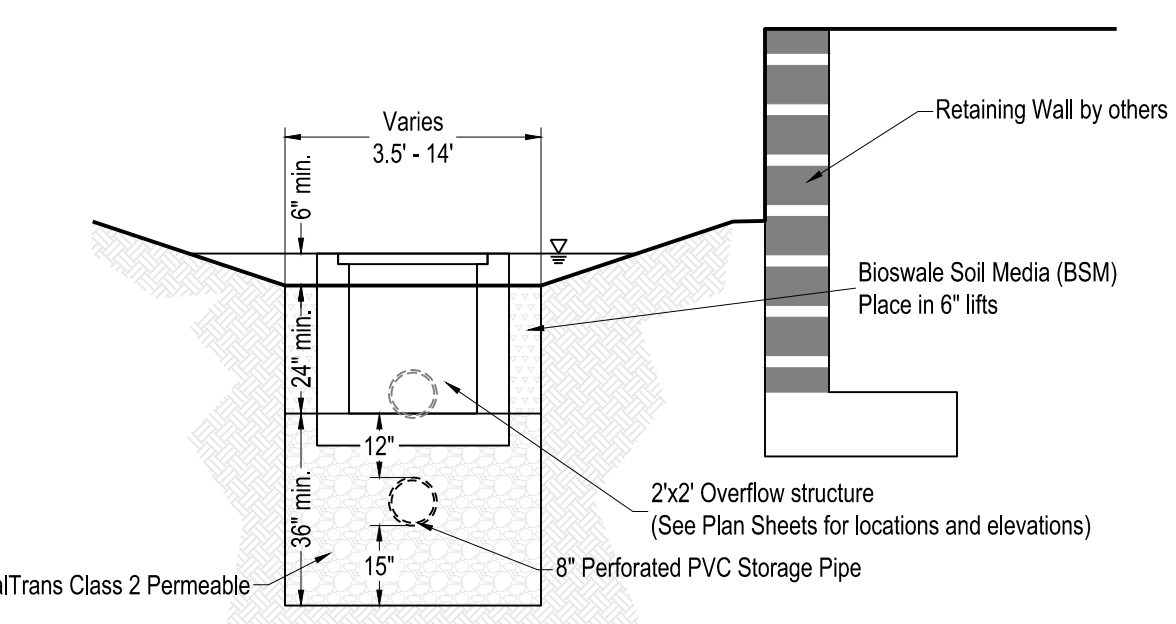
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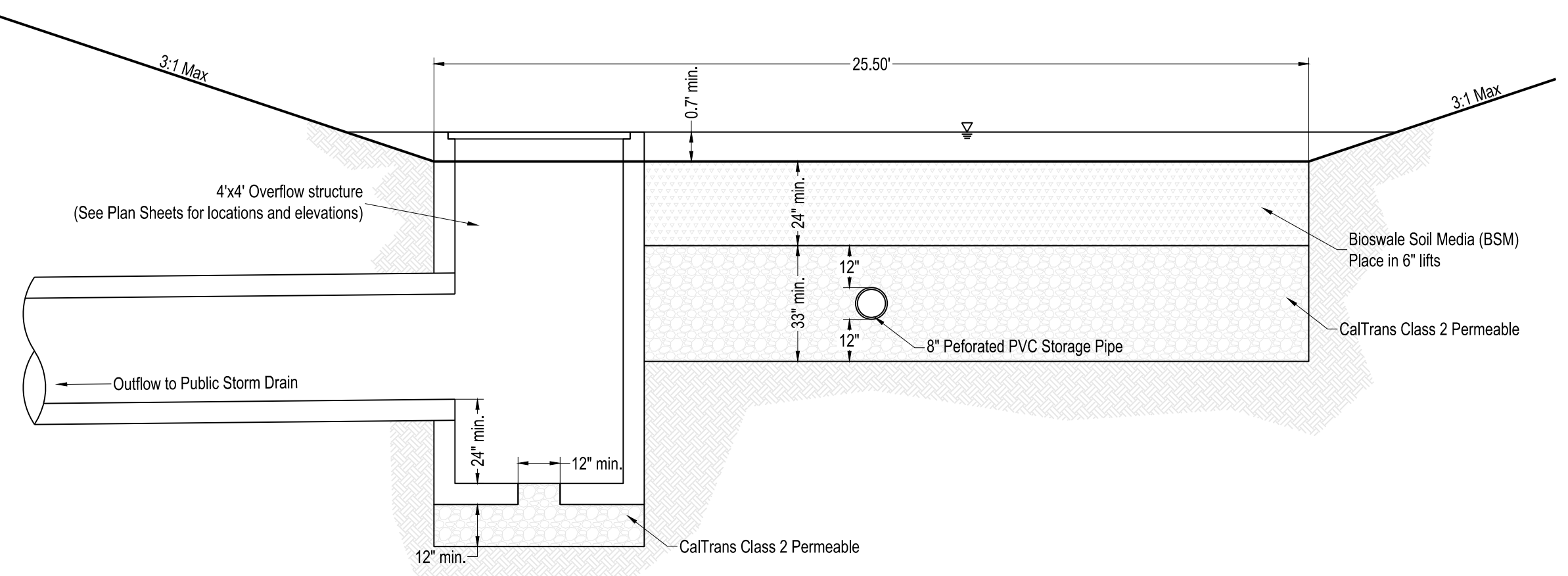
LID Sizing Table											
DMA	BMP	Description	Total DMA Area	DMA Impervious Area	i	C	Required Treatment Area	Provided Treatment Area	Required Retention Volume	Provided Retention Volume	
1	SCM 1	Bioswale	23,084 SF	10,852 SF	0.47	0.32	434 SF	500 SF	1,018 CF	1,147 CF	
2	SCM 2	Bioswale	21,799 SF	8,997 SF	0.41	0.29	360 SF	400 SF	860 CF	937 CF	
3	SCM 3	Bioswale	34,456 SF	10,185 SF	0.40	0.28	407 SF	450 SF	981 CF	1,041 CF	
4	SCM 4	Bioswale	53,317 SF	12,247 SF	0.58	0.40	490 SF	486 SF	1,144 CF	1,174 CF	
5	SCM 5	Bioswale	18,342 SF	8,916 SF	0.49	0.33	357 SF	400 SF	834 CF	893 CF	
6	SCM 6	Bioswale	29,055 SF	12,286 SF	0.42	0.29	491 SF	560 SF	1,169 CF	1,247 CF	
7	SCM 7	Bioswale	19,170 SF	8,791 SF	0.46	0.31	352 SF	400 SF	827 CF	830 CF	
8	SCM 8	Bioretention/ Detention Pond	282,792 SF	45,861 SF	0.16	0.15	1,834 SF	1,867 SF	3,366 CF	4,622 CF	
Total			482,016 SF	118,134 SF	0.27	0.21	4,725 SF	5,063 SF	10,198 CF	11,892 CF	



Bioswale Detail: SCMs 1-3, & 5-7
Scale: none



Bioswale Detail: SCM 4
Scale: none



Bioswale Detail: SCM 8
Scale: none

Legend:

- SCM # Source Control Measure
- DMA Boundary
- Undisturbed Landscape

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DATE: 3/20/23 DRAWN: RS CHECKED: WJM

Serene Hills

Preliminary Stormwater Control Plan



DRAFT MITIGATED NEGATIVE DECLARATION

Serene Hills Residential Project (SR2023-0019/EA2023-0008/SD2023-0003) 2275 East Dunne Avenue

File Number/Project Name: Serene Hills Residential Project (SR2023-0019/EA2023-0008/SD2023-0003)

Project Location and Surrounding Land Uses: The approximately 8.37-acre project site, identified by Assessor's Parcel Numbers (APNs) 728-02-002 and -003, is located at 2275 East Dunne Avenue, north of the terminus of Saddleback Drive in Morgan Hill, California. The project site consists primarily of disced grassland and contains two existing Pacific Gas and Electric Co. (PG&E) easements, an existing well and well tank, and 18 trees, located primarily on the eastern half of the site. A drainage swale crosses the project site from the northeast to the southwest. Surrounding land uses include large-lot single-family residences to the north, a single-family residential subdivision to the south, and undeveloped land to the north, east, and west (see Figure 1 and Figure 2).

Existing Plan Designations and Zoning: The City of Morgan Hill General Plan designates the site as Residential Estate. The site is zoned as Residential Estate one acre (RE-1).

Project Background: In June 2018, an IS/MND was prepared for the 2275 East Dunne Avenue General Plan Amendment and Rezone Project (2018 IS/MND). The 2018 IS/MND analyzed the environmental effects of changing the land use designation of the project site from Residential Estate to Residential Detached Low (RDL) through a General Plan Amendment, as well as a Rezone to change the zoning of the project site from RE-1 to Residential Detached Low 12,000-square foot lot (RDL-12,000). Because a project-specific development application was not filed, the IS/MND included a programmatic evaluation of the project site with development of up to 22 dwelling units, and any future development at the project site was anticipated to require a project-level analysis. The requested General Plan Amendment and Rezone were not approved and the 2018 IS/MND was not adopted by the City Council; however, the 2018 IS/MND has been used to prepare this IS/MND for the new proposed project.

Project Description: The proposed project would include the subdivision of the project site into seven single-family residential lots ranging from approximately 43,571 square feet (sf) to 51,890 sf (see Figure 3). Within the seven lots, three 3,463-sf four-bedroom residences would be developed, as well as four five-bedroom residences ranging from 4,631 sf to 5,300 sf. Six of the on-site trees would be removed. Each single-family residential lot would contain a drainage management area (DMA) that would convey treated runoff to a bioswale located along the western property line of each lot. The seven bioswales would collect runoff and provide preliminary treatment. From each bioswale, treated runoff would be conveyed to the existing on-site swale, which would be channelized as part of the proposed project, and then flow to the proposed bioretention/detention pond located at the lowest point on the site at the southwest corner. Outflow from the pond would then be directed through a proposed 30-inch stormwater line that would extend off-site and outfall into an existing 36-inch storm drain across East Dunne Avenue, which eventually discharges into Tennant Creek near Old Hill Road (see **Figure 4**).

In addition, as part of the proposed project, the termini of Sorrel Way at the southwest corner of the project site and Saddleback Drive at the center of the southern project site boundary would extend north through the project site and connect to a new roadway known as Kole Court. The new internal roadways would provide access to four of the proposed single-family residences, whereas a new 25-foot-wide private driveway extending from Saddleback Drive would provide access to the three remaining single-family residences.

INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

The City of Morgan Hill, California, a municipal corporation, does hereby prepare, make, declare, and publish the Initial Study/Mitigated Negative Declaration (IS/MND) for the following described project:

Project Name and Number: Serene Hills Residential Project (SR2023-0019/EA2023-0008/SD2023-0003)

Original Project: 2275 East Dunne Avenue General Plan Amendment and Rezone Project (GPA2018-0001/ZA2018-0001/EA2018-0001)

The City of Morgan Hill, Development Services Department, has reviewed the proposed project and on the basis of the whole record before it, has determined that pursuant to CEQA Guidelines Section 15162, no substantial changes have occurred with respect to the circumstances under which the IS/MND was previously considered, and there is no new available information, which was not known and could not have been known at the time that the IS/MND was considered. The project, as identified in this document, would not have a significant effect on the environment beyond that which was evaluated in the 2275 East Dunne Avenue General Plan Amendment and Rezone IS/MND (2018 IS/MND). This document demonstrates that further environmental review is not required given that the proposed modifications to the approved project would not trigger the applicable criteria set forth in the CEQA Guidelines Section 15162.

This revised IS/MND to the previously considered 2018 IS/MND has been prepared pursuant to Title 14, Section 15164 of the California Code of Regulations and City of Morgan Hill environmental standards.

A copy of this document and all supportive documentation may be reviewed or obtained at the City of Morgan Hill, Development Services Department, 17575 Peak Avenue, Morgan Hill, California, 95037.

Development Service Director, City of Morgan Hill,
California, a municipal corporation

By: _____

Date: _____

Serene Hills Residential Project (SR2023-0019/EA2023-0008/SD2023-0003)

File Number/Project Name: Serene Hills Residential Project (SR2023-0019/EA2023-0008/SD2023-0003)

Project Location and Surrounding Land Uses: The approximately 8.37-acre project site, identified by Assessor's Parcel Numbers (APNs) 728-02-002 and -003, is located north of the terminus of Saddleback Drive in Morgan Hill, California. The project site consists primarily of disced grassland and contains two existing Pacific Gas and Electric Co. (PG&E) easements, an existing well and well tank, and 18 trees, located primarily on the eastern half of the site. A drainage swale crosses the project site from the northeast to the southwest. Surrounding land uses include large-lot single-family residences to the north, a single-family residential subdivision to the south, and undeveloped land to the north, east, and west (see Figure 1 and Figure 2).

Existing Plan Designations and Zoning: The City of Morgan Hill General Plan designates the site as Residential Estate. The site is zoned as Residential Estate one acre (RE-1).

Project Background: In June 2018, an IS/MND was prepared for the 2275 East Dunne Avenue General Plan Amendment and Rezone Project (2018 IS/MND). The 2018 IS/MND analyzed the environmental effects of changing the land use designation of the project site from Residential Estate to Residential Detached Low (RDL) through a General Plan Amendment, as well as a Rezone to change the zoning of the project site from RE-1 to Residential Detached Low 12,000-square foot lot (RDL-12,000). Because a project-specific development application was not filed, the IS/MND included a programmatic evaluation of the project site with development of up to 22 dwelling units, and any future development at the project site was anticipated to require a project-level analysis. The requested General Plan Amendment and Rezone were not approved and the 2018 IS/MND was not adopted by the City Council; however, the 2018 IS/MND has been used to prepare this IS/MND for the new proposed project.

Project Description: The proposed project would include the subdivision of the project site into seven single-family residential lots ranging from approximately 43,571 square feet (sf) to 51,890 sf (see Figure 3). Within the seven lots, three 3,463-sf four-bedroom residences would be developed, as well as four five-bedroom residences ranging from 4,631 sf to 5,300 sf. Six of the on-site trees would be removed. Each single-family residential lot would contain a drainage management area (DMA) that would convey treated runoff to a bioswale located along the western property line of each lot. The seven bioswales would collect runoff and provide preliminary treatment. From each bioswale, treated runoff would be conveyed to the existing on-site swale, which would be channelized as part of the proposed project, and then flow to the proposed bioretention/detention pond located at the lowest point on the site at the southwest corner. Outflow from the pond would then be directed through a proposed 30-inch stormwater line that would extend off-site and outfall into an existing 36-inch storm drain across East Dunne Avenue, which eventually discharges into Tennant Creek near Old Hill Road (see Figure 4).

In addition, as part of the proposed project, the termini of Sorrel Way at the southwest corner of the project site and Saddleback Drive at the center of the southern project site boundary would extend north through the project site and connect to a new roadway known as Kole Court. The new internal roadways would provide access to four of the proposed single-family residences, whereas a new 25-foot-wide private driveway extending from Saddleback Drive would provide access to the three remaining single-family residences.

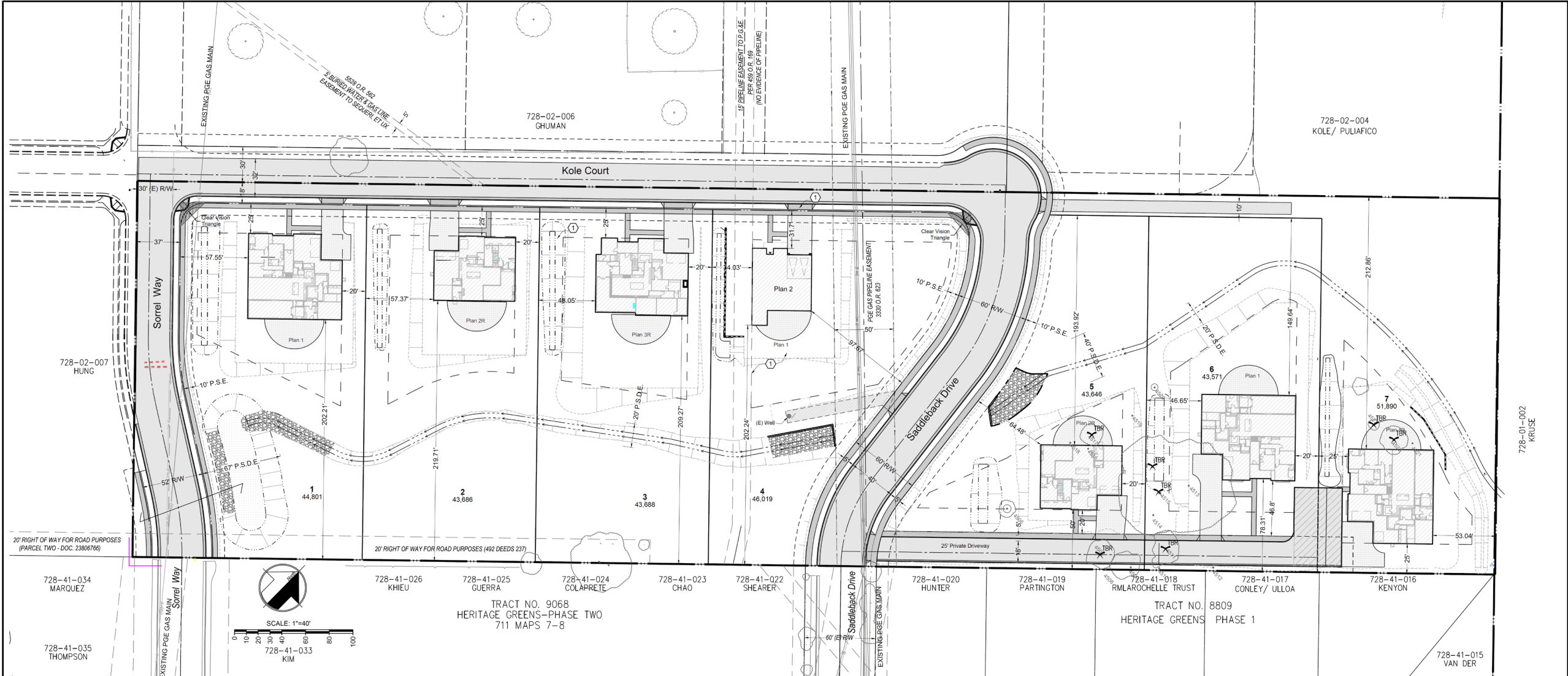
Figure 1
Regional Vicinity Map



Figure 2
Project Site Boundaries



Figure 3
Serene Hills Site Development Plan



Building Coverage Calculations			
Lot #	Lot Area (SF)	Building Area (SF)	Building Coverage (%)
1	44,801	5300	11.83%
2	43,686	3463	7.93%
3	43,688	4631	10.60%
4	46,019	5300	11.52%
5	43,646	3463	7.93%
6	43,571	5300	12.16%
7	51,890	5300	10.21%

Applicant/Owner:

Serene Hills LLC
22561 Poppy Drive
Cupertino, CA 95014
(408) 396-2706

Engineer:

William J. McClintock RCE 24893
MH Engineering
16075 Vineyard Blvd.
Morgan Hill, CA 95037
(408) 778-7381
billm@mhengineering.com

Planner:

Vince Burgos
2424 Calle Galicia
Santa Barbara, CA 93109
(408) 421-2695

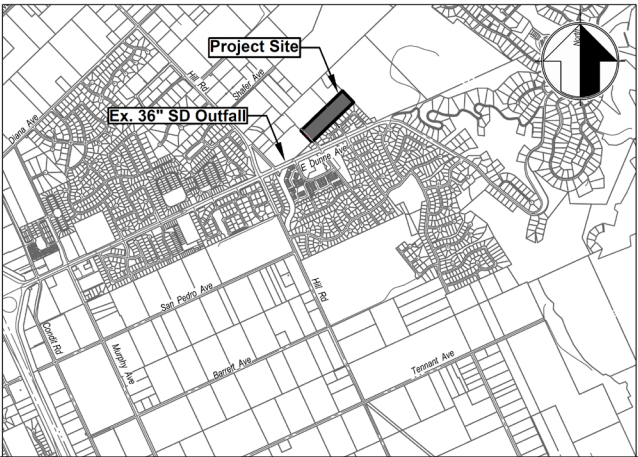
Project Information:

APN: 728-02-003
Present Use: Residential / Open
Proposed Use: Residential
Present Zoning: Residential Estate (RE 1)
Proposed Zoning: Residential (RE 1)
Sanitary Sewer: City of Morgan Hill
Gas and Electric: PG&E
Water: City of Morgan Hill
Telephone: Verizon
Existing Improvements: As Shown
Area: 8.37 ac

Legend:

TBR Existing tree to be removed
--- Building Setback Line
① Relocate (E) Water Lines and Easements

Vicinity Map



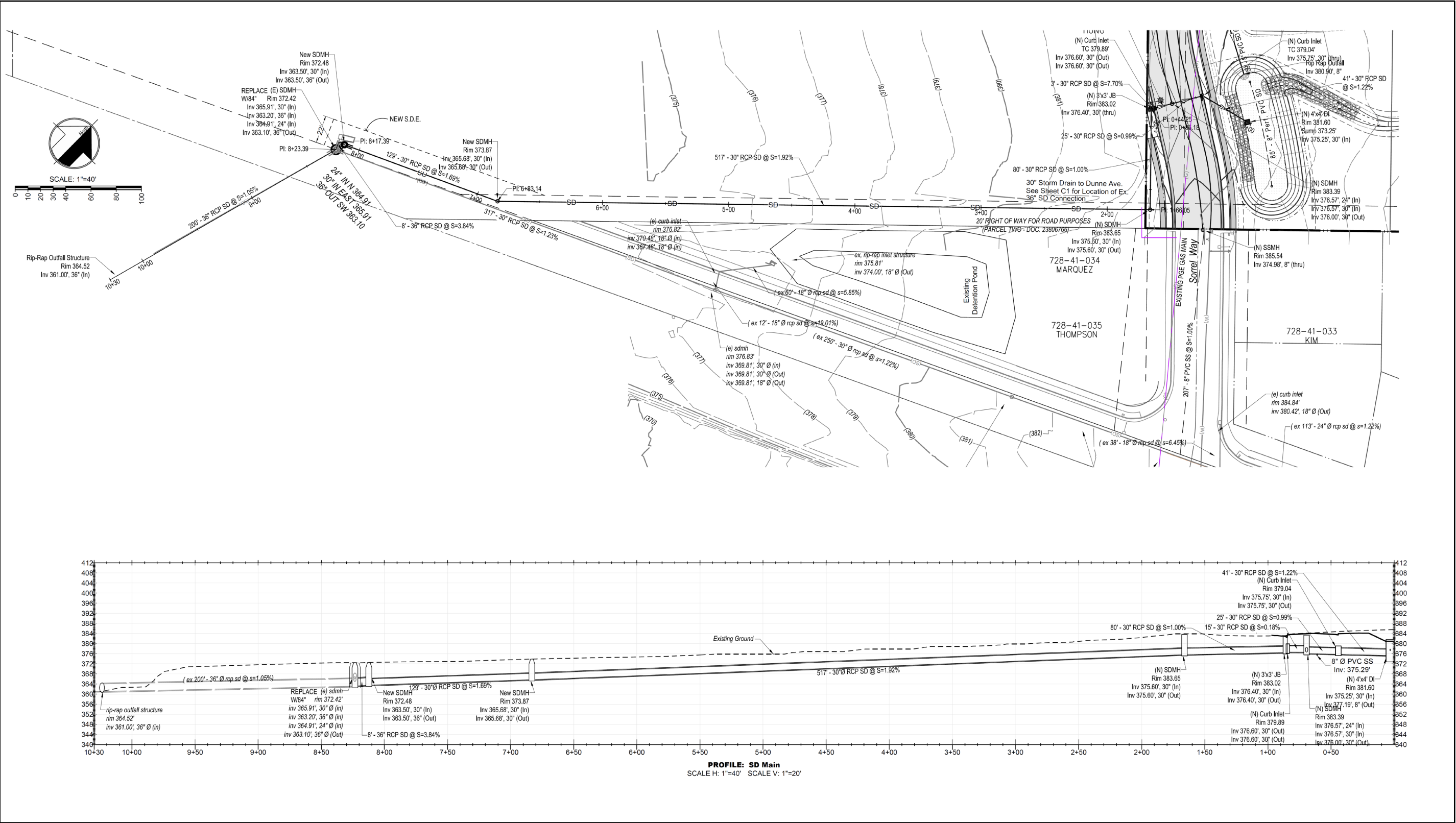
Sheet Index

#	Sheet Title
1	Site Development Plan
2	Tentative Map
3	Preliminary Grading Plan
4	Preliminary Grading Cross Sections
5	Preliminary Utility Plan
6	Preliminary Stormwater Control Plan

Sheet

Serene Hills

Figure 4
Proposed Off-Site Storm Drain Extension



Project Approvals

The proposed project would require the following entitlements from the City of Morgan Hill:

- Approval of a Tentative Subdivision Map; and
- Design Permit.

Use of a Prior Environmental Document:

The California Supreme Court has held that a lead agency has the responsibility of initially deciding whether an original environmental document retains “some relevance” to the ongoing decision-making process. The City of Morgan Hill has determined that the 2018 IS/MND is relevant and has prepared an revised IS/MND document to evaluate the proposed project.

The requested General Plan Amendment and Rezone were not approved, and the 2018 IS/MND was not adopted. As such, the project site remains designated Residential Estate and zoned RE-1. In addition, a project-specific development application was not filed when the City considered the 2018 IS/MND. Instead, the 2018 IS/MND analyzed the conceptual development of a maximum of 22 on-site dwelling units. The proposed project represents a filed application for development consistent with the current land use and zoning designations and features specific project plans.

Discussion

The following sections provide discussions of any potential impacts associated with the proposed project beyond those previously identified in the 2018 IS/MND. Given the limited scope of changes that would occur as a result of the proposed project in comparison to the former 2275 East Dunne Avenue General Plan Amendment and Rezone Project, this document provides a detailed evaluation of select CEQA topics potentially affected by the changes, including Air Quality, Greenhouse Gas Emissions, Biological Resources, Cultural Resources, and Hydrology and Water Quality. The remaining CEQA topics are appropriately discussed at a lesser level of detail.

Air Quality

The City of Morgan Hill is located in the San Francisco Bay Area Air Basin (SFBAAB), which is under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). The SFBAAB area is currently designated as a nonattainment area for State and federal ozone, State and federal fine particulate matter 2.5 microns in diameter (PM_{2.5}), and State respirable particulate matter 10 microns in diameter (PM₁₀) ambient air quality standards (AAQS). The SFBAAB is designated attainment or unclassified for all other AAQS. It should be noted that on January 9, 2013, the U.S. Environmental Protection Agency (USEPA) issued a final rule to determine that the Bay Area has attained the 24-hour PM_{2.5} federal AAQS. Nonetheless, the Bay Area must continue to be designated as nonattainment for the federal PM_{2.5} AAQS until such time as the BAAQMD submits a redesignation request and a maintenance plan to the USEPA, and the USEPA approves the proposed redesignation. The USEPA has not yet approved a request for redesignation of the SFBAAB; therefore, the SFBAAB remains in nonattainment for 24-hour PM_{2.5}.

In compliance with regulations, due to the nonattainment designations of the area, the BAAQMD periodically prepares and updates air quality plans that provide emission reduction strategies to achieve attainment of the AAQS, including control strategies to reduce air pollutant emissions

through regulations, incentive programs, public education, and partnerships with other agencies.

The current air quality plans are prepared in cooperation with the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG). The most recent State ozone plan is the 2017 Clean Air Plan, adopted on April 19, 2017. Adopted BAAQMD rules and regulations, as well as the thresholds of significance, have been developed with the intent to ensure continued attainment of AAQS, or to work towards attainment of AAQS for which the area is currently designated nonattainment, consistent with the applicable air quality plan. Thus, by exceeding the BAAQMD's emission thresholds for construction or operational emissions, a project would be considered to conflict with or obstruct implementation of the BAAQMD's air quality planning efforts.

Under Section 4.3, Air Quality, the 2018 IS/MND determined that buildout of the project site would result in air quality emissions that would not exceed the BAAQMD's thresholds of significance. Specifically, the 2018 IS/MND compared the 2275 East Dunne Avenue Project to the BAAQMD Screening Criteria in place at the time the IS/MND was drafted, and determined that development of 22 units would be below the construction and operational criteria pollutant screening thresholds of 114 units and 325 units, respectively. As such, potential impacts were determined to be less than significant. Nonetheless, the 2018 IS/MND included Mitigation Measure (MM) AIR-1, which requires that any future development projects implement BMPs during ground-disturbing activities associated with project construction. In addition, the 2018 IS/MND determined that all other impacts related to air quality, including impacts associated with toxic air contaminants (TACs) and odors, would be less than significant.

Since the adoption of the 2018 IS/MND, BAAQMD has updated its screening criteria to aid in determining if emissions from development projects would exceed the applicable thresholds of significance and result in potentially significant air quality impacts. According to the BAAQMD 2022 CEQA Guidelines, if a project is below the screening level identified for the applicable land use type, emissions from construction and operation of the project would have a less-than-significant impact on air quality. The screening criterion for criteria pollutant emissions associated with single-family housing is 254 units during construction and 421 units for operations. The proposed project involves the development of seven single-family residential units, which would be below the screening criteria during construction and operations. Therefore, based on the BAAQMD's screening criteria, the proposed project's emissions would not be expected to exceed BAAQMD thresholds of significance.

Nonetheless, to confirm this conclusion, and to determine the change in criteria pollutant emissions that would occur with implementation of the proposed project, air quality emissions were estimated using the California Emissions Estimator Model (CalEEMod) version 2022 software for both the previously evaluated project and the currently proposed project. Table 1 presents the maximum unmitigated construction emissions associated with the previously evaluated project in comparison to the maximum unmitigated construction emissions associated with the currently proposed project.

As presented in Table 1, the proposed project would result in a net increase in construction related emissions as compared to the previously evaluated project. The net increase in construction-related emissions associated with the proposed project is due to the additional construction activities that would occur as a result of the proposed 30-inch off-site stormwater line that would be required as part of the proposed project. Nonetheless, the net increase in construction-related emissions associated with the proposed project, as well as overall project construction emissions, would be below the applicable thresholds of significance for all criteria pollutants. Therefore, the

proposed project would not result in any new or more severe significant impacts related to construction criteria pollutant emissions from what was previously analyzed in the 2018 IS/MND.

Table 1				
Maximum Unmitigated Construction Emissions (lbs/day)				
	ROG	NO_x	PM₁₀[*]	PM_{2.5}[*]
Previously Evaluated Project	4.0	36.0	1.60	1.47
Proposed Project	4.85	44.9	1.96	1.81
<i>Net Increase</i>	<i>+0.85</i>	<i>+8.90</i>	<i>+0.36</i>	<i>+0.34</i>
Threshold of Significance	54	54	82	54
Exceeds Threshold?	NO	NO	NO	NO
* Denotes emissions from exhaust only. BAAQMD has not yet adopted PM thresholds for fugitive emissions.				
Source: CalEEMod, February 2024 (see Attachment 2).				

In addition, all projects under the jurisdiction of the BAAQMD are required to implement all of the BAAQMD's Basic Construction Mitigation Measures (BCMMS), which include the following:

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
4. All vehicle speeds on unpaved roads shall be limited to 15 mph.
5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
6. All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.
7. All trucks and equipment, including their tires, shall be washed off prior to leaving the site.
8. Unpaved roads providing access to sites located 100 feet or further from a paved road shall be treated with a six- to 12-inch layer of compacted layer of wood chips, mulch, or gravel.
9. Publicly visible signs shall be posted with the telephone number and name of the person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's General Air Pollution Complaints number shall also be visible to ensure compliance with applicable regulations.

In addition to the BCMMS, projects are strongly encouraged to implement enhanced best management practices to control fugitive dust emissions. The enhanced measures are especially important when schools, residential areas, or other sensitive land uses are located near the construction site. BAAQMD recommended enhanced best management practices (BMPs) include the following:

1. Limit the simultaneous occurrence of excavation, grading, and ground-disturbing construction activities.
2. Install wind breaks (e.g., trees, fences) on the windward side(s) of actively disturbed areas of construction. Wind breaks should have at maximum 50 percent air porosity.
3. Plant vegetative ground cover (e.g., fast-germinating native grass seed) in disturbed areas as soon as possible and watered appropriately until vegetation is established.

SERENE HILLS RESIDENTIAL PROJECT (EA2023-0008)

4. Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.
5. Minimize the amount of excavated material or waste materials stored at the site.
6. Hydroseed or apply non-toxic soil stabilizers to construction areas, including previously graded areas, that are inactive for at least 10 calendar days.

Although BAAQMD requires that all construction activity within the SFBAAB implement the above listed BCMs, both the previously evaluated project and the proposed project were modeled without the inclusion of such measures to provide a conservative, worst-case emissions estimate. As presented in Table 1, even under the conservative assumptions used for this analysis, emissions of PM_{2.5} and PM₁₀ would remain below the BAAQMD's thresholds of significance. Implementation of the BCMs provided herein would ensure the project's compliance with SM AIR-1 as set forth in the 2018 IS/MND. However, it should be noted that the BCMs have been updated since the 2018 IS/MND was prepared. Therefore, the BCMs presented above are the most currently adopted BAAQMD BCMs and supersede the measures included in SM AIR-1.

Table 2 presents the maximum unmitigated operational emissions associated with the previously evaluated project in comparison to the maximum unmitigated operational emissions associated with the currently proposed project.

Table 2 Maximum Unmitigated Operational Emissions								
	ROG		NO _x		PM ₁₀ *		PM _{2.5} *	
	lbs/day	tons/yr	lbs/day	tons/yr	lbs/day	tons/yr	lbs/day	tons/yr
Previously Evaluated Project	1.94	0.33	1.01	0.16	0.04	0.01	0.04	0.01
Proposed Project	1.08	0.19	0.27	0.05	0.01	< 0.005	0.01	< 0.005
<i>Net Increase</i>	<i>-0.86</i>	<i>-0.14</i>	<i>-0.74</i>	<i>-0.11</i>	<i>-0.03</i>	<i>-0.005</i>	<i>-0.03</i>	<i>-0.005</i>
Threshold of Significance	54	10	54	10	82	15	54	10
Exceeds Threshold?	NO	NO	NO	NO	NO	NO	NO	NO
Note: * Denotes emissions from exhaust only. BAAQMD has not yet adopted PM thresholds for fugitive emissions.								
Source: CalEEMod, February 2024 (see Attachment 2).								

As presented in Table 2, the proposed project would result in a net decrease in all criteria pollutant emissions as compared to the previously evaluated project. Therefore, the proposed project would not result in any new or more severe significant impacts related to operational criteria pollutant emissions from what was previously analyzed in the 2018 IS/MND.

Based on the information presented above, the proposed project would not result in any new impacts or substantially more severe impacts related to air quality relative to what was analyzed in the 2018 IS/MND.

Prior Mitigation Measures

None applicable.

Modified Mitigation Measures

None required.

New Mitigation Measures

None required.

Greenhouse Gas Emissions

The 2018 IS/MND evaluated potential impacts related to greenhouse gas (GHG) emissions under Section 4.7 and concluded that a less-than-significant impact would occur. Specifically, the 2018 IS/MND compared the 2275 East Dunne Avenue Project to the BAAQMD Screening Criteria in place at the time the IS/MND was drafted, and determined that development of 22 units would be below the screening threshold of 56 units. As such, potential impacts associated with GHG emissions were determined to be less than significant.

Since preparation of the 2018 IS/MND, the BAAQMD adopted new thresholds of significance for GHG emissions. The applicable BAAQMD thresholds of significance for GHG emissions are now qualitative and require that a project either include specific project design elements or be consistent with a local GHG reduction strategy that meets the criteria pursuant to State CEQA Guidelines Section 15183.5(b).¹ In December of 2021, the City of Morgan Hill adopted a Climate Action Plan (CAP); however, the City's CAP does not qualify as a local GHG reduction strategy under CEQA Guidelines Section 15183.5(b). Therefore, the City has determined that the BAAQMD thresholds of significance are appropriate for the analysis of the proposed project, and the following analysis focuses on the BAAQMD GHG thresholds related to specific project design elements.

According to the BAAQMD's thresholds of significance, in order to find a less-than-significant GHG impact, projects must include, at a minimum, the following project design elements:

- The project will not include natural gas appliances or natural gas plumbing (in both residential and nonresidential development);
- The project will not result in any wasteful, inefficient, or unnecessary energy usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines;
- The project will achieve a reduction in project-generated vehicle miles traveled (VMT) below the regional average consistent with the current California Climate Change Scoping Plan (15 percent) or meet a locally adopted SB 743 VMT target, reflecting the recommendations provided in the Governor's Office of Planning and Research (OPR's) Technical Advisory on Evaluating Transportation Impacts in CEQA; and
- The project will achieve compliance with off-street electric vehicle (EV) requirements in the most recently adopted version of CALGreen Tier 2.

In order to be consistent with the first criterion, the proposed project is required to include all electric appliances and plumbing. Natural gas is prohibited in all new construction within the City pursuant to City Ordinance No. 2306, effective March 1, 2020. Therefore, the proposed project would not include the use of natural gas appliances or natural gas plumbing and, thus, would comply with the first BAAQMD GHG criterion.

Regarding the second criterion, the proposed project would comply with all applicable federal, State, and local regulations regarding energy use during both project construction and project operations, such as the California Green Building Standards Code (CALGreen Code) and the Building Energy Efficiency Standards. Requirements of the CALGreen Code that would be applicable to the proposed project include, but are not limited to, the following measures:

¹ Bay Area Air Quality Management District. *CEQA Thresholds for Evaluating the Significance of Climate Impacts From Land Use Projects and Plans*. April 2022.

- Compliance with relevant regulations related to future installation of EV charging infrastructure;
- Indoor water use consumption is reduced through the establishment of maximum fixture water use rates;
- Outdoor landscaping must comply with the California Department of Water Resources' Model Water Efficient Landscape Ordinance (MWELO), or a local ordinance, whichever is more stringent, to reduce outdoor water use;
- Diversion of 65 percent of construction and demolition waste from landfills; and
- Mandatory use of low-pollutant emitting interior finish materials such as paints, carpet, vinyl flooring, and particle board.

Adherence to the most recent CALGreen Code and the Building Energy Efficiency Standards would ensure that the proposed structures would consume energy efficiently through the incorporation of such features as efficient water heating systems, high performance attics and walls, and high efficacy lighting. In addition, all construction equipment and operation thereof would be regulated by the CARB In-Use Off-Road Diesel Vehicle Regulation. The In-Use Off-Road Diesel Vehicle Regulation is intended to reduce emissions from in-use, off-road, heavy-duty diesel vehicles in California by imposing limits on idling, requiring all vehicles to be reported to CARB, restricting the addition of older vehicles into fleets, and requiring fleets to reduce emissions by retiring, replacing, or repowering older engines, or installing exhaust retrofits. Required compliance with applicable standards and regulations would ensure that energy use associated with the proposed project would not be wasteful, inefficient, or unnecessary. Therefore, the proposed project would comply with the second BAAQMD GHG criterion.

With respect to the third criterion, the Governor's OPR released The Technical Advisory on Evaluating Transportation Impacts in CEQA, which includes screening thresholds to identify when a lead agency may screen out VMT impacts.² For example, OPR recommends that projects that generate or attract fewer than 110 trips per day generally may be assumed to cause a less-than-significant impact related to VMT. The anticipated trip generation for the proposed project was estimated using standard rates published in the 10th Edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual (2017). A trip rate of 9.44 average daily trips (ADT) per residential unit, based on the ITE "Single-Family Residential" land use (ITE Land Use Category #210), was applied to the seven proposed single-family residences for an average of 66 trips per day. Therefore, the proposed project would meet the OPR screening criteria for projects that generate or attract fewer than 110 trips per day, and the project would not result in impacts related to VMT. As such, the proposed project would comply with the third BAAQMD GHG criterion.

With respect to the fourth criterion, the CALGreen Code requires all single-family residential projects to install a listed raceway to accommodate a dedicated 208/240-volt branch circuit for each unit, which would be suitable for EV charging. For single-family residences, such as the residences included as part of the proposed project, compliance with the CALGreen Code would satisfy the fourth BAAQMD criterion.

It should also be noted that, as previously discussed, the change in GHG emissions that would occur with implementation of the proposed project was estimated using CalEEMod version 2023 software for both the proposed project and the previously evaluated project, and is presented herein for informational purposes. Table 3 presents the maximum unmitigated GHG emissions

² Governor's Office of Planning and Research. *Technical Advisory on Evaluating Transportation Impacts in CEQA*. December 2018.

associated with the previously evaluated project in comparison to the maximum unmitigated GHG emissions associated with the proposed project.

Table 3		
Maximum Unmitigated GHG Emissions (tons/yr)		
	Construction	Operations
Previously Evaluated Project	208	321
Proposed Project	462	101
<i>Net Increase</i>	<i>+254</i>	<i>-220</i>
<i>Source: CalEEMod, February 2024 (see Attachment 2).</i>		

Based on the above, the proposed project would not conflict with the BAAQMD's GHG thresholds of significance and, thus, would not conflict with the State's latest climate legislation. Therefore, the proposed project would not result in any additional significant impacts or more severe significant impacts related to GHG emissions as compared to the 2018 IS/MND.

Prior Mitigation Measures

None applicable.

Modified Mitigation Measures

None required.

New Mitigation Measures

None required.

Biological Resources

The 2018 IS/MND evaluated potential impacts to biological resources, including special-status wildlife and aquatic resources, under Section 4.4 and concluded that a less-than-significant impact would occur with implementation of SMs BIO-1, BIO-2, and BIO-3. Specifically, based on the presence of on-site trees and drainage features, SMs BIO-1, BIO-2, and BIO-3 require a preconstruction survey for nesting birds, compliance with the Santa Clara Valley Habitat Plan (SCVHP) policies concerned with watercourses and streams, and obtainment of a tree removal permit from the City, respectively.

With respect to the currently proposed project, a project-specific Technical Biological Report was prepared by Live Oak Associates, Inc. in January 2024 (see Attachment 3).³ The Technical Biological Report included queries of databases including the California Natural Diversity Database (CNDDB) and California Native Plant Society (CNPS) Inventory of Rare Plants, as well as research on biological resources native to the Santa Clara Valley region. Local policies and ordinances from the City of Morgan Hill were used as sources of information, as well as the SCVHP. In addition, a field survey of the project site was conducted in December 2023. At the time of the field survey, the project site had been fully disced and consisted mainly of grassland with trees and swales, with a well and well tank located in the center of the site.

According to the Technical Biological Report, the project site is regularly disturbed through consistent discing, and therefore does not provide habitat for special-status plant species. In addition, the project site does not contain the specialized features required to support special-status plant species known to occur in the region, such as serpentine soils, vernal pools,

³ Live Oak Associates, Inc. *Serene Hills Project Site Technical Biological Report*. January 22, 2024.

chaparral, and/or because the site is substantially below the elevations at which these species occur. As such, the Technical Biological Report concluded that impacts to special-status plants would not occur.

The Technical Biological Report concluded that nine special-status wildlife species have the potential to occur on-site, or use the site as foraging habitat. The special-status species identified by the Technical Biological Report include the following: Townsend's big-eared bat; pallid bat; northern harrier; white-tailed kite; golden eagle; loggerhead shrike; grasshopper sparrow; burrowing owl; and American badger. Of the foregoing species, only the burrowing owl is covered by the SCVHP.

Based on the December 2023 survey, the Technical Biological Report concluded that on-site trees would not provide suitable roosting habitat for the Townsend's big-eared bat or pallid bat. While protected bat species may forage in the air over the project site, foraging habitat is not protected. Therefore, impacts to bats would not occur as a result of the proposed project. However, the trees could support nesting birds and raptors protected by the Migratory Bird Treaty Act (MBTA), including the special-status bird species identified by the Technical Biological Report (i.e., the northern harrier, white-tailed kite, loggerhead shrike, and grasshopper sparrow). Construction activities conducted during the nesting period for migratory birds (i.e., between February 1 to August 31) could pose a risk of nest abandonment and death of any eggs or young in nests within or near the site, which would constitute a significant impact. To reduce impacts to protected bird species to a less-than-significant level, the 2018 IS/MND required SM BIO-1. A modified version of SM BIO-1 was included in the Technical Biological Report, which is provided below.

With respect to the potential for burrowing owls to occur within the project site, the Technical Biological Report identified suitable habitat in the form of California ground squirrel burrows at the southern boundary of the project site, as well as in the adjacent fields. Because burrowing owls are protected under State and federal law, as well as the SCVHP, ground-disturbing activities associated with project construction could result in a potentially significant impact if such activities resulted in the destruction of burrows or death of owls. As such, Mitigation Measure BIO-4 is included below to ensure impacts to burrowing owls would not occur as a result of the proposed project.

In addition, the Technical Biological Report identifies American badgers as a California Species of Special Concern known to occur in the hills east of the project site. As previously noted, the American badger is not covered under the SCVHP. The closest recorded occurrence is approximately two miles to the west of the site along State Route (SR) 101. Badger burrows and American badgers were not observed during the December 2023 survey; however, based on the proximity of the previous sighting to the project site, American badgers have the potential to occur within the project site. As such, ground-disturbing activities associated with project construction could result in a potentially significant impact to American badgers. Mitigation Measure BIO-5 is included below to ensure impacts to American badgers would not occur as a result of the proposed project.

The Technical Biological Report identifies several swales on-site, including a swale that historically connected to the Santa Clara Conduit. According to the Technical Biological Report, the connection has not remained clearly active, but the connectivity of the on-site swales could not be determined. Regardless of the connectivity status, the swales and any other on-site aquatic resources would be significantly altered and likely channelized by the proposed project. As such, the Technical Biological Report recommends preparation of an aquatic resources delineation report for submittal to the U.S. Army Corps of Engineers (USACE) for verification as to whether

any on-site aquatic features are subject to USACE's jurisdiction. The aquatic resources delineation report would also provide a foundation to determine if waters of the State occur on-site and whether the California Department of Fish and Wildlife (CDFW) and/or Regional Water Quality Control Board (RWQCB) have jurisdiction over any of the delineated areas. If waters of the U.S. and State are identified in areas proposed for disturbance, the currently proposed project would be subject to the additional provisions set forth by Mitigation Measure BIO-6.

In addition to the Technical Biological Report prepared for the proposed project, a project-specific arborist report was prepared by Smith Tree Specialists, Inc. on August 27, 2022 (see Attachment 4).⁴ Pursuant to the arborist report, protected or heritage trees are not located within the project site. However, one ordinance-sized eucalyptus tree is located on-site. The eucalyptus tree is therefore recommended for retention and protection according to proper tree protection zone (TPZ) guidelines contained therein. Additionally, five other trees have been recommended for retention and protection. The 12 other trees identified on-site were recommended for removal due to poor health, proximity to grading, or because the trees are dead. Compliance with the recommendations and TPZ guidelines included in the arborist report, as required by SM BIO-3, would ensure that the proposed project would not conflict with any local policies or ordinances protecting biological resources.

Finally, the project site is located within the SCVHP, which was developed through a partnership between Santa Clara County, the cities of San José, Morgan Hill, and Gilroy, the Santa Clara Valley Water District (SCVWD), the Santa Clara Valley Transportation Authority (VTA), the USFWS, and the CDFW. The SCVHP is intended to promote the recovery of endangered species and enhance ecological diversity and function, while accommodating planned growth in approximately 500,000 acres of southern Santa Clara County. The SCVHP provides take authorization for 18 covered species and includes conservation measures to protect the species covered by the SCVHP, as well as a conservation strategy designed to mitigate impacts on covered species and contribute to the recovery of the species in the study area.

As set forth by Morgan Hill Municipal Code Section 18.132.050, compliance with the SCVHP requires payment of fees according to the Fee Zone designation of the property, payment of nitrogen deposition fees related to the number of anticipated car trips resulting from the development, and any surcharge fees that are required based on site-specific impacts to sensitive habitats or sensitive species. According to the Habitat Agency Geobrowser, the project site is designated entirely by the SCVHP as Rural Residential and is located within Fee Zone B (Agricultural and Valley Floor Lands). The Habitat Agency Geobrowser does not identify Category 1 Streams or Stream Buffers within or adjacent to the project site. According to the SCVHP, the Rural Residential land cover includes land comprised of low-density residential development with a density of less than one dwelling unit per 2.5 to 20 acres. Land cover fees for Zone B are assessed at a rate of \$11,806 per acre. Based on the project site's 8.37 acres of Rural Residential land cover, the project's Zone B land cover fees would total \$98,816.22. According to the Habitat Agency Geobrowser, the project site is not subject to the burrowing owl fee, but the proposed project would be subject to nitrogen deposition fees, which assess a fee rate of \$37.57 per new residence. As the proposed project would include seven units, the project's nitrogen deposition fees would total \$262.99. Under Section 18.132.050 of the Morgan Hill Municipal Code, the proposed project would be required to pay such fees, which would help ensure that the project does not conflict with the provisions of the adopted Habitat Conservation Plan (HCP).

⁴ Smith Tree Specialists. *Arborist Report*. August 27, 2022.

Additionally, in order to mitigate potential impacts to covered species, the proposed project would be subject to all applicable SCVHP conditions, including, as determined by the Technical Biological Report, Conditions 1, 3, 12, and 15. Condition 1 requires compliance with existing laws protecting special-status plant and wildlife species, including nesting birds and raptors protected by the MBTA. SMs BIO-1, BIO-4, and BIO-5 ensure compliance with this condition. Additionally, in order to comply with Condition 1, the proposed project must also comply with SCVHP Condition 15, which requires preconstruction surveys for burrowing owls. Compliance with Condition 15 would be accomplished through SM BIO-1. Condition 3 requires implementation of all applicable measures from Table 6-2 of the SCVHP in order to minimize indirect and direct effects to covered species and any on-site aquatic habitat. The City of Morgan Hill would require that all applicable measures from Table 6-2 of the SCVHP are implemented as part of the City's approval of the project engineering plans and Stormwater Pollution Prevention Plan (SWPPP). Condition 12, related to wetland and pond avoidance and minimization, would only apply if seasonal swales occur on the project site, which would be identified through Mitigation Measure BIO-6.

Overall, implementation of the mitigation measures listed below would ensure the proposed project would not result in any additional significant impacts or more severe significant impacts to biological resources as compared to the 2018 IS/MND.

Prior Mitigation Measures

None applicable.

Mitigation Measures

MM BIO-1 from the 2018 IS/MND requires a preconstruction survey for nesting migratory birds and raptors. SM BIO-3 from the 2018 IS/MND required obtaining a tree removal permit for any on-site trees that need to be removed. Thus, the mitigation measures are still applicable to the proposed project. Minor modifications to MM BIO-1, which clarify the timing of the survey, as well as establish specific requirements for the preconstruction survey ~~area, are~~ shown in ~~strikethrough~~ and double-underline. Minor modifications to MM BIO-3, including recommendations from the project-specific Arborist Report, are also shown.

Implementation of the following mitigation measure would reduce the potential impact to nesting and migrating birds to a *less-than-significant* level.

MM BIO-1 If project staging and construction is anticipated to take place during the avian nesting season (February 1st through August 31st), a nesting bird preconstruction survey shall be conducted by a qualified biologist to insure that nesting birds are not located within or adjacent to the project site. Specifically, the survey for nesting migratory birds shall cover the project site and off-site improvement areas, and the survey for nesting raptors would shall encompass the site, off-site improvement areas, and surrounding lands within 250 feet, where accessible. This The preconstruction survey shall be completed not more than 14 days prior to the start within 7 days prior to the onset of any staging or construction activity. If nesting activity is observed during the preconstruction survey, the qualified biologist ~~will~~ shall ~~coordinate with the California Department of Fish and Wildlife (CDFW) to~~ establish appropriate buffers, monitoring, and/or construction phasing measures to avoid any impacts to nesting birds. The buffers shall consist of a minimum width of 100 feet for passerines and 500 feet for raptors. After the nesting is completed, as determined by the biologist, the buffer shall no longer be required. The results of the preconstruction survey should be valid for 14 days and shall be submitted to the City of Morgan Hill Development Services Department.

MM BIO-3 As required by the City's Tree Removal Controls, a tree removal permit is required from the Community Development Director, which includes the description of the tree replacement program and identification of any conditions imposed by the City.

For the Ordinance Sized Trees to be preserved as part of the project, the project applicant shall implement the Tree Preservation Recommendations included in the Arborist Report prepared for the proposed project by Smith Tree Specialists, including, but not limited to, avoidance of tree driplines, construction of temporary fencing around protected trees, fertilization of trees after construction, and periodic inspection of the trees' condition.

The above measures shall be included in the notes on construction drawings, subject to review and approval by the City of Morgan Hill Development Services Department, prior to initiation of construction.

New Mitigation Measures

Implementation of the following mitigation measure would reduce the potential impact to burrowing owl to a *less-than-significant* level.

Burrowing Owl

MM BIO-4 Prior to construction activities, a minimum of two surveys shall be conducted by a qualified biologist to ascertain whether or not burrowing owls occupy burrows on or adjacent to the project site and/or off-site improvement areas, with the first survey conducted within 14 days to initial construction activities (i.e. vegetation removal, grading, excavation, etc.) and the second survey conducted within two days prior to initial construction activities. Results of the surveys shall be submitted to the City of Morgan Hill Development Services Department. If burrowing owls or fresh sign of burrowing owls are not observed during preconstruction surveys, construction may proceed. If burrowing owls or recent signs of burrowing owls are observed during the surveys, occupied burrows shall be identified by the monitoring biologist and appropriate buffers, as described below, shall be established.

- A 250-foot non-disturbance buffer shall be established around all active burrowing owl burrows or nest sites as identified and defined by a qualified biologist. If the biologist determines that a nest is vacant, the non-disturbance buffer zone around that nest may be removed. The SCVHP specifies that a vacation from the site for a week or more by a burrowing owl, as determined by a qualified biologist, would constitute a voluntary relocation by the owl, and the qualified biologist could then take measures to collapse suitable burrows of the site to discourage reoccupation. The biologist shall supervise hand excavation of the burrow to prevent reoccupation only after receiving approval from the wildlife agencies.
 - For permission to encroach within 250 feet of such burrows during the nesting season (February 1 through August 31), an Avoidance, Minimization, and Monitoring Plan shall be prepared and approved by the City of Morgan Hill and the Wildlife Agencies prior to such encroachment (see Chapter 6, pages 6-64 & 6-65 of the SCVHP for further detail).
- Should a burrowing owl be located on-site in the non-breeding season (September through January), construction activities shall not be allowed

within the 250-foot buffer of the active burrow(s) used by any burrowing owl unless the following avoidance measures are adhered to:

- A qualified biologist monitors the owls for at least three days prior to construction to determine baseline foraging behavior (i.e., behavior without construction).
- The same qualified biologist monitors the owls during construction does not find a change in owl foraging behavior in response to construction activities.
- If any change in owl nesting and foraging behavior as a result of construction activities occurs, such activities shall cease within the 250-foot buffer.
- If the owls are gone for at least one week, the project proponent may request approval from the City of Morgan Hill that a qualified biologist excavate usable burrows to prevent owls from reoccupying the site. After all usable burrows are excavated, the buffer zone shall be removed, and construction may continue.
- The SCVHP stipulates that passive relocation or exclusion of burrowing owls shall not be allowed until a positive regional growth trend is achieved as defined in Section 5.4.6 of the SCVHP; however, a project may qualify for an exception to this prohibition. Permission to engage in passive relocation during the non-breeding season would need to be requested through the standard application process (see Section 6.8 of the SCVHP). Application for an exception would require additional information, including a relocation plan/schedule and documentation by a qualified biologist that owls have occupied the site for the full year without vacating the site for 10 or more consecutive days. The application would need to be submitted to the City of Morgan Hill, and the Wildlife Agencies would then evaluate the application and make a determination for granting the exception. If passive relocation is granted, additional measures may be required by the City.

American Badger

MM BIO-5

During the course of the preconstruction surveys for other species, a qualified biologist shall also determine the presence or absence of badgers prior to the start of construction. The results of the preconstruction survey shall be submitted to the City of Morgan Hill Development Services Department. If badgers are found to be absent, other mitigations for the protection of badgers shall not be warranted.

If an active badger den is identified during preconstruction surveys within or immediately adjacent to an area subject to construction, a construction-free buffer of up to 300 feet shall be established around the den. Once the biologist has determined that badger has vacated the burrow, the burrow can be collapsed or excavated, and ground disturbance can proceed. Should the burrow be determined to be a natal or reproductive den, and because badgers are known to use multiple burrows in a breeding burrow complex, a biological monitor shall be present onsite during construction activities in the vicinity of the burrows to ensure the buffer is adequate to avoid direct impact to individuals or natal/reproductive den abandonment. The monitor shall be required to be present until the young are determined to be of an independent age and construction activities would not harm individual badgers.

Waters of the State/U.S.

MM BIO-6 Prior to initiation of any ground disturbance, a formal wetland delineation shall be conducted on the site to ascertain whether any waters of the U.S. or state occur on-site; the report shall be submitted to the USACE for verification to determine the extent of all hydrological features as it relates to Waters of the U.S. The report shall also provide a foundation to determine if waters of the State occur on-site and whether CDFW and/or RWQCB have jurisdiction over any of the areas. Once the extent of waters of the U.S. and State are known, the potential for and extent to which any of the features could be impacted can be determined.

If waters of the U.S. and/or State would be impacted by the proposed project, the following mitigations shall be implemented:

- The project shall avoid all waters of the U.S. and/or State. Avoiding impacts to any jurisdictional wetland swales may include re-designing the project to avoid the wetlands to the extent possible. If a redesign is not feasible, then the following mitigations would need to be implemented to reduce impacts to a less than significant level.
- If full avoidance of wetland swale habitat is not possible under the currently proposed project, actions shall be taken to minimize impacts to such habitats. Measures taken during construction activities shall include placing construction fencing around any preserved wetland features to ensure that construction activities do not inadvertently impact such areas.
- To compensate for the permanent loss of any wetland swale habitat, three options are available: 1) Credits through an approved mitigation bank; 2) On- or off-site creation/restoration with accompanying mitigation and monitoring plan; and 3) Payment of Seasonal Wetland Fees to the SCVHP. The USACE and CDFW are participants in the SCVHP; although the Habitat Agency (with the SCVHP) is currently in talks with the RWQCB, the RWQCB is currently not a participant in the SCVHP. Therefore, mitigation for any impacts to wetland swales on-site shall include either #1 and #3, or #2 and #3, as mitigation per the RWQCB would likely be a separate mitigation consisting of on- or off-site restoration with an appropriate Habitat Monitoring Plan or payment for mitigation credits to a mitigation bank (#1 or #2 below). The RWQCB may also require a Waste Discharge Permit under the Porter-Cologne Water Quality Act. Should the RWQCB become a participant in the SCVHP, only #3 would be required. The foregoing mitigations are outlined below.

1. Several mitigation banks exist for wetlands and payment for wetland credits at an approved mitigation bank shall be a minimum of 1:1 creation:loss ratio. The applicant would not be required to conduct follow-up monitoring once fees are paid.
2. If on- or off-site mitigation is preferred, a mitigation and monitoring plan (MMP) shall be prepared. The plan shall identify on-site and/or off-site preserve areas having a sufficient water budget (as determined by a hydrologist) for the creation of wetland habitat that is of equal or greater quality to the habitats being impacted at a minimum 1:1 creation:loss ratio. Any off-site creation would preferably occur within the same watershed.
At a minimum, the MMP shall:

- Define the location of all created wetlands;
 - Provide evidence of a suitable water budget to support any created wetland and channel habitats, as determined by a qualified hydrologist;
 - Identify the species, size, number and location of plants to be installed;
 - Identify the time of year for planting and any methods for supplemental watering during the establishment period;
 - Identify the monitoring period which shall be no less than 5 years;
 - Identify measures that shall be monitored, and define incremental and final success criteria that shall be required for the wetland mitigation to be deemed a success;
 - Identify adaptive management procedures that accommodate the uncertainty that comes with wetland creation projects. These include (but are not limited to) measures to address colonization by invasive species, unexpected lack of water, excessive foraging of installed wetland plants by wildlife, erosion of channel banks, etc.;
 - Define management and maintenance activities (weeding, repair of water delivery systems and browsing protection, etc.); and
 - Provide for surety in funding for MMP and for in-perpetuity preservation and management of created wetland and channel habitats.
3. Wetland swales shall be mitigated for under the SCVHP, which would consist of a fee for “seasonal wetlands” of \$503,724 per acre, paid prior to initiation of any ground disturbance. In addition, the applicant shall implement Condition 12 of the SCVHP to the satisfaction of the City of Morgan Hill.

Cultural Resources

The 2018 IS/MND concluded that if cultural resources were to be found during project ground-disturbing activities, a potentially significant impact could occur. As such, MM CUL-1, which establishes avoidance measures in the event of encountering historical resources, cultural resources, and/or human remains, was included in the 2018 IS/MND to ensure impacts would be less than significant.

In order to ensure impacts related to cultural resources would not be more severe than what was analyzed in the 2018 IS/MND, a project-specific Cultural Resource Assessment Report (Cultural Report) was prepared by PaleoWest in April 2023.⁵ The Cultural Report included a search of cultural resource records from the Northwest Information Center (NWIC) and archival records including topographic maps and historical aerial images, as well as coordination with the Native American Heritage Commission (NAHC) in order to search the Sacred Lands File (SLF) and coordination with local tribal representatives. In addition, an intensive pedestrian survey was

⁵ PaleoWest. *Cultural Resource Assessment Report for the Serene Hills Housing Project, City of Morgan Hill, Santa Clara County, California*. April 2023.

conducted on April 3, 2023, using parallel transects at 10-meter intervals to examine the project site for historic and pre-contact period site indicators.

The records search at the NWIC included a review of previously conducted cultural resource studies and previously recorded cultural resources within the project site and within a one-mile radius surrounding the site. The geographic areas of 21 previous cultural resource investigations from years ranging between 1950 to 2012 intersected with or included the project site, and 19 previous studies from between 1979 to 2018 intersected with or included the one-mile radius. Based on the results of the records search, while one previously recorded cultural resource is located within the one-mile radius, over 1,000 feet northeast of the project site, previously recorded cultural resources are not located within the project site.

In addition to the NWIC records search, historical maps of the project site were examined as part of the Cultural Report to identify the potential for cultural resources older than 45 years to occur within the project site. Topographic maps show the area as relatively unchanged between 1917 and 1939, during which the project site featured one structure (presumed to be a farmhouse due to surrounding agricultural uses). Historical aerial imagery from 1963 showed that the farm on the property had expanded to at least five buildings, and the construction of East Dunne Avenue was complete. By 1980, the area south of East Dunne Avenue had begun to infill with residential development. Parcels adjacent to the project site remained relatively unchanged until the mid-1990s, when single-family residences were constructed on Magnolia Way, immediately adjacent to the southern project site boundary. The farmhouse structures in the project site were demolished between 2014 and 2016, and the site has since remained unchanged. Therefore, the Cultural Report concluded that a moderate potential exists for the project site to contain historical resources older than 45 years, such as trash pits or building foundations.

In addition, according to the Cultural Report, watercourses served as focal points for pre-contact period occupants of the Santa Clara Valley. As such, the project site is located in a potentially sensitive archaeological area due to the presence of Coyote Creek, Llagas Creek, and Little Llagas Creek. Previous cultural studies relevant to the area have found that pre-contact period occupation sites were likely occupied due to the accessibility of the sites, protection from seasonal flooding, and the availability of resources. The project site is also located within 1.5 miles of the historical El Camino Real (now SR 101), an important travel route since the time the California missions were active. Based on the project site's proximity to watercourses and known historical travel corridors, the prior existence of a historic-era farmhouse, and previous records on the archaeologically sensitive nature of the area, previously undocumented pre-contact and historic-period archaeological resources could be encountered during construction of the proposed project. It should be noted that the off-site storm drain line would be installed within an existing private gravel drive, which would have been previously disturbed during construction, and thus, cultural resources are not anticipated to be encountered.

As previously mentioned, an intensive pedestrian survey of the project site was conducted on April 3, 2023, using parallel transects at 10-meter intervals. All exposed and accessible ground surface within the project site boundaries was examined for the presence of historic and pre-contact period site indicators. Historic period site indicators include fence lines, ditches, standing buildings, objects or structures such as sheds, or concentrations of materials at least 50 years in age, such as domestic refuse, refuse from other pursuits (such as agriculture), or structural materials. Pre-contact period site indicators include areas of darker soil with concentrations of ash, charcoal, bone, shell, flaked stone, ground stone, and pottery. Fragments from a fence and an abandoned well were the only cultural materials observed during the field survey. According

to the Cultural Report, the remains of the fence may be from the old ranch, but are not diagnostic, and the well is modern.

Finally, the Cultural Report requested a search of the SLF and a list of Native American representatives with traditional affiliations to the area from the NAHC to determine previous records of Native American cultural resources within the project site and/or the surrounding area. The results of the SLF search were negative.

Although the Cultural Report did not identify any pre-contact archaeological materials within or in the vicinity of the project site, archival research suggests the possibility of encountering buried pre-contact and historic period cultural resources during project construction. Additionally, the project site's location in the foothills and near an intermittent stream suggests a historically viable location for pre-contact settlement and resource exploitation. Finally, a ranch occupied the project site since at least 1940, and associated historic period remains may be encountered as more ground surface is exposed. The 2018 IS/MND included MM CUL-1 to ensure that, in the event that archaeological materials are found, impacts would not occur. Since preparation of the 2018 IS/MND, the City of Morgan Hill has adopted following standard Conditions of Approval related to the protection of historical and archaeological resources, consistent with Section 18.60.090 of the Morgan Hill Municipal Code:

- A. The developer shall enter into written contracts with an archaeologist and the Tamien Nation Tribe, and pay all fees associated with the activities required by this condition. The following policies and procedures for treatment and disposition of inadvertently discovered human remains or archaeological materials shall apply:
 - 1. Prior to start of grading or earthmoving activity (includes demolition and moving of heavy equipment on site) on the "first day of construction", the archaeologist and Tamien Nation Tribal Monitor shall hold a preconstruction meeting for the purposes of "cultural sensitivity training" with the general contractor and subcontractors.
 - 2. An archaeologist and a Tamien Nation Tribal Monitor shall be present on-site to monitor all ground disturbing activities and an archaeologist shall be on-call. Where historical or archaeological artifacts are found, work in areas where remains or artifacts are found will be restricted or stopped until proper protocols are met, as described below:
 - a) Work at the location of the find will halt immediately within fifty feet of the find. If an archaeologist is not present at the time of the discovery, the applicant shall contact an archaeologist for evaluation of the find to determine whether it qualifies as a unique archaeological resource as defined by this chapter.
 - b) If the find is determined not to be a Unique Archaeological Resource, construction can continue. The archaeologist will prepare a brief informal memo/letter in collaboration with a tribal representative that describes and assesses the significance of the resource, including a discussion of the methods used to determine significance for the find;
 - c) If the find appears significant and to qualify as a unique archaeological resource, the archaeologist will determine if the resource can be

avoided and will detail avoidance procedures in a formal memo/letter;
and

- d) If the resource cannot be avoided, the archaeologist in collaboration with a tribal representative shall develop within forty-eight hours an action plan to avoid or minimize impacts. The field crew shall not proceed until the action plan is approved by the Development Services Director. The action plan shall be in conformance with California Public Resources Code 21083.2.
3. The following policies and procedures for treatment and disposition of inadvertently discovered human remains or archaeological materials shall apply. If human remains are discovered, it is probable they are the remains of Native Americans,
 - a) If human remains are encountered, they shall be treated with dignity and respect as due to them. Discovery of Native American remains is a very sensitive issue and serious concern. Information about such a discovery shall be held in confidence by all project personnel on a need-to-know basis. The rights of Native Americans to practice ceremonial observances on sites, in labs and around artifacts shall be upheld.
 - b) Remains should not be held by human hands. Surgical gloves should be worn if remains need to be handled.
 - c) Surgical mask should also be worn to prevent exposure to pathogens that may be associated with the remains.
 4. In the event that known or suspected Native American remains are encountered, or significant historic or archaeological materials are discovered, ground-disturbing activities shall be immediately stopped. Examples of significant historic or archaeological materials include, but are not limited to, concentrations of historic artifacts (e.g., bottles, ceramics) or prehistoric artifacts (chipped chert or obsidian, arrow points, ground stone mortars and pestles), culturally altered ash stained midden soils associated with pre-contact Native American habitation sites, concentrations of fire-altered rock and/or burned or charred organic materials and historic structure remains such as stone lined building foundations, wells or privy pits. Ground-disturbing project activities may continue in other areas that are outside the exclusion zone as defined below.
 5. An "exclusion zone" where unauthorized equipment and personnel are not permitted shall be established (e.g., taped off) around the discovery area plus a reasonable buffer zone by the contractor foreman or authorized representative, or party who made the discovery and initiated these protocols, or if on-site at the time of discovery, by the monitoring archaeologist and tribal representative (typically twenty-five to fifty feet for single burial or archaeological find).
 6. The discovery locale shall be secured (e.g., 24-hour surveillance) as directed by the City or County if considered prudent to avoid further disturbances.

7. The Contractor Foreman or authorized representative, or party who made the discovery and initiated these protocols shall be responsible for immediately contacting by telephone the parties listed below to report the find and initiate the consultation process for treatment and disposition:
 - The City of Morgan Hill Development Services Director (408) 779-7247
 - The Contractor's Point(s) of Contact
 - The Coroner of the County of Santa Clara (if human remains found) (408) 793-1900
 - The Native American Heritage Commission (NAHC) in Sacramento (916) 653-4082
 - The Amah Mutsun Tribal Band (916) 481-5785 (H) or (916) 743-5833 (C)
 - The Tamien Nation (707) 295-4011 (office) and (925) 336-5359 (THPO)
8. The Coroner has two working days to examine the remains after being notified of the discovery. If the remains are Native American the Coroner has 24 hours to notify the NAHC.
9. The NAHC is responsible for identifying and immediately notifying the Most Likely Descendant (MLD). (Note: NAHC policy holds that the Native American Monitor will not be designated the MLD.)
10. Within 24 hours of their notification by the NAHC, the MLD will be granted permission to inspect the discovery site if they so choose.
11. Within 24 hours of their notification by the NAHC, the MLD may recommend to the City's Development Services Director the recommended means for treating or disposing, with appropriate dignity, the human remains and any associated grave goods. The recommendation may include the scientific removal and non-destructive or destructive analysis of human remains and items associated with Native American burials. Only those osteological analyses or DNA analyses recommended by the appropriate tribe may be considered and carried out.
12. If the MLD recommendation is rejected by the City of Morgan Hill the parties will attempt to mediate the disagreement with the NAHC. If mediation fails then the remains and all associated grave offerings shall be reburied with appropriate dignity on the property in a location not subject to further subsurface disturbance.

Such requirements would ensure that impacts to cultural resources would not occur as a result of the proposed project, and would supersede the requirements of MM CUL-1 included in the 2018 IS/MND.

Prior Mitigation Measures

None applicable.

Modified Mitigation Measures

None required.

New Mitigation Measures

None required.

Hydrology and Water Quality

The 2018 IS/MND evaluated potential impacts to hydrology and water quality under Section 4.9 and concluded that the only potentially impact would be related to water quality standards, waste discharge requirements, or otherwise degraded water quality during project construction. In order to reduce the foregoing impact to a less than significant level, the 2018 IS/MND included MM HYD-1, which requires the proposed project to prepare a SWPPP and Erosion Control Plan (ECP) in accordance with the City of Morgan Hill Standard Conditions of Approval and the General National Pollutant Discharge Elimination System (NPDES). All other impacts related to hydrology and water quality were determined to be less than significant.

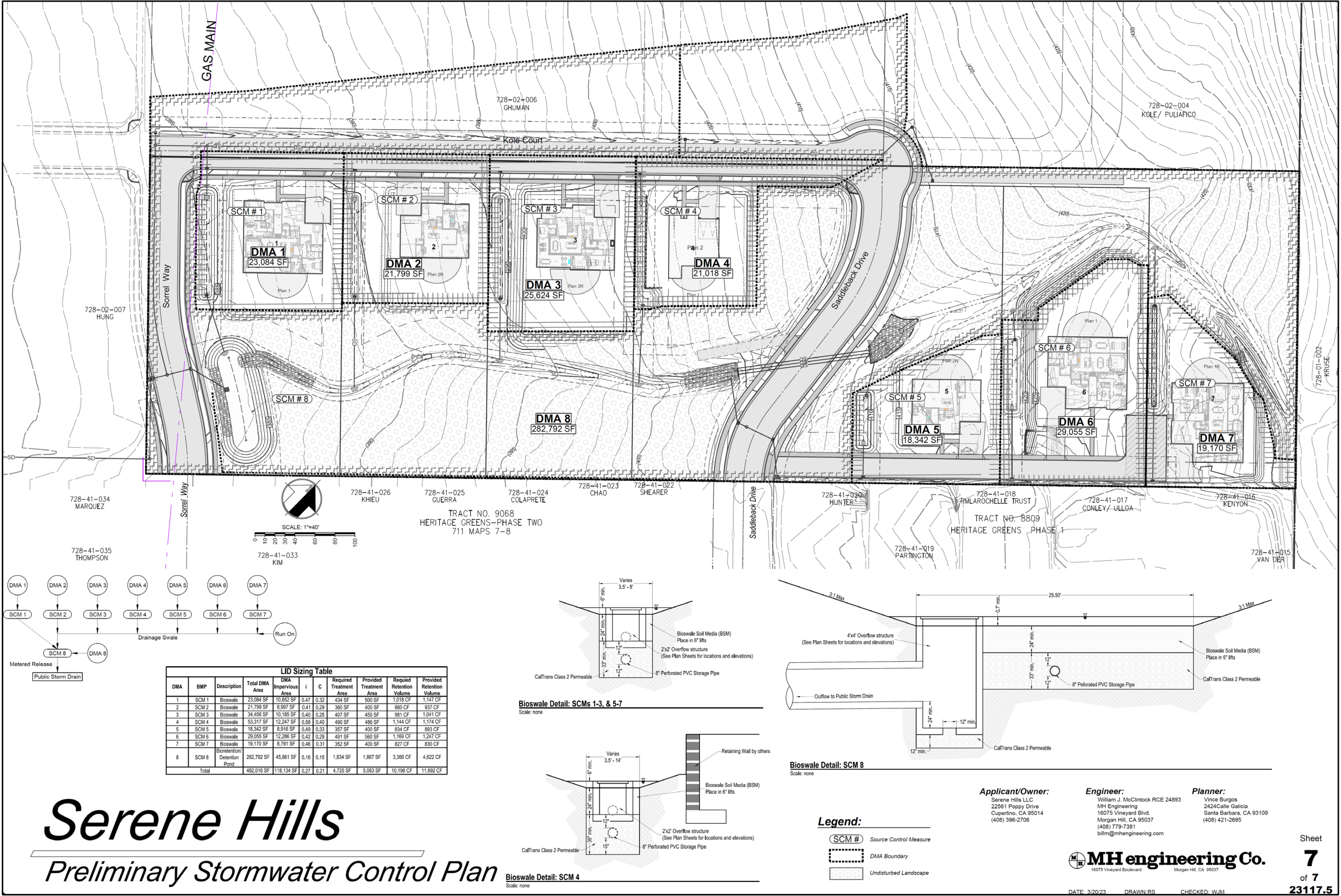
In order to ensure that the proposed project would not result in any additional or more severe significant impacts related to hydrology and water as compared to the 2018 IS/MND, a project-specific Preliminary Stormwater Control Plan (SWCP) was prepared by MH Engineering Co. on July 24, 2023 (see Attachment 5).⁶ The Preliminary SWCP included an evaluation of the proposed performance requirements, drainage design, and source control measures. According to the Preliminary SWCP, the project site currently experiences significant run-on from the hillside northeast of the project site. Run-on drains into an existing drainage swale that crosses the project site from the northeast to the southwest. Stormwater retained within the existing channel typically drains from the project site within 48 hours after the storm event, which creates adequate storage capacity for follow-up rain events.

During project construction, grading activities could result in an increase in erosion-related pollutants in stormwater runoff. Similar to the 2018 IS/MND, construction activities associated with the proposed project could therefore result in significant impacts to water quality standards, waste discharge requirements, or otherwise degraded water quality. However, the proposed project would still be required to develop an ECP and SWPPP to demonstrate elimination or reduction strategies associated with non-stormwater discharges into the stormwater system, how discharges into the stormwater system would be monitored, and what BMPs would be implemented by the project to avoid water quality impacts during construction and operational periods. As such, SM HYD-1 would still be required to reduce the potential for substantial adverse impacts to water quality during construction.

Development of the proposed project would create new impervious surfaces on-site, which would increase urban runoff as compared to the current project site conditions. To manage stormwater flows created by the proposed project, the project site's stormwater facilities would be developed within eight DMAs located throughout the entirety of the project site (see Figure 5).

⁶ MH Engineering Co. *Preliminary Stormwater Control Plan*. July 24, 2023.

Figure 5
Preliminary Stormwater Control Plan



Serene Hills
Preliminary Stormwater Control Plan

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23117.5

DMA 1 through DMA 7 would be associated with each of the seven single-family residential lots, and stormwater from each lot would be conveyed to a bioswale located along the western property line of each lot. The seven bioswales would collect stormwater runoff from DMAs 1 through 7 and provide preliminary treatment.

From each bioswale, treated runoff would be conveyed through a 24-inch by 24-inch drainage inlet to the existing on-site swale, which would be channelized as part of the proposed project. DMA 8, located east of the proposed extension to Saddleback Drive, would also drain into the channelized swale. Stormwater runoff would then flow through the existing swale to the proposed bioretention/detention pond located at the lowest point on the site at the southwest corner. Outflow from the proposed bioretention/detention pond would then be directed through a proposed 30-inch stormwater line that would extend off-site and outfall into an existing 36-inch storm drain across East Dunne Avenue, which eventually discharges into Tennant Creek near Old Hill Road. Consistent with State requirements, the off- and on-site stormwater systems would be designed sufficient to adequately handle the project's stormwater runoff, which would ensure that the proposed project would not have the potential to violate any storm water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality in excess of what was previously anticipated for the site by the 2018 IS/MND.

In addition, the majority of the development associated with the proposed project would be located within the disturbance area analyzed in the 2018 IS/MND, and would result in the development of seven on-site residences, as compared to the 22 units considered in the 2018 IS/MND. Because the proposed project would result in the development of the same land use as compared to what was anticipated in the 2018 IS/MND, albeit at a lower density, the proposed project would result in similar, or less, impervious surface area than what was analyzed in the 2018 IS/MND. Furthermore, the proposed project would implement all requirements of the NPDES permitting process, as well as all other applicable State and local requirements. Finally, although the proposed project includes off-site improvements, the 30-inch stormwater line that would extend west from the project site would be constructed within an existing private gravel drive, and would not result in the construction of new impervious surfaces.

Overall, the proposed project would not result in more severe significant impacts related to hydrology and water quality as compared to the 2018 IS/MND.

Prior Mitigation Measures

MM HYD-1 In accordance with the City of Morgan Hill Standard Conditions of Approval and the NPDES Storm Water Permit for Construction Activities, future development projects will prepare a SWPPP and an ECP. The plans will be submitted to the Director of Public Works and Central Coast RWQCB for review and approval, prior to issuance of a building permit. The ECP and SWPPP will demonstrate how the project will eliminate or reduce non-stormwater discharges into the stormwater system, how discharges into the stormwater system will be monitored, and what BMPs will be implemented by the project to avoid water quality impacts during construction (e.g., street sweeping, fiber rolls, temporary cover and/or permanent cover) and post-construction periods. In conformance with existing policies, programs, and with implementation of BMPs, the project will not result in significant impacts to water quality or water discharge requirements.

Modified Mitigation Measures

None required.

New Mitigation Measures

None required.

Remaining Environmental Resource Areas

The 2018 IS/MND previously considered development of the project site with 22 dwelling units. The proposed project would consist of seven single-family residences located on the same project site. As such, the area of disturbance associated with the development of seven single-family residences, with the exception of the proposed off-site stormwater line, which would be located in an existing private gravel drive north of East Dunne Avenue, would remain the same as what was anticipated in the 2018 IS/MND. Therefore, impacts related to agriculture and forestry resources, as well as mineral resources, would be the same as what was previously analyzed in the 2018 IS/MND.

Wildfire is an environmental issue area that was included in CEQA Guidelines Appendix G subsequent to the approval of the 2018 IS/MND. As such, the 2018 IS/MND did not include an analysis specifically dedicated to wildfire; however, the 2018 IS/MND analyzed the potential impacts related to wildfires within Section 4.8.2, under the Hazards and Hazardous Materials section. As noted therein, the project site is not in the City's Fire Hazard Severity Zone (FHSZ); however, the area immediately to the east of the project site is located within the City's High FHSZ.⁷ Similar to the 2018 IS/MND, the proposed project would be constructed in conformance with current building and fire codes, including features that would reduce potential fire hazards. In addition, the proposed project would be served by the City's existing water distribution system, and would be designed with safe access for emergency response vehicles. Therefore, impacts related to wildfire would be the same as what was previously analyzed in the 2018 IS/MND.

In addition, a number of environmental impact areas are a function of population, including public services, utilities and service systems, recreation, and population and housing. For example, if fewer individuals occupy a project site, the project is expected to exert less demand on utilities such as water and sewer. Given that the proposed project would involve the development of seven single-family residences, any increase in population would be less than what was anticipated in the 2018 IS/MND, and therefore would not be considered significant in the context of the City or as compared to the 2275 East Dunne Avenue Project. Thus, impacts to the aforementioned areas would be within the scope of what was previously analyzed in the 2018 IS/MND.

With respect to geology and soils, an Initial Geotechnical Investigation was prepared on April 23, 2018 (see Attachment 6).⁸ The Initial Geotechnical Investigation included a review of published sources and historic aerial photos, as well as an in-person reconnaissance of the project site. In order to comply with the findings of the Initial Geotechnical Investigation, the 2018 IS/MND required compliance with MMs GEO-1, GEO-2, and GEO-3, which require preparation of a design-level geotechnical investigation and specifies the measures to be included therein. The proposed project would be subject to the aforementioned MMs; as such, impacts related to geology and soils would not be more severe than what was previously analyzed in the 2018 IS/MND.

With respect to hazards and hazardous materials, the 2018 IS/MND identified a potentially significant impact associated with elevated levels of organochlorine pesticides (OCPs) associated with the historic agricultural use of the site. Mitigation Measure HAZ-1 required preparation of a

⁸ City of Morgan Hill. *City of Morgan Hill Wildland Urban Interface*. March 18, 2009.
Cornerstone Earth Group. *Initial Geotechnical Investigation*. April 23, 2018.

Phase I Environmental Site Assessment (ESA) to determine the potential hazards, and preparation of a Phase II ESA if the Phase I ESA recommends soil testing. The Phase I ESA recommended soil testing in order to define contamination. As such, in compliance with Mitigation Measure HAZ-1, a Limited Phase II Subsurface Investigation Report (Phase II Report) was prepared on January 19, 2023, to document the concentrations of any hazardous contaminants in the soil (see Attachment 7).⁹ The Phase II Report included the collection of 18 evenly-spaced shallow soil samples across the project site and concluded that the proposed project would not result in potentially significant impacts associated with the OCPs originating from the site's former agricultural uses. Therefore, impacts related to hazards and hazardous materials would not be more severe than what was previously analyzed in the 2018 IS/MND.

With respect to transportation, the City of Morgan Hill is in the process of preparing Citywide VMT guidelines. Until such guidelines are adopted, the City uses OPR guidance to evaluate potential significant impacts to transportation. As discussed above, based on the ITE "Single-Family Residential" land use (ITE Land Use Category #210), the seven proposed single-family residences would result in an average of 66 trips per day. Therefore, the proposed project would meet the OPR screening criteria for projects that generate or attract fewer than 110 trips per day, and the project would not result in impacts related to VMT. As such, impacts related to transportation would not be more severe than what was previously analyzed in the 2018 IS/MND.

Furthermore, a project-specific Noise Assessment Study¹⁰ (see Attachment 8) evaluated potential noise impacts associated with project construction and increased traffic during operations. The Noise Assessment Study evaluated the potential noise created by construction and operation of the proposed project against the noise standards set forth within the City of Morgan Hill Noise Element and estimated future traffic noise levels. According to the Noise Assessment Study, existing traffic noise levels in the general area are anticipated to increase by 1.0 dB or less due to the proposed project, and noise levels would not exceed applicable local standards. Therefore, the Noise Assessment Study concluded that the proposed project would have a less-than-significant impact associated with noise during project operations. With respect to project construction, SM NOI-1 included in the 2018 IS/MND requires standard construction noise suppression measures, and would still be applicable to the proposed project. Thus, project related noise impacts would be within the scope of what was previously analyzed in the 2018 IS/MND.

Additionally, the project site was analyzed as being developed with residential uses in the 2018 IS/MND, which concluded that impacts associated with aesthetics, energy, and land use and planning would be less-than-significant. It should be noted that the proposed project would be subject to all relevant provisions of the most recent update of the California Building Standards Code (CBSC), which would include the 2022 Building Energy Efficiency Standards. Compliance with the requirements of the Building Energy Efficiency Standards would ensure that the proposed residences would consume energy efficiently, and impacts related to energy would not be more severe than what was previously analyzed in the 2018 IS/MND. Finally, because the proposed project would be located on the same project site as the 2018 IS/MND and would develop the site with fewer residences than was originally analyzed therein, the proposed project would have similar, if not less severe, impacts associated with aesthetics and land use and planning.

⁹ AEI Consultants. *Limited Phase II Subsurface Investigation Report*. January 19, 2023.

¹⁰ Edward L. Pack Associates, Inc. *Noise Assessment Study for the Planned "Serene Hills" Single-Family Subdivision, Sorrel Way, Morgan Hill*. January 30, 2023.

SERENE HILLS RESIDENTIAL PROJECT (EA2023-0008)

Overall, with implementation of the MMs included in the 2018 IS/MND, as listed below, the proposed project would not result in any additional significant impacts or more severe significant as compared to the 2018 IS/MND.

Prior Mitigation Measures

- MM GEO-1 future As required pursuant to General Plan Policy SSI-1.1, SSI-1.2, and SSI-2.1, residential development shall prepare a design-level geotechnical investigation which shall include trenching in order to locate the fault zone and establish a “no build” zone. The study shall be completed and submitted to the City for review as part of the tentative subdivision map review process. All recommendations in the design level geotechnical investigation shall be implemented by the project, which shall include standard engineering and seismic safety design techniques. Future development shall also meet the requirements of applicable Building and Fire Code.
- MM GEO-2 As part of the design-level geotechnical investigation required for future development onsite, the investigation shall include a debris flow analysis to evaluate the potential for debris flow. In the event debris flow hazard is identified, engineering measures would be implemented to reduce the hazard. Examples of engineering measures could include a combination of walls (deflection wall or catchment wall) and/or catchment basin and debris grate/catch basin.
- MM GEO-3 Future development shall implement recommendations in the design-level geotechnical report prepared for the project, which shall include design and engineering measures to avoid and reduce adverse effects of expansive soils to future development onsite. Recommendations to address the undocumented fills shall also be implemented, which shall include removing all fills identified within the building areas and to a lateral distance of at least five feet beyond the building footprint or to a lateral distance equal to fill depth below the perimeter footing, whichever is greater.
- MM HAZ-1 As required by General Plan Policy SSI-4.16, a Phase I Environmental Site Assessment (ESA) has been prepared for the site in order to determine whether there are potential hazards associated with the historic agricultural use of the site. If the Phase I ESA recommends soil testing in order to define contamination, Phase II soil investigations shall be completed to document the concentrations of any hazardous contaminants in the soil. Recommendations of the Phase II for any required soil remediation shall be implemented by the project.
- MM NOI-1 The following standard construction noise suppression measures would be implemented during the construction activities to reduce noise levels:
- Construction activities shall be limited to the hours between 7:00 a.m. and 8:00 p.m., Monday through Friday, and between the hours of 9:00 a.m. and 6:00 p.m. on Saturdays. No construction activities should occur on Sundays or federal holidays (Consistent with Section 8.28.040 of the Morgan Hill Municipal Code).
 - Equip all internal combustion engine driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.

SERENE HILLS RESIDENTIAL PROJECT (EA2023-0008)

- Locate stationary noise generating equipment (e.g. rock crushers, compressors) as far as possible from adjacent residential receptors.
- Acoustically shield stationary equipment located near residential receptors with temporary noise barriers or recycled demolition materials.
- Utilize "quiet" air compressors and other stationary noise sources where technology exists.
- The contractor shall prepare a detailed construction plan identifying the schedule for major noise-generating construction activities. The construction plan shall identify a procedure for coordination with adjacent residential land uses so that construction activities can be scheduled to minimize noise disturbance.
- Designate a "disturbance coordinator" who would be responsible for responding to any complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g., bad muffler, etc.) and will require that reasonable measures be implemented to correct the problem.

Modified Mitigation Measures

None required.

New Mitigation Measures

None required.

Conclusion

As established in the discussions above regarding the potential effects of the proposed project, the proposed project would not result in any new significant information of substantial importance, new significant impacts, a substantial increase in the severity of previously identified significant impacts, or new mitigation measures, from what was analyzed in 2018 IS/MND.

Consistent with Section 15065(a)(4) of the CEQA Guidelines, a lead agency shall find that a project may have a significant effect on the environment where there is substantial evidence that the project has the potential to cause substantial adverse effects on human beings, either directly or indirectly. Pursuant to this standard, a change to the physical environment that might otherwise be minor must be treated as significant if people would be significantly affected. This factor relates to adverse changes to the environment of human beings generally, and not to effects on particular individuals.

While changes to the environment that could indirectly affect human beings would be represented by all of the designated CEQA issue areas, those that could directly affect human beings include air quality, hazardous materials, and noise. Implementation of the Standard Permit Conditions and mitigation measures, and adherence to General Plan, City Code, and state and federal regulations described in these sections of the report, would avoid significant impacts. No other direct or indirect adverse effects on human beings have been identified. **(Less than Significant Impact with Mitigation Incorporated)**

Based on the above analysis, this revised Mitigated Negative Declaration using the previously considered 2018 IS/MND has been prepared.

ATTACHMENT 1

2275 EAST DUNNE AVENUE PROJECT

INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

Initial Study

2275 East Dunne Avenue General Plan Amendment & Rezone



June 2018

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ACRONYMS AND ABBREVIATIONS

ABAG	Association of Bay Area Governments
AB 52	Assembly Bill 52
ADT	average daily trips
ADWF	average dry weather flow
ALUC	Airport Land Use Commission
BAAQMD	Bay Area Air Quality Management District
BMPs	Best Management Practices
CalFire	California Department of Forestry and Fire Protection
CARB	California Air Resource Board
CCR	California Code of Regulations
CCTF	Coyote Creek Thrust Fault
CDFW	California Department of Fish and Wildlife
CNEL	community noise equivalent level
CEQA	California Environmental Quality Act
CO ₂ e	carbon dioxide
dBA	A-weighted decibel
Du/ac	Dwelling units per acre
ECP	Erosion Control Plan
EIR	Environmental Impact Report
ESA	Environmental Site Assessment
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FMMP	Farmland Mapping and Monitoring Program
GHG	greenhouse gases
GPA	General Plan Amendment
L _{dn}	day-night average sound level
mgd	million gallons per day
MHFD	Morgan Hill Fire Department
MHPD	Morgan Hill Police Department
MLD	Most Likely Descendant
MND	Mitigated Negative Declaration
NPDES	National Pollutant Discharge Elimination System
MT	metric tons
NOD	Notice of Determination

Pdf	debris flow hazard zone
PM _{2.5}	fine particulate matter
PM ₁₀	Particulate matter
RDCS	Residential Development Control System
RFTF	Range Front Thrust Fault
RWQCB	Regional Water Quality Control Board
SB 32	Senate Bill 32
SCRWA	South County Regional Wastewater Authority
SCVHP	Santa Clara Valley Habitat Plan
SCVWD	Santa Clara Valley Water District
SWMP	Storm Water Management Plan
SWPPP	Stormwater Pollution Prevention Plan
TACs	toxic air contaminants
USFWS	United States Fish and Wildlife Service
2017 CAP	Bay Area 2017 Clean Air Plan

SECTION 1.0 INTRODUCTION AND PURPOSE

1.1 PURPOSE OF THE INITIAL STUDY

The City of Morgan Hill as the Lead Agency, has prepared this Initial Study for the 2275 E. Dunne Avenue General Plan Amendment and Rezoning Project in compliance with the California Environmental Quality Act (CEQA), the CEQA Guidelines (California Code of Regulations §15000 et. seq.) and the regulations and policies of the City of Morgan Hill, California.

The project proposes to amend the General Plan land use designation and rezone the 8.34-acre project site located on 2275 East Dunne Avenue in the City of Morgan Hill. This Initial Study evaluates the environmental impacts that might reasonably be anticipated to result from implementation of the proposed project.

1.2 PUBLIC REVIEW PERIOD

Publication of this Initial Study marks the beginning of a 30-day public review and comment period. During this period, the Initial Study will be available to local, state, and federal agencies and to interested organizations and individuals for review. Written comments concerning the environmental review contained in this Initial Study during the 30-day public review period should be sent to:

Tiffany Brown, Associate Planner
17575 Peak Avenue
Morgan Hill, CA 95037
Tiffany.Brown@morganhill.ca.gov

1.3 CONSIDERATION OF THE INITIAL STUDY AND PROJECT

Following the conclusion of the public review period, the City of Morgan Hill will consider the adoption of the Initial Study/Mitigated Negative Declaration (MND) for the project at a regularly scheduled meeting. The City shall consider the Initial Study/MND together with any comments received during the public review process. Upon adoption of the MND, the City may proceed with project approval actions.

1.4 NOTICE OF DETERMINATION

If the project is approved, the City of Morgan Hill will file a Notice of Determination (NOD), which will be available for public inspection and posted within 24 hours of receipt at the County Clerk's Office for 30 days. The filing of the NOD starts a 30-day statute of limitations on court challenges to the approval pursuant to CEQA (CEQA Guidelines Section 15075(g)).

SECTION 2.0 PROJECT INFORMATION

2.1 PROJECT TITLE

2275 E. Dunne Avenue General Plan Amendment and Rezone Project

2.2 LEAD AGENCY CONTACT

Tiffany Brown, Associate Planner
17575 Peak Avenue
Morgan Hill, CA 95037
Tiffany.Brown@morganhill.ca.gov

2.3 PROJECT APPLICANT

Alex Ross
Pillars Architecture Design
12 S. 1st Street, #808
San José 95113
alex@pillarsarchitecture.com

2.4 PROJECT LOCATION

The 8.34-acre project site is located at the base of the eastern foothills of Morgan Hill on 2275 E. Dunne Avenue, north of Sorrel Way, in the City of Morgan Hill. The project site and relationship to the general area are shown in Figures 2.4-1 to 2.4-3.

2.5 ASSESSOR'S PARCEL NUMBER

728-02-002 and -003

2.6 GENERAL PLAN DESIGNATION AND ZONING DISTRICT

General Plan designation: *Residential Estate* (one dwelling unit/acre [du/ac]) to *Residential Detached Low* (four du/ac)

Zoning: This project is subject to the transition provisions of the City's newly adopted Zoning Code (Section 18.04.080). Upon the effective date of the Zoning Code, land that is zoned with a zoning district classification from the previous Zoning Code shall be re-classified or translated to one of the zoning districts as established in Chapter 18.04.080 Transitional Provisions.

Prior Zone District	Re-Classified Zone District	Proposed Zone District
<i>Residential Estate - 40,000-square foot</i>	<i>Residential Estate - 1 acre</i>	<i>Residential Detached Low Density 12,000-square foot</i>

2.7 HABITAT PLAN DESIGNATION

Santa Clara Valley Habitat Conservation Plan

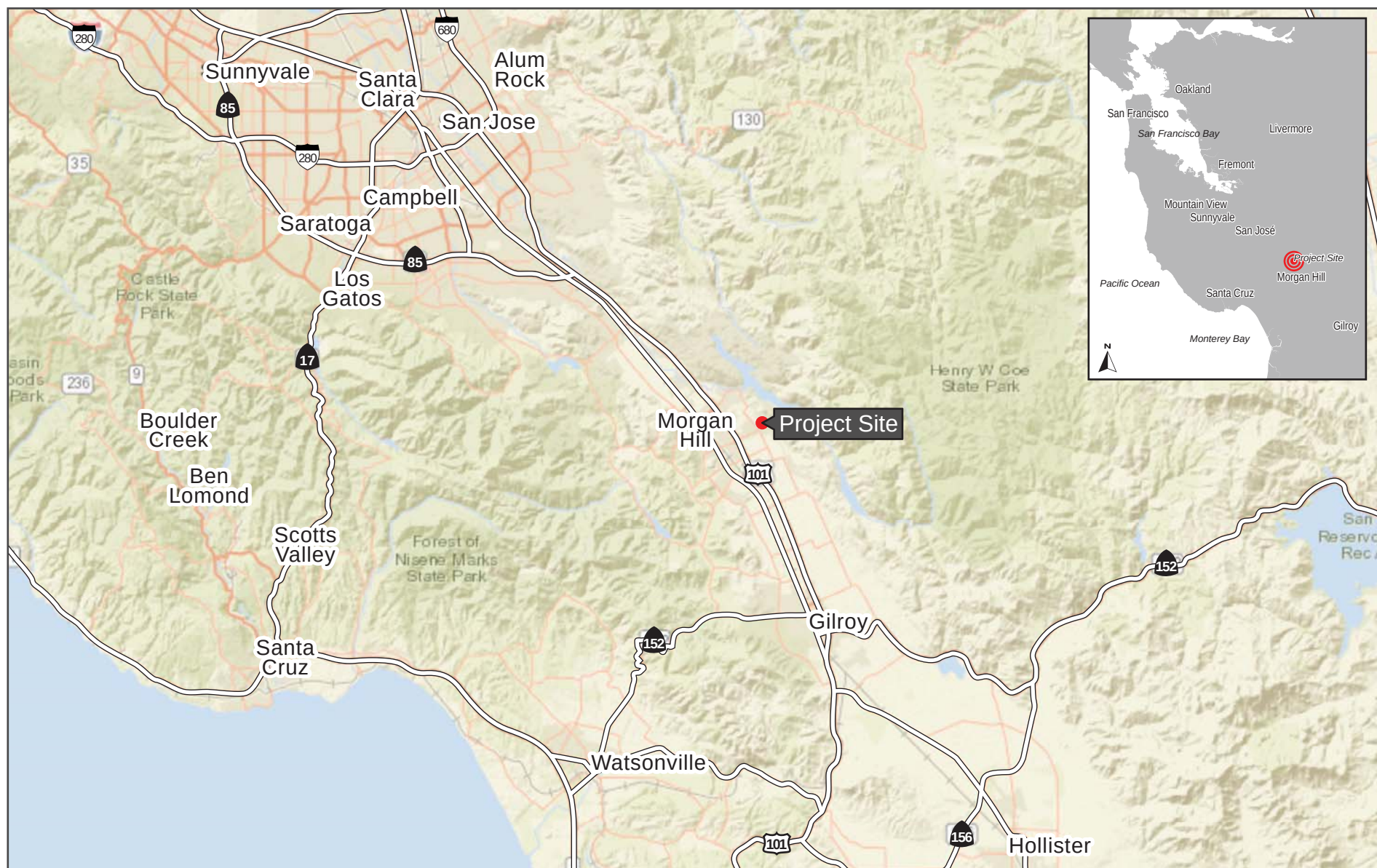
Private Development Areas: *Urban Development Equal to or Greater Than two Acres Covered*

Land Cover Designation: *Rural Residential*

Land Cover Fee Zone: *Agricultural and Valley Floor Lands*

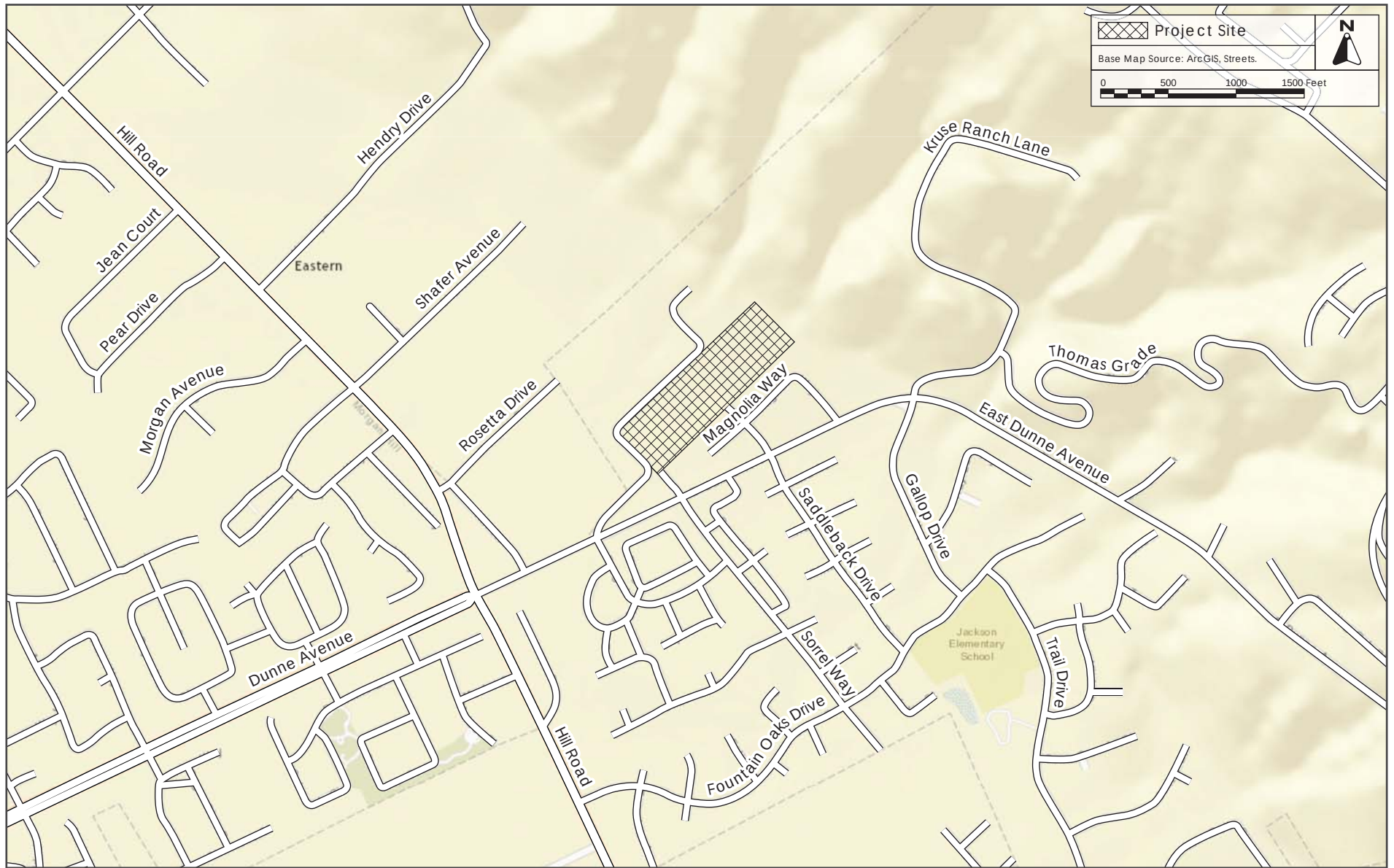
2.8 PROJECT-RELATED APPROVALS, AGREEMENTS, AND PERMITS

- General Plan Amendment
- Zoning Amendment



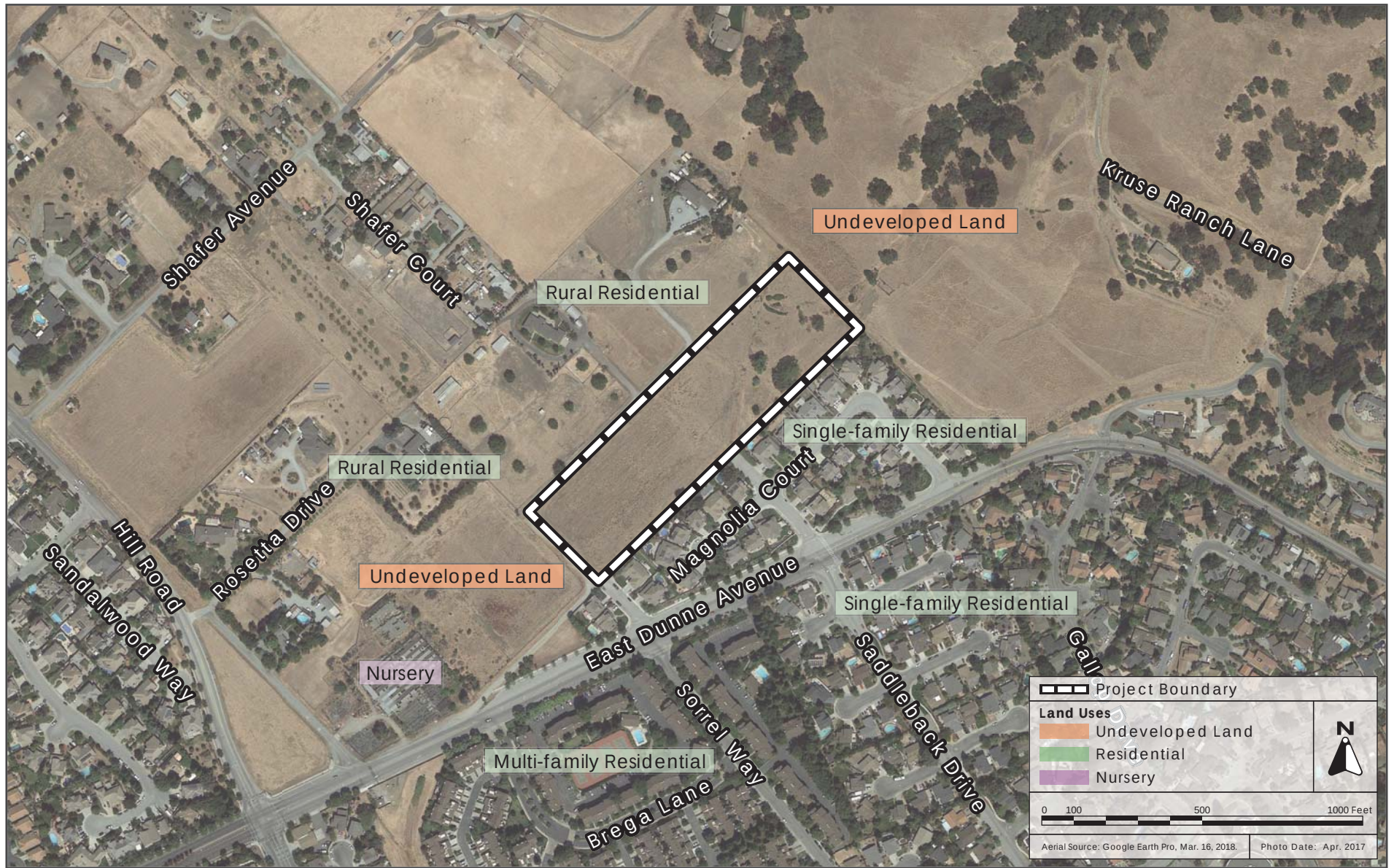
REGIONAL MAP

FIGURE 2.4-1



VICINITY MAP

FIGURE 2.4-2



AERIAL PHOTOGRAPH AND SURROUNDING LAND USES

FIGURE 2.4-3

SECTION 3.0 PROJECT DESCRIPTION

3.1 OVERVIEW

The 8.34-acre project site is located on 2275 E. Dunne Avenue, north of Sorrel Way in the City of Morgan Hill. The project proposes a General Plan Amendment (GPA) to change the land use designation from *Residential Estate* to *Residential Detached Low*, and a rezoning from *Residential Estate one acre* (RE-1) to *Residential Detached Low Density 12,000-square foot lot* (RDL-12,000) in order to allow future subdivision(s) and residential uses on minimum 12,000-square foot lots.

3.2 EXISTING USE AND GENERAL PLAN DESIGNATION

The 8.34-acre (approximately 363,290 square foot) project site (APNs 728-02-002 and -003) is located on 2275 E. Dunne Avenue, north of Sorrel Way in the City of Morgan Hill. The project site is currently undeveloped and has a General Plan designation of *Residential Estate* with a zoning of RE-1. The existing General Plan designation and zoning district are defined as the following:

Existing General Plan Designation

Residential Estate: This designation is intended to promote and encourage a suitable environment for families living on relatively large parcels of land. Concentrated along the western and southern City borders, the Residential Estate designation allows single-family homes, secondary dwelling units, appropriate agricultural uses, and associated community services and facilities. The maximum allowable density is one dwelling unit per acre (du/ac).

Re-Classified Zoning District

Residential Estate-One acre: The purpose of the RE-1 zoning district is to provide locations for detached single-family homes on large lots in a semi-rural setting. The RE zoning district is divided into three subzones allowing for a range of permitted residential densities. The minimum lot size is one acre.

3.3 SURROUNDING LAND USES

The project is located in the east foothills of Morgan Hill, and is surrounded by rural residential and undeveloped land to the north and west, single-family residential to the south, and undeveloped land to the east. The General Plan designation and zoning for the surrounding properties are summarized in Table 3.0-1.

Table 3.0-1: Land Uses Surrounding the Project Site			
Direction	General Plan Designation	Zoning District	Existing Use
North	<i>Residential Estate</i>	RE-1	Rural residential
South	<i>Single Family Medium</i>	<i>Residential Detached Medium Density 9,000 square foot lot (R1-9,000)</i>	Single-family residential
East	<i>Open Space</i>	<i>Open Space (OS)</i>	Undeveloped land
West	<i>Residential Estate</i>	<i>Residential Detached Medium Density 7,000-square foot lot (R1-7,000 RPD)</i>	Rural residential

3.4 PROPOSED GENERAL PLAN DESIGNATION AND ZONING

The project proposes to change the General Plan land use designation from *Residential Estate* to *Residential Detached Low* and a rezoning from RE-1 to RDL-12,000.

Proposed General Plan Designation

Residential Detached Low: This designation is intended to accommodate families in suburban single-family homes, including manufactured homes on medium-sized parcels. Secondary dwelling units are allowed within this designation. The maximum allowable density is four dwelling units per acre.

Proposed Zoning District

Residential Detached Low Density 12,000-square foot lot: The purpose of the RDL zoning district is to provide locations for detached single-family homes in low-density single-family neighborhoods. The RDL-12,000 zoning district requires a minimum lot size of 12,000 square feet.

3.5 DEVELOPMENT ASSUMPTIONS FOR THE ENVIRONMENTAL REVIEW

No project specific development application is filed with the City at this time. In order to evaluate an appropriate development potential for the proposed General Plan Amendment to *Residential Detached Low* and a rezone to RDL-12,000, a unit count representing approximately 75 percent of the maximum theoretical development allowed is used. A maximum of 30 residential units/lots (363,290-square foot site divided by 12,000-square foot lots) could be considered. However, this density is unlikely due to the requirements for roads, right-of-way, and setbacks, etc. For the purpose of this analysis, development of 75 percent of the maximum development is used to derive the reasonably foreseeable development potential of the proposed project site. This would allow development of up to 22 dwelling units onsite for the proposal. No specific development is proposed for the project site at this time, and therefore the analysis in this Initial Study is conceptual or

programmatic in nature given the lack of detail about how the property would be developed. Future development of specific projects on the proposed site will require subsequent environmental review to provide project-level analysis of any proposed subdivision(s) that would occur based on the proposed General Plan Amendment and rezone. This subsequent environmental review would evaluate the impacts of future development based on the precise location of proposed lots and house building pads, proposed streets and driveways, utilities, grading, tree removal(s), etc.

3.6 FUTURE IMPROVEMENTS NEEDED

Future development would require connections to the existing utility system, however, no utility improvements or upgrades are currently envisioned as part of the proposed General Plan Amendment and rezone. Utility improvements or upgrade requirements will be analyzed as part of the project-level analysis for future development. Future development would require additional right-of-way for future site access and circulation, and may include the following:

- Extend either Sorel Way or Saddleback Drive to the north;
- Connect dead ends of Sorel Way and Saddleback Drive to form a loop; and
- Widen right-of-way width of Sorel Way and/or Saddleback Drive to 60 feet to allow for detached sidewalk with a 5-foot landscape strip.

SECTION 4.0 ENVIRONMENTAL CHECKLIST AND IMPACT DISCUSSION

This section presents the discussion of impacts related to the following environmental subjects in their respective subsections:

4.1	Aesthetics	4.10	Land Use and Planning
4.2	Agricultural and Forestry Resources	4.11	Mineral Resources
4.3	Air Quality	4.12	Noise and Vibration
4.4	Biological Resources	4.13	Population and Housing
4.5	Cultural Resources	4.14	Public Services
4.6	Geology and Soils	4.15	Recreation
4.7	Greenhouse Gas Emissions	4.16	Transportation/Traffic
4.8	Hazards and Hazardous Materials	4.17	Utilities and Service Systems
4.9	Hydrology and Water Quality	4.18	Mandatory Findings of Significance

The discussion for each environmental subject includes the following subsections:

- **Environmental Checklist** – The environmental checklist, as recommended by CEQA, identifies environmental impacts that could occur if the proposed project is implemented. The right-hand column of the checklist lists the source(s) for the answer to each question. The sources are identified at the end of this section.
- **Impact Discussion** – This subsection discusses the project’s impact as it relates to the environmental checklist questions. For significant impacts, feasible mitigation measures are identified. “Mitigation measures” are measures that will minimize, avoid, or eliminate a significant impact (CEQA Guidelines Section 15370). Each impact is numbered using an alphanumeric system that identifies the environmental issue. For example, **Impact HAZ-1** denotes the first potentially significant impact discussed in the Hazards and Hazardous Materials section. Mitigation measures are also numbered to correspond to the impact they address. For example, **MM NOI-2.3** refers to the third mitigation measure for the second impact in the Noise section.

Important Note to the Reader

The California Supreme Court in a December 2015 opinion [*California Building Industry Association v. Bay Area Air Quality Management District*, 62 Cal. 4th 369 (No. S 213478)] confirmed that CEQA, with several specific exceptions, is concerned with the impacts of a project on the environment, not the effects the existing environment may have on a project. Therefore, the evaluation of the significance of project impacts pursuant to CEQA in the following sections focuses on impacts of the project on the environment, including whether a project may exacerbate existing environmental hazards.

The City of Morgan Hill currently has policies that address existing conditions (e.g., air quality, noise, and hazards) affecting a proposed project, which are also addressed in this section. This is consistent with one of the primary objectives of CEQA and this document, which is to provide objective information to decision-makers and the public regarding a project as a whole. The CEQA Guidelines and the courts are clear that a CEQA document (e.g., EIR or Initial Study) can include

information of interest even if such information is not an “environmental impact” as defined by CEQA.

Therefore, where applicable, in addition to describing the impacts of the project on the environment, this chapter will discuss Planning Considerations that relate to policies pertaining to existing conditions. Such examples include, but are not limited to, locating a project near sources of air emissions that can pose a health risk, in a floodplain, in a geologic hazard zone, in a high noise environment, or on/adjacent to sites involving hazardous substances.

4.1 AESTHETICS

4.1.1 Environmental Checklist

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Checklist Source(s)
Would the project:					
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐	1,2,3
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☒	☐	1,2,3
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐	1,2,3
d) Create a new source of substantial light or glare which will adversely affect day or nighttime views in the area?	☐	☐	☒	☐	1,2,3

4.1.2 Impact Discussion

a,b) Have a substantial adverse effect on a scenic vista? Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

The project site is located in the Morgan Hill eastern foothills. The project site sits on the bottom of the foothills, and is surrounded by rural/suburban residential development and vacant lands (see Photo 1). Views from the project site are limited to its surrounding area. The project site is not located near a scenic vista, nor along a state scenic highway. For these reasons, the proposed General Plan Amendment and rezone would not have a significant impact on scenic vistas or scenic highways. **(Less Than Significant Impact)**

c) Substantially degrade the existing visual character or quality of the site and its surroundings?

The project site is surrounded by rural residential with large lots to the north, east and west, and a one- to two-story single-family subdivision to the south/southeast (see Photos 2 and 3). The existing visual character of the area is suburban. As described in *Section 3.0 Project Description*, the proposed General Plan Amendment and rezone would allow approximately 22 single-family dwelling units. Once a specific development is proposed upon approval of the General Plan Amendment and rezone, the project would be subject to review and approval by the City to ensure it meets local design and aesthetic standards. For these reasons, the General Plan Amendment and rezone, would not degrade the existing visual character of its surrounding site. **(Less than Significant Impact)**

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

While there is no specific development proposed at this time, it is anticipated that lighting from future development (up to 22 dwelling units) would not generate significant lighting to the project area. It can be assumed that all lights would be constructed of conventional, low-glare materials. For these reasons, the proposed General Plan Amendment and rezone would not result in significant adverse visual or aesthetic impact. **(Less Than Significant Impact)**



Photo 1- View of the project site and surrounding sites looking southwest.



Photo 2- View of the adjacent site to the northeast looking southeast.

PHOTOS

1 AND 2



Photo 3- View of the northeast corner of project site looking northeast.

4.2 AGRICULTURAL AND FORESTRY RESOURCES

4.2.1 Environmental Checklist

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Checklist Source(s)
Would the project:					
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?	☐	☐	☒	☐	1,2,3,4
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒	1,2,3,4
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	☒	1,2,3,5
d) Result in a loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒	1,2,3,5
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?	☐	☐	☐	☒	1,2,3,5

4.2.2 Impact Discussion

a,b) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) to non-agricultural use? Conflict with existing zoning for agricultural use, or a Williamson Act contract?

The California Department of Conservation manages the Farmland Mapping and Monitoring Program (FMMP) to assess and record how suitable a particular tract of land is for agricultural purposes. In each county, the land is analyzed for soil and irrigation quality and the highest quality land is designated as Prime Farmland.

The project site is not designated as farmland nor is it restricted by a Williamson Act Contract. The Santa Clara County Important Farmland 2014 Map designates the project site as *Other Land*, which is land not included in any other mapping category.¹ As defined by the map, common examples

¹ California Department of Conservation, Division of Land Resource Protection. *Santa Clara County Important Farmland 2014*. October 2016.

include low density rural developments, brush, timber, wetland, and riparian areas not suitable for livestock grazing. A review of historic aerial photographs indicate past agricultural uses onsite, however, the project site is not designated in the General Plan for such use, or zoned for agricultural purposes. For these reasons, the General Plan Amendment and rezone would not result in impacts to agricultural resources. **(Less Than Significant Impact)**

c,d) Conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production? Result in a loss of forest land or conversion of forest land to non-forest use?

The project site is not zoned as forest land or timberland. As described in *Section 4.4 Biological Resources*, the Santa Clara Valley Habitat Plan (SCVHP) identifies the land cover onsite as *Rural Residential*.² The surrounding area is developed with rural development and does not contain forest land or timberland. For these reasons, the General Plan Amendment and rezone would not impact forest land or timberland. **(No Impact)**

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?

According to the Santa Clara County Important Farmland Map 2014, the project surrounding contains *Urban and Built-Up Land* and *Grazing Land*. Neither of these designation is defined as farmland, therefore, the proposed General Plan Amendment and rezoning would not result in conversion of nearby farmland to non-agricultural uses.

The project surrounding contains vacant grassland and rural/low-density residential development and zoned as forest land, therefore, the proposed General Plan Amendment and rezone would not result in conversion of nearby forestland. **(No Impact)**

² Santa Clara Valley Habitat Agency. "Geobrowser." Accessed: April 10, 2018. Available at: <http://www.hcpmaps.com/habitat/>.

4.3 AIR QUALITY

4.3.1 Environmental Checklist

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Checklist Source(s)
Would the project:					
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐	1,2,6,7
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐	1,2,7
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is classified as non-attainment under an applicable federal or state ambient air quality standard including releasing emissions which exceed quantitative thresholds for ozone precursors?	☐	☐	☒	☐	1,2,7
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐	1,2,7
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐	1

As previously discussed in *Section 3.0*, in December 2015, the California Supreme Court issued an opinion in “CBIA vs. BAAQMD” holding that CEQA is primarily concerned with the impacts of a project on the environment and generally does not require agencies to analyze the impact of existing conditions on a project’s future users or residents unless the project risks exacerbate those environmental hazards or risks that already exist. Nevertheless, the City has General Plan policies (including Policy NRE-11.1 which requires developments to prepare a project-specific air quality modeling and analysis to identify measures that can reduce exposure risks from freeways and industrial uses) that address existing conditions affecting a proposed project, which are discussed below as non-CEQA related effects.

4.3.2 Impact Discussion

a) **Conflict with or obstruct implementation of the applicable air quality plan?**

The most recent clean air plan is the Bay Area 2017 Clean Air Plan (2017 CAP), which was adopted by BAAQMD in April, 2017. Determining consistency with the 2017 CAP (i.e., protecting public health and protecting the climate) or prevent implementation of Control Measures contained in the 2017 CAP.

The proposed General Plan Amendment and rezone would allow for the construction of approximately 22 dwelling units and its associated improvements such as road widening, and utility connections. While the proposed General Plan Amendment would allow more single-family

residential units onsite than current land use regulations allow, the development of approximately 22 dwelling units in Morgan Hill would not result in substantial increase in vehicle miles traveled by residential in Morgan Hill.

The project is not proposing a specific development that could be compared to control measures for stationary, area, or mobile sources or energy control measures. Future development would be required to develop consist with applicable General Plan polices and the City's Environmental Agenda that correspond with Control Measures in the 2017 CAP during the development and permit review phase.

Exposure of sensitive receptors to toxic air contaminants (TACs) and fine particulate matter (PM_{2.5}) emissions would be associated with construction of a future project. Future projects would be required to implement BAAQMD's *Basic Construction Mitigation Measure* (further discussed in checklist question b below) for dust and diesel exhaust control. Implementation of *Basic Construction Mitigation Measure* during construction for future developments would reduce impacts and would not conflict with control measures in the 2017 CAP to reduce air pollutant emissions or goals of protecting public health or the climate. For these reasons, the project would not conflict with implementation of the 2017 CAP. **(Less Than Significant Impact)**

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

The project site is within the San Francisco Bay Area Air Basin. The Bay Area Air Quality Management District (BAAQMD) is the regional government agency that monitors and regulates air pollution within the air basin. The San Francisco Bay Area meets all State and Federal ambient air quality standards except for three regional pollutants known at times to exceed the state and federal standards in the project area. These pollutants include ground-level ozone, particulates (PM₁₀), and PM_{2.5}.

Table 3-1 in the 2017 BAAQMD CEQA Air Quality Guidelines contains screening level sizes for various land use types/development. The screening levels were developed to provide a conservative indication of whether a proposed project could result in potentially significant air quality impacts. If all of the screening criteria are met by a proposed project, then a detailed air quality assessment of a project's air pollutant emissions does not need to be prepared and the project's air quality impacts are considered less than significant. As described in *Section 3.0 Project Description*, future development of the 8.34-acre site would consist of approximately 22 dwelling units, assuming the development of a standard subdivision. As summarized in Table 4.3-2 below, the single-family screening level for construction and operational criteria pollutants are 114 dwelling units and 325 dwelling units, respectively.

Table 4.3-1: Criteria Air Pollutants and Precursor Screening Level Sizes		
Land Use Type	Operational Criteria Pollutant Screening Size	Construction Criteria Pollutant Screening Size
Single-Family	325	114
Below screening Threshold?		
22-Unit Single-Family Subdivision	Yes	Yes

Future redevelopment of the project site would not exceed the screening levels for construction and operational criteria pollutants. As defined by BAAQMD, a project screening threshold is said to have a less than significant impact if all *Basic Construction Mitigation Measures* listed in Table 8-2 of the *BAAQMD CEQA Air Quality Guidelines* would be included in the project design and during construction. Future development resulting from the proposed project would be required to implement the following basic construction mitigation measures as part of the overall development review process.

Standard Measure to be Considered at the Time of Future Development

SM AIR-1: The following *Basic Construction Mitigation Measures* listed in Table 8-2 of the *BAAQMD CEQA Air Quality Guidelines* will be implemented during construction to reduce dust and other particulate matter impacts:

- During any construction period ground disturbance, the project contractor shall implement the following Best Management Practices (BMPs):
 - Exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
 - Haul trucks transporting soil, sand, or other loose material off-site shall be covered.
 - Visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
 - Vehicle speeds on unpaved roads shall be limited to 15 mph.
 - Roadways, driveways, and sidewalks to be paved shall be completed as soon as possible after grading to minimize dirt and soil exposure. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
 - Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.
 - Construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
 - Post a publicly visible sign with the telephone numbers and contact information for the project construction manager and the Lead Agency regarding dust complaints. This construction manager shall respond and take corrective action within 48 hours.

- o The BAAQMD phone number shall also be visible to ensure compliance with applicable regulations.

With implementation of SM AIR-1 during construction of future development onsite, the proposed General Plan Amendment and rezone would not result in a significant operational or construction criteria pollutant impact **(Less Than Significant Impact)**

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is classified as non-attainment under an applicable federal or state ambient air quality standard including releasing emissions which exceed quantitative thresholds for ozone precursors?

As discussed above, non-attainment pollutants of concern for the San Francisco Bay Area Air Basins are ozone, PM₁₀ and PM_{2.5}. According to BAAQMD, if a project exceeds the significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions. As discussed within checklist question b, future development of the site (approximately 22 dwelling units) would not exceed the screening levels for construction and operational criteria pollutants. Implementation of BAAQMD's *Basic Construction Mitigation Measures* listed above for dust control would reduce construction impacts to a less than significant level. For these reasons the proposed General Plan Amendment and rezone would not result in a cumulatively considerable net increase of a criteria pollutant for which the project region is classified as non-attainment within an applicable federal or state ambient air quality standard, including releasing emissions that exceed quantitative thresholds for ozone precursors. **(Less Than Significant Impact)**

d) Expose sensitive receptors to substantial pollutant concentrations?

The nearest sensitive receptors are residential uses adjacent to the project site. Future residential development is not expected to emit significant levels of TACs. Residential uses are not stationary sources of TACs, and do not involve use of significant diesel-powered vehicles that generate mobile TAC emissions.

Future construction would result in development of approximately 22 dwelling units. Construction of the future subdivision would require use of diesel equipment (e.g., generators, excavators, dozers, graders, etc.) The exhaust from diesel equipment contains diesel particulate matter, which is a known TAC. Depending on proximity and duration of use, the operation of diesel equipment onsite during future construction activities has the potential to expose occupants of surrounding residences to substantial TAC emissions. Since no specific development is proposed at this time, construction related impacts would be addressed during future project-level environmental review. General Plan Policy NRE-11-3 requires proposed developments that emit toxic air contaminants to prepare health risk assessments in accordance with BAAQMD procedures as part of environmental review and implement effective mitigation measures (e.g., use of alternative fuel construction equipment) to reduce potential health risks to a less than significant level, if necessary. Once construction is complete, residents driving to/from their homes would not be a source of TAC emissions, therefore, would not expose sensitive receptors to substantial pollutant concentrations. **(Less Than Significant Impact)**

e) Create objectionable odors affecting a substantial number of people?

The proposed General Plan Amendment and rezone would allow residential development onsite. Residential use is not considered an odor generating sources, such as food processing uses. While construction activities can generate odors associated with construction equipment and materials, this odor source would be temporary and would not affect a substantial number of people. For these reasons, the proposed General Plan Amendment and rezone would not significantly and permanently create objectionable odors affecting a substantial number of people. **(Less Than Significant Impact)**

4.3.2.1 *Air Quality Effects to the Project (Non-CEQA Related Effects)*

The proposed General Plan Amendment and rezoning would allow approximately 22 residential units onsite. The project area is located in the Morgan Hill foothills and consists of vacant open space and rural/suburban residential development. There are no stationary sources within 1,000 feet of the project site such as a busy roadway with over 10,000 average daily trips (ADT). General Plan Policy NRE-11.1, which requires modeling for sensitive land uses, such as residential development, proposed near sources of pollution such as freeways and industrial uses, and incorporate effective design measures to avoid health and safety risks. Since no development is proposed at this time, future development would be required to include an air quality evaluation that considers the presence of stationary TACs sources and the site's proximity to high volume roadways, and implement all measures identified to reduce health risks to future residences.

4.4 BIOLOGICAL RESOURCES

4.4.1 Environmental Checklist

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Checklist Source(s)
Would the project:					
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 Wildlife (CDFW) or United States Fish and Wildlife Service (USFWS)?	☐	☐	☒	☐	1,5,8
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS?	☐	☐	☒	☐	1,5,8,9
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☒	☐	1,5,8,9
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, impede the use of native wildlife nursery sites?	☐	☐	☒	☐	1,5,9
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐	1,2,3
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?	☐	☐	☒	☐	1,5,8

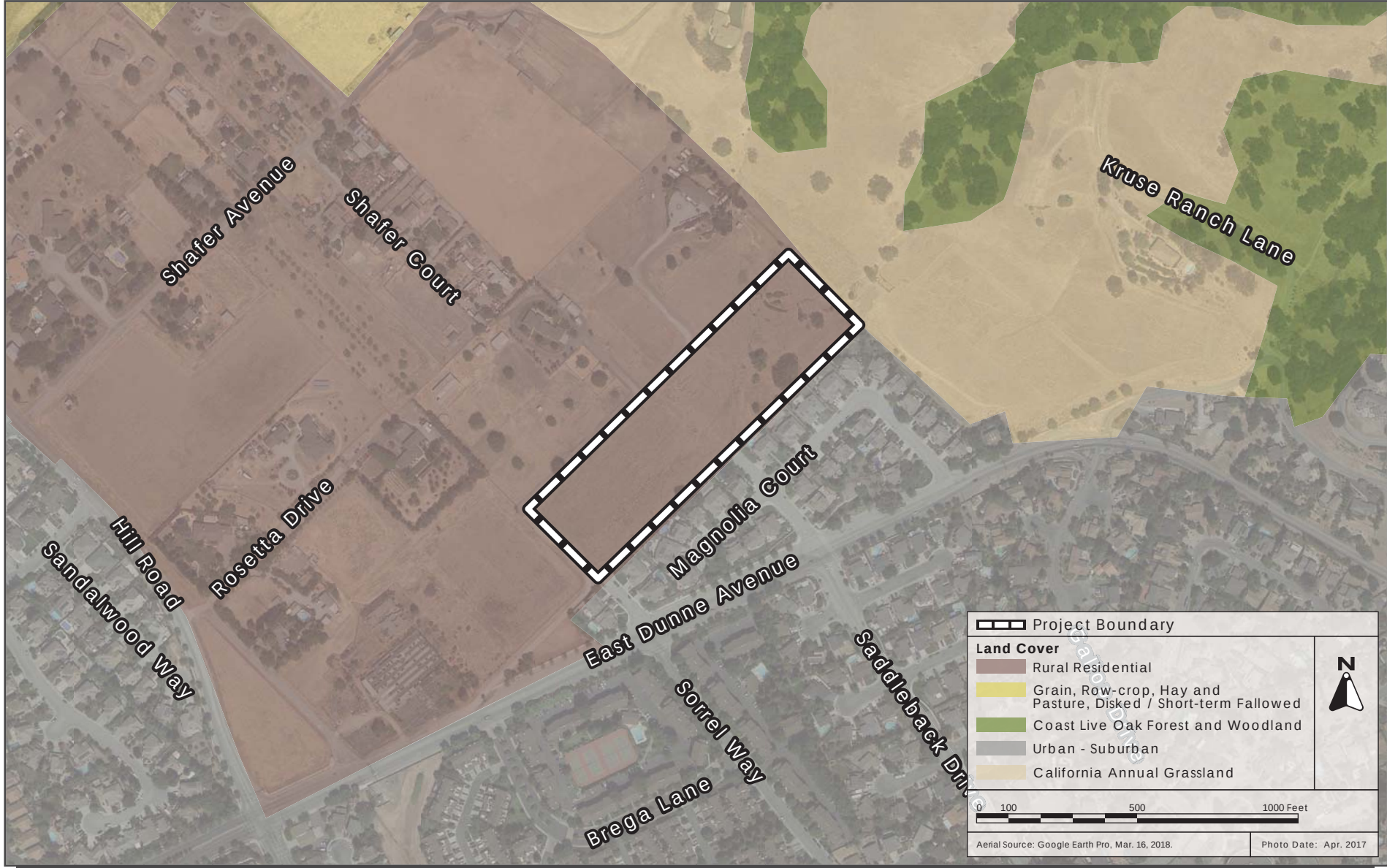
4.4.2 Setting

4.4.2.1 Existing Conditions

The proposed project site is located in the Santa Clara Valley Habitat Plan (SCVHP) study area. SCVHP is a habitat conservation program intended to promote the recovery of endangered species and enhance ecological diversity and function, while accommodating planned growth in

approximately 500,000 acres of southern Santa Clara County. The Habitat Plan identifies and preserves land that provides important habitat for endangered and threatened species. The land preservation is intended to provide mitigation for the environmental impacts of planned development, public infrastructure operations, and maintenance activities, as well as to enhance the long-term viability of endangered species.

Review of the Habitat Agency Geobrowser indicates the 8.34-acre site is mapped as *Rural Residential* land cover. Existing SCVHP land cover types are shown in Figure 4.4-1. The project site is currently undeveloped with some remaining man-made materials, disturbed soils and localized fills from a previous residence onsite. The site is covered in ruderal vegetation with approximately six trees onsite. There is a drainage feature that passes through the site from the northeast to the southeast of the site. Photos of the project site are shown in Photos 1 to 3 in *Section 4.1 Aesthetics*. The existing drainage pattern is shown in Figure 4.6-1 of *Section 4.6 Geology and Soils*.



EXISTING SCVHP LAND COVER TYPES

FIGURE 4.4-1

4.4.3 Impact Discussion

- 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 CDFW or USFWS?**

The project site is surrounded by single-family residences and rural residences in large lots. The adjacent site to the northeast is mapped as *California Annual Grassland* at its southern portion with a drainage feature crossing the proposed project site. The adjacent site however, is not mapped with any Wildlife or Plant Survey Area of the SCVHP. No special status plant or wildlife species are recorded in the project area. The project site has a *Rural Residential* land cover and does not contain sensitive habitats or habitats suitable for special-status plants or wildlife species to occur onsite.

The trees on and adjacent to the project site could provide nesting habitat for birds, including migratory birds and raptors. Nesting birds are among the species protected within the provisions of the Migratory Bird Treaty Act and California Fish and Game Code Sections 3503, 3503.5, and 2800. Future redevelopment of the site during the nesting season (i.e., February 1 to August 31) could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes abandonment and/or loss of reproductive effort is considered a taking by the CDFW. Any loss of fertile eggs, nesting raptors, or any activities resulting in nest abandonment would constitute an impact. Future construction activities such as tree removal and site grading that disturb a nesting bird or raptor on-site or immediately adjacent to the construction zone would also constitute an impact. Since residential development is considered a covered activity pursuant to the SCVHP, future development onsite would be required to comply with conditions in SCVHP, including Condition 1: *Avoid Direct Impacts on Protected Plant and Wildlife Species*.

Standard Measure to be Considered at the Time of Future Development

SM BIO-1: If project staging and construction is anticipated to take place during the avian nesting season (February 1st – August 31st), a nesting bird preconstruction survey shall be conducted by a qualified biologist to insure that nesting birds are not located within or adjacent to the project site. This survey shall be completed not more than 14 days prior to the start of any staging or construction activity. If nesting activity is observed during the preconstruction survey, the qualified biologist will coordinate with the California Department of Fish and Wildlife (CDFW) to establish appropriate buffers, monitoring, and/or construction phasing measures to avoid any impacts to nesting birds. The results of the preconstruction survey should be valid for 14 days.

Implementation of SM BIO-1 would reduce potential impacts from future development that may be allowed with the proposed General Plan Amendment and rezone to a less than significant level.

(Less Than Significant Impact)

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS?

There is a drainage feature emulating from the foothill that passes through the site from the northeast of the property line to the southwest. The drainage feature is identified as a creek feature on the 2009 Santa Clara Valley Water District Creek and Watershed Map and terminates on the central portion of the site.³ Potential watercourses or drainage features are required to be field verified using criteria set by the SCVHP. SCVHP requires projects to determine if a potential watercourse or drainage feature located on the project site qualifies as a Category 2 stream.⁴ The drainage onsite is generally less than five-foot deep in northeast and less than three-foot deep to the southwest of the site. A review of aerial maps indicates the site was previously occupied by a single-family residence near the drainage feature. The drainage feature was filled and redirected to divert runoff from the hillside from the previous residence. The shallow drainage does not contain riparian vegetation or appear as a sensitive habitat for a sensitive natural community. As discussed above, the project site is identified as *Rural Residential* in accordance with SCVHP, and it is unlikely the drainage feature onsite would be subject to SCVHP setback requirements from creeks and streams. As required by SCVHP, when future project-level development is proposed, it would be required to submit an application form to SCVHP, which would include a field verification to confirm the land cover onsite, and if deemed necessary by the Director of the Community Development Department, identify if the drainage feature onsite is considered a Category 2 stream, or riparian habitat. Since the proposed project is a covered activity, payment of applicable fair share impact fees and/or incorporation of covered activity avoidance and minimization, would reduce potential riparian impacts to a less than significant level. **(Less Than Significant Impact)**

Standard Measure to be Considered at the Time of Future Development

SM BIO-2: Future development onsite shall submit a SCVHP application form and retain a qualified biologist to field verify the project site's land cover type and potential watercourses or drainage features using the *Criteria to Verify or Identify a Watercourse as a Stream* method as outlined in the Habitat Plan.

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

The project site has a *Rural Residential* land cover. The drainage feature onsite is where the drainage from the foothill terminates. The project site does not appear to contain wetlands, marshes, or vernal pools onsite. As described above, future development is a covered activity and would be required to submit a formal application form to SCVHP. The SCVHP application would require a qualified biologist to conduct a field verification to verify existing land cover onsite. Although unlikely, in the event the drainage onsite is identified as a Category 2 stream, or as a wetland, the project would be

³ Santa Clara Valley Water District. *Creek and Watershed Map of Morgan Hill and Gilroy*. 2009.

⁴ Category 2 stream is a stream type that may not have sufficient flow to support covered and riparian habitat. These streams include all ephemeral streams and some intermittent stream reaches. These reaches provide minimum support of water-quality functions and primary breeding habitat for covered species. Source: Santa Clara Valley Habitat Agency. *Santa Clara Valley Habitat Plan*. August 2012.

required to pay all applicable fair share impact fees and/or incorporation of covered activity avoidance and minimization to reduce impacts to a less than significant level. **(Less Than Significant Impact)**

- 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, impede the use of native wildlife nursery sites?**

The project site is surrounded by rural/suburban residential development. The project site is mapped as *Rural Residential* in accordance with SCVHP, and is not designated or known to support movement of any wildlife species, therefore, the proposed General Plan Amendment and rezone would not significantly interfere with movement of any wildlife. **(Less Than Significant Impact)**

- e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?**

There are approximately six existing trees onsite, some of which appear to be Eucalyptus and Oak trees, and may be “protected trees” pursuant to Section 12.32.020 (G) of the City’s Municipal Code. A future development application would be required to prepare a tree survey to document existing trees onsite and comply with the City’s Tree Removal Controls to replace removed trees at the ratio determined by the trees species and size. Compliance with the City’s Tree Removal Controls would reduce tree impacts to a less than significant level. **(Less Than Significant Impact)**

Standard Measure to be Considered at the Time of Future Development

SM BIO-3: As required by the City’s Tree Removal Controls, a tree removal permit is required from the Community Development Director, which includes the description of the tree replacement program and identification of any conditions imposed by the City.

- 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?**

The project site is mapped as *Rural Residential* in the SCVHP study area. The project site is within Fee Zone B “Agricultural and Valley Floor Lands”. The 2018 SCVHP fees for development of Zone B are \$13,982 per acre.

Nitrogen deposition from vehicular exhaust is known to have damaging effects on many of the serpentine plants in the Habitat Plan area, as well as the host plants that support the federally endangered Bay checkerspot butterfly. Mitigation for impacts of nitrogen deposition upon serpentine habitat and the Bay checkerspot butterfly can be correlated to the amount of new vehicle trips that a project is expected to generate. Fees collected in accordance with the SCVHP for new vehicle trips can be used to purchase conservation land for the Bay checkerspot butterfly. The project would be required to provide a nitrogen deposition fee of \$4.70 per new daily vehicle trips. With payment of all applicable SCVHP fees, the project would not conflict with the adopted SCVHP. **(Less Than Significant Impact)**

4.5 CULTURAL RESOURCES

The following discussion is based, in part, on a cultural resources assessment prepared by *Basin Research Associates* in March 2018. This report is on file at the City of Morgan Hill and can be viewed during regular business hours.

4.5.1 Environmental Checklist

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Checklist Source(s)
Would the project:					
a) Cause a substantial adverse change in the significance of an historical resource as defined in CEQA Guidelines Section 15064.5?	☐	☐	☐	☒	1,10
b) Cause a substantial adverse change in the significance of an archaeological resource as defined in CEQA Guidelines Section 15064.5?	☐	☐	☒	☐	1,2,10,11
c) Directly or indirectly destroy a unique paleontological resource or site, or unique geologic feature?	☐	☐	☒	☐	1,2,10,12
d) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☐	☒	☐	1,2,10,11
e) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:					
1. 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); or	☐	☐	☒	☐	1,2,10,11
2. 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 this criteria, the significance of the resource to a California Native American tribe shall be considered.	☐	☐	☒	☐	1,2,10,11

4.5.2 Impact Discussion

a) Cause a substantial adverse change in the significance of an historical resource?

The project site is currently undeveloped. The surrounding development consists of rural residential to the north, east, and west, and relatively new (approximately 20 years old) single-family residential neighborhood to the south. A review of the City's list of historic properties and the Santa Clara County Historic Resources inventory indicates there are no structures in the project vicinity that are considered historical.⁵ **(No Impact)**

b,c,d,e) Cause a substantial adverse change in the significance of an archaeological resource?

Directly or indirectly destroy a unique paleontological resource or site, or unique geologic feature? Disturb any human remains, including those interred outside of dedicated cemeteries? Cause a substantial adverse change in the significance of a tribal cultural resource that is: 1) listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources, 2) determined to be a significant resource to a California Native American tribe.

The project site does not contain evidence of Native American use and/or occupation. Pursuant to Assembly Bill 52 (AB 52), there are no known resources to tribal cultural resources within the project site. Development of the project site will have no effect on identified prehistoric, historic archaeological, and/or tribal resources. According to the consulting archaeologist, a program of archaeological subsurface presence/absence testing is not necessary and no archaeological monitoring is required during construction of the project.

Future development would involve surface disturbance to create building pads for approximately 22 dwelling units, trenches for utilities, and would involve additional right-of-way widening on Sorrel Way and or Saddleback Drive. Potential impacts to unknown archaeological and tribal cultural resources will be further reduced by implementation of the following standard guidelines during construction, as required by state law:

Standard Measure to be Considered at the Time of Future Development

SM CUL-1: The following standard permit condition would apply to future development of the project site to reduce and avoid impacts to unknown subsurface cultural resources.

- In the event any prehistoric or significant historic era cultural materials⁶ are encountered during subsurface construction, all construction within a radius of 50 feet of the find shall be halted, the Director of the Community Development Department would be notified, and an archaeologist shall be retained to examine the find to make appropriate recommendations.

⁵ City of Morgan Hill. *Morgan Hill 2035 General Plan Draft Environmental Impact Report*. January 13, 2016. Table 4.5-1.

⁶ Significant cultural materials includes but are not limited to: aboriginal human remains, chipped stone; ground stone; shell and bone artifacts; concentrations of fire-cracked rock; ash and charcoal; shell; bone; and historic features such as privies or building foundations.

- If human remains are discovered, the Santa Clara County Coroner shall be notified. The Coroner shall determine whether or not the remains were Native American. If the Coroner determines that the remains are not subject to his authority, he shall notify the Native American Heritage Commission, who shall identify the Most Likely Descendant (MLD) of the deceased Native American.
- If the Director of the Community Development Department finds that the cultural resource find is not a significant resource, work shall resume only after the submittal of a preliminary report and after provisions for reburial and ongoing monitoring are accepted. Provisions for identifying descendants of a deceased Native American and for reburial shall follow the protocol set forth in the CEQA Guidelines. If the site is found to be a significant archaeological site, a mitigation program shall be prepared and submitted to the Director of the Community Development Department for consideration and approval, in conformance with the protocol set forth in the CEQA Guidelines. **(Less than Significant Impact)**

4.6 GEOLOGY AND SOILS

The following discussion is based, in part on an Initial Geotechnical Investigation prepared by *Cornerstone Earth Group* on April 23, 2018. A copy of this report is provided in Appendix A of this Initial Study

4.6.1 Environmental Checklist

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Checklist Source(s)
Would the project:					
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:					
1. Rupture of a known earthquake fault, as described 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 (refer to Division of Mines and Geology Special Publication 42)?	☐	☐	☒	☐	1,2,12
2. Strong seismic ground shaking?	☐	☐	☒	☐	1,2,12
3. Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐	1,2,12
4. Landslides?	☐	☐	☒	☐	1,2,12
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐	1,2,3,12
c) Be located on a geologic unit or soil that is unstable, or that will become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐	1,2,12
d) Be located on expansive soil, as defined in Section 1803.5.3 of the California Building Code (2016), creating substantial risks to life or property?	☐	☐	☒	☐	1,2,12
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒	1

As previously discussed in *Section 3.0*, in December 2015, the California Supreme Court issued an opinion in “CBIA vs. BAAQMD” holding that CEQA is primarily concerned with the impacts of a project on the environment and generally does not require agencies to analyze the impact of existing conditions on a project’s future users or residents unless the project risks exacerbating those environmental hazards or risks that already exist. Nevertheless, the City has General Plan policies

(including Policy SSI-1.1, SSI-1.2, and SSI-1.3 that prohibit development on sites with hazardous geologic conditions unless low intensity uses are proposed and measures are implemented to reduce risks to an acceptable level) that address existing conditions affecting a proposed project, which are discussed below as non-CEQA related effects.

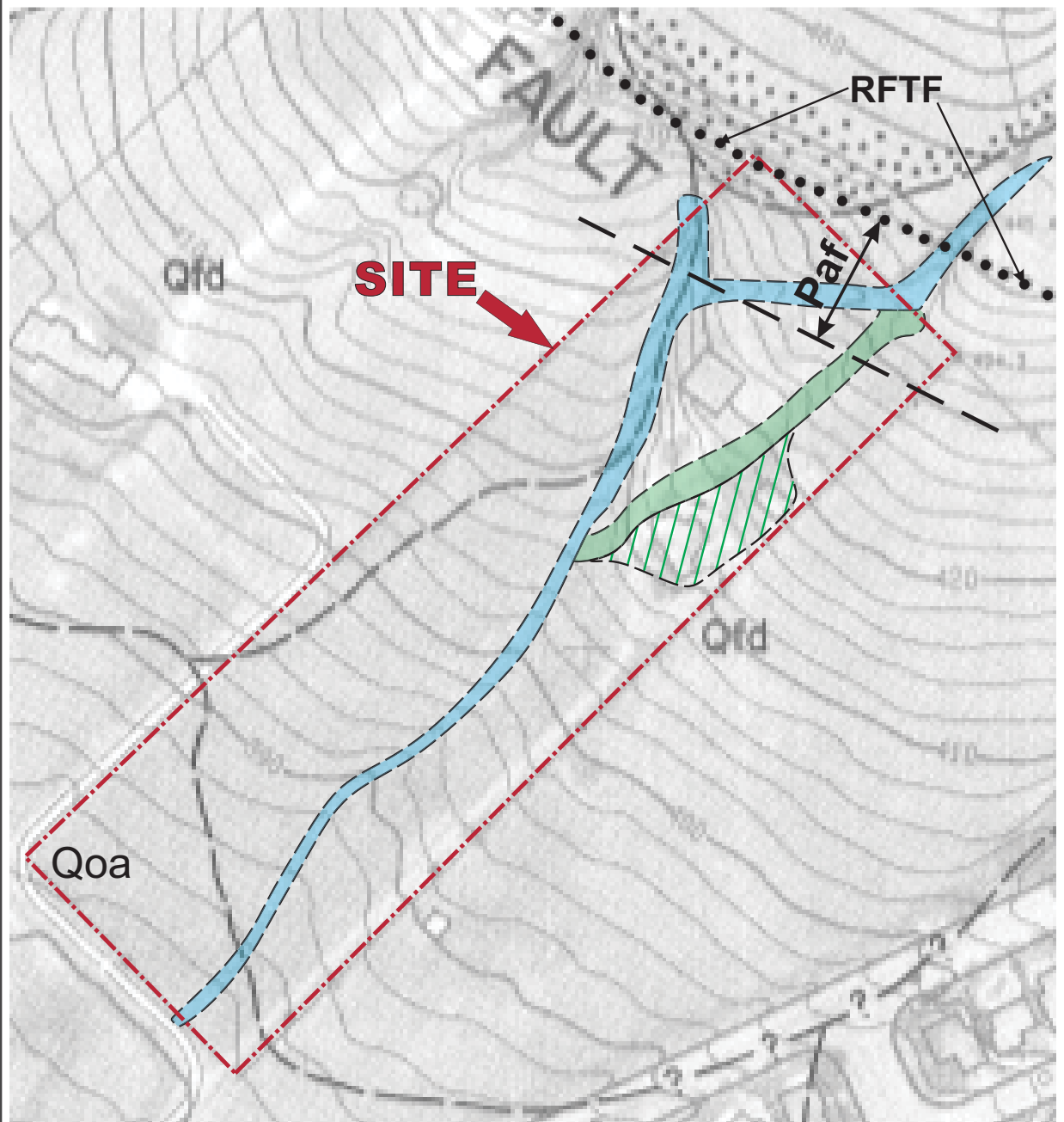
4.6.2 Impact Discussion

- a,c) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: 1) rupture of a known earthquake fault, 2) strong seismic ground shaking, 3) seismic-related ground failure, or 4) landslides? Be located on a geologic unit or soil that is unstable, or that will become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?**

Seismic Hazards

Faults local to Morgan Hill are the Coyote Creek Thrust Fault (CCTF) and the Range Front Thrust Fault (RFTF). The RFTF is projected as intersecting the northeast property corner of the project site and, for this reason, the northeast portion of the site is located within a county-designated Fault Rupture Hazard Zone as well as a City of Morgan Hill Fault Rupture Hazard Zone “Paf” zone, as shown in Figure 4.6-1. The Paf zone is characterized as a Zone of potential permanent ground displacement due to horizontal or vertical movement along the trace of an active or potentially active fault. In general, surface fault rupture involves shearing, differential movement, and ground breakage along the trace of the fault during moderate to strong earthquakes. The resulting movement can severely damage structures and utilities that are located across the fault trace.

Based on review of published sources, historic aerial photos, and a site reconnaissance prepared by *Cornerstone Earth Group*, dated April 23, 2018, there is compelling evidence (i.e., topographic, geologic, as well as soil moisture patterns) of the fault zone trending along the base of the range front. Since the fault zone is concealed beneath colluvial accumulations and alluvial fans along the base of the range front, its precise location cannot be determined without subsurface investigation. Therefore, future development could potentially place structures on a fault. Without knowing the actual location of the fault, building exclusion zones cannot be established for the project site. To place residential units within the Paf zone (refer to Figure 4.6-1), that portion of the site shall be trenched in order to locate the fault zone. This potential geologic hazard is an existing condition that could affect future residents of the site, and as referenced above, this planning issue is outside the ordinary purview of CEQA

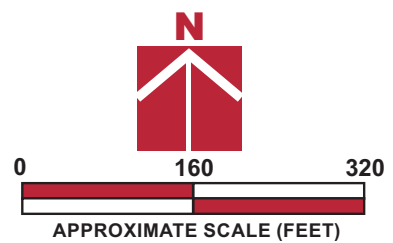


Geologic Units

- Qfd** Alluvial Fan Deposits (Holocene)
- Qoa** Old Alluvium (Late Pleistocene)
- RFTF** Range Front Thrust Fault (concealed beneath alluvial fan deposits). Per PGE, 1991
- Paf** Regulatory Zone: Zone of potential permanent ground displacement

Explanation

-  Active drainage swale
-  Infilled (with fill) former drainage swale
-  Area of previous ground disturbance and surficial fills



Base: Geology, Geologic, and Geotechnical Hazards, City of Morgan Hill, dated December 1991.

Existing Site Geological Conditions

FIGURE 4.6-1

Standard Measure to be Considered at the Time of Future Development

SM GEO-1: As required pursuant to General Plan Policy SSI-1.1, SSI-1.2, and SSI-2.1, future residential development shall prepare a design-level geotechnical investigation which shall include trenching in order to locate the fault zone and establish a “no build” zone. The study shall be completed and submitted to the City for review as part of the tentative subdivision map review process. All recommendations in the design-level geotechnical investigation shall be implemented by the project, which shall include standard engineering and seismic safety design techniques. Future development shall also meet the requirements of applicable Building and Fire Code.

Implementation of all standard measures required during the tentative subdivision stage would reduce potential earthquake hazards to future residential structures to a less than significant level.

Existing seismic conditions discussed above would not be exacerbated by the proposed General Plan Amendment and rezone, such that it would impact (or worsen) off-site seismic conditions. **(Less Than Significant Impact)**

Soil Hazards

The project site is not located within a State-Designated Liquefaction Hazard Zone, therefore the potential for liquefaction is low. There are no open faces with a distance considered susceptible to lateral spreading. Since the project’s potential for liquefaction is low, its potential for lateral spreading is low as well.

The project site itself is not within a regulatory landslide hazard zone. Portions of the adjacent site to the northeast are contained within a county-designated and City-designated landslide hazard zone. Based on the field visit conducted by the geotechnical consultant, no evidence of earthflow or slump type landfills on the adjacent site was observed, and the potential for slope instability on the adjacent site is low.

The drainage on the adjacent property is located within a debris flow hazard zone (Pdf). Though the project site itself is not located in a pdf zone, the runout area emanating from the drainage on the adjacent site is projected toward the project site. For these reasons, it is recommended that a debris flow analysis be performed as part of the future design-level geotechnical study to evaluate the effects of potential debris flow hazard that could affect the future subdivision.

Standard Measure to be Considered at the Time of Future Development

SM GEO-2: As part of the design-level geotechnical investigation required for future development onsite, the investigation shall include a debris flow analysis to evaluate the potential for debris flow. In the event debris flow hazard is identified, engineering measures would be implemented to reduce the hazard. Examples of engineering measures could include a combination of walls (deflection wall or catchment wall) and/or catchment basin and debris grate/catch basin.

Potential engineering measures listed above would not result in improvements offsite that would change the existing geologic conditions offsite, such as grading and/or installing walls uphill from the site. These engineering measures, if recommended during future development, would occur onsite and be constructed with standard engineering techniques.

Existing site conditions described above would not be exacerbated by the proposed General Plan Amendment and rezone such that it would impact (or worsen) offsite landslide conditions. **(Less Than Significant Impact)**

b) Result in substantial soil erosion or the loss of topsoil?

Construction

Future development would disturb the ground, including the drainage feature onsite. The disturbance during construction would expose soils, thereby increasing the potential for wind- or water-related erosion and sedimentation at the site until the completion of construction. As discussed in *Section 4.9 Hydrology and Water Quality*, future development shall be required to implement SM HYD-1.1, which requires preparation of a Stormwater Pollution Prevention Plan (SWPPP) and Erosion Control Plan (ECP) that demonstrates how the project would avoid water quality impacts during construction. For these reasons, the proposed General Plan Amendment and rezone would not result in substantial soil erosion or loss of topsoil during construction period. **(Less Than Significant Impact)**

Post-Construction

As discussed above, the drainage from the northeast property passes through the site and delivers runoff to the northeast property line. In addition, future development onsite would increase impervious surfaces onsite, such as roofs, sidewalks, and pavement, which would increase stormwater runoff onsite. As required by the City, SM HYD-1 shall be implemented, which requires future development to prepare and submit a Storm Drainage Study to the Director of Public Works for review and approval. The study shall determine if the existing drainage facility is adequate to convey runoff volumes. If determined by the project engineer that additional drainage facilities are required to convey stormwater runoff from the adjacent site, measures would be included such as installation of catch basins, and culverts. In addition to a Storm Drainage Study, SM GEO-2 requires a debris flow analysis be prepared to investigate potential engineering measures needed to prevent debris flow hazards. With implementation of these standard measures, the proposed General Plan Amendment and rezone would not result in substantial soil erosion or loss of topsoil. **(Less Than Significant Impact)**

d) Be located on expansive soil, as defined in Section 1803.5.3 of the California Building Code (2007), creating substantial risks to life or property?

Based on soil conditions in the project area, the project is likely to contain highly expansive surficial soils. Expansive soils can undergo significant volume change with changes in moisture content. They shrink and harden when dried and expand and soften when wetted. In addition, the project site may contain undocumented fill from the previous structures onsite.

Standard Measure to be Considered at the Time of Future Development

SM GEO-3: Future development shall implement recommendations in the design-level geotechnical report prepared for the project, which shall include design and engineering measures to avoid and reduce adverse effects of expansive soils to future development onsite. Recommendations to address the undocumented fills shall also be implemented, which shall include removing all fills identified within the building areas and to a lateral distance of at least five feet beyond the building footprint or to a lateral distance equal to fill depth below the perimeter footing, whichever is greater.

The existing soil conditions onsite discussed above would not be exacerbated by the project such that it would impact (or worsen) off-site conditions **(Less Than Significant Impact)**

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater

Future development would connect to existing utilities servicing the area and would not require the use of septic tanks. **(No Impact)**

4.7 GREENHOUSE GAS EMISSIONS

4.7.1 Environmental Checklist

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Checklist Source(s)
Would the project:					
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐	1,7,13
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐	1,7,13

4.7.2 Impact Discussion

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

Construction Emissions

Future development would result in minor increases in greenhouse gases (GHGs) associated with construction activities including operation of construction equipment and emissions from construction workers' personal vehicles traveling to and from the construction site. Construction-related GHG emissions vary depending on the level of activity, length of construction period, types of equipment, etc. Neither the City nor BAAQMD has established a quantitative threshold or standard for determining whether the project's construction-related GHG emissions are significant. Because project construction would be temporary, and would not result in permanent increase in GHG emissions that would interfere with the implementation of Senate Bill 32 (SB 32), the increase in emissions would be less than significant.

Operational Emissions

According to BAAQMD, a project in operation by 2020 would result in significant greenhouse gas impacts if it generates more than 1,100 metric tons (MT) of carbon dioxide (CO₂e) per year, or 4.6 MT CO₂e per capita. BAAQMD sets guidelines and screening levels to determine if a project would contribute to a significant level of GHG emissions. Based on screening levels for the year 2020, the operational GHG screening size for a single-family development project is 56 units, which is a conservative indication whether a project's GHG emissions would be significant. SB 32, requires the California Air Resource Board (CARB) to ensure that statewide GHG emissions are reduced to 40 percent below 1990 levels by 2030. Although BAAQMD has yet to publish a threshold for 2030, for the purpose of this Initial Study, the metric of 660 MT per year (40% reduction of 2020 threshold) is used to gauge the project's GHG impacts in comparison with the adopted 2020 screening threshold of 56 units.

Compared with the screening threshold of 56 units, the proposed project would be have a screening level below the 2020 established target. Future development would be less than half of the screening

threshold. In addition, it is estimated the project would generate approximately 296 MT of CO₂e per year (refer to Appendix B for GHG emissions model), which is below 660 MT per year to meet the state's 2030 emission target. For these reasons, it is reasonable to assume the proposed General Plan Amendment and rezone would not result in significant GHG impacts. **(Less Than Significant Impact)**

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

GHG emissions of future development would be well below BAAQMD's 2020 thresholds and estimated 2030 thresholds. The City of Morgan Hill does not currently have a Climate Action Plan or Greenhouse Gas Reduction Strategy that would be applicable to the project. For these reasons, the proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. **(Less Than Significant Impact)**

4.8 HAZARDS AND HAZARDOUS MATERIALS

4.8.1 Environmental Checklist

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Checklist Source(s)
Would the project:					
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐	1
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?	☐	☐	☐	☒	1,12,14
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒	1
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, will it create a significant hazard to the public or the environment?	☐	☐	☐	☒	1,14
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, will the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒	1
f) For a project within the vicinity of a private airstrip, will the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒	1
g) Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒	1
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☒	☐	15

As previously discussed in *Section 3.0*, in December 2015, the California Supreme Court issued an opinion in “CBIA vs. BAAQMD” holding that CEQA is primarily concerned with the impacts of a project on the environment and generally does not require agencies to analyze the impact of existing

conditions on a project's future users or residents unless the project risks exacerbate those environmental hazards or risks that already exist. Nevertheless, the City has General Plan policies (including Policy SSI-4.16 which regulates new development projects to mitigate previous environmental contaminations onsite) that address existing conditions affecting a proposed project, which are discussed below as non-CEQA related effects.

4.8.2 Impact Discussion

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Future residential development would not include any on-site use of hazardous materials other than small amounts of cleaning supplies. The proper storage and use of these materials would not create a significant hazard to the public. **(Less Than Significant Impact)**

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?

On-Site Soils

The project site is currently undeveloped, however, a review of aerial map shows past agricultural uses onsite and an abandoned water well. As discussed in checklist question d, the project site is not listed as a hazardous materials site pursuant to Government Section Code 65962.5, therefore, the water well was not used to monitor levels of hazardous materials and was most likely associated with the agricultural use of the site. Removal of the abandoned well would be permitted through the Santa Clara Valley Water District (SCVWD). The past agricultural use of the site, however, could have the potential to contain elevated concentrations of metal and organochlorine pesticide residues within the surficial soil onsite. Soil disturbance during construction of future residential development onsite could result in health hazards to construction workers, or to future residence onsite.

Mitigation Measure to be Considered at the Time of Future Development

Impact HAZ-1: The surficial soil onsite may contain elevated levels of organochlorine pesticide. **(Significant Impact)**

Mitigation Measure: Implementation of the following mitigation measures to reduce impacts from contaminated soil (if present) would reduce potentially significant human health hazards to a less than significant level.

MM HAZ-1: As required by General Plan Policy SSI-4.16, during future environmental review when a development project is proposed, a Phase I Environmental Site Assessment (ESA) shall be prepared for the site in order to determine whether there are potential hazards associated with the historic agricultural use of the site. If the Phase I ESA recommends soil testing in order to define contamination, Phase II soil investigations shall be completed to document the concentrations of any hazardous contaminants in the soil.

Recommendations of the Phase II for any required soil remediation shall be implemented by the project. **(Less Than Significant Impact with Mitigation)**

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

The project site is not located within a quarter mile of an existing or proposed school, therefore, future development would not result in hazardous impacts to schools. **(No Impact)**

- 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, will it create a significant hazard to the public or the environment?**

The project site is undeveloped and has no previous uses of concern (e.g. gas station, dry cleaners, former industrial use involving storage and handling of hazardous materials, etc.). The project is not included on a list of hazardous materials site, therefore, the proposed General Plan Amendment and rezone would not place future residential development on a hazardous materials site as defined by Government Section Code Section 65962.5. **(No Impact)**

- e,f,g) **Result in a nearby airport-related safety hazard for people residing or working in the project area? Result in a private airstrip-related safety hazard for people residing or working in the project area? Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan?**

The project site is not located within the Santa Clara County Airport Land Use Commission (ALUC) jurisdiction, nor is it near a private airstrip. The project site is not on one of the City's designated evacuation routes. **(No Impact)**

- h) **Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?**

The project site is not in the City's fire hazard zone.⁷ The site adjacent to the northeast, however, is located within the City's high fire hazard severity zone.⁸ Future development would be constructed in conformance with current building and fire codes, including features that would reduce potential fire hazards. In addition, future development onsite would be served by the City's water distribution system, and would be designed with safe access for emergency response vehicles. For these reasons, the proposed General Plan Amendment and rezone would not significantly expose structures onsite or offsite to wildland fires. **(Less Than Significant Impact)**

⁷ City of Morgan Hill. *City of Morgan Hill Wildland Urban Interface*. March 2009.

⁸ Ibid.

4.9 HYDROLOGY AND WATER QUALITY

4.9.1 Environmental Checklist

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Checklist Source(s)
Would the project:					
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐	1,2,3,16
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there will be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells will drop to a level which will not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐	1,2,17
c) 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 will result in substantial erosion or siltation on-or off-site?	☐	☐	☒	☐	1,2,3,9, 12
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which will result in flooding on-or off-site?	☐	☐	☒	☐	1,2,3,9, 12
e) Create or contribute runoff water which will exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐	1,2,3,9, 12
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐	1,2,3,16
g) Place housing within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒	1,12,18
h) Place within a 100-year flood hazard area structures which will impede or redirect flood flows?	☐	☐	☐	☒	1,12,18
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒	1,19
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒	1,20

4.9.2 Impact Discussion

a,f) Violate any water quality standards or waste discharge requirements? Otherwise substantially degrade water quality?

Construction

Future construction activities would increase the amount of debris onsite and grading activities, which could increase pollutant loads of eroded material in stormwater runoff. Future development would be required to implement standard measures to reduce the potential for substantial adverse impacts to water quality during construction.

Standard Measure to be Considered at the Time of Future Development

SM HYD-1: In accordance with the City of Morgan Hill Standard Conditions of Approval and the General National Pollutant Discharge Elimination System (NPDES) Storm Water Permit for Construction Activities, future development projects will prepare a SWPPP and an ECP. The plans will be submitted to the Director of Public Works and Central Coast Regional Water Quality Control Board (RWQCB) for review and approval, prior to issuance of a building permit. The ECP and SWPPP will demonstrate how the project will eliminate or reduce non-stormwater discharges into the stormwater system, how discharges into the stormwater system will be monitored, and what BMPs will be implemented by the project to avoid water quality impacts during construction (e.g., street sweeping, fiber rolls, temporary cover and/or permanent cover) and post-construction periods. In conformance with existing policies, programs, and with implementation of BMPs, the project will not result in significant impacts to water quality or water discharge requirements. **(Less Than Significant Impact)**

Post-Construction

Future residential development onsite shall conform to the City's Storm Water Management Plan (SWMP) to reduce the discharge of pollutants into waterways and to protect local water quality that could be degraded by stormwater and urban runoff within the corporate limits of Morgan Hill. In order to meet SWMP requirements, the future development would be designed to direct all runoff to on-site landscape areas, which would function as bioretention areas. As discussed in *Section 4.4 Biological Resources* and *4.6 Geology and Soils*, there is an existing drainage feature that passes through the site from the northeastern to southwest. Runoff delivered from the adjacent site shall also be directed properly to be treated onsite before discharge to the storm drain system. Potential drainage features to adequately convey runoff could include catch basins, or culverts, and would be identified and reviewed by the City as part of future tentative subdivision map application for the site. Conformance with the SWMP would minimize the potential for the project to result in post-construction water quality impacts. **(Less Than Significant Impact)**

- b) **Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there will be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells will drop to a level which will not support existing land uses or planned uses for which permits have been granted)?**

The project site is situated over the Llagas Groundwater Subbasin, which drains to the south toward the Pajaro River and eventually Monterey Bay.⁹ The operational groundwater storage capacity for the Llagas groundwater sub-basin ranges from 152,000 to 165,000 acre-feet.¹⁰ The project site is relatively small (approximately 8.34-acres) and does not contribute to substantial groundwater recharge to the Llagas Basin, therefore, future development and a decrease in pervious surfaces would have negligible decrease in groundwater recharge. In addition, groundwater levels in the project area are approximately 50 and 60 feet below ground surface, which is deep enough that future residential development and would not interfere with groundwater flow or expose any aquifers. **(Less Than Significant Impact)**

- c,d,e) **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 will result in substantial erosion or siltation on-or off-site? Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which will result in flooding on-or off-site? Create or contribute runoff water which will exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?**

The project site is currently undeveloped. As discussed above, there is a drainage feature that passes through the site. Runoff from the site currently drains to the drainage feature onsite, which drains offsite to Tennant Creek, and eventually drains to Llagas Creek. A review of historic aerial photographs shows the site was previously developed with a single-family residence. The building was located near the central portion of the site near the drainage. Evidence shows the drainage was previously diverted for the development of the previous single-family residence. The diversion required in-filling of the central portion of the site and diverted the drainage around the previous building structure. The drainage extends from the top of the hill offsite to the east and terminates on the project site. As described in *Section 4.4 Biological Resources*, the portion of the drainage passing through the site does not appear as a potential Category 2 stream but will be evaluated at a project level during project level environmental review. Future development shall conform to the City's SWMP to provide control for stormwater runoff. In addition, the City's Municipal Code Chapter 18.71 also requires projects that create impervious surfaces of 10,000 square feet or more to incorporate permanent stormwater pollution prevention measures. A future subdivision shall be required to provide adequate drainage facilities, such as catch basins and culverts to direct and treat stormwater onsite before discharge to the storm drain system. Conformance with the SWMP and the City's Municipal Code requirements would minimize the potential for the project to result in impacts to soil erosion or siltation and flooding. **(Less Than Significant Impact)**

⁹ Santa Clara Valley Water District. *2016 Groundwater Management Plan*. November 2016.

¹⁰ Ibid.

g,h) Place housing within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map? Place within a 100-year flood hazard area structures which will impede or redirect flood flows?

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) designates the project site as Zone X, which is defined as a 500-year flood zone (0.2 percent annual chance of flood).¹¹ For this reasons, the proposed General Plan Amendment and rezone would not place housing within a flood-hazard area, nor would it impede or redirect 100-year flows. **(No Impact)**

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

Dams located near Morgan Hill include Anderson Dam and Chesbro Dam. According to the Anderson Inundation Maps prepared by SCVWD, the project site is not within a dam failure inundation hazard zone.¹² **(No Impact)**

j) Result in inundation by seiche, tsunami, or mudflow?

Due to the inland location of the project site, it is not located near an enclosed body of water. For these reasons, the project site is not subject to seiche or tsunami.¹³ **(No Impact)**

¹¹ Federal Emergency Management Agency (FEMA). *Flood Insurance Rate Map. Map Number 06085C0463H*. May 2009.

¹² Santa Clara Valley Water District. *Leroy Anderson Dam Flood Inundation Maps*. 2016. Sheet 9.

¹³ Association of Bay Area Governments. "Resilience Program." Accessed: April 13, 2018. Available at: <http://gis.abag.ca.gov/website/Hazards/?hlyr=tsunami>.

4.10 LAND USE AND PLANNING

4.10.1 Environmental Checklist

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Checklist Source(s)
Would the project:					
a) Physically divide an established community?	☐	☐	☒	☐	1,2,3
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐	1,2,3,5,8
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☒	☐	1,2,3,5,8

4.10.2 Impact Discussion

a) Physically divide an established community?

The project site is surrounded by rural residential development with large lots to the north, east, and west. A single-family subdivision is located adjacent to the south/southeast property line. The project site is currently undeveloped and unkempt with weeds.

As further discussed below, the proposed General Plan Amendment and rezone would increase the density onsite and allow a subdivision with approximately 22 dwelling units. Future development of a single-family subdivision would be similar in character to the single-family subdivisions to the south/southeast. Future development may be required to extend either Sorel Way or Saddleback Drive to the north and connect dead ends of the two streets to form a loop. Future rights-of-way on either street would also be required to install sidewalks and landscape strips. These road improvements would improve the connectivity of residential development in the area. For these reasons, the proposed General Plan Amendment and rezone would not divide an established community. **(Less Than Significant Impact)**

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect?

The project site is currently designated as *Residential Estate* (one du/ac) with a zoning of RE- 1 acre. Both the *Residential Estate* designation and RE-1 acre zoning are intended to promote and encourage a suitable environment for families living on relatively large parcels of land.

The proposed General Plan Amendment and rezone would change the General Plan land use designation and zoning onsite to Residential Detached Low (four du/ac) and RDL-12,000 (12,000 square-foot lots), respectively.

As described in *Section 3.0 Project Description*, the density proposed would allow a maximum of 30 dwelling units, however, given the roads, right-of-way, and setback requirements for a typical subdivision, it is unlikely future development would be developed at the maximum density allowed. Since development is not proposed at this time, this Initial Study assumes development of 75 percent of the site, which results in approximately 22 dwelling units. Future use onsite would continue to be residential. The potential environmental effects of the proposed General Plan Amendment and rezone are analyzed throughout this Initial Study. Future development would comply with City and other applicable land use policies (e.g., SCVHP), and would not conflict with regulations adopted for avoiding or mitigating an environmental effect. **(Less Than Significant Impact)**

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

The project site is located within an area designated as *Urban-Suburban* in accordance with the SCVHP. No sensitive species or habitat types are known to be present on the project site, and the project would not directly impact any of the covered species in the Habitat Plan. As discussed in *Section 4.4, Biological Resources*, future development would be subject to all applicable SCVHP conditions and fees required to mitigate its impacts to a less than significant level. **(Less Than Significant Impact)**

4.11 MINERAL RESOURCES

4.11.1 Environmental Checklist

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Checklist Source(s)
Would the project:					
a) Result in the loss of availability of a known mineral resource that will be of value to the region and the residents of the state?	☐	☐	☐	☒	1,2
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?	☐	☐	☐	☒	1,2

4.11.2 Impact Discussion

- a.b) Result in the loss of availability of a known mineral resource that will be of value to the region and the residents of the state? 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?**

The project site is located in a suburban area in the City of Morgan Hill. There are no known mineral resources on or adjacent to the project site, and no mineral recovery sites are present in the project vicinity. For these reasons, the proposed project would not result in impacts to known mineral resources. **(No Impact)**

4.12 NOISE AND VIBRATION

4.12.1 Environmental Checklist

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Checklist Source(s)
Would the project result in:					
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐	1,2,3
b) Exposure of persons to, or generation of, excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐	1,2,3
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐	1,2,3,21
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐	1,2,3
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, will the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒	1
f) For a project within the vicinity of a private airstrip, will the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒	1

As previously discussed in *Section 3.0*, in December 2015, the California Supreme Court issued an opinion in “CBIA vs. BAAQMD” holding that CEQA is primarily concerned with the impacts of a project on the environment and generally does not require agencies to analyze the impact of existing conditions on a project’s future users or residents unless the project risks exacerbate those environmental hazards or risks that already exist. Nevertheless, the City has General Plan policies (including Policy SSI-8.1 that requires new development projects to be designed and constructed to meet acceptable exterior and interior noise levels) that address existing conditions affecting a proposed project, which are discussed below as non-CEQA related effects.

4.12.2 Impact Discussion

- a) **Result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?**

Impacts from the Project

Based on the General Plan land use compatibility guidelines for community noise environments, low density single-family residential development is allowed in areas with ambient noise levels up to 60 A-weighted decibel (dBA) community noise equivalent level (CNEL), and is conditionally allowed in areas with noise levels up to 70 dBA CNEL. Noise levels in the project area are expected to be at or below 60 dBA CNEL in year 2035.¹⁴ Daily trips estimated for the development of approximately 22 dwelling units would be 208 trips. The increase in 208 daily trips would not be substantial and would not result in a substantial (i.e., three dBA) increase in ambient noise levels in the project area. **(Less Than Significant Impact)**

Impacts to the Project (Non-CEQA Related Effects)

As discussed above, the California Supreme Court in a December 2015 opinion (*BIA v. BAAQMD*) confirmed CEQA is concerned with the impacts of a project on the environment, not the effects the existing environment may have on a project; nevertheless the City has policies that address existing conditions (e.g. noise) affecting a proposed project.

The City of Morgan Hill requires interior noise levels within new residential units not to exceed 45 dBA day-night average sound level (L_{dn}). Typically, standard residential construction provides approximately 15 dBA of exterior to interior noise reduction, assuming the windows are partially open for ventilation. Since the future noise level would not exceed 60 dBA CNEL, standard construction techniques would ensure that noise levels within future residences are below 45 dBA L_{dn} .

- b) **Result in exposure of persons to, or generation of, excessive groundborne vibration or groundborne noise levels?**

Future construction, including grading and excavation, would require use of vibration-generating heavy equipment. Future development onsite would be subject to all City construction standards and requirements to ensure construction-related vibration is not substantial. In addition, future residential use is not considered a source of groundborne vibration. For these reasons, the proposed General Plan Amendment and rezone would not expose persons to excessive groundborne vibration and groundborne noise levels. **(Less Than Significant Impact)**

¹⁴ City of Morgan Hill. *Morgan Hill 2035 General Plan*. July 27, 2016. Figure SSI-7.

c) Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Ambient noise levels in the project area are primarily due to vehicular traffic on surrounding local roadways. The noise level in the project area is estimated to be less than 60 dBA CNEL. Future development of approximately 22 dwelling units would result in additional vehicle trips in the project area. As discussed Section 4.16 Traffic/Transportation, it is estimated the future development would generate about 208 daily trips. The slight increase in vehicle trips compared to current daily volumes surrounding streets would not significantly increase ambient noise level in the area.

Mechanical equipment, such as air conditioning units of future dwelling units, would be appropriately sited and designed to meet the City's noise requirements of 60 dBA L_{dn} for residential exterior noise level. Prior to issuance of a building permit for future mechanical equipment onsite, an acoustical study would be required to demonstrate that noise generation from stationary equipment would conform to the City's requirements. **(Less Than Significant Impact)**

d) Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Typically, small residential, commercial, or office construction projects do not generate significant noise and vibration when standard construction noise control measures are enforced at the project site and when the duration of the noise generating construction period is limited to one construction season (typically one year) or less.

Standard Measure to be Considered at the Time of Future Development

SM NOI-1: The following standard construction noise suppression measures would be implemented during the construction activities to reduce noise levels:

- Construction activities shall be limited to the hours between 7:00 a.m. and 8:00 p.m., Monday through Friday, and between the hours of 9:00 a.m. and 6:00 p.m. on Saturdays. No construction activities should occur on Sundays or federal holidays (Consistent with Section 8.28.040 of the Morgan Hill Municipal Code).
- Equip all internal combustion engine driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.
- Locate stationary noise generating equipment (e.g. rock crushers, compressors) as far as possible from adjacent residential receptors.
- Acoustically shield stationary equipment located near residential receptors with temporary noise barriers or recycled demolition materials.
- Utilize "quiet" air compressors and other stationary noise sources where technology exists.
- The contractor shall prepare a detailed construction plan identifying the schedule for major noise-generating construction activities. The construction plan shall identify a procedure for

coordination with adjacent residential land uses so that construction activities can be scheduled to minimize noise disturbance.

- Designate a "disturbance coordinator" who would be responsible for responding to any complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g., bad muffler, etc.) and will require that reasonable measures be implemented to correct the problem.

Since construction activities are temporary, implementation of these measures would reduce construction noise levels, and would not result in a significant construction noise impact to nearby receptors. **(Less than Significant Impact)**

e,f) Expose people residing or working in the project area to excessive noise levels? Expose people residing or working in the project area to excessive noise levels?

The project is located approximately six miles north of the South County Airport. There are no private airstrips in the site vicinity. The project site is not within the noise contours of the airport, therefore there would be no noise impacts to future residents resulting from airport-related noise.

(No Impact)

4.13 POPULATION AND HOUSING

4.13.1 Environmental Checklist

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Checklist Source(s)
Would the project:					
a) Induce substantial 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)?	☐	☐	☒	☐	1,2,3,10,22,33
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒	1
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒	1

4.13.2 Setting

Based on California Department of Finance population estimates, Morgan Hill's total population for 2018 was 44,513 in January 2018 and the average persons per household was an estimated 3.15.¹⁵. The Association of Bay Area Governments (ABAG) projects the population for Morgan Hill to be 46,100 in 2030.¹⁶

As part of the General Plan, residential development within the City of Morgan Hill is controlled by the Residential Development Control System (RDCS). Morgan Hill's RDCS process meters the amount of residential development occurring within the City in any given year, typically up to 215 units annually, to ensure the rate of development does not outstrip the availability of public services and infrastructure to serve the City's residents. RDCS establishes a population ceiling of 58,200 for the City as of January 1, 2035.

4.13.3 Impact Discussion

a) **Induce substantial 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)?**

The proposed General Plan Amendment and rezone would allow development of approximately 22 dwelling units, assuming development of a typical single-family subdivision on 12,000-square foot lots. Assuming 3.15 persons per household for each residential unit, the project would generate approximately 69 new residents. Future development would require an award of RDCS allotments

¹⁵ California Department of Finance. "E-5: City/County Population and Housing Estimates – January 1, 2018." Accessed: May 29, 2018. Available at: <http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-5/>.

¹⁶ Association of Bay Area Governments. *Projections 2013*. 2013.

prior to processing entitlements for a project at the site. Since the purpose of the RDSC is to control population growth in the area, the proposed General Plan Amendment and rezone would not result in population growth that has not been accounted for in the City's General Plan. **(Less than Significant Impact)**

b,c) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

The project site is currently undeveloped, therefore, the proposed General Plan Amendment and rezone would not displace existing housing or people. **(No Impact)**

4.14 PUBLIC SERVICES

4.14.1 Environmental Checklist

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Checklist Source(s)
Would the project					
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the 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:					
- Fire Protection?	☐	☐	☒	☐	1,2,10,15,23
- Police Protection?	☐	☐	☒	☐	1,2,10,24,25
- Schools?	☐	☐	☒	☐	1,2,10,26,27
- Parks?	☐	☐	☒	☐	1,2,3,10,22
- Other Public Facilities?	☐	☐	☒	☐	1,2,10

4.14.2 Impact Discussion

- a) **Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the 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 public services?**

Fire and Police Protection Services

The City of Morgan Hill Fire Department (MHFD) provides fire prevention, fire suppression, and emergency medical services. The MHFD contracts with the California Department of Forestry and Fire Protection (CalFire) for additional personnel to manage the MHFD and provide fire and emergency medical services. The City is served by three stations. The nearest is the Dunne Hill Fire Station, located at 2100 East Dunne Avenue (approximately 0.8 mile southwest of the site). In general, the response time meets the current standard of eight minutes 95 percent of the time. The response times are typically within one to two percent of this standard.¹⁷

¹⁷ Dwight Good, Fire Marshal, Cal Fire. E-mail: RE: Fire Department Response Times. November 10, 2014.

Police service is provided to the project site by the City of Morgan Hill Police Department (MHPD). The MHPD facility is located at 16200 Vineyard Boulevard, approximately 3.8 miles southwest of the project site. The MHPD employs 39 sworn officers.¹⁸ The Police Department's goal is to respond to Priority One calls within five minutes and Priority Two calls within eight minutes.¹⁹ Priority One calls are reports of a crime in progress or where an injury has occurred and Priority Two calls are reports of felonies and other major calls.

As discussed in *Section 4.8 Hazards and Hazardous Materials*, the project site is not located within a fire hazard zone, however, is adjacent to a City-designated high fire hazard zone to the northeast. Future development onsite would incrementally increase the demand for fire and police protection services, however, would be constructed in accordance with current building and fire codes, served by the City's water distribution system, and designed with safe access for emergency response vehicles. Future development onsite would not by itself preclude MHFD or MHPD from meeting their service goals and would not require the construction of new or expanded fire or police facilities. For these reasons, the proposed project would not result in significant impacts to fire and police protection services. **(Less Than Significant Impact)**

Schools

The project site is located within the Morgan Hill Unified School District. The District has eight elementary schools, two middle schools, two comprehensive high schools, one continuation high school, and a community adult school, as well as a home schooling program. Future residents of the project site would be served by Jackson Academy (grades k-8 approximately, 0.6 miles south of the site), Martin Murphy Middle School (grades 6-8, approximately 13 miles north of the site), and Live Oak High School (grades 9-12, approximately 2.4 miles northwest of the site).²⁰

Future development would not result in a substantial increase in students for the Morgan Hill Unified School District. Using the Morgan Hill Unified School District's student generation rates per unit for housing, the addition of 22 single family residences would generate approximately 11 students.²¹ Future development onsite would be required to pay a school impact fee prior to issuance of a building permit, in accordance with state law (California Government Code Section 65996). Fees are assessed based upon the proposed square footage of the new development., therefore, implementation of the proposed project would not substantially degrade existing school facilities nor result in the need for new permanent facilities to be constructed, and impacts from the project would be less than significant. **(Less Than Significant Impact)**

Parks

The City owns 70 acres of developed park land (including the Civic Center, assessment district parks and city owned trails) and 59 acres of recreation facilities. Included within this inventory, the City maintains two community parks, five neighborhood parks, two neighborhood/school parks, and 15

¹⁸ City of Morgan Hill. "Police." Available at: <http://www.morgan-hill.ca.gov/index.aspx?nid=129>. Accessed February 28, 2017.

¹⁹ City of Morgan Hill. *Operating and CIP Budget, FY 13-14. Police Field Operations, Performance Measures*. 2013.

²⁰ Morgan Hill Unified School District. "Schools." Accessed: April 18, 2018. Available at: <http://www.schoolworksgis.com/SL/MHUSD/schoollocator.html>.

²¹ Morgan Hill Unified School District. *Demographic Study 2014-2015*. March 2015

The estimated student generation rate of 0.465 for new residences within the Morgan Hill Unified School District.

mini-parks, in addition to its public trail system and open space. The City also owns and operates special use facilities for recreational purposes. These facilities include the Morgan Hill Aquatics Center, Community and Cultural Center, the Centennial Recreation Center, the 38-acre Outdoor Sports Center, and Skateboard/BMX park.

General Plan Policies HC-3.3 and HC-3.29 and a park land dedication/park land in-lieu fee ordinance (Municipal Code Chapter 17.28) requires park land dedication or in-lieu fees for residential developments. Future development could generate approximately 69 additional park users, and would not result in the need for additional parklands in the City. Future development would be subject to the City's in-lieu fees requirement for residential developments, which would avoid significant impacts to the City's park facilities. **(Less Than Significant Impact)**

4.15 RECREATION

4.15.1 Environmental Checklist

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Checklist Source(s)
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 will occur or be accelerated?	☐	☐	☒	☐	1,2,3,10, 22
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☒	☐	1,2,3,10, 22

4.15.2 Impact Discussion

- a,b) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility will occur or be accelerated? Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?**

As discussed in *Section 4.14 Public Services* the number of residents using area parks would be increase by approximately 69 residents. A fee paid in-lieu of parkland dedication would be appropriate to mitigate the impact on the City's parks and recreational facilities and to provide for the necessary parkland to serve the increased population. The in-lieu fees paid by a future project would be used by the City to acquire and/or develop new parkland and/or amenities, and would therefore mitigate the impacts from the new residential development. **(Less than Significant Impact)**

4.16 TRANSPORTATION/TRAFFIC

4.16.1 Environmental Checklist

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Checklist Source(s)
Would the project:					
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☒	☐	1,2,3,21,28
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐	1,2,21,28
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒	1
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible land uses (e.g., farm equipment)?	☐	☐	☐	☒	1,2,3
e) Result in inadequate emergency access?	☐	☐	☐	☒	1,2,3
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☒	☐	1,2

4.16.2 Impact Discussion

a,b) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit? Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

According to the City of Morgan Hill and Santa Clara Valley Transportation Authority Transportation Impact Analysis Guidelines, a transportation impact analysis is needed when a project generates 100 or more new peak hour (AM and/or PM peak hour) trips. Based on the trip generation rates for single-family units, 22 dwelling units would generate approximately 17 AM peak hour trips (four inbound, 13 outbound) and 22 PM peak hour trips (14 inbound, eight outbound).²² The proposed General Plan Amendment and rezone would not be in conflict with an adopted plan, ordinance, or policy related to the effectiveness of the circulation system. **(Less Than Significant Impact)**

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

The proposed site is not within an airport safety zone. The proposed General Plan Amendment and rezone would not result in any hazards to air traffic or changes to air traffic patterns. **(No Impact)**

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible land uses (e.g., farm equipment)?

There is no development proposed at this time. Future development would be reviewed for consistency with the City's design standards during the planning permitting phase, including pedestrian, bicycle, and vehicular access, circulation and safety. The proposed General Plan Amendment and rezone would not increase hazards or create incompatible land uses. **(Less Than Significant Impact)**

e) Result in inadequate emergency access?

Future development onsite would be reviewed and approved by the MHFD and Department of Public Works to ensure adequate emergency access. **(Less Than Significant Impact)**

f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

There is no development proposed at this time. Future development would be reviewed for consistency with City's General Plan policies and design guidelines during the planning permit phase. The proposed General Plan Amendment and rezone would not conflict with existing or planned multimodal transportation facilities. **(Less Than Significant Impact)**

²² Institute of Transportation Engineers. *Trip Generation Manual, 10th Edition*. Land Use (210). September 2017.

4.17 UTILITIES AND SERVICE SYSTEMS

4.17.1 Environmental Checklist

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Checklist Source(s)
Would the project:					
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☒	☐	1,2,10,16
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐	1,2,10,29,20
c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐	1,2,12
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☒	☐	1,2,10,30
e) Result in a determination by the wastewater treatment provider which 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?	☐	☐	☒	☐	1,2,10
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐	1,2,10,31,32
g) Comply with federal, state, and local statutes and regulations related to solid waste.	☐	☐	☒	☐	1,2,10,31,32

4.17.2 Impact Discussion

a) **Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?**

The South County Regional Wastewater Authority (SCRWA) Wastewater Treatment Plant provides service to the cities of Morgan Hill and Gilroy. Wastewater from the project site would be transported through existing sanitary sewer pipelines in the vicinity to the SCRWA for treatment. The treatment plant has capacity to treat an average dry weather flow (ADWF) of 8.5 million gallons per day (mgd) and is currently permitted by the RWQCB, Central Coast Region to treat up to 8.5

mgd.²³ The project site is currently undeveloped. Development of approximately 22 single-family units onsite would generate approximately 1.98 million gallons per year, or 0.005 mgd.²⁴ While future residential development would increase wastewater generation onsite, the proposed General Plan Amendment and rezone would not cause an exceedance of the RWQCB treatment requirements. **(Less Than Significant Impact)**

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Both the cities of Gilroy and Morgan Hill have growth control systems in place which limit unexpected increases in sewage generation. Development of approximately 22 single-family units onsite would generate approximately 2.3 million gallons per year, or 0.006 mgd.²⁵ It is anticipated the addition of 22 new single-family units would not substantially increase water or wastewater volumes such that new or expanded facilities would be required.²⁶ The proposed General Plan Amendment and rezone would not have a significant impact related to the provision of water and sewer service for the project. **(Less Than Significant Impact)**

c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

As discussed in *Section 4.6 Geology and Soils* and *Section 4.9 Hydrology and Water Quality*, there is an existing drainage feature from uphill that passes through the site from the northeast to the southwest. Future development of the site would be subject to the City's SWMP and be designed to direct all runoff onsite to a bioretention area. Measures to direct stormwater runoff could include catch basins, or culverts. These stormwater facilities would be constructed onsite and in accordance with City's SWMP requirement, which would not cause significant environmental effects. **(Less Than Significant Impact)**

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

As discussed in *Section 4.13 Population and Housing*, the RDCS regulates population growth through the provision of residential building allotments. By metering residential growth, the RDCS is a tool for the City to ensure infrastructure, including new water supply facilities have adequate capacity before development is approved. RDCS competition standards give points to projects that do not require off-site extension of utility lines and/or for projects that do not require water improvements beyond minimum requirements. Future development of approximately 22 dwelling units onsite, if is granted the allotments by RDCS, would not substantially increase water demand

²³ California Regional Water Quality Control Board. *Waste Discharge Requirements, South County Regional Wastewater Authority Wastewater Treatment and Reclamation Facility, Santa Clara County (NPDES Permit No. CA0049964) – Order No. R3-2010-0009*. April 2010.

²⁴ Wastewater generation is approximately equal to 85 percent of a project's water demand.

²⁵ California Air Pollution Control Officers Association (CAPCOA). *California Emissions Estimator Model User's Guide, Version 2016.2*. September 2016. Appendix D, Table 9.1. Residential: 65,154 gallons/unit/year (indoor) and 41,075 gallons/unit/year (outdoor)

²⁶ Ha, Charlie. Supervising Civil Engineer, City of Morgan Hill Community Development – Engineering Division. Personal Communication.

onsite, and would not result in significant impacts to water supplies. **(Less Than Significant Impact)**

- e) **Result in a determination by the wastewater treatment provider which 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?**

As discussed above, the RDCS is a tool used to determine if the City's existing infrastructure, including wastewater treatment, has the capacity to support a proposed development. The project site must be awarded allotments through the RDCS process prior to receiving project entitlements. The SCRWA would determine adequate capacity to serve the development during the entitlement stage of the project. **(Less Than Significant Impact)**

- f,g) **Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs? Complies with federal, state, and local statutes and regulations related to solid waste?**

The City of Morgan Hill has contracted with Recology South Valley to provide solid waste disposal and recycling service within the City. Recology South Valley will dispose of solid waste from the City at Johnson Canyon Sanitary Landfill which has a projected permitted capacity of approximately 13,800,000 cubic yards and is expected to remain open through 2040.²⁷ It is estimated the addition of 22 new single-family dwelling units would generate an additional 132 pounds (or 0.26 cubic yards) of solid waste per day.²⁸ Future development would be served by a landfill with adequate capacity to serve the project site. **(Less Than Significant Impact)**

²⁷ California Integrated Waste Management Board. "Facility/Site Summary Details: Johnson Canyon Sanitary Landfill." 2008. Accessed April 25, 2018. Available at: <http://www.calrecycle.ca.gov/SWFacilities/Directory/27-AA-0005/Detail/>.

²⁸ Sources: 1) CalRecycle. "California's 2016 Per Capita Disposal Rate Estimate." Accessed April 25, 2018. Available at: <http://www.calrecycle.ca.gov/LGCentral/GoalMeasure/DisposalRate/MostRecent/default.htm>. Per resident disposal rate of 6.0 pounds/residents/day. 2) A common conversion factor used for municipal solid waste as it is collected and transported in compaction vehicles is 500 pounds/cubic yard (Lacaze, Skip. Personal communication with City of San José, Department of Environmental Services. June 3, 2013.

4.18 MANDATORY FINDINGS OF SIGNIFICANCE

4.18.1 Environmental Checklist

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Checklist Source(s)
a) Does the project have the potential to 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, 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?	☐	☒	☐	☐	1-33
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)?	☐	☒	☐	☐	1-33
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐	1-33

4.18.2 Impact Discussion

- a) Does the project have the potential to 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, 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?**

As discussed in the individual sections, there is no development proposed with the General Plan Amendment and rezone; therefore, the project would not degrade the quality of the environment with the implementation of measures in accordance with the City’s General Plan and Municipal Code and other applicable plans, policies, regulation, and ordinances. Subsequent project specific environmental review will be required for future development; however, this Initial Study does contemplate a maximum site development of 22 units.

As discussed in *Section 4.4 Biological Resources*, the project is located in an environment with rural and suburban development. The project site is located within the Habitat Plan study area and has a land cover type *Rural Residential*. The project site contains a drainage feature that does not appear as a Category Two Stream, or habitat that sustains sensitive species. Future development would be

subject to all applicable Habitat Plan conditions and fees to mitigate its impacts to biological resources to a less than significant level.

As discussed in *Section 4.5 Cultural Resources*, the project site has low potential for buried prehistoric archaeological resources and paleontological onsite. The project site is undeveloped and does not contain historic resources. Implementation of standard measures in accordance with the City's requirement would ensure future development impacts to cultural resources would be less than significant.

As discussed in *Section 4.6 Geology and Soils*, the site is located in a seismically active region with geologic conditions such as presence of a potential fault, expansive soils, undocumented fill, and potential debris flow hazard. Future development would be required to prepare a design-specific geotechnical study and implement all recommendations required to reduce all potential geologic hazards.

As discussed in *Section 4.8 Hazards and Hazardous Materials*, pesticides may be present in shallow soils onsite from previous agricultural uses. Site investigation prior to tentative subdivision map approval and remediation, if any required, in accordance with applicable state and local regulations would ensure less than significant hazardous materials impacts.

As discussed in *Section 4.9 Hydrology and Water Quality*, there is an existing drainage feature that passes through the site. Construction activities during development onsite could result in temporary impacts to surface water quality. Development of the site would include grading and permanently change the drainage feature onsite. Future development would be subject to the City's SWMP and Municipal Code requirements to control stormwater runoff during the construction period and incorporate permanent post-construction stormwater pollution prevention measures.

As discussed in *Section 4.12 Noise and Vibration*, the project site is surrounded by rural and suburban residential development, and year 2035 noise levels in the project area are estimated to be at or below 60 dBA CNEL. Future development would not create significant operational noise levels (from mechanical equipment and traffic noise) in the area that would exceed the noise level standard of 60 dBA CNEL for surrounding residential development. Construction levels could substantially increase short term ambient noise levels in the project area. Implementation of standard measures in accordance with the City's General Plan policies and Municipal Code would ensure noise impacts related to future development onsite would be less than significant.

As discussed in *Section 4.14 Public Services*, development of the site would incrementally increase demand on local fire and police protection services, schools, and parks in the project area. Implementation of standard measures in accordance with the General Plan and Government Code would reduce the impacts to public services to a less than significant level. **(Less Than Significant Impact with Mitigation Incorporated)**

b) Does the project have impacts that are individually limited, but cumulatively considerable?

Pursuant to Section 15065(a)(3) of the CEQA Guidelines, a lead agency shall find that a project may have a significant impact on the environment where there is substantial evidence that the project has potential environmental effects "that are individually limited, but cumulatively considerable." As

defined in Section 15065(a)(3) of the CEQA Guidelines, cumulatively considerable means “that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.”

Because criteria air pollutant and GHG gas emissions would contribute to regional and global emissions of such pollutants, the identified thresholds developed by BAAQMD was designed such that a project-level impact would also be a cumulatively considerable impact. The proposed General Plan Amendment and rezone would not result in significant emissions of criteria air pollutants and GHG emissions and, therefore, would not make a substantial contribution to cumulative air quality or GHG emissions impacts.

As discussed in *Section 4.3 Air Quality*, no development is proposed with the General Plan Amendment and rezone; therefore, the project would not generate significant dust and other particulate matter emissions with the implementation of BAAQMD standard measures. Future development, i.e. residential subdivision, would be required to prepare an air quality assessment to identify and mitigate any air quality impacts from Toxic Air Contaminants (TAC) emitted during construction. Implementation of mitigation measures recommended in the air quality assessment would reduce short-term construction impacts from TACs to a less than significant level, including any potential cumulative TAC impacts when considering the combined effect of the project with surrounding TAC sources.

As discussed in *Section 4.16 Transportation/Traffic*, future development onsite would generate fewer than 100 AM and/or PM peak hour trips and there are no other developments in the vicinity that would generate substantial vehicle trips, therefore, no cumulative impact on the roadway network is anticipated.

With implementation of mitigation measures and standard measures in accordance with the City’s General Plan and Municipal Code, and other applicable plans, policies, regulation, and ordinances, future development allowed with the General Plan Amendment and rezone would not result in significant geology and soils, hazards and hazardous materials, hydrology and water quality, or public services impacts and would not contribute to cumulative impacts to these resources. The project would not impact agricultural and forestry resources or mineral resources, therefore, it would not contribute to a significant cumulative impact on these resources.

The project site is in a rural/suburban area and, given its limited size, development at the site would not contribute to a cumulative impact on aesthetics, and population and housing with the implementation of General Plan policies, Municipal Code requirements, residential design guidelines, and unit allotments from RDCS.

The adjacent property to the northeast (Kruse Ranch property) submitted an application to the City to subdivide and construct up to three single-family residences. Due to the limited number and size of developments proposed in the vicinity of the site, in the event development of the adjacent site coincides with future development allowed with the proposed General Plan Amendment and rezone, implementation of mitigation measures and standard measures in conformance with applicable City’s General Plan policies and Municipal Code requirements, and other applicable plans, policies, regulation, and ordinances would not result in cumulative impacts to the environment.

Another property in proximity with an application submitted to the City is located at 17200 Kruse Ranch Lane (located adjacent above the Kruse Ranch property). This project is the transfer of residential development credits in order to create three open space easements to the site. This project if approved, would keep the site undeveloped as is, and would not result in any new development or cumulative impacts, when combined with the proposed project. The development credit would be transferred to another site in the City, the location of which is unknown at this time. **(Less Than Significant Cumulative Impact with Mitigation Incorporated)**

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

Consistent with Section 15065(a)(4) of the CEQA Guidelines, a lead agency shall find that a project may have a significant effect on the environment where there is substantial evidence that the project has the potential to cause substantial adverse effects on human beings, either directly or indirectly. Pursuant to this standard, a change to the physical environment that might otherwise be minor must be treated as significant if people would be significantly affected. This factor relates to adverse changes to the environment of human beings generally, and not to effects on particular individuals. While changes to the environment that could indirectly affect human beings would be represented by all of the designated CEQA issue areas, those that could directly affect human beings include air quality, hazardous materials, and noise. Implementation of the Standard Permit Conditions and mitigation measures, and adherence to General Plan, City Code, and state and federal regulations described in these sections of the report, would avoid significant impacts. No other direct or indirect adverse effects on human beings have been identified. **(Less than Significant Impact with Mitigation Incorporated)**

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SECTION 6.0 LEAD AGENCY AND CONSULTANTS

6.1 LEAD AGENCY

City of Morgan Hill

Community Development Department
Tiffany Brown, Associate Planner

6.2 CONSULTANTS

David J. Powers & Associates, Inc.

Environmental Consultants and Planners
Akoni Danielsen, Principal Project Manager
Amy Wang, Associate Project Manager

Cornerstone Earth Group

Geotechnical Consultants
Barry Butler, Senior Principal Engineer
Andre E. Ashour, Project Engineer
Craig Harwood, Project Engineering Geologist

Basin Research Associates

Archaeological Consultants
Colin I. Busby, Principal

ATTACHMENT 2

CALEEMOD MODELING RESULTS

Serene Hills Residential Project Custom Report

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8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Serene Hills Residential Project
Construction Start Date	8/1/2024
Operational Year	2027
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	1.80
Precipitation (days)	32.8
Location	37.141826655043374, -121.61061255115244
County	Santa Clara
City	Morgan Hill
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1935
EDFZ	1
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.21

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
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Single Family Housing	7.00	Dwelling Unit	8.37	32,757	319,857	—	21.0	—
Road Widening	0.15	Mile	2.30	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.78	4.85	44.9	46.0	0.07	1.96	20.0	22.0	1.81	10.2	12.0	—	7,596	7,596	0.34	0.19	2.47	7,664
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.40	3.70	36.0	33.6	0.05	1.60	19.8	21.4	1.47	10.1	11.6	—	5,438	5,438	0.22	0.05	0.02	5,458
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.74	1.85	13.5	14.5	0.03	0.56	5.93	6.41	0.52	3.04	3.48	—	2,776	2,776	0.11	0.04	0.17	2,790
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.32	0.34	2.47	2.65	< 0.005	0.10	1.08	1.17	0.09	0.55	0.63	—	460	460	0.02	0.01	0.03	462

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	5.78	4.85	44.9	46.0	0.07	1.96	20.0	22.0	1.81	10.2	12.0	—	7,353	7,353	0.29	0.08	1.74	7,387
2025	4.00	3.37	31.7	30.9	0.07	1.37	19.8	21.2	1.26	10.1	11.4	—	7,596	7,596	0.34	0.19	2.47	7,664
2026	1.44	2.16	10.7	14.2	0.03	0.40	0.03	0.43	0.37	0.01	0.38	—	2,576	2,576	0.10	0.02	0.14	2,586
2027	1.38	2.11	10.3	14.2	0.03	0.36	0.03	0.39	0.33	0.01	0.33	—	2,575	2,575	0.10	0.02	0.13	2,585
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	4.40	3.70	36.0	33.6	0.05	1.60	19.8	21.4	1.47	10.1	11.6	—	5,438	5,438	0.22	0.05	0.02	5,458
2025	4.00	3.37	31.7	30.8	0.05	1.37	19.8	21.2	1.26	10.1	11.4	—	5,434	5,434	0.22	0.05	0.02	5,454
2026	1.44	2.16	10.7	14.2	0.03	0.40	0.03	0.43	0.37	0.01	0.38	—	2,574	2,574	0.10	0.02	< 0.005	2,584
2027	1.38	2.11	10.3	14.2	0.03	0.36	0.03	0.39	0.33	0.01	0.33	—	2,573	2,573	0.10	0.02	< 0.005	2,583
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	1.33	1.12	10.8	10.1	0.01	0.48	5.93	6.41	0.44	3.04	3.48	—	1,639	1,639	0.07	0.01	0.09	1,645
2025	1.74	1.85	13.5	14.5	0.03	0.56	4.64	5.20	0.52	2.28	2.80	—	2,776	2,776	0.11	0.04	0.17	2,790
2026	1.03	1.54	7.67	10.1	0.02	0.29	0.02	0.31	0.26	0.01	0.27	—	1,839	1,839	0.07	0.02	0.04	1,846
2027	0.27	0.43	1.97	2.72	< 0.005	0.07	0.01	0.07	0.06	< 0.005	0.06	—	492	492	0.02	< 0.005	0.01	494
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.24	0.20	1.98	1.85	< 0.005	0.09	1.08	1.17	0.08	0.55	0.63	—	271	271	0.01	< 0.005	0.01	272
2025	0.32	0.34	2.47	2.65	< 0.005	0.10	0.85	0.95	0.09	0.42	0.51	—	460	460	0.02	0.01	0.03	462
2026	0.19	0.28	1.40	1.85	< 0.005	0.05	< 0.005	0.06	0.05	< 0.005	0.05	—	304	304	0.01	< 0.005	0.01	306
2027	0.05	0.08	0.36	0.50	< 0.005	0.01	< 0.005	0.01	0.01	< 0.005	0.01	—	81.5	81.5	< 0.005	< 0.005	< 0.005	81.8

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.28	1.08	0.25	2.30	0.01	0.01	0.46	0.47	0.01	0.12	0.13	3.44	624	628	0.38	0.02	1.80	645
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.23	1.03	0.27	1.76	< 0.005	0.01	0.46	0.47	0.01	0.12	0.12	3.44	594	598	0.38	0.02	0.28	614
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.24	1.04	0.26	1.88	< 0.005	0.01	0.44	0.45	0.01	0.11	0.12	3.44	588	592	0.38	0.02	0.90	608
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.04	0.19	0.05	0.34	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.02	0.57	97.4	98.0	0.06	< 0.005	0.15	101

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.23	0.21	0.16	1.87	< 0.005	< 0.005	0.46	0.46	< 0.005	0.12	0.12	—	483	483	0.02	0.02	1.56	490
Area	0.04	0.86	< 0.005	0.40	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	1.06	1.06	< 0.005	< 0.005	—	1.07
Energy	0.01	< 0.005	0.08	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	128	128	0.01	< 0.005	—	128
Water	—	—	—	—	—	—	—	—	—	—	—	0.49	12.4	12.9	0.05	< 0.005	—	14.7
Waste	—	—	—	—	—	—	—	—	—	—	—	2.96	0.00	2.96	0.30	0.00	—	10.3
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.23	0.23
Total	0.28	1.08	0.25	2.30	0.01	0.01	0.46	0.47	0.01	0.12	0.13	3.44	624	628	0.38	0.02	1.80	645

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.22	0.20	0.19	1.72	< 0.005	< 0.005	0.46	0.46	< 0.005	0.12	0.12	—	454	454	0.02	0.02	0.04	460
Area	0.00	0.83	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
Energy	0.01	< 0.005	0.08	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	128	128	0.01	< 0.005	—	128
Water	—	—	—	—	—	—	—	—	—	—	—	0.49	12.4	12.9	0.05	< 0.005	—	14.7
Waste	—	—	—	—	—	—	—	—	—	—	—	2.96	0.00	2.96	0.30	0.00	—	10.3
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.23	0.23
Total	0.23	1.03	0.27	1.76	< 0.005	0.01	0.46	0.47	0.01	0.12	0.12	3.44	594	598	0.38	0.02	0.28	614
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.21	0.20	0.17	1.64	< 0.005	< 0.005	0.44	0.44	< 0.005	0.11	0.11	—	448	448	0.02	0.02	0.66	454
Area	0.02	0.84	< 0.005	0.20	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	0.52	0.52	< 0.005	< 0.005	—	0.53
Energy	0.01	< 0.005	0.08	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	128	128	0.01	< 0.005	—	128
Water	—	—	—	—	—	—	—	—	—	—	—	0.49	12.4	12.9	0.05	< 0.005	—	14.7
Waste	—	—	—	—	—	—	—	—	—	—	—	2.96	0.00	2.96	0.30	0.00	—	10.3
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.23	0.23
Total	0.24	1.04	0.26	1.88	< 0.005	0.01	0.44	0.45	0.01	0.11	0.12	3.44	588	592	0.38	0.02	0.90	608
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.04	0.04	0.03	0.30	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.02	—	74.1	74.1	< 0.005	< 0.005	0.11	75.2
Area	< 0.005	0.15	< 0.005	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	0.09	0.09	< 0.005	< 0.005	—	0.09
Energy	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	21.2	21.2	< 0.005	< 0.005	—	21.3
Water	—	—	—	—	—	—	—	—	—	—	—	0.08	2.06	2.14	0.01	< 0.005	—	2.43
Waste	—	—	—	—	—	—	—	—	—	—	—	0.49	0.00	0.49	0.05	0.00	—	1.71
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04	0.04
Total	0.04	0.19	0.05	0.34	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.02	0.57	97.4	98.0	0.06	< 0.005	0.15	101

3. Construction Emissions Details

3.1. Site Preparation (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.34	3.65	36.0	32.9	0.05	1.60	—	1.60	1.47	—	1.47	—	5,296	5,296	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	—	19.7	19.7	—	10.1	10.1	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.34	3.65	36.0	32.9	0.05	1.60	—	1.60	1.47	—	1.47	—	5,296	5,296	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	—	19.7	19.7	—	10.1	10.1	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.30	1.09	10.8	9.86	0.01	0.48	—	0.48	0.44	—	0.44	—	1,586	1,586	0.06	0.01	—	1,591

Dust From Material Movement:	—	—	—	—	—	—	5.89	5.89	—	3.02	3.02	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.24	0.20	1.96	1.80	< 0.005	0.09	—	0.09	0.08	—	0.08	—	263	263	0.01	< 0.005	—	263
Dust From Material Movement:	—	—	—	—	—	—	1.07	1.07	—	0.55	0.55	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.05	0.77	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	153	153	< 0.005	0.01	0.65	155
Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.06	0.66	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	142	142	< 0.005	0.01	0.02	144
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.19	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	42.9	42.9	< 0.005	< 0.005	0.08	43.5
Vendor	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	0.00
Hauling	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	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.10	7.10	< 0.005	< 0.005	0.01	7.21
Vendor	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	0.00
Hauling	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	0.00

3.3. Site Preparation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.94	3.31	31.6	30.2	0.05	1.37	—	1.37	1.26	—	1.26	—	5,295	5,295	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	—	19.7	19.7	—	10.1	10.1	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.94	3.31	31.6	30.2	0.05	1.37	—	1.37	1.26	—	1.26	—	5,295	5,295	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	—	19.7	19.7	—	10.1	10.1	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.76	0.64	6.13	5.85	0.01	0.26	—	0.26	0.24	—	0.24	—	1,026	1,026	0.04	0.01	—	1,029
Dust From Material Movement	—	—	—	—	—	—	3.81	3.81	—	1.96	1.96	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.12	1.12	1.07	< 0.005	0.05	—	0.05	0.04	—	0.04	—	170	170	0.01	< 0.005	—	170
Dust From Material Movement	—	—	—	—	—	—	0.70	0.70	—	0.36	0.36	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.04	0.72	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	150	150	< 0.005	0.01	0.59	152
Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.05	0.61	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	139	139	< 0.005	0.01	0.02	141
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.12	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	27.2	27.2	< 0.005	< 0.005	0.05	27.6

Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	4.50	4.50	< 0.005	< 0.005	0.01	4.57
Vendor	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	0.00
Hauling	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	0.00

3.5. Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.80	3.20	29.7	28.3	0.06	1.23	—	1.23	1.14	—	1.14	—	6,599	6,599	0.27	0.05	—	6,622
Dust From Material Movement	—	—	—	—	—	—	9.21	9.21	—	3.65	3.65	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.31	0.26	2.44	2.33	0.01	0.10	—	0.10	0.09	—	0.09	—	542	542	0.02	< 0.005	—	544

Dust From Material Movement:	—	—	—	—	—	—	0.76	0.76	—	0.30	0.30	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.45	0.42	< 0.005	0.02	—	0.02	0.02	—	0.02	—	89.8	89.8	< 0.005	< 0.005	—	90.1
Dust From Material Movement:	—	—	—	—	—	—	0.14	0.14	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.05	0.82	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	171	171	< 0.005	0.01	0.68	174
Vendor	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	0.00
Hauling	0.09	0.02	1.03	0.50	0.01	0.02	0.21	0.23	0.01	0.06	0.07	—	826	826	0.07	0.13	1.80	868
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	13.2	13.2	< 0.005	< 0.005	0.02	13.4
Vendor	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	0.00
Hauling	0.01	< 0.005	0.09	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	67.9	67.9	0.01	0.01	0.06	71.3
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.18	2.18	< 0.005	< 0.005	< 0.005	2.22
Vendor	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	0.00

Hauling	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	11.2	11.2	< 0.005	< 0.005	0.01	11.8
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3.7. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.35	1.13	10.4	13.0	0.02	0.43	—	0.43	0.40	—	0.40	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.35	1.13	10.4	13.0	0.02	0.43	—	0.43	0.40	—	0.40	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.55	0.46	4.29	5.36	0.01	0.18	—	0.18	0.16	—	0.16	—	985	985	0.04	0.01	—	989
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.08	0.78	0.98	< 0.005	0.03	—	0.03	0.03	—	0.03	—	163	163	0.01	< 0.005	—	164
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	21.6	21.6	< 0.005	< 0.005	0.09	21.9
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	20.2	20.2	< 0.005	< 0.005	0.05	21.1
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.09	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	20.0	20.0	< 0.005	< 0.005	< 0.005	20.3
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	20.2	20.2	< 0.005	< 0.005	< 0.005	21.1
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.31	8.31	< 0.005	< 0.005	0.02	8.43
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.30	8.30	< 0.005	< 0.005	0.01	8.68
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.38	1.38	< 0.005	< 0.005	< 0.005	1.40
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.37	1.37	< 0.005	< 0.005	< 0.005	1.44
Hauling	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	0.00

3.9. Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.28	1.07	9.85	13.0	0.02	0.38	—	0.38	0.35	—	0.35	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.28	1.07	9.85	13.0	0.02	0.38	—	0.38	0.35	—	0.35	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.91	0.77	7.04	9.26	0.02	0.27	—	0.27	0.25	—	0.25	—	1,712	1,712	0.07	0.01	—	1,718
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.14	1.28	1.69	< 0.005	0.05	—	0.05	0.05	—	0.05	—	283	283	0.01	< 0.005	—	284
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	21.2	21.2	< 0.005	< 0.005	0.08	21.5
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	19.8	19.8	< 0.005	< 0.005	0.05	20.8
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.08	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	19.6	19.6	< 0.005	< 0.005	< 0.005	19.9

Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	19.9	19.9	< 0.005	< 0.005	< 0.005	20.7
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	14.2	14.2	< 0.005	< 0.005	0.02	14.4
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	14.2	14.2	< 0.005	< 0.005	0.01	14.8
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.35	2.35	< 0.005	< 0.005	< 0.005	2.38
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.35	2.35	< 0.005	< 0.005	< 0.005	2.45
Hauling	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	0.00

3.11. Building Construction (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.23	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.23	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	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	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	0.20	1.78	2.46	< 0.005	0.06	—	0.06	0.06	—	0.06	—	455	455	0.02	< 0.005	—	457
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.33	0.45	< 0.005	0.01	—	0.01	0.01	—	0.01	—	75.3	75.3	< 0.005	< 0.005	—	75.6
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.09	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	20.8	20.8	< 0.005	< 0.005	0.07	21.1
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	19.4	19.4	< 0.005	< 0.005	0.04	20.4
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.08	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	19.3	19.3	< 0.005	< 0.005	< 0.005	19.5
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	19.4	19.4	< 0.005	< 0.005	< 0.005	20.3
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.70	3.70	< 0.005	< 0.005	0.01	3.75
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.69	3.69	< 0.005	< 0.005	< 0.005	3.86
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.61	0.61	< 0.005	< 0.005	< 0.005	0.62

Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.61	0.61	< 0.005	< 0.005	< 0.005	0.64
Hauling	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	0.00

3.13. Paving (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.95	0.80	7.45	9.98	0.01	0.35	—	0.35	0.32	—	0.32	—	1,511	1,511	0.06	0.01	—	1,517
Paving	—	0.60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.20	0.27	< 0.005	0.01	—	0.01	0.01	—	0.01	—	41.4	41.4	< 0.005	< 0.005	—	41.6
Paving	—	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.04	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.86	6.86	< 0.005	< 0.005	—	6.88
Paving	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.04	0.61	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	129	129	< 0.005	< 0.005	0.51	131
Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.30	3.30	< 0.005	< 0.005	0.01	3.35
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.55	0.55	< 0.005	< 0.005	< 0.005	0.55
Vendor	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	0.00
Hauling	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	0.00

3.15. Architectural Coating (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	0.88	1.14	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134

Architectural	—	0.96	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	0.88	1.14	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	0.96	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.34	0.44	< 0.005	0.01	—	0.01	0.01	—	0.01	—	51.2	51.2	< 0.005	< 0.005	—	51.4
Architectural Coatings	—	0.37	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.48	8.48	< 0.005	< 0.005	—	8.51
Architectural Coatings	—	0.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.32	4.32	< 0.005	< 0.005	0.02	4.39
Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.00	4.00	< 0.005	< 0.005	< 0.005	4.06
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.55	1.55	< 0.005	< 0.005	< 0.005	1.57
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.26	0.26	< 0.005	< 0.005	< 0.005	0.26
Vendor	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	0.00
Hauling	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	0.00

3.17. Architectural Coating (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.12	0.86	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134

Architect ural Coatings	—	0.96	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.12	0.86	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architect ural Coatings	—	0.96	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.09	0.61	0.81	< 0.005	0.02	—	0.02	0.02	—	0.02	—	95.4	95.4	< 0.005	< 0.005	—	95.7
Architect ural Coatings	—	0.69	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.11	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.8	15.8	< 0.005	< 0.005	—	15.8
Architect ural Coatings	—	0.13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.24	4.24	< 0.005	< 0.005	0.02	4.30
Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.93	3.93	< 0.005	< 0.005	< 0.005	3.98
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.83	2.83	< 0.005	< 0.005	< 0.005	2.88
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.47	0.47	< 0.005	< 0.005	< 0.005	0.48
Vendor	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	0.00
Hauling	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	0.00

3.19. Architectural Coating (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.14	0.11	0.83	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architect ural Coatings	—	0.96	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.11	0.83	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architect ural Coatings	—	0.96	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.18	0.24	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	29.0	29.0	< 0.005	< 0.005	—	29.1
Architect ural Coatings	—	0.21	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.80	4.80	< 0.005	< 0.005	—	4.82
Architect ural Coatings	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.16	4.16	< 0.005	< 0.005	0.01	4.22
Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.85	3.85	< 0.005	< 0.005	< 0.005	3.91
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.85	0.85	< 0.005	< 0.005	< 0.005	0.86
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.14	0.14	< 0.005	< 0.005	< 0.005	0.14
Vendor	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	0.00
Hauling	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	0.00

3.21. Linear, Grubbing & Land Clearing (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00

3.23. Linear, Grading & Excavation (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—

Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	27.4	27.4	< 0.005	< 0.005	0.07	28.7
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.15	0.15	< 0.005	< 0.005	< 0.005	0.16
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.02	0.02	< 0.005	< 0.005	< 0.005	0.03
Hauling	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	0.00

3.25. Linear, Drainage, Utilities, & Sub-Grade (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.27	1.06	8.71	11.2	0.02	0.36	—	0.36	0.33	—	0.33	—	1,613	1,613	0.07	0.01	—	1,618
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.84	8.84	< 0.005	< 0.005	—	8.87
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.46	1.46	< 0.005	< 0.005	—	1.47
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.07	1.10	0.00	0.00	0.21	0.21	0.00	0.05	0.05	—	219	219	< 0.005	0.01	0.93	222
Vendor	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	0.00
Hauling	0.01	< 0.005	0.09	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	73.0	73.0	0.01	0.01	0.16	76.8
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.12	1.12	< 0.005	< 0.005	< 0.005	1.14
Vendor	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	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.40	0.40	< 0.005	< 0.005	< 0.005	0.42
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.19	0.19	< 0.005	< 0.005	< 0.005	0.19
Vendor	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	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07

3.27. Linear, Paving (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.23	0.21	0.16	1.87	< 0.005	< 0.005	0.46	0.46	< 0.005	0.12	0.12	—	483	483	0.02	0.02	1.56	490
Total	0.23	0.21	0.16	1.87	< 0.005	< 0.005	0.46	0.46	< 0.005	0.12	0.12	—	483	483	0.02	0.02	1.56	490
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.22	0.20	0.19	1.72	< 0.005	< 0.005	0.46	0.46	< 0.005	0.12	0.12	—	454	454	0.02	0.02	0.04	460
Total	0.22	0.20	0.19	1.72	< 0.005	< 0.005	0.46	0.46	< 0.005	0.12	0.12	—	454	454	0.02	0.02	0.04	460
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.04	0.04	0.03	0.30	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.02	—	74.1	74.1	< 0.005	< 0.005	0.11	75.2
Total	0.04	0.04	0.03	0.30	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.02	—	74.1	74.1	< 0.005	< 0.005	0.11	75.2

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	24.2	24.2	< 0.005	< 0.005	—	24.4
Total	—	—	—	—	—	—	—	—	—	—	—	—	24.2	24.2	< 0.005	< 0.005	—	24.4
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	24.2	24.2	< 0.005	< 0.005	—	24.4
Total	—	—	—	—	—	—	—	—	—	—	—	—	24.2	24.2	< 0.005	< 0.005	—	24.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	4.01	4.01	< 0.005	< 0.005	—	4.05
Total	—	—	—	—	—	—	—	—	—	—	—	—	4.01	4.01	< 0.005	< 0.005	—	4.05

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.01	< 0.005	0.08	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	104	104	0.01	< 0.005	—	104

Total	0.01	< 0.005	0.08	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	104	104	0.01	< 0.005	—	104
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.01	< 0.005	0.08	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	104	104	0.01	< 0.005	—	104
Total	0.01	< 0.005	0.08	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	104	104	0.01	< 0.005	—	104
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	17.2	17.2	< 0.005	< 0.005	—	17.2
Total	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	17.2	17.2	< 0.005	< 0.005	—	17.2

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	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
Consumer Products	—	0.70	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.04	0.03	< 0.005	0.40	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.06	1.06	< 0.005	< 0.005	—	1.07

Total	0.04	0.86	< 0.005	0.40	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	1.06	1.06	< 0.005	< 0.005	—	1.07
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	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
Consumer Products	—	0.70	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.00	0.83	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	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
Consumer Products	—	0.13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	< 0.005	< 0.005	< 0.005	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.09	0.09	< 0.005	< 0.005	—	0.09
Total	< 0.005	0.15	< 0.005	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	0.09	0.09	< 0.005	< 0.005	—	0.09

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	0.49	12.4	12.9	0.05	< 0.005	—	14.7
Total	—	—	—	—	—	—	—	—	—	—	—	0.49	12.4	12.9	0.05	< 0.005	—	14.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	0.49	12.4	12.9	0.05	< 0.005	—	14.7
Total	—	—	—	—	—	—	—	—	—	—	—	0.49	12.4	12.9	0.05	< 0.005	—	14.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	0.08	2.06	2.14	0.01	< 0.005	—	2.43
Total	—	—	—	—	—	—	—	—	—	—	—	0.08	2.06	2.14	0.01	< 0.005	—	2.43

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	2.96	0.00	2.96	0.30	0.00	—	10.3
Total	—	—	—	—	—	—	—	—	—	—	—	2.96	0.00	2.96	0.30	0.00	—	10.3

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	2.96	0.00	2.96	0.30	0.00	—	10.3
Total	—	—	—	—	—	—	—	—	—	—	—	2.96	0.00	2.96	0.30	0.00	—	10.3
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	0.49	0.00	0.49	0.05	0.00	—	1.71
Total	—	—	—	—	—	—	—	—	—	—	—	0.49	0.00	0.49	0.05	0.00	—	1.71

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.23	0.23
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.23	0.23
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.23	0.23
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.23	0.23

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04	0.04
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04	0.04

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
----------------	-----	-----	-----	----	-----	-------	-------	-------	--------	--------	--------	------	-------	------	-----	-----	---	------

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	8/1/2024	4/9/2025	5.00	180	—
Grading	Grading	4/10/2025	5/21/2025	5.00	30.0	—
Building Construction	Building Construction	6/5/2025	4/7/2027	5.00	480	—
Paving	Paving	5/22/2025	6/4/2025	5.00	10.0	—
Architectural Coating	Architectural Coating	6/19/2025	4/21/2027	5.00	480	—
Linear, Grubbing & Land Clearing	Linear, Grubbing & Land Clearing	8/1/2024	8/2/2024	5.00	1.00	—
Linear, Grading & Excavation	Linear, Grading & Excavation	8/3/2024	8/5/2024	5.00	2.00	—
Linear, Drainage, Utilities, & Sub-Grade	Linear, Drainage, Utilities, & Sub-Grade	8/6/2024	8/8/2024	5.00	2.00	—
Linear, Paving	Linear, Paving	8/9/2024	8/10/2024	5.00	1.00	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
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Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backh oes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Tractors/Loaders/Backh oes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backh oes	Diesel	Average	3.00	7.00	84.0	0.37
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48
Linear, Drainage, Utilities, & Sub-Grade	Tractors/Loaders/Backh oes	Diesel	Average	2.00	8.00	84.0	0.37
Linear, Drainage, Utilities, & Sub-Grade	Signal Boards	Electric	Average	3.00	8.00	6.00	0.82
Linear, Drainage, Utilities, & Sub-Grade	Air Compressors	Diesel	Average	1.00	8.00	37.0	0.48
Linear, Drainage, Utilities, & Sub-Grade	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Linear, Drainage, Utilities, & Sub-Grade	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Linear, Drainage, Utilities, & Sub-Grade	Trenchers	Diesel	Average	1.00	8.00	40.0	0.50

Linear, Drainage, Utilities, & Sub-Grade	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
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5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	11.7	LDA,LDT1,LDT2
Site Preparation	Vendor	—	8.40	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	11.7	LDA,LDT1,LDT2
Grading	Vendor	—	8.40	HHDT,MHDT
Grading	Hauling	11.5	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	2.52	11.7	LDA,LDT1,LDT2
Building Construction	Vendor	0.75	8.40	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	11.7	LDA,LDT1,LDT2
Paving	Vendor	—	8.40	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—

Architectural Coating	Worker	0.50	11.7	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	8.40	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT
Linear, Grubbing & Land Clearing	—	—	—	—
Linear, Grubbing & Land Clearing	Worker	0.00	11.7	LDA,LDT1,LDT2
Linear, Grubbing & Land Clearing	Vendor	0.00	8.40	HHDT,MHDT
Linear, Grubbing & Land Clearing	Hauling	0.00	20.0	HHDT
Linear, Grubbing & Land Clearing	Onsite truck	—	—	HHDT
Linear, Grading & Excavation	—	—	—	—
Linear, Grading & Excavation	Worker	0.00	11.7	LDA,LDT1,LDT2
Linear, Grading & Excavation	Vendor	1.00	8.40	HHDT,MHDT
Linear, Grading & Excavation	Hauling	0.00	20.0	HHDT
Linear, Grading & Excavation	Onsite truck	—	—	HHDT
Linear, Drainage, Utilities, & Sub-Grade	—	—	—	—
Linear, Drainage, Utilities, & Sub-Grade	Worker	25.0	11.7	LDA,LDT1,LDT2
Linear, Drainage, Utilities, & Sub-Grade	Vendor	0.00	8.40	HHDT,MHDT
Linear, Drainage, Utilities, & Sub-Grade	Hauling	1.00	20.0	HHDT
Linear, Drainage, Utilities, & Sub-Grade	Onsite truck	—	—	HHDT
Linear, Paving	—	—	—	—
Linear, Paving	Worker	0.00	11.7	LDA,LDT1,LDT2
Linear, Paving	Vendor	0.00	8.40	HHDT,MHDT
Linear, Paving	Hauling	0.00	20.0	HHDT
Linear, Paving	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	66,333	22,111	0.00	0.00	—

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	—	—	270	0.00	—
Grading	2,764	—	90.0	0.00	—
Paving	0.00	0.00	0.00	0.00	2.38
Linear, Grubbing & Land Clearing	—	—	2.30	0.00	—
Linear, Grading & Excavation	—	—	2.30	0.00	—
Linear, Drainage, Utilities, & Sub-Grade	—	15.6	2.30	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Single Family Housing	0.08	0%
Road Widening	2.30	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	88.1	204	0.03	< 0.005
2025	0.00	204	0.03	< 0.005
2026	0.00	204	0.03	< 0.005
2027	0.00	204	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Single Family Housing	66.1	66.8	59.9	23,831	640	647	580	230,775

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	7

Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
66332.925	22,111	0.00	0.00	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Single Family Housing	43,294	204	0.0330	0.0040	323,553

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Single Family Housing	253,865	4,179,277

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	5.48	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
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5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
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5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)
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5.17. User Defined

Equipment Type	Fuel Type
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5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres
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5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres
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5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)
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8. User Changes to Default Data

Screen	Justification
Land Use	Changes based on applicant provided information

Construction: Construction Phases	No demolition required. Changes made based on applicant provided information. Based on typical construction practices, architectural coating assumed to start two weeks after the start of building construction and last for the same number of days
Operations: Hearths	Fireplaces are not proposed as part of the project.
Construction: Off-Road Equipment	Linear equipment adjusted based on typical equipment usage for utility line construction.

East Dunne Ave Approved Project Custom Report

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5.18.2.1. Unmitigated

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	East Dunne Ave Approved Project
Construction Start Date	8/1/2024
Operational Year	2025
Lead Agency	City of Morgan Hill
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	1.80
Precipitation (days)	32.8
Location	37.141826655043374, -121.61061255115244
County	Santa Clara
City	Morgan Hill
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1935
EDFZ	1
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.21

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
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Single Family Housing	22.0	Dwelling Unit	8.34	42,900	257,683	—	66.0	—
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1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.41	3.92	36.0	33.7	0.05	1.60	19.8	21.4	1.47	10.1	11.6	—	5,449	5,449	0.22	0.05	0.65	5,469
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.64	4.00	12.3	14.7	0.03	0.53	0.12	0.63	0.49	0.03	0.51	—	2,673	2,673	0.11	0.03	0.01	2,685
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.72	1.91	5.37	6.84	0.01	0.22	0.96	1.15	0.20	0.47	0.65	—	1,253	1,253	0.05	0.02	0.10	1,259
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.13	0.35	0.98	1.25	< 0.005	0.04	0.17	0.21	0.04	0.09	0.12	—	207	207	0.01	< 0.005	0.02	208

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	4.41	3.71	36.0	33.7	0.05	1.60	19.8	21.4	1.47	10.1	11.6	—	5,449	5,449	0.22	0.05	0.65	5,469
2025	1.54	3.92	11.4	14.6	0.03	0.46	0.10	0.56	0.42	0.02	0.45	—	2,676	2,676	0.11	0.03	0.49	2,689
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	1.64	4.00	12.3	14.7	0.03	0.53	0.12	0.63	0.49	0.03	0.51	—	2,673	2,673	0.11	0.03	0.01	2,685
2025	1.54	3.91	11.4	14.6	0.03	0.46	0.10	0.56	0.42	0.02	0.45	—	2,670	2,670	0.11	0.03	0.01	2,683
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.57	0.83	4.38	4.91	0.01	0.20	0.96	1.15	0.18	0.47	0.65	—	838	838	0.03	0.01	0.07	841
2025	0.72	1.91	5.37	6.84	0.01	0.22	0.04	0.26	0.20	0.01	0.21	—	1,253	1,253	0.05	0.02	0.10	1,259
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.10	0.15	0.80	0.90	< 0.005	0.04	0.17	0.21	0.03	0.09	0.12	—	139	139	0.01	< 0.005	0.01	139
2025	0.13	0.35	0.98	1.25	< 0.005	0.04	0.01	0.05	0.04	< 0.005	0.04	—	207	207	0.01	< 0.005	0.02	208

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.95	1.94	0.92	7.87	0.02	0.04	1.43	1.47	0.04	0.36	0.40	10.8	2,085	2,096	1.19	0.07	6.48	2,152
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.80	1.80	1.01	6.12	0.02	0.04	1.43	1.47	0.04	0.36	0.40	10.8	1,987	1,998	1.20	0.07	0.47	2,050

Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.82	1.83	0.89	6.43	0.02	0.03	1.37	1.40	0.03	0.35	0.38	10.8	1,878	1,889	1.19	0.07	2.92	1,942
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.15	0.33	0.16	1.17	< 0.005	0.01	0.25	0.26	0.01	0.06	0.07	1.79	311	313	0.20	0.01	0.48	321

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.79	0.73	0.58	6.49	0.02	0.01	1.43	1.44	0.01	0.36	0.37	—	1,575	1,575	0.06	0.06	6.18	1,601
Area	0.13	1.20	0.09	1.28	< 0.005	0.01	—	0.01	0.01	—	0.01	0.00	96.0	96.0	< 0.005	< 0.005	—	96.1
Energy	0.03	0.02	0.26	0.11	< 0.005	0.02	—	0.02	0.02	—	0.02	—	402	402	0.04	< 0.005	—	404
Water	—	—	—	—	—	—	—	—	—	—	—	1.53	12.2	13.7	0.16	< 0.005	—	18.8
Waste	—	—	—	—	—	—	—	—	—	—	—	9.29	0.00	9.29	0.93	0.00	—	32.5
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.31	0.31
Total	0.95	1.94	0.92	7.87	0.02	0.04	1.43	1.47	0.04	0.36	0.40	10.8	2,085	2,096	1.19	0.07	6.48	2,152
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.76	0.69	0.68	5.98	0.01	0.01	1.43	1.44	0.01	0.36	0.37	—	1,480	1,480	0.07	0.07	0.16	1,502
Area	0.01	1.09	0.07	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	0.00	92.6	92.6	< 0.005	< 0.005	—	92.7
Energy	0.03	0.02	0.26	0.11	< 0.005	0.02	—	0.02	0.02	—	0.02	—	402	402	0.04	< 0.005	—	404
Water	—	—	—	—	—	—	—	—	—	—	—	1.53	12.2	13.7	0.16	< 0.005	—	18.8
Waste	—	—	—	—	—	—	—	—	—	—	—	9.29	0.00	9.29	0.93	0.00	—	32.5
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.31	0.31

Total	0.80	1.80	1.01	6.12	0.02	0.04	1.43	1.47	0.04	0.36	0.40	10.8	1,987	1,998	1.20	0.07	0.47	2,050
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.73	0.67	0.62	5.70	0.01	0.01	1.37	1.38	0.01	0.35	0.36	—	1,460	1,460	0.06	0.06	2.61	1,482
Area	0.06	1.14	0.01	0.61	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	3.93	3.93	< 0.005	< 0.005	—	3.94
Energy	0.03	0.02	0.26	0.11	< 0.005	0.02	—	0.02	0.02	—	0.02	—	402	402	0.04	< 0.005	—	404
Water	—	—	—	—	—	—	—	—	—	—	—	1.53	12.2	13.7	0.16	< 0.005	—	18.8
Waste	—	—	—	—	—	—	—	—	—	—	—	9.29	0.00	9.29	0.93	0.00	—	32.5
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.31	0.31
Total	0.82	1.83	0.89	6.43	0.02	0.03	1.37	1.40	0.03	0.35	0.38	10.8	1,878	1,889	1.19	0.07	2.92	1,942
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.13	0.12	0.11	1.04	< 0.005	< 0.005	0.25	0.25	< 0.005	0.06	0.07	—	242	242	0.01	0.01	0.43	245
Area	0.01	0.21	< 0.005	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	0.65	0.65	< 0.005	< 0.005	—	0.65
Energy	0.01	< 0.005	0.05	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	66.5	66.5	0.01	< 0.005	—	66.8
Water	—	—	—	—	—	—	—	—	—	—	—	0.25	2.02	2.27	0.03	< 0.005	—	3.12
Waste	—	—	—	—	—	—	—	—	—	—	—	1.54	0.00	1.54	0.15	0.00	—	5.38
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.05	0.05
Total	0.15	0.33	0.16	1.17	< 0.005	0.01	0.25	0.26	0.01	0.06	0.07	1.79	311	313	0.20	0.01	0.48	321

3. Construction Emissions Details

3.1. Site Preparation (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	4.34	3.65	36.0	32.9	0.05	1.60	—	1.60	1.47	—	1.47	—	5,296	5,296	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	—	19.7	19.7	—	10.1	10.1	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.99	0.90	< 0.005	0.04	—	0.04	0.04	—	0.04	—	145	145	0.01	< 0.005	—	146
Dust From Material Movement	—	—	—	—	—	—	0.54	0.54	—	0.28	0.28	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.18	0.16	< 0.005	0.01	—	0.01	0.01	—	0.01	—	24.0	24.0	< 0.005	< 0.005	—	24.1
Dust From Material Movement	—	—	—	—	—	—	0.10	0.10	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.05	0.77	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	153	153	< 0.005	0.01	0.65	155

Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.92	3.92	< 0.005	< 0.005	0.01	3.98
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.65	0.65	< 0.005	< 0.005	< 0.005	0.66
Vendor	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	0.00
Hauling	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	0.00

3.3. Grading (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.26	1.90	18.2	18.8	0.03	0.84	—	0.84	0.77	—	0.77	—	2,958	2,958	0.12	0.02	—	2,969
Dust From Material Movement	—	—	—	—	—	—	7.08	7.08	—	3.42	3.42	—	—	—	—	—	—	—
Onsite truck	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	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	1.00	1.03	< 0.005	0.05	—	0.05	0.04	—	0.04	—	162	162	0.01	< 0.005	—	163
Dust From Material Movement	—	—	—	—	—	—	0.39	0.39	—	0.19	0.19	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.18	0.19	< 0.005	0.01	—	0.01	0.01	—	0.01	—	26.8	26.8	< 0.005	< 0.005	—	26.9
Dust From Material Movement	—	—	—	—	—	—	0.07	0.07	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.04	0.66	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	131	131	< 0.005	< 0.005	0.56	133
Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.73	6.73	< 0.005	< 0.005	0.01	6.83
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.11	1.11	< 0.005	< 0.005	< 0.005	1.13
Vendor	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	0.00
Hauling	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	0.00

3.5. Building Construction (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.44	1.20	11.2	13.1	0.02	0.50	—	0.50	0.46	—	0.46	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	0.20	1.82	2.13	< 0.005	0.08	—	0.08	0.07	—	0.07	—	389	389	0.02	< 0.005	—	391
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.33	0.39	< 0.005	0.01	—	0.01	0.01	—	0.01	—	64.5	64.5	< 0.005	< 0.005	—	64.7

Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.30	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	64.1	64.1	< 0.005	< 0.005	0.01	65.0
Vendor	0.01	< 0.005	0.09	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	64.5	64.5	< 0.005	0.01	< 0.005	67.5
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.5	10.5	< 0.005	< 0.005	0.02	10.7
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	10.5	10.5	< 0.005	< 0.005	0.01	11.0
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.74	1.74	< 0.005	< 0.005	< 0.005	1.77
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.73	1.73	< 0.005	< 0.005	< 0.005	1.82
Hauling	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	0.00

3.7. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.35	1.13	10.4	13.0	0.02	0.43	—	0.43	0.40	—	0.40	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.35	1.13	10.4	13.0	0.02	0.43	—	0.43	0.40	—	0.40	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.63	0.53	4.88	6.10	0.01	0.20	—	0.20	0.19	—	0.19	—	1,121	1,121	0.05	0.01	—	1,125
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.10	0.89	1.11	< 0.005	0.04	—	0.04	0.03	—	0.03	—	186	186	0.01	< 0.005	—	186
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.32	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	67.9	67.9	< 0.005	< 0.005	0.27	68.9
Vendor	0.01	< 0.005	0.08	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	63.5	63.5	< 0.005	0.01	0.17	66.4
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.28	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	62.9	62.9	< 0.005	< 0.005	0.01	63.7

Vendor	0.01	< 0.005	0.09	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	63.5	63.5	< 0.005	0.01	< 0.005	66.3
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.13	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	29.7	29.7	< 0.005	< 0.005	0.05	30.2
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	29.7	29.7	< 0.005	< 0.005	0.03	31.0
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	4.92	4.92	< 0.005	< 0.005	0.01	4.99
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.91	4.91	< 0.005	< 0.005	0.01	5.14
Hauling	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	0.00

3.9. Paving (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.01	0.85	7.81	10.0	0.01	0.39	—	0.39	0.36	—	0.36	—	1,512	1,512	0.06	0.01	—	1,517
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.01	0.85	7.81	10.0	0.01	0.39	—	0.39	0.36	—	0.36	—	1,512	1,512	0.06	0.01	—	1,517
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.43	0.55	< 0.005	0.02	—	0.02	0.02	—	0.02	—	82.8	82.8	< 0.005	< 0.005	—	83.1
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.7	13.7	< 0.005	< 0.005	—	13.8
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.04	0.66	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	131	131	< 0.005	< 0.005	0.56	133
Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.05	0.57	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	121	121	< 0.005	0.01	0.01	123
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.73	6.73	< 0.005	< 0.005	0.01	6.83
Vendor	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	0.00

Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.11	1.11	< 0.005	< 0.005	< 0.005	1.13
Vendor	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	0.00
Hauling	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	0.00

3.11. Architectural Coating (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.14	0.91	1.15	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architect ural Coatings	—	2.63	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.12	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	18.0	18.0	< 0.005	< 0.005	—	18.1
Architect ural Coatings	—	0.35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.98	2.98	< 0.005	< 0.005	—	3.00
Architectural Coatings	—	0.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.8	12.8	< 0.005	< 0.005	< 0.005	13.0
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.75	1.75	< 0.005	< 0.005	< 0.005	1.78
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.29	0.29	< 0.005	< 0.005	< 0.005	0.29
Vendor	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	0.00
Hauling	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	0.00

3.13. Architectural Coating (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	0.88	1.14	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architect ural Coatings	—	2.63	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	0.88	1.14	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architect ural Coatings	—	2.63	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.06	0.44	0.56	< 0.005	0.01	—	0.01	0.01	—	0.01	—	66.1	66.1	< 0.005	< 0.005	—	66.3
Architect ural Coatings	—	1.30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.9	10.9	< 0.005	< 0.005	—	11.0

Architect Coatings	—	0.24	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	13.6	13.6	< 0.005	< 0.005	0.05	13.8
Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.6	12.6	< 0.005	< 0.005	< 0.005	12.7
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.29	6.29	< 0.005	< 0.005	0.01	6.38
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.04	1.04	< 0.005	< 0.005	< 0.005	1.06
Vendor	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	0.00
Hauling	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	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.79	0.73	0.58	6.49	0.02	0.01	1.43	1.44	0.01	0.36	0.37	—	1,575	1,575	0.06	0.06	6.18	1,601
Total	0.79	0.73	0.58	6.49	0.02	0.01	1.43	1.44	0.01	0.36	0.37	—	1,575	1,575	0.06	0.06	6.18	1,601
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.76	0.69	0.68	5.98	0.01	0.01	1.43	1.44	0.01	0.36	0.37	—	1,480	1,480	0.07	0.07	0.16	1,502
Total	0.76	0.69	0.68	5.98	0.01	0.01	1.43	1.44	0.01	0.36	0.37	—	1,480	1,480	0.07	0.07	0.16	1,502
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.13	0.12	0.11	1.04	< 0.005	< 0.005	0.25	0.25	< 0.005	0.06	0.07	—	242	242	0.01	0.01	0.43	245
Total	0.13	0.12	0.11	1.04	< 0.005	< 0.005	0.25	0.25	< 0.005	0.06	0.07	—	242	242	0.01	0.01	0.43	245

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
----------	-----	-----	-----	----	-----	-------	-------	-------	--------	--------	--------	------	-------	------	-----	-----	---	------

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	76.0	76.0	0.01	< 0.005	—	76.8
Total	—	—	—	—	—	—	—	—	—	—	—	—	76.0	76.0	0.01	< 0.005	—	76.8
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	76.0	76.0	0.01	< 0.005	—	76.8
Total	—	—	—	—	—	—	—	—	—	—	—	—	76.0	76.0	0.01	< 0.005	—	76.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	12.6	12.6	< 0.005	< 0.005	—	12.7
Total	—	—	—	—	—	—	—	—	—	—	—	—	12.6	12.6	< 0.005	< 0.005	—	12.7

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.03	0.02	0.26	0.11	< 0.005	0.02	—	0.02	0.02	—	0.02	—	326	326	0.03	< 0.005	—	327
Total	0.03	0.02	0.26	0.11	< 0.005	0.02	—	0.02	0.02	—	0.02	—	326	326	0.03	< 0.005	—	327
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	0.03	0.02	0.26	0.11	< 0.005	0.02	—	0.02	0.02	—	0.02	—	326	326	0.03	< 0.005	—	327
Total	0.03	0.02	0.26	0.11	< 0.005	0.02	—	0.02	0.02	—	0.02	—	326	326	0.03	< 0.005	—	327
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.01	< 0.005	0.05	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	54.0	54.0	< 0.005	< 0.005	—	54.1
Total	0.01	< 0.005	0.05	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	54.0	54.0	< 0.005	< 0.005	—	54.1

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.01	< 0.005	0.07	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	0.00	92.6	92.6	< 0.005	< 0.005	—	92.7
Consumer Products	—	0.92	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.17	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.12	0.11	0.01	1.25	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.34	3.34	< 0.005	< 0.005	—	3.35
Total	0.13	1.20	0.09	1.28	< 0.005	0.01	—	0.01	0.01	—	0.01	0.00	96.0	96.0	< 0.005	< 0.005	—	96.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Hearths	0.01	< 0.005	0.07	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	0.00	92.6	92.6	< 0.005	< 0.005	—	92.7
Consumer Products	—	0.92	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.17	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.01	1.09	0.07	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	0.00	92.6	92.6	< 0.005	< 0.005	—	92.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	0.38	0.38	< 0.005	< 0.005	—	0.38
Consumer Products	—	0.17	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.01	0.01	< 0.005	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.27	0.27	< 0.005	< 0.005	—	0.27
Total	0.01	0.21	< 0.005	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	0.65	0.65	< 0.005	< 0.005	—	0.65

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	1.53	12.2	13.7	0.16	< 0.005	—	18.8
Total	—	—	—	—	—	—	—	—	—	—	—	1.53	12.2	13.7	0.16	< 0.005	—	18.8
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	1.53	12.2	13.7	0.16	< 0.005	—	18.8
Total	—	—	—	—	—	—	—	—	—	—	—	1.53	12.2	13.7	0.16	< 0.005	—	18.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	0.25	2.02	2.27	0.03	< 0.005	—	3.12
Total	—	—	—	—	—	—	—	—	—	—	—	0.25	2.02	2.27	0.03	< 0.005	—	3.12

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	9.29	0.00	9.29	0.93	0.00	—	32.5
Total	—	—	—	—	—	—	—	—	—	—	—	9.29	0.00	9.29	0.93	0.00	—	32.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	9.29	0.00	9.29	0.93	0.00	—	32.5
Total	—	—	—	—	—	—	—	—	—	—	—	9.29	0.00	9.29	0.93	0.00	—	32.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	1.54	0.00	1.54	0.15	0.00	—	5.38
Total	—	—	—	—	—	—	—	—	—	—	—	1.54	0.00	1.54	0.15	0.00	—	5.38

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.31	0.31
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.31	0.31
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.31	0.31
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.31	0.31
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.05	0.05
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.05	0.05

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
----------------	-----	-----	-----	----	-----	-------	-------	-------	--------	--------	--------	------	-------	------	-----	-----	---	------

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	8/1/2024	8/14/2024	5.00	10.0	—
Grading	Grading	8/15/2024	9/11/2024	5.00	20.0	—
Building Construction	Building Construction	10/10/2024	8/27/2025	5.00	230	—
Paving	Paving	9/12/2024	10/9/2024	5.00	20.0	—
Architectural Coating	Architectural Coating	10/24/2024	9/10/2025	5.00	230	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40

Grading	Tractors/Loaders/Backhoes	Diesel	Average	3.00	8.00	84.0	0.37
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	11.7	LDA,LDT1,LDT2
Site Preparation	Vendor	—	8.40	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	15.0	11.7	LDA,LDT1,LDT2
Grading	Vendor	—	8.40	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	7.92	11.7	LDA,LDT1,LDT2

Building Construction	Vendor	2.35	8.40	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	11.7	LDA,LDT1,LDT2
Paving	Vendor	—	8.40	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	1.58	11.7	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	8.40	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	86,873	28,958	0.00	0.00	—

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
------------	------------------------	------------------------	----------------------	-------------------------------	---------------------

Site Preparation	—	—	15.0	0.00	—
Grading	—	—	20.0	0.00	—
Paving	0.00	0.00	0.00	0.00	0.24

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Single Family Housing	0.24	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	204	0.03	< 0.005
2025	0.00	204	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Single Family Housing	208	210	188	74,897	2,011	2,032	1,822	725,292

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	4
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	18
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
86872.5	28,958	0.00	0.00	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Single Family Housing	136,067	204	0.0330	0.0040	1,016,882

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Single Family Housing	797,861	3,366,907

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	17.2	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
----------------	-----------	-------------	----------------	---------------	------------	-------------

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
----------------	-----------	----------------	---------------	----------------	------------	-------------

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)
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5.17. User Defined

Equipment Type	Fuel Type
----------------	-----------

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres
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5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres
--------------------	---------------	-------------

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)
-----------	--------	------------------------------	------------------------------

8. User Changes to Default Data

Screen	Justification
Land Use	Changes based on information contained within the approved 2275 East Dunne Avenue IS/MND
Construction: Construction Phases	No demolition required. Based on typical construction practices, architectural coating assumed to start two weeks after the start of building construction and last for the same number of days
Operations: Hearths	Fireplaces are not proposed as part of the project.

ATTACHMENT 3

TECHNICAL BIOLOGICAL REPORT



**SERENE HILLS PROJECT SITE
TECHNICAL BIOLOGICAL REPORT
CITY OF MORGAN HILL, SANTA CLARA COUNTY, CALIFORNIA**

Prepared by

LIVE OAK ASSOCIATES, INC.

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January 22, 2024

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1 INTRODUCTION

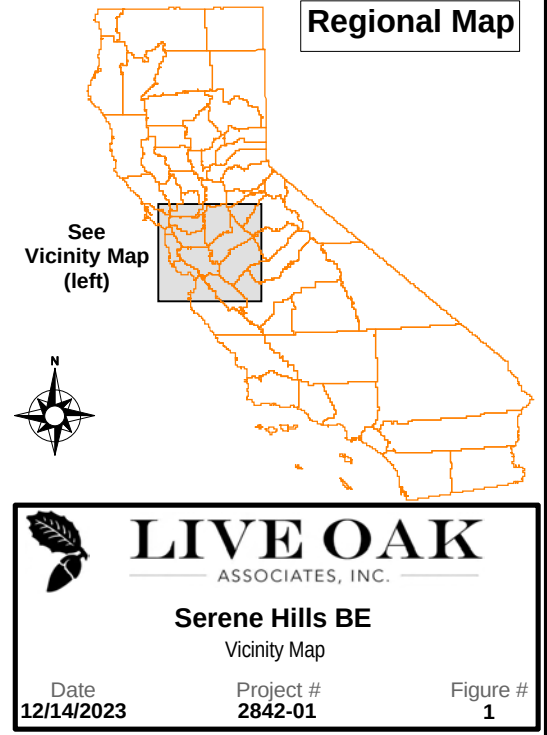
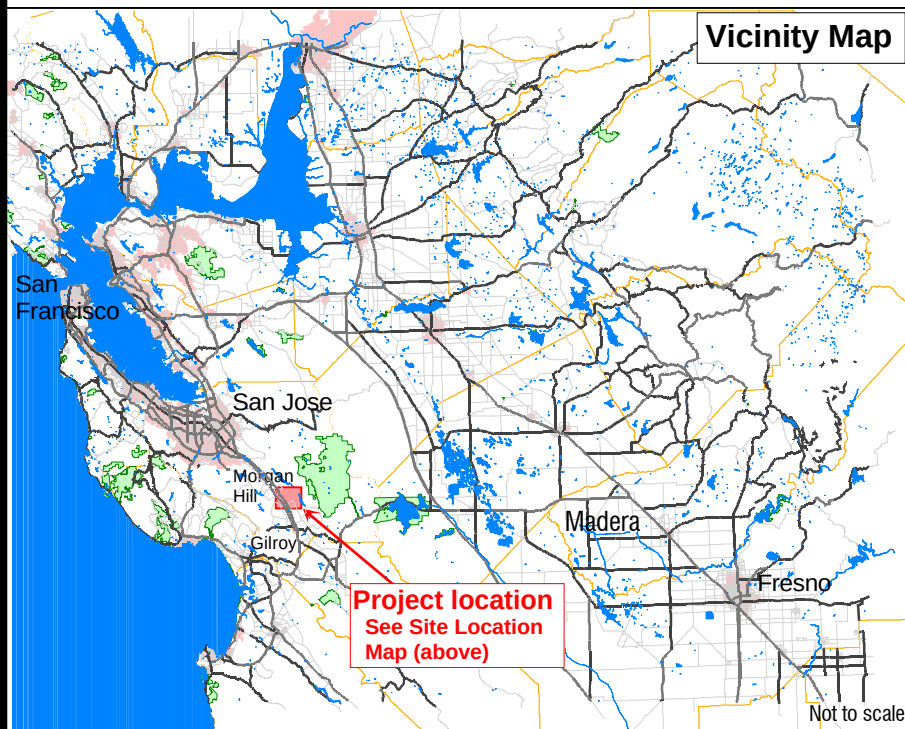
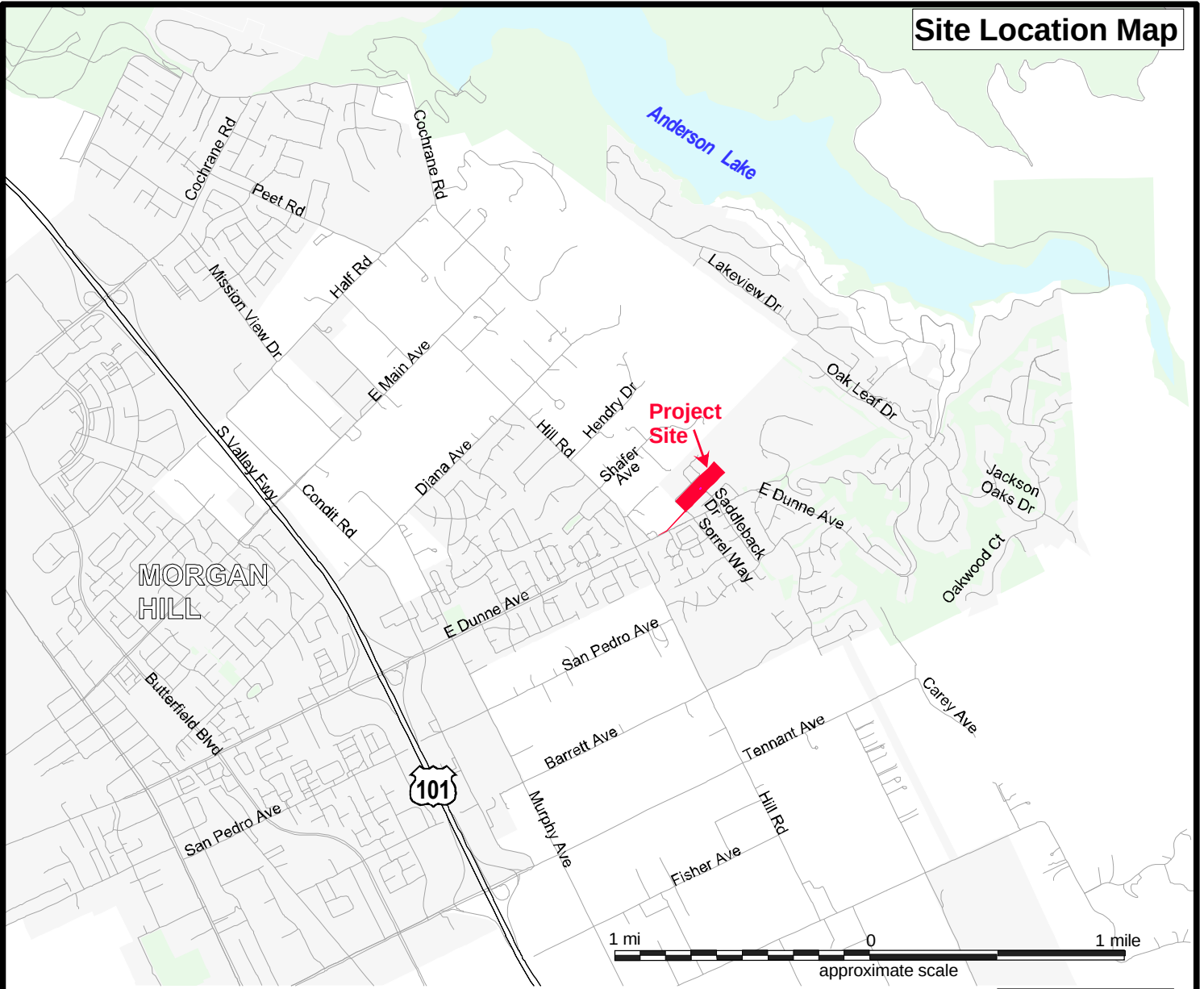
The Serene Hills Property (“project site”) was evaluated by Live Oak Associates, Inc. (LOA) to ascertain whether build-out of a residential neighborhood (“project”) would have a significant impact, as defined by the California Environmental Quality Act (CEQA), on the biological resources of the site and region. This report describes the biotic resources of the approximately 8.37-acre project site and evaluates potential impacts to these biotic resources resulting from the proposed project. The site is located on Forest Street (APN 728-02-002 and -003) in Morgan Hill, Santa Clara County, California (Figure 1). The site can be found on the Mt. Sizer U.S.G.S. 7.5’ quadrangle in Section 23 of Township 9 south, Range 3 east.

In general, the development of parcels can damage or modify biotic habitats used by sensitive plant and wildlife species. In such cases, site development may be regulated by state or federal agencies, subject to provisions of CEQA, and/or covered by local policies and ordinances. Therefore, this report addresses: 1) sensitive biotic resources potentially occurring in the project site; 2) the federal, state, and local laws regulating such resources, 3) possible significant impacts to these resources that could result from the project; and 4) mitigation measures that would reduce these impacts to a less-than-significant level as defined by CEQA.

The analysis of impacts, as discussed in Section 3.0 of this report, was based on the known and potential biotic resources of the project site discussed in Section 2.0. Sources of information used in the preparation of this analysis included: 1) the *California Natural Diversity Data Base* (RareFind 5; CDFW 2023); 2) the *California Rare Plant Rank* (CNPS 2023); 3) manuals and references related to plants and animals of the Santa Clara Valley region; 4) policies and ordinances of the City of Morgan Hill that relate to biotic resources; and 5) the Santa Clara Valley Habitat Plan (SCVHP; 2012).

A field survey of the project site was conducted on December 12, 2023, by LOA ecologist Katrina Krakow.

Site Location Map





1.1 PROJECT DESCRIPTION

The 8.37-acre property is planned for the development of seven single-family residences. A channelized drainage ditch with outfalls and basins is also planned for this site.



2 EXISTING CONDITIONS

At the time of the field survey, the project site had been fully disked and consists mainly of California annual grassland with some trees and some swales with a well and well tank in the center of the site. The site is bounded by residential development to the southeast, sparse residential development to the northwest, and undeveloped land to the southwest and northeast. The site has a relatively flat topography with slight slopes in the northern portion of the site with elevations ranging from a low of approximately 425 feet (129 meters) National Geodetic Vertical Datum (NGVD) in the northeastern portion of the site to 373 feet NGVD (114 meters) at the junction of the site with E. Dunne Avenue.

Annual precipitation in the general vicinity of the project site is about 15-20 inches, almost 85% of which falls between the months of October and March. Virtually all precipitation falls in the form of rain.

Two soil map units occur on the site (NRCS 2023): Cropley clay, 0 to 2 percent slopes, MLRA 14 and Cropley clay, 2 to 9 percent slopes, MLRA 14. These soils are not alkaline or serpentine; therefore, special status plants adapted to alkaline and serpentine soils are not expected to occur on the site. All soils on the site are hydric. Hydric soils are soils are defined as saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions such that under sufficiently wet conditions they support hydrophytic vegetation. These soils are moderately well and well drained with medium to very high runoff and slow permeability.

2.1 BIOTIC HABITATS

Two land cover types, California annual grassland, Northern Coast Scrub/Diablan Sage Scrub, Developed: (Urban-Suburban), and potential seasonal wetland are present on the Serene Hills Property. These are named consistent with nomenclature for land cover types contained in the Santa Clara Valley Habitat Plan (SCVHP) (Figure 2). These land cover types are described in greater detail below.

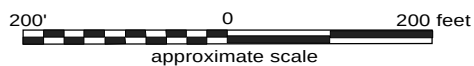


LEGEND

CrA CROPLEY CLAY, 0 TO 2% slopes

CrC CROPLEY CLAY, 2 TO 9% slopes

Source:
U.S. Dept. of Agriculture, Natural Resources Conservation Service



	LIVE OAK ASSOCIATES, INC.	
	Serene Hills BE Soils	
	Date 12/14/2023	Project # 2842-01
		Figure # 2



2.1.1 California Annual Grassland

The majority of the site supports California annual grassland. This habitat is ruderal in nature and had been entirely disked at the time of the December 2023 site survey and is dominated by non-native plants. Vegetation in this habitat includes, but is not limited to, narrow-leaf milkweed (*Asclepias fascicularis*), wild oats (*Avena* sp.), beet (*Beta vulgaris*), black mustard (*Brassica nigra*), yellow-star thistle (*Centaurea solstitialis*), fireweed (*Chamaenerion angustifolium*), chenopod (*Chenopodium* sp.), chicory (*Cichorium intybus*), doveweed (*Croton setiger*), artichoke (*Cynara cardunculus*), bristly ox-tongue (*Helminthotheca echioides*), prickly lettuce (*Lactuca serriola*), mallow (*Malva* sp.), canary grass (*Phalaris* sp.), and English plantain (*Plantago lanceolata*). Trees onsite are mainly concentrated in the northeastern portion of the site with a few around the edges of the site and includes acacia (*Acacia* sp.), eucalyptus (*Eucalyptus* sp.), prickly pear (*Opuntia* sp.), coast live oak (*Quercus agrifolia*), valley oak (*Quercus lobata*), blue elderberry (*Sambucus nigra*), and fan palm (*Washingtonia* sp.). A variety of planted trees dot the end of the driveway within the California annual grassland, including, but not limited to the Peruvian pepper tree (*Schinus molle*), fan palm, and landscaped hedges. Four swales exist on the site within the California annual grassland habitat, most of which appear to be non-wetland swales supporting plants consistent with the surrounding California annual grassland, however, see the Potential Seasonal Wetland section below for further information regarding the potential for wetland swales to occur on the site.

Wildlife observed within or flying over the site during the December 2023 survey included the turkey vulture (*Cathartes aura*), red-tailed hawk (*Buteo jamaicensis*), northern flicker (*Colaptes auratus*), killdeer (*Charadrius vociferus*), California scrub jay (*Aphelocoma californica*), American crow (*Corvus brachyrhynchos*), Bewick's wren (*Thryomanes bewickii*), Anna's hummingbird (*Calypte anna*), California towhee (*Melospiza crissalis*), song sparrow (*Melospiza melodia*), a few California ground squirrel (*Otospermophilus beecheyi*) burrows exist in the southern corner of the site; Botta's pocket gopher (*Thomomys bottae*) sign exists throughout the site and black-tailed jackrabbit (*Lepus californicus*) and striped skunk (*Mephitis mephitis*) diggings were also observed.



2.1.2 Northern Coast Scrub/Diablan Sage Scrub

This habitat exists in the northern portion of the site and consists of 10-12-foot-high coyote brush (*Baccharis pilularis*), with understory consistent with the adjacent California annual grassland.

2.1.3 Developed: Urban-Suburban

The site supports an older paved driveway shared with other residences past the site as well as a well and well tank in the center of the site. Two 12-inch culverts exist within approximately six feet of each other at the southwestern edge of the southern-most swale.

2.1.4 Potential Seasonal Wetland

The site supports a network of four swales. Portions of the swales support hydrophilic vegetation, which are generally mapped in Figure 3. Until a wetland delineation is completed, the full extent of these areas are undefined and a delineation will more precisely define them. “Wetland swale” is not a term used in the SCVHP, therefore, as “seasonal wetland” is the closest habitat type identified by the SCVHP, these areas are identified as potential seasonal wetlands on Figure 3. Although no blue lines exist on the site, the flow lines from the USGS are roughly consistent with the swale locations in the northern portion of the site. In the southern portion of the site, a poorly defined swale occurs roughly in the same location where historical photography shows a swale channel that historically had connectivity to the Santa Clara Conduit. Although this no longer appears to be connected, additional surveys are necessary to determine the full current extent of this swale. The vegetation within the swales is consistent with the California annual grassland habitat except for a small patch of cocklebur (*Xanthium* sp.) in one of the swales in the northern portion of the site and the presence of curly dock (*Rumex crispus*) along the southernmost swale.

2.2 MOVEMENT CORRIDORS

General Discussion- Habitat corridors are vital to terrestrial animals for connectivity between core habitat areas (i.e., larger intact habitat areas where species make their living). Connections between two or more core habitat areas help ensure that genetic diversity is maintained, thereby diminishing the probability of inbreeding depression and geographic extinctions.

The quality of habitat within the corridors is important. In general, “better” habitat has less human interference (e.g., roads, homes, etc.) and is more desirable to more species than areas with



sparse vegetation and high-density roads. Movement corridors in California are typically associated with valleys, rivers and creeks supporting riparian vegetation, and ridgelines. With increasing encroachment of humans on wildlife habitats, it has become important to establish and maintain linkages, or movement corridors, for animals to be able to access locations containing different biotic resources that are essential to maintaining their life cycles.

Healthy riparian areas (supporting structural diversity, i.e., understory species to saplings to mature riparian trees) not only support a rich and diverse wildlife community but have also been shown to facilitate regional wildlife movement. Riparian areas can vary from tributaries winding through scrubland to densely vegetated riparian forests.

Site-specific Discussion- The site is located along the edge of the developed portion of the City of Morgan Hill. Although fences exist along the northeastern and southwestern edge, the majority of wildlife would be able to move freely through the site. Fences along the southeastern edge abut current residential development, so generally, wildlife would not be expected to move between the site and the residential development. There is a drainage off-site and uphill from the site which appears to support a ponded area, which may support wildlife and further wildlife movement between the site and this feature. Therefore, localized movements throughout the site are currently unimpeded.

Per the above discussion, local animals can be expected to move through the site in their ordinary day-to-day movement, and the site is not likely to support regional movement.

2.3 SPECIAL STATUS PLANTS AND ANIMALS

Several species of plants and animals within the state of California have low populations, limited distributions, or both. Such species may be considered “rare” and are vulnerable to extirpation as the state’s human population grows and the habitats these species occupy are converted to agricultural and urban uses. As described more fully in Section 3.2, state and federal laws have provided the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting the diversity of plant and animal species native to the state. A sizable number of native plants and animals have been formally



designated as threatened or endangered under state and federal endangered species legislation. Others have been designated as “candidates” for such listing. Still others have been designated as “species of special concern” by the CDFW. The California Native Plant Society (CNPS) has developed its own set of lists of native plants considered rare, threatened, or endangered (CNPS 2001). Collectively, these plants and animals are referred to as “special status species.”

A number of special status plants and animals occur in the vicinity of the project site. These species, and their potential to occur in the project site, are listed in Table 1. Sources of information for this table included *California Natural Diversity Data Base* (CDFW 2023), *Listed Plants and Listed Animals* (USFWS 2023), *State and Federally Listed Endangered and Threatened Animals of California* (CDFW 2023), *The California Native Plant Society’s Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2023), *California Bird Species of Special Concern* (Shuford and Gardall 2008), and *California Amphibian and Reptile Species of Special Concern* (Thompson et al. 2016). This information was used to evaluate the potential for special status plant and animal species that occur on the site.

A search of published accounts for all of the relevant special status plant and animal species was conducted for the Mt. Sizer USGS 7.5-minute quadrangle in which the project site occurs, and for the eight surrounding quadrangles (Lick Observatory, Isabel Valley, Mt. Stakes, Morgan Hill, Mississippi Creek, Mt. Madonna, Gilroy, and Gilroy Hot Springs) using the CNDDDB Rarefind5. All species listed as occurring in these quadrangles on CNPS Lists 1A, 1B, 2, or 4 were also reviewed (See Figure 3).

Serpentine soils are absent from the site; as such, those species that are uniquely adapted to serpentine conditions in the project’s vicinity are considered absent from the site. These species include the Bay checkerspot butterfly (*Euphydryas editha bayensis*), big-scale balsamroot (*Balsamorhiza macrolepis* var. *macrolepis*), Santa Cruz Mountain pussypaws (*Calyptridium parryi* var. *hesseae*), Tiburon Indian paintbrush (*Castilleja affinis* ssp. *neglecta*), pink creamsacs (*Castilleja rubicundula* ssp. *rubicundula*), coyote ceanothus (*Ceanothus ferrisiae*), dwarf soaproot (*Chlorogalum pomeridianum* var. *minus*), Mt. Hamilton fountain thistle (*Cirsium fontinale* var. *campylon*), San Francisco collinsia (*Collinsia multicolor*), Santa Clara Valley dudleya (*Dudleya*



abramsii ssp. *setchellii*), smooth lessingia (*Lessingia micradenia* ssp. *glabrata*), woodland woollythreads (*Monolopia gracilens*), Metcalf Canyon jewel-flower (*Streptanthus albidus* ssp. *albidus*), and most beautiful jewel-flower (*Streptanthus albidus* ssp. *peramoenus*).

Several other special status plant species have been ruled out on the site as they occur in habitats not present in the project site (e.g., vernal pool, chaparral, broad leafed forest, coastal prairie, coastal scrub, etc.) or at elevations significantly below or above elevations of the site (approximately 114 to 129 meters NGVD). These species include the Anderson's manzanita (*Arctostaphylos andersonii*), Santa Clara red ribbons (*Clarkia concinna* ssp. *automixa*), Hospital Canyon larkspur (*Delphinium californicum* ssp. *interius*), Tracy's eriastrum (*Eriastrum tracyi*), Hoover's button-celery (*Eryngium aristulatum* var. *hooveri*), fragrant fritillary (*Fritillaria liliacea*), Loma Prieta hoita (*Hoita strobilina*), legenera (*Legenere limosa*), Mt. Hamilton coreopsis (*Leptosyne hamiltonii*), Mt. Hamilton lomatium (*Lomatium observatorium*), arcuate bush-mallow (*Malacothamnus arcuatus*), Hall's bush-mallow (*Malacothamnus hallii*), Oregon meconella (*Meconella oregana*), Santa Cruz Mountains beardtongue (*Penstemon rattanii* var. *kleei*), San Benito pentachaeta (*Pentachaeta exilis* ssp. *aeolica*), Mt. Diablo phacelia (*Phacelia phacelioides*), warty popcornflower (*Plagiobothrys verrucosus*), Chaparral harebell (*Ravenella exigua*), rock sanicle (*Sanicula saxatilis*), Mt. Hamilton jewelflower (*Streptanthus callistus*), and Santa Cruz clover (*Trifolium buckwestiorum*).

Additionally, fish are absent from the site, as streams and other waters sufficient to support fish are absent from the site. Special status plant and animal species having potential to occur on the project site or immediate vicinity because suitable habitats are present are discussed further below.



LEGEND



California Annual Grassland



Developed: Urban / Suburban



Northern Coastal Scrub / Diablan Sage Scrub



Swale



Potential Seasonal Wetland



Culvert

200' 0 200 feet
approximate scale

Aerial Photo courtesy of
U.S.D.A. National Agriculture Imagery Program (NAIP) 9-28-2022



LIVE OAK
ASSOCIATES, INC.

Serene Hills BE

Habitats / Land Cover

Date
1/02/2024

Project #
2842-01

Figure #
3



TABLE 1: SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY.

PLANTS (adapted from CDFW 2023 and CNPS 2023)

Other plant species listed by CNPS

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Bent-flowered fiddleneck <i>Amsinckia lunaris</i>	CNPS 1B	<u>Habitat</u> : Coastal bluff scrub, cismontane woodland, and valley and foothill grasslands. <u>Elevation</u> : 3-500 meters. <u>Blooms</u> : March–June.	Unlikely. The site provides poor habitat for this species. The closest record for this species is more than three miles from the site as well (CDFW 2023).

TABLE 1: SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY.

ANIMALS (adapted from CDFW 2023 and USFWS 2023)

Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Acts

Common and scientific name	Status	General habitat description	*Occurrence in the study area
Western bumble bee <i>Bombus occidentalis</i>	CCE	In California, mainly occurring within the coastal and Sierra Nevada ranges within meadows and grasslands and some natural areas within urban environments. Indication of recent population potentially being restricted to high elevation and coastal areas. Historically occurred from the Channel Islands to the northern California border. Flight period is February to late November, peaking in late June and late September. Tends to construct nest underground in animal burrows on west and south-west facing slopes. Overwintering sites are likely in friable soils or in debris or leaf litter.	Unlikely. Suitable nesting sites for this species is unlikely as the entire site is regularly disked; there are only a few ground squirrel burrows onsite. While this species may rarely to occasionally forage on the site, it is unlikely to nest on the site. The closest recorded observation of this species is centered approximately 2.5 miles to the southwest of the site (CDFW 2023).



TABLE 1: SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY.

ANIMALS (adapted from CDFW 2023 and USFWS 2023)

Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Acts

Common and scientific name	Status	General habitat description	*Occurrence in the study area
Crotch bumble bee <i>Bombus crotchii</i>	CCE	In California, inhabits open grassland and scrub habitats of the southern 2/3 of California. Historically in, but largely extirpated from the Central Valley. Flight period for queens is late February to late October peaking in April and July; flight period for males and workers is March through September peaking in early July. Constructs nests underground in animal burrows. Overwintering sites are likely in soft soils or in debris or leaf litter.	Unlikely. Suitable nesting sites for this species are unlikely as the entire site is regularly disked; there are only a few ground squirrel burrows onsite. While this species may rarely to occasionally forage on the site, it is unlikely to nest on the site. The closest recorded observation of this species is centered more than 3 miles to the south of the site (CDFW 2023).
California tiger salamander (CTS) <i>Ambystoma californiense</i>	FT, CT, SCVHP Focal Species	Breeds in vernal pools and stock ponds of central California; adults aestivate in grassland habitats adjacent to the breeding sites.	Unlikely. Suitable breeding habitat for this species is absent from the site, and burrows are largely absent from the site due to regular disking. However, aerial imagery shows a ponded area just upslope from the site and the closest recorded observation of this species is centered approximately 1 mile to the east of the site (CDFW 2023), therefore, while possible, it is unlikely this species may occasionally move across the site.
Foothill yellow-legged frog (FYLF) <i>Rana boylei</i>	FE, CE, SCVHP Focal Species	Occurs in swiftly flowing streams and rivers with rocky substrate with open, sunny banks in forest, chaparral, and woodland habitats, and can sometimes be found in isolated pools.	Absent. Suitable habitat for the FYLF is absent from the site.
California Red-legged Frog (CRLF) <i>Rana aurora draytonii</i>	FT, CSC, SCVHP Focal Species	Rivers, creeks and stock ponds of the Sierra foothills and Bay Area, preferring pools with overhanging vegetation.	Absent. Suitable habitat for the CRLF is absent from the site.
Western pond turtle (WPT) <i>Actinemys marmorata</i>	CCT, SCVHP Focal Species	Intermittent and permanent waterways including streams, marshes, rivers, ponds, and lakes. Open slow-moving water of rivers and creeks of central California with rocks and logs for basking.	Absent. Suitable habitat for WPT is absent from the site.
Tricolored Blackbird <i>Agelaius tricolor</i>	CT, SCVHP Focal Species	Breeds near fresh water in dense emergent vegetation.	Absent. Suitable nesting habitat for this species is absent from the site.



TABLE 1: SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY.

ANIMALS (adapted from CDFW 2023 and USFWS 2023)

Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Acts

Common and scientific name	Status	General habitat description	*Occurrence in the study area
Least Bell's vireo (LBV) <i>Vireo bellii pusillus</i>	FE, CE, SCVHP Focal Species	Occurs in southern California and southern Santa Clara County during the breeding season March, migrates out of the state July through September. Early successional riparian vegetation including dense brush, mesquite, or cottonwood-willow forests in riparian areas.	Absent. Suitable nesting habitat for this species is absent for the site.
Swainson's hawk (SWHA) <i>Buteo swainsoni</i>	CT	Breeds in stands with few trees in juniper-sage flats, riparian areas, and in oak savannah. Requires adjacent suitable foraging areas such as grasslands or alfalfa fields supporting rodent populations.	Unlikely. The SWHA is only known in the region from one pair which breeds each year in Coyote Valley. The past several years, they have nested immediately south of Bailey Avenue north of Morgan Hill. There are no other recent records of this species in Santa Clara County.
San Joaquin kit fox <i>Vulpes macrotis mutica</i>	FE, CT	Frequents desert alkali scrub and annual grasslands and may forage in adjacent agricultural habitats. Utilizes enlarged (4 to 10 inches in diameter) ground squirrel burrows as denning habitat.	Absent. The site is outside of the range for San Joaquin kit fox.

TABLE 1: SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY.

ANIMALS (adapted from CDFW 2023 and USFWS 2023)

Species Listed as Species of Special Concern

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Santa Cruz black salamander <i>Aneides niger</i>	CSC	Occurs in deciduous woodland, coniferous forests, and coastal grasslands around the Santa Cruz Mountains and foothills. This species is also known to occur on the developed flats in pockets within older developments. They can be found under rocks near streams, in talus, under damp logs, rotting wood, and other objects.	Absent. Suitable habitat for the Santa Cruz black salamander is absent from the project site.



TABLE 1: SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY.

ANIMALS (adapted from CDFW 2023 and USFWS 2023)

Species Listed as Species of Special Concern

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Coast horned lizard <i>Phrynosoma blainvillii</i>	CSC	Occurs in grasslands, scrublands, oak woodlands, etc. of central California. Common in sandy washes with scattered shrubs.	Absent. Habitats required by coast horned lizards are absent from the site.
California glossy snake <i>(Arizona elegans occidentalis)</i>	CSC	Occurs in arid areas with grassland, scrub, chaparral, and rocky washes. This species is nocturnal and spends the day in burrows.	Unlikely. Suitable habitat for this species is poor on this site, as nearly the entire site has been disked and is adjacent to fully developed land.
Northern harrier <i>Circus cyaneus</i>	CSC	Frequents meadows, grasslands, open rangelands, freshwater emergent wetlands; uncommon in wooded habitats.	Possible. Although the nearest documented observation of this species is more than three miles from the site (CDFW 2023), the site provides suitable breeding and foraging habitat for this species.
White-tailed Kite (WTK) <i>Elanus leucurus</i>	CP	Open grasslands and agricultural areas throughout central California.	Possible. Although the nearest documented observation of this species is more than three miles from the site (CDFW 2023), the site provides moderately suitable breeding and foraging habitat for this species.
Golden Eagle (GE) <i>Aquila chrysaetos</i>	CP	Typically frequents rolling foothills, mountain areas, sage-juniper flats, and desert.	Possible. Although suitable breeding habitat for the golden eagle is absent from the site, foraging habitat exists onsite.
Burrowing Owl (BUOW) <i>Athene cunicularia</i>	CSC, SCVHP Focal Species	Found in open, dry grasslands, deserts, and ruderal areas. Requires suitable burrows. This species is often associated with California ground squirrels.	Possible. Moderately suitable habitat is present onsite with a few ground squirrel burrows on the site. The nearest documented occurrence of BUOW is approximately two miles from the site (CDFW 2023).
Loggerhead Shrike (LOSH) <i>Lanius ludovicianus</i>	CSC	Frequents open habitats with sparse shrubs and trees, other suitable perches, bare ground, and low herbaceous cover. Nests in tall shrubs and dense trees. Forages in grasslands, marshes, and ruderal habitats. Can often be found in cropland.	Possible. Suitable breeding and foraging habitat exist onsite.
Yellow-breasted chat (YBC) <i>Icteria virens</i>	CSC	Frequently breeds in dense shrubs and blackberry thickets and uses areas of dense vegetation during migration.	Absent. Dense vegetation suitable for nesting is absent from the site.



TABLE 1: SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY.

ANIMALS (adapted from CDFW 2023 and USFWS 2023)

Species Listed as Species of Special Concern

Common and scientific names	Status	General habitat description	*Occurrence in the study area
California Yellow Warbler <i>Dendroica petechia brewsteri</i>	CSC	Migrants move through many habitats of Sierra and its foothills. This species breeds in riparian thickets of alder, willow, and cottonwoods.	Absent. Suitable breeding habitat is absent from the site.
Grasshopper sparrow <i>Ammodramus savannarum</i>	CSC	Occurs in California during spring and summer in open grasslands with scattered shrubs.	Possible. Suitable breeding habitat is present for this species on the site.
Townsend's Big-eared bat <i>Corynorhinus townsendii</i>	CSC	Primarily a cave-dwelling bat that may also roost in buildings. Occurs in a variety of habitats.	Possible. Although suitable foraging habitat occurs onsite, suitable roosting habitat is absent from the site. The nearest documented occurrence of this species is more than three miles from the site (CDFW 2023).
Pallid Bat <i>Antrozous pallidus</i>	CSC	Grasslands, chaparral, woodlands, and forests; most common in dry rocky open areas providing roosting opportunities.	Possible. Although suitable foraging habitat occurs onsite, suitable roosting habitat is absent from the site. The nearest documented occurrence of this species is more than three miles to the south of the site (CDFW 2023).
San Francisco Dusky-Footed Woodrat <i>Neotoma fuscipes annectens</i>	CSC	Found in hardwood forests, oak riparian, and shrub habitats.	Absent. Woodrat nests are absent from the site, and they are not expected to move onto the site.
American Badger <i>Taxidea taxus</i>	CSC	Found in drier open stages of most shrub, forest, and herbaceous habitats with friable soils, specifically grassland environments. Natal dens occur on slopes.	Possible. The site is suitable for badgers, and suitable habitat exists adjacent on three sides of the site, however, it is unlikely a badger would have a reproductive den onsite. The nearest documented occurrence of a badger is approximately two miles from the site (CDFW 2023).

*Explanation of Occurrence Designations and Status Codes

Present: Species observed on the site at time of field surveys or during recent past.

Likely: Species not observed on the site, but it may reasonably be expected to occur there on a regular basis.

Possible: Species not observed on the site, but it could occur there from time to time.

Unlikely: Species not observed on the site, and would not be expected to occur there except, perhaps, as a transient.

Absent: Species not observed on the site and precluded from occurring there because habitat requirements not met.

STATUS CODES

FE	Federally Endangered	CSC	California Species of Special Concern
FT	Federally Threatened	CE	California Endangered
CT	California Threatened	CR	California Rare
FPE	Federally Endangered (Proposed)	CP	California Protected
FPT	Federally Threatened (Proposed)	CCE	California Candidate Endangered
FC	Federal Candidate	CCT	California Candidate Threatened

CRPR California Native Plant Society Listing

1A Plants Presumed Extinct in California

1B Plants Rare, Threatened, or Endangered in California and elsewhere

3 Plants about which we need more information – a review list

4 Plants of limited distribution – a watch list



2 Plants Rare, Threatened, or Endangered in
California, but more common elsewhere

2.4 JURISDICTIONAL WATERS

Jurisdictional waters include rivers, creeks, and drainages that have a defined bed and bank and which, at the very least, carry ephemeral flows. Jurisdictional waters also include lakes, ponds, reservoirs, and wetlands. Such waters may be subject to the regulatory authority of the U.S. Army Corps of Engineers (USACE), CDFW, and the Regional Water Quality Control Board (RWQCB). See Section 3.2.5 of this report for additional information.

Several swales exist on the site, including one that, per historical aerial photos show a swale channel that historically had connectivity to the Santa Clara Conduit. Although this no longer appears to be connected, additional surveys are necessary to determine the full current extent of this swale to determine current connectivity. Although the site does not likely support any waters under the jurisdiction of the USACE, the CDFW and/or RWQCB may claim jurisdiction over the onsite swales. Therefore, a wetland delineation is recommended for this project site to determine extent and connectivity of swales on the site.



3 IMPACTS AND MITIGATIONS

3.1 SIGNIFICANCE CRITERIA

General plans, area plans, and specific projects are subject to the provisions of the California Environmental Quality Act. The purpose of CEQA is to assess the impacts of proposed projects on the environment before they are constructed. For example, site development may require the removal of some or all of its existing vegetation. Animals associated with this vegetation could be destroyed or displaced. Animals adapted to humans, roads, buildings, pets, etc., may replace those species formerly occurring on a site. Plants and animals that are state and/or federally listed as threatened or endangered may be destroyed or displaced. Sensitive habitats such as wetlands and riparian woodlands may be altered or destroyed. These impacts may be considered significant. According to *2023 CEQA Status and Guidelines (2023)*, “Significant effect on the environment” means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic interest. Specific project impacts to biological resources may be considered “significant” if they will:

- 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 Wildlife or U.S. Fish and Wildlife Service;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;
- 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;
- 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;



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- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and
 - Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

3.2 RELEVANT GOALS, POLICIES, AND LAWS

3.2.1 Threatened and Endangered Species

State and federal “endangered species” legislation has provided the CDFW and USFWS with a mechanism for conserving and protecting plant and animal species of limited distribution and/or low or declining populations. Species listed as threatened or endangered under provisions of the state and federal Endangered Species Acts, candidate species for such listing, state species of special concern, and some plants listed as endangered by the California Native Plant Society are collectively referred to as “species of special status.” Permits may be required from both the CDFW and USFWS if activities associated with a proposed project will result in the take of a listed species. To “take” a listed species, as defined by the state of California, is “to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill” said species (California Fish and Game Code, Section 86). “Take” is more broadly defined by the federal Endangered Species Act to include “harm” of a listed species (16 USC, Section 1532(19), 50 CFR, Section 17.3). Furthermore, the CDFW and the USFWS are responding agencies under CEQA. Both agencies review CEQA documents in order to determine the adequacy of their treatment of endangered species issues and to make project-specific recommendations for their conservation.

3.2.2 Migratory Birds

State and federal laws also protect most bird species. The State of California signed Assembly Bill 454 into law in 2019, which clarifies native bird protection and increases protections where California law previously deferred to Federal law. The Federal Migratory Bird Treaty Act (FMBTA: 16 U.S.C., scc. 703, Supp. I, 1989) prohibits killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs.



3.2.3 Birds of Prey

Birds of prey are protected in California under provisions of the State Fish and Game Code, Section 3503.5, which states that it is “unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto.” Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered “taking” by the CDFW.

Additionally, the Bald and Golden Eagle Protection Act (16 U.S.C., scc. 668-668c) prohibits anyone from taking bald or golden eagles, including their parts, nests, or eggs, unless authorized under a federal permit. The act prohibits any disturbance that directly affects an eagle or an active eagle nest as well as any disturbance caused by humans around a previously used nest site during a time when eagles are not present such that it agitates or bothers an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death, or nest abandonment.

3.2.4 Bats

Section 2000 and 4150 of the California Fish and Game Code states that it is unlawful to take or possess a number of species, including bats, without a license or permit, as required by Section 3007. Additionally, Title 14 of the California Code of Regulations states it is unlawful to harass, herd, or drive a number of species, including bats. To harass is defined as “an intentional act which disrupts an animal's normal behavior patterns, which includes, but is not limited to, breeding, feeding or sheltering.” For these reasons, bat colonies in particular are considered to be sensitive and therefore, disturbances that cause harm to bat colonies are unlawful.

3.2.5 Wetlands and Other “Jurisdictional Waters”

Jurisdictional waters include waters of the United States subject to the regulatory authority of the U.S. Army Corps of Engineers (USACE) and waters of the State of California subject to the regulatory authority of the California Department of Fish and Wildlife (CDFW) and the California Regional Water Quality Control Board (RWQCB).



Clean Water Act, Section 404. The USACE regulates the filling or grading of Waters of the U.S. under the authority of Section 404 of the Clean Water Act. Drainage channels and adjacent wetlands may be considered “waters of the United States” or “jurisdictional waters” subject to the jurisdiction of the USACE. The extent of jurisdiction has been defined in the Code of Federal Regulations and clarified in federal courts.

The definition of waters of the U.S. have changed several times in recent years. In January 2020, the Environmental Protection Agency (EPA) and USACE jointly issued the Navigable Waters Protection Rule. The new rule was published in the Federal Register on April 21, 2020 and became effective on June 22, 2020.

The Navigable Waters Protection Rule (33 CFR §328.3(a)) defines waters of the U.S. as:

Territorial Seas and Traditional Navigable Waters (TNWs)

- The territorial seas and traditional navigable waters include large rivers and lakes and tidally influenced waterbodies used in interstate or foreign commerce.

Tributaries

- Tributaries include perennial and intermittent rivers and streams that contribute surface flow to traditional navigable waters in a typical year. These naturally occurring surface water channels must flow more often than just after a single precipitation event—that is, tributaries must be perennial or intermittent.
 - Tributaries can connect to a traditional navigable water or territorial sea in a typical year either directly or through other “waters of the United States,” through channelized non-jurisdictional surface waters, through artificial features (including culverts and spillways), or through natural features (including debris piles and boulder fields).
 - Ditches are to be considered tributaries only where they satisfy the flow conditions of the perennial and intermittent tributary definition, and either were constructed in or relocate a tributary or were constructed in an adjacent wetland and contribute perennial or intermittent flow to a traditional navigable water in a typical year.



Lakes, Ponds, and Impoundments of Jurisdictional Waters

- Lakes, ponds, and impoundments of jurisdictional waters are jurisdictional where they contribute surface water flow to a traditional navigable water or territorial sea in a typical year either directly or through other waters of the United States, through channelized non-jurisdictional surface waters, through artificial features (including culverts and spillways), or through natural features (including debris piles and boulder fields).
- Lakes, ponds, and impoundments of jurisdictional waters are also jurisdictional where they are flooded by a water of the United States in a typical year, such as certain oxbow lakes that lie along the Mississippi River.

Adjacent Wetlands

- Wetlands that physically touch other jurisdictional waters are “adjacent wetlands.”
- Wetlands separated from a water of the United States by only a natural berm, bank or dune are also “adjacent.”
- Wetlands inundated by flooding from a water of the United States in a typical year are “adjacent.”
- Wetlands that are physically separated from a jurisdictional water by an artificial dike, barrier, or similar artificial structure are “adjacent” so long as that structure allows for a direct hydrologic surface connection between the wetlands and the jurisdictional water in a typical year, such as through a culvert, flood or tide gate, pump, or similar artificial feature.
- An adjacent wetland is jurisdictional in its entirety when a road or similar artificial structure divides the wetland, as long as the structure allows for a direct hydrologic surface connection through or over that structure in a typical year.

The Navigable Waters Protection Rule also outlines what do not constitute waters of the United States. The following waters/features are not jurisdictional under the rule:



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- Waterbodies that are not included in the four categories of waters of the United States listed above.
 - Groundwater, including groundwater drained through subsurface drainage systems, such as drains in agricultural lands.
 - Ephemeral features, including ephemeral streams, swales, gullies, rills, and pools.
 - Diffuse stormwater run-off and directional sheet flow over upland.
 - Many farm and roadside ditches.
 - Prior converted cropland retains its longstanding exclusion but is defined for the first time in the final rule. The agencies are clarifying that this exclusion will cease to apply when cropland is abandoned (i.e., not used for, or in support of, agricultural purposes in the immediately preceding five years) and has reverted to wetlands.
 - Artificially irrigated areas, including fields flooded for agricultural production, that would revert to upland should application of irrigation water to that area cease.
 - Artificial lakes and ponds, including water storage reservoirs and farm, irrigation, stock watering, and log cleaning ponds, constructed or excavated in upland or in non-jurisdictional waters.
 - Water-filled depressions constructed or excavated in upland or in non-jurisdictional waters incidental to mining or construction activity, and pits excavated in upland or in non-jurisdictional waters for the purpose of obtaining fill, sand, or gravel.
 - Stormwater control features excavated or constructed in upland or in non-jurisdictional waters to convey, treat, infiltrate, or store stormwater run-off.
 - Groundwater recharge, water reuse, and wastewater recycling structures, including detention, retention and infiltration basins and ponds, that are constructed in upland or in non-jurisdictional waters.



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- Waste treatment systems have been excluded from the definition of waters of the United States since 1979 and will continue to be excluded under the final rule. Waste treatment systems include all components, including lagoons and treatment ponds (such as settling or cooling ponds), designed to either convey or retain, concentrate, settle, reduce, or remove pollutants, either actively or passively, from wastewater or stormwater prior to discharge (or eliminating any such discharge).

All activities that involve the discharge of dredge or fill material into waters of the U.S. are subject to the permit requirements of the USACE under Section 404 of the Clean Water Act. Such permits are typically issued on the condition that the applicant agrees to provide mitigation that result in no net loss of wetland functions or values. No permit can be issued without a CWA Section 401 Water Quality Certification (or waiver of such certification) verifying that the proposed activity will meet state water quality standards (Section 3.6.2).

- Porter-Cologne Water Quality Act/Clean Water Act, Section 401. There are nine Regional Water Quality Control Boards statewide; collectively, they oversee regional and local water quality in California. The RWQCB administers Section 401 of the Clean Water Act and the Porter-Cologne Water Quality Control Act. The RWQCB for a given region regulates discharges of fill or pollutants into waters of the State through the issuance of various permits and orders.

Pursuant to Section 401 of the Clean Water Act, the RWQCB regulates waters of the State that are also waters of the U.S. Discharges into such waters require a Section 401 Water Quality Certification from the RWQCB as a condition to obtaining certain federal permits, such as a Clean Water Act Section 404 permit (Section 3.6.1). Discharges into all Waters of the State, even those that are not also Waters of the U.S., require Waste Discharge Requirements (WDRs), or a waiver of WDRs, from the RWQCB.

The Porter-Cologne Water Quality Control Act, Water Code Section 13260, requires that “any person discharging waste, or proposing to discharge waste, within any region that could affect the ‘waters of the State’ to file a report of discharge” with the RWQCB. Waters of the State as defined



in the Porter-Cologne Act (Water Code Section 13050[e]) are “any surface water or groundwater, including saline waters, within the boundaries of the state.” This gives the RWQCB authority to regulate a broader set of waters than the Clean Water Act alone; specifically, in addition to regulating waters of the U.S. through the Section 401 Water Quality Certification process, the RWQCB also claims jurisdiction and exercises discretionary authority over “isolated waters,” or waters that are not themselves waters of the U.S. and are not hydrologically connected to waters of the U.S.

The RWQCB also administers the Construction Stormwater Program and the federal National Pollution Discharge Elimination System (NPDES) program. Projects that disturb one or more acres of soil must obtain a Construction General Permit under the Construction Stormwater Program. A prerequisite for this permit is the development of a Stormwater Pollution Prevention Plan (SWPPP) by a certified Qualified SWPPP Developer. Projects that discharge wastewater, stormwater, or other pollutants into a Water of the U.S. may require a NPDES permit.

- California Department of Fish and Game Code, Section 1602. The CDFW has jurisdiction over the bed and bank of natural drainages and lakes according to provisions of Section 1602 of the California Fish and Game Code. Activities that may substantially modify such waters through the diversion or obstruction of their natural flow, change or use of any material from their bed or bank, or the deposition of debris require a Notification of Lake or Streambed Alteration. If the CDFW determines that the activity may adversely affect fish and wildlife resources, a Lake or Streambed Alteration Agreement will be prepared. Such an agreement typically stipulates that certain measures will be implemented to protect the habitat values of the lake or drainage in question.

3.2.6 City Tree Ordinance

The City of Morgan Hill has a Tree Ordinance (Section 12.32 of the Municipal Code), which regulates the removal of trees. The City’s Tree Ordinance requires a permit to remove Community, Ordinance-Sized, and Indigenous Trees and includes the following definitions:



"Community of trees" means a group of trees of any size which are ecologically or aesthetically related to each other such that loss of several of them would cause a significant ecological, aesthetic, or environmental impact in the immediate area.

"Ordinance Sized Tree" means any live woody plant rising above the ground with a single stem or trunk of a circumference of forty inches or more for nonindigenous species and eighteen inches or more for indigenous species measured at four and one-half feet vertically above the ground or immediately below the lowest branch, whichever is lower, and having the inherent capacity of naturally producing one main axis continuing to grow more vigorously than the lateral axes. All commercial tree farms, nonindigenous tree species in residential zones and orchards (including individual fruit trees) are exempted from the definition of tree for the purpose of this chapter.

"Street Tree" is a tree, of any size, situated within the public street right-of-way or publicly accessible private street (e.g., trees within a landscape park strip), or within five feet of a publicly accessible sidewalk adjacent to a public or private street in the case of a street without a landscape park strip.

"Indigenous tree" means any tree which is native to the Morgan Hill region. Such trees include oaks (all types), California Bays, Madrones, Sycamore, and Alder.

"Any person desiring to cut down, remove, destroy, or cause to be removed any tree regulated in this chapter shall apply to the community development department for a tree cutting permit on forms provided by the department. The application shall be accompanied by such drawings, written material, photographs, and other information as are necessary to provide necessary data concerning trees within the affected area and which shall include:

- A. The diameter and height of the tree;
- B. The type of trees (e.g. coniferous, evergreen hardwood and deciduous hardwood);
- C. A map or accurate sketch of location and trees proposed to be cut (showing other significant trees, shrubs, buildings or proposed buildings; photographs may be used to show the area);
- D. Method for marking the tree proposed to be cut down, removed, or destroyed;



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- E. Description of method to be used in removing the tree;
 - F. Description of tree planting or replacement program;
 - G. Reasons for proposing removal of the tree;
 - H. Address where tree is located;
 - I. General health of tree to be cut down or removed; and
 - J. Other pertinent information which the community development director may require.”

3.2.7 Santa Clara Valley Habitat Plan

Six local partners (i.e., County of Santa Clara, Santa Clara Valley Transportation Authority; Santa Clara Valley Water District; and the Cities of San Jose, Gilroy, and Morgan Hill) and two wildlife agencies (CDFW and USFWS) prepared and adopted this multi-species habitat conservation plan, which primarily covers southern Santa Clara County, as well as the City of San Jose except for the bayland areas. The SCVHP addresses listed species and species that are likely to become listed during the plan's 50-year permit term. The eighteen covered species include nine plants and nine animals. The animal species covered include, but are not limited to, the California tiger salamander, California red-legged frog, western pond turtle, and western burrowing owl. The SCVHP requires that the agencies comment on reportable interim projects and recommend mitigation measures or project alternatives that would help achieve the preliminary conservation objectives and not preclude important conservation planning options or connectivity between areas of high habitat value. Funding sources for the SCVHP include development fees based on land cover types (natural, agricultural, or small vacant sites surrounded by urban development). Additional fees are charged based on the occurrence of certain sensitive habitat types such as serpentine and wetlands.

The project is considered a covered project under the SCVHP. As a result, the project would be subject to conditions and fees of the SCVHP.



3.2.7.1 SCVHP Fees

Chapter 9 of the SCVHP identifies fees that would be required by this project. Fees are calculated at the time the project submits the SCVHP application, which corresponds to application timing of grading and/or building permits. Temporary impact fees, such as for leach fields and utility trenching, are assessed at a fraction of these fees.

3.2.7.2 Conditions on Covered Activities

The SCVHP provides several conditions for covered activities under the SCVHP. These conditions can be found in Chapter 6 of the SCVHP and are summarized below.

- **Condition 1 (page 6-7). Avoid Direct Impacts on Legally Protected Plant and Wildlife Species-** Condition 1 instructs developers to avoid direct impacts on legally protected plant and wildlife species, including federally endangered Contra Costa goldfields and fully protected wildlife species including the golden eagle, bald eagle, American peregrine falcon, southern bald eagle, white-tailed kite, California condor, and ring-tailed cat. Several of these species are likely to occur on or forage over the site (golden eagle, white-tailed kite, and ringtail). Condition 1 also protects bird species and their nests that are protected under the Migratory Bird Treaty Act (MBTA); additionally, golden eagles and bald eagles are protected under the Bald and Golden Eagle Protection Act. Additionally, page 6-94 and Table 6-8 identify required surveys for breeding habitat of select covered wildlife species.
- **Condition 2 (page 6-9). Incorporate Urban-Reserve System Interface Design Requirements-** Condition 2 provides design requirements for the urban-reserve system interface. Some of the design requirements included in Condition 2 are installing non-permeable fences between urban and reserve areas, fencing public roads that run adjacent to reserve areas, minimizing the length of shared boundaries between urban and reserve areas, outdoor lighting limitations, and landscaping requirements.
- **Condition 3 (page 6-12). Maintain Hydrologic Conditions and Protect Water Quality- (Condition applies to project)-** Condition 3 applies to all projects due to the fact that implementation of projects could result in impacts on watershed health, including impacts to aquatic habitat for species, through changes in hydrology and water quality. This condition



incorporates all of the most important measures for water quality protection of the National Pollutant Discharge Elimination System (NPDES) Program of the Clean Water Act. Required measures of Condition 3 are located in Table 6-2 of the SCVHP; these measures relate to water quality and habitat protection during and after project construction. They include measures typically included in a SWPPP but may include measures that are in addition to such plans.

- **Condition 4 (page 6-14). Avoidance and Minimization for In-Stream Projects-** Condition 4 minimizes impacts on riparian and aquatic habitat through appropriate design requirements and construction practices and provides avoidance and minimization measures for in-stream projects that may impact stream morphology, aquatic and riparian habitat, flow conditions, covered species, natural communities, and wildlife movement.
- **Condition 5 (page 6-18). Avoidance and Minimization Measures for In-Stream Operations and Maintenance-** Condition 5 provides avoidance and minimization measures for in-stream operations and maintenance activities, which includes, but is not limited to trail, bridge, road, and culvert maintenance, bank stabilization, removal of debris, and vegetation management.
- **Condition 6 (Page 6-21). Design and Construction Requirements for Covered Transportation Projects-** Condition 6 provides requirements for rural development design, construction, and post-construction. Types of projects covered by Condition 6 include highway projects, mass transit projects, roadway projects and interchange upgrades, road safety and operational improvements, and dirt road construction.
- **Condition 7 (page 6-28). Rural Development Design and Construction Requirements-** Condition 7 provides requirements for development design and construction of new development outside of the urban service area including requirements relating to site hydrology, vineyards, private rural roads, vegetation management, soils, and lighting.
- **Condition 8 (page 6-35). Implement Avoidance and Minimization Measures for Rural Road Maintenance-** Condition 8 provides requirements for rural roads, road median, and barrier maintenance including requirements regarding riparian setbacks, erosion measures, herbicide and pesticide use, seasonal restrictions, mower cleaning, revegetation, ground-disturbing road maintenance, and flow lines.



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- **Condition 9 (page 6-37). Prepare and Implement a Recreation Plan-** Condition 9 requires providing public access to all reserve lands owned by a public entity; each reserve land must provide a recreation plan.
 - **Condition 10 (page 6-42). Fuel Buffer-** Condition 10 provides requirements for fuel buffers between 30 and 100 feet of structures. Requirements include measures relating to fuel buffers near structures and on reserve lands; the most notable measure is the requirement for nesting bird surveys prior to any fuel buffer maintenance during the nesting season.
 - **Condition 11 (page 6-44). Stream and Riparian Setbacks-** Condition 11 provides requirements for stream and riparian setbacks; as the development area is outside the Urban Service Area, stream setbacks measured from the top of the stream bank should be 35 to 200 feet depending on the category rating of the stream and the slope class. Setbacks for Category 1 streams with 0-30% slopes should be at least 150 feet, and with >30% slopes should be at least 200 feet. The setback would be more if the edge-of-riparian line plus 35 feet is greater than the stream setback. Category 2 streams should have a setback of 35 feet.
 - **Condition 12 (page 6-56). Wetland and Pond Avoidance and Minimization-** Condition 12 provides measures to protect wetlands and ponds, including planning actions, design, and construction actions.
 - **Condition 13 (page 6-58). Serpentine and Associated Covered Species Avoidance and Minimization-** Condition 13 requires surveys for special status plants and the Bay checkerspot butterfly as well as its larval host plant in areas that support serpentine bunchgrass grassland, serpentine rock outcrops, serpentine seeps, and serpentine chaparral. Fees apply for impacts to serpentine habitat.
 - **Condition 14 (page 6-60). Valley Oak and Blue Oak Woodland Avoidance and Minimization-** Condition 14 provides requirements for project planning and project construction, including avoidance of large oaks, guidance on irrigation near oak trees, and a buffer around the root protection zone, roads, and pathways within 25 feet of the dripline of an oak tree, trenching, and pruning activities.
 - **Condition 15 (page 6-62). Western Burrowing Owl-** Condition 15 requires preconstruction surveys for burrowing owls in appropriate habitat prior to construction activities, provides



avoidance measures for owls and nests in the breeding season and owls in the non-breeding season, and requirements for construction monitoring.

- **Condition 16 (page 6-68) Least Bell's Vireo-** Condition 16 requires preconstruction surveys in appropriate habitat for the least Bell's vireo prior to construction activities and provides avoidance and construction monitoring measures.
- **Condition 17 (page 6-69) Tricolored Blackbird-** Condition 17 requires preconstruction surveys in appropriate habitat for the tricolored blackbird prior to construction activities and provides avoidance and construction monitoring measures.
- **Condition 18 (page 6-71) San Joaquin Kit Fox-** Condition 18 requires preconstruction surveys in appropriate habitat for the San Joaquin kit fox prior to construction activities and provides avoidance and construction monitoring measures.
- **Condition 19 (page 6-74). Plant Salvage when Impacts are Unavoidable-** Condition 19 provides salvage guidance and requirements for covered plants.

Condition 20 (page 6-76). Avoid and Minimize Impacts to Covered Plant Occurrences- Condition 20 provides requirements for preconstruction surveys for appropriate covered plants (per habitat).

3.3 IMPACTS SPECIFIC TO THE PROJECT

The approximately 8.37-acre property is planned for the development of a low-density residential neighborhood consisting of seven single-family residences. As discussed above, activities resulting in impacts to biotic resources may be regulated by local, state, and federal laws. The natural resource issues specific to this project are discussed in detail below.

3.3.1 Potential Project Impacts to Special Status Plants

Potential Impact. The grassland habitat of the site does not provide habitat for special status plants due to on-going and long-term disturbance and disking. In addition, special status plant species known to occur, or to once have occurred, in the project region are considered absent from the site due to an absence of potential habitat for these species (i.e. an absence of serpentine soils, vernal pools, chaparral, and/or because the site is substantially below the elevations at



which these species occur, etc.). As such, the project as proposed is expected to have no impact on special status plants.

Mitigation. None warranted.

3.3.2 Loss of Habitat for Special Status Animals

Potential Impact. Twenty-five special status animal species occur, or once occurred, regionally (see Table 1). Of these, 16 species would be absent or unlikely to occur on the site due to a lack of suitable habitat for these species. The species that would be absent or unlikely to occur include the western bumble bee, Crotch bumble bee, California tiger salamander, foothill yellow-legged frog, California red-legged frog, Santa Cruz black salamander, coast horned lizard, California glossy snake, western pond turtle, Swainson's hawk, yellow-breasted chat, California yellow warbler, least Bell's vireo, tricolored blackbird, San Francisco dusky-footed woodrat, and San Joaquin kit fox.

The remaining nine special status animal species from Table 1 potentially occur more frequently as potential foragers or transients, may be resident to the site, or may occur within areas adjacent to the site. These include northern harrier, white-tailed kite, golden eagle, burrowing owl, loggerhead shrike, grasshopper sparrow, Townsend's big-eared bat, pallid bat, and American badger.

Suitable roosting habitat was not observed during the December 2023 survey. Although roosting habitat is not available onsite for the Townsend's big-eared bat and pallid bat, these species are expected to forage within the site from time to time.

The loss of grassland habitat, which does not contain regionally important habitat for northern harrier, white-tailed kite, golden eagle, burrowing owl, loggerhead shrike, grasshopper sparrow, Townsend's big-eared bat, pallid bat, and American badger, will not result in a significant loss of habitat for the species listed in Table 1.

The project does have the potential to result in an impact to individuals such as construction-related injury or mortality of nesting migratory birds and raptors, northern harrier, white-tailed



kite, golden eagle, burrowing owl, loggerhead shrike, grasshopper sparrow, Townsend's big-eared bat, pallid bat, and American badger, as discussed below in Sections 3.3.5 through 3.3.7.

Mitigation. No mitigation warranted for loss of habitat for special status animal species.

3.3.3 Loss of Habitat for Native Wildlife

Potential Impact. The habitats of the site comprise only a small portion of the regionally available habitat for plant and animal species that are expected to use the habitat. The proposed project would result in the loss of California annual grassland habitat. This is not expected to result in a significant loss of habitat for local wildlife. Therefore, impacts due to the loss of habitats for native wildlife resulting from the proposed project are considered less-than-significant.

Mitigation. No mitigation would be warranted for the loss of habitat for native wildlife.

3.3.4 Interference with the Movement of Native Wildlife

Potential Impact. The site does is not within a regional movement corridor or landscape linkage, therefore, native wildlife that currently move across the site are expected to continue to move across the site after the site is built out.

Mitigation. No mitigation would be warranted for the loss of a wildlife movement corridor.

3.3.5 Impacts to Nesting Migratory Birds Including Northern Harrier, White-tailed Kite, Golden Eagle, Loggerhead Shrike, Grasshopper Sparrow, and other Nesting Raptors and Protected Birds

Potential Impacts. Trees, shrubs, and grassland habitat of the project site may support nesting birds and raptors. Buildout of the project during the nesting period for migratory birds (i.e., typically between February 1 to August 31), including initial site grading, soil excavation, and/or tree and vegetation removal, poses a risk of nest abandonment and death of any live eggs or young that may be present in nests within or near the site. Such an effect would be considered a significant impact. To ensure that any active nests will not be disturbed, and individual birds will not be harmed by construction activities, the following measures should be followed.



Mitigation. The following measures will ensure active migratory bird and raptor nests will not be disturbed, and individual birds will not be harmed by construction activities and will reduce the project's potential impacts to nesting migratory birds to a less-than-significant level.

Mitigation Measure 3.3.5a. If initial site disturbance activities, including, tree, shrub, or vegetation removal, are to occur during the breeding season (typically February 1 to August 31), a qualified biologist would conduct pre-construction surveys for nesting migratory birds and raptors. The survey for nesting migratory birds would cover the project site itself, and the survey for nesting raptors would encompass the site and surrounding lands within 250 feet, where accessible. The survey should occur within 7 days prior to the onset of ground disturbance. If a nesting migratory bird were to be detected, an appropriate construction-free buffer would be established. Actual size of buffer, which would be determined by the project biologist, would depend on species, topography, and type of activity that would occur in the vicinity of the nest. The project buffer would be monitored periodically by the project biologist to ensure compliance. After the nesting is completed, as determined by the biologist, the buffer would no longer be required.

3.3.6 Impacts to Western Burrowing Owls

Potential Impacts. The site is outside of the burrowing owl fee area for the SCVHP; however, the site provides overwintering habitat for burrowing owls in the form of some California ground squirrel burrows on the southern edge of the site and foraging habitat, and suitable habitat for this species is also present in adjacent fields. As burrowing owls are protected under Condition 1 of the SCVHP, following measures within Condition 15 of the SCVHP is required, and the project shall conduct pre-construction surveys in accordance with the Condition 15 of the SCVHP. Measures to ensure compliance with this condition are included below as Mitigation Measure 3.3.6.

Should site demolition or grading occur during the nesting season for this species (February 1 through August 31), nests and nestlings that may be present would likely be destroyed. Overwintering burrowing owls may also be buried in their roost burrows outside of the nesting season (September 1 through January 31). Any actions related to site development that result in



the mortality of burrowing owls would constitute a violation of the federal Migratory Bird Treaty Act and provisions of the California Fish and Game Code. Therefore, the mortality of burrowing owls would constitute a significant impact under CEQA.

Mitigation. The following measures will ensure that burrowing owls will not be harmed by construction activities. Implementation of the following measures will reduce the project's potential impacts to burrowing owls to a less-than-significant level under CEQA and will ensure compliance with the SCVHP and state and federal laws.

Mitigation Measure 3.3.6a: Preconstruction surveys are required to ascertain whether or not burrowing owls occupy burrows on or adjacent to the site. These surveys consist of a minimum of two surveys, with the first survey no more than 14 days prior to initial construction activities (i.e. vegetation removal, grading, excavation, etc.) and the second survey conducted no more than 2 days prior to initial construction activities. If no burrowing owls or fresh sign of burrowing owls are observed during pre-construction surveys, construction may proceed. If burrowing owls or their recent sign are observed during these surveys, occupied burrows will be identified by the monitoring biologist and appropriate buffers, as described below, will be established.

- A 250-foot non-disturbance buffer will be established around all active burrowing owl burrows or nest sites as identified and defined by a qualified biologist. If the biologist determines that a nest is vacant, the non-disturbance buffer zone around that nest may be removed. The SCVHP specifies that a vacation from the site for a week or more by a burrowing owl, as determined by a qualified biologist, would constitute a voluntary relocation by the owl, and the qualified biologist could then take measures to collapse suitable burrows of the site to discourage reoccupation. The biologist will supervise hand excavation of the burrow to prevent reoccupation only after receiving approval from the wildlife agencies (SCVHP, Chapter 6, Condition 15).
 - For permission to encroach within 250 feet of such burrows during the nesting season (February 1 through August 31), an Avoidance, Minimization, and Monitoring Plan would need to be prepared and approved by the Implementing



Entity and the Wildlife Agencies prior to such encroachment (review Chapter 6, pp. 6-64 & 6-65 of the SCVHP for further detail).

- Should a burrowing owl be located onsite in the non-breeding season (September through January), construction activities would not be allowed within this 250-foot buffer of the active burrow(s) used by any burrowing owl unless the following avoidance measures are adhered to:
 - A qualified biologist monitors the owls for at least 3 days prior to construction to determine baseline foraging behavior (i.e., behavior without construction).
 - The same qualified biologist monitors the owls during construction and finds no change in owl foraging behavior in response to construction activities.
 - If there is any change in owl nesting and foraging behavior as a result of construction activities, these activities will cease within the 250-foot buffer.
 - If the owls are gone for at least one week, the project proponent may request approval from the Implementing Entity that a qualified biologist excavate usable burrows to prevent owls from reoccupying the site. After all usable burrows are excavated, the buffer zone will be removed, and construction may continue.

Mitigation Measure 3.3.6b: The SCVHP stipulates that passive relocation or exclusion of burrowing owls would not be allowed until a positive regional growth trend is achieved as defined in Section 5.4.6 of the SCVHP; however, a project may qualify for an exception to this prohibition. Permission to engage in passive relocation during the non-breeding season would need to be requested through the standard application process (Section 6.8 of the SCVHP). Application for an exception would require additional information including a relocation plan/schedule and documentation by a qualified biologist that owls have occupied the site for the full year without vacating the site for 10 or more consecutive days. The application would need to be submitted to the Implementing Entity, and the Wildlife Agencies would then evaluate the application and make a determination for granting the exception. If passive relocation is granted, additional measures may be required by the Implementing Entity.



3.3.7 Impacts to American Badgers

Potential Impacts. American badgers, a California Species of Special Concern, are known to occur in the hills east of the site with the closest recorded observation being approximately 2 miles to the west of the site along Highway 101. Therefore, American badgers may occur within the Project Site. No badgers or badger burrows were observed in the area during the survey of the Project Site; however, the project is adjacent to contiguous badger habitat, therefore, the project has the potential to result in a significant impact to American badgers.

Mitigations. Implementation of the following measures prior to the construction of the project will reduce impacts to American badgers from direct mortality to a less-than-significant level.

Mitigation Measure 3.3.5a (Pre-construction Surveys). During the course of the preconstruction surveys for other species, a qualified biologist shall also determine the presence or absence of badgers prior to the start of construction. If badgers are found to be absent, a report shall be written to the applicant so stating and no other mitigations for the protection of badgers shall be warranted.

Mitigation Measure 3.3.5b (Avoidance and Monitoring). If an active badger den is identified during pre-construction surveys within or immediately adjacent to an area subject to construction, a construction-free buffer of up to 300 feet shall be established around the den. Once the biologist has determined that badger has vacated the burrow, the burrow can be collapsed or excavated, and ground disturbance can proceed. Should the burrow be determined to be a natal or reproductive den, and because badgers are known to use multiple burrows in a breeding burrow complex, a biological monitor shall be present onsite during construction activities in the vicinity of the burrows to ensure the buffer is adequate to avoid direct impact to individuals or natal/reproductive den abandonment. The monitor will be required to be present until it is determined that young are of an independent age and construction activities would not harm individual badgers.

Implementation of the above measures would reduce potential impacts to the American badger to a less-than-significant level.



3.3.8 Potential Impacts to Riparian Habitat and Other Sensitive Natural Communities, Including Federally and State Protected Wetlands

Potential Impacts. Riparian habitat does not exist onsite. Several swales exist on the site, including one that, per historical aerial photos show a swale channel that historically had connectivity to the Santa Clara Conduit. Although this no longer appears to be connected, additional surveys are necessary to determine the full current extent of this swale to determine current connectivity. The project plans to alter this swale as well as others onsite, including rip rap and outfalls, and will likely channelize some swales onsite. Although the site does not likely support any waters under the jurisdiction of the USACE, the CDFW and/or RWQCB may claim jurisdiction over the onsite swales. Therefore, a wetland delineation is recommended for this project site to determine extent and connectivity of swales on the site.

Mitigation. The following mitigation measures when implemented would reduce potentially significant impacts to riparian habitat, and to waters of the U.S. and state to a less than significant level.

Wetland Delineation. A formal wetland delineation should be conducted on the site to ascertain whether any waters of the U.S. or state occur on site; the Definition Report should be submitted to the USACE for verification to determine the extent of all hydrological features as it relates to Waters of the U.S. This report will also provide a foundation to determine if waters of the state occur onsite and whether CDFW and/or RWQCB have jurisdiction over any of these areas. Once the extent of waters of the U.S. and state are known, it can be determined whether and to what extent any of these features will be impacted.

If waters of the U.S. and/or state are to be impacted this would constitute a significant adverse impact. The following mitigations if fully implemented would reduce the impact to a less than significant impact.

Avoidance. The project as designed, does not avoid impacts to swales and until a delineation is completed and verified, it is not possible to evaluate the ability of the project to avoid these sensitive resources. Nonetheless, the preferred method of mitigation would be avoidance of all waters of the U.S. and. Avoiding impacts to any jurisdictional wetland swales may include re-



designing the project to avoid the wetlands to the extent possible. If a redesign is not feasible, then the following mitigations would need to be implemented to reduce impacts to a less than significant level.

Minimization. If full avoidance of wetland swale habitat is not possible under the currently proposed project, actions should be taken to minimize impacts to these habitats. Measures taken during construction activities should include placing construction fencing around any preserved wetland features to ensure that construction activities do not inadvertently impact these areas.

Compensation. To compensate for the permanent loss of any wetland swale habitat, there are three options: 1) Credits via an approved mitigation bank; 2) On- or off-site creation/restoration with accompanying mitigation and monitoring plan; and 3) Payment of Seasonal Wetland Fees to the SCVHP. The USACE and CDFW are participants in the SCVHP; although the Habitat Agency (with the SCVHP) is currently in talks with the RWQCB, the RWQCB is currently not a participant in the SCVHP. Therefore, it is likely mitigation for any impacts to wetland swales onsite will include either #1 and #3 or #2 and #3 above, as mitigation per the RWQCB would likely be a separate mitigation consisting of on- or off-site restoration with an appropriate Habitat Monitoring Plan or payment for mitigation credits to a mitigation bank (#1 or #2 below). The RWQCB may also require a Waste Discharge Permit under the Porter-Cologne Water Quality Act. Should the RWQCB become a participant in the SCVHP, it is possible only #3 would be required. These mitigations are outlined below.

1. Several mitigation banks exist for wetlands and payment for wetland credits at an approved mitigation bank would be a minimum of 1:1 creation:loss ratio. This option does not require the applicant to conduct follow-up monitoring once fees are paid.
2. If on- or off-site mitigation is preferred, a mitigation and monitoring plan (MMP) will be prepared. The plan should identify on-site and/or off-site preserve areas having a sufficient water budget (as determined by a hydrologist) for the creation of wetland habitat that is of equal or greater quality to the habitats being impacted at a minimum 1:1 creation:loss ratio. Any off-site creation would preferably occur within the same watershed.



At a minimum, the MMP will:

- Define the location of all created wetlands;
- Provide evidence of a suitable water budget to support any created wetland and channel habitats, as determined by a qualified hydrologist;
- Identify the species, size, number and location of plants to be installed;
- Identify the time of year for planting and any methods for supplemental watering during the establishment period;
- Identify the monitoring period which should be no less than 5 years;
- Identify measures that will be monitored, and define incremental and final success criteria that will be required for the wetland mitigation to be deemed a success;
- Identify adaptive management procedures that accommodate the uncertainty that comes with wetland creation projects. These include (but are not limited to) measures to address colonization by invasive species, unexpected lack of water, excessive foraging of installed wetland plants by wildlife, erosion of channel banks, etc.;
- Define management and maintenance activities (weeding, repair of water delivery systems and browsing protection, etc.); and
- Provide for surety in funding for MMP and for in-perpetuity preservation and management of created wetland and channel habitats.

3. Wetland swales would be mitigated for under the SCVHP (see Section 3.3.12 below) which would consist of a fee for “seasonal wetlands” of (\$503,724 per acre; 2023-2024 rates) as well as to follow measures in Condition 12 of the SCVHP.

3.3.9 Degradation of Water Quality in Seasonal Drainages, Stock Ponds and Downstream Waters

Potential Impact. Eventual site development and construction may require grading that leaves the soil of construction zones barren of vegetation and, therefore, vulnerable to sheet, rill, or gully



erosion. Eroded soil is generally carried as sediment in surface runoff to be deposited in natural creek beds, canals, and adjacent wetlands. Furthermore, urban runoff is often polluted with grease, oil, pesticide and herbicide residues, heavy metals, etc. These pollutants may eventually be carried to sensitive wetland habitats used by a diversity of native wildlife species. The deposition of pollutants and sediments in sensitive riparian and wetland habitats would be considered a potentially significant adverse environmental impact. The project would comply with the City's grading requirements. Therefore, the project buildout would result in a less-than-significant impact to water quality.

Mitigation. No mitigation is warranted.

3.3.10 Conflict with Local Policies and Ordinances: City of Morgan Hill Tree Ordinance

Potential Impacts. The site likely supports trees protected under the City of Morgan Hill's Tree Ordinance. Therefore, a tree inventory and Arborist report should be conducted to identify any protected trees onsite. The Arborist report will determine how many ordinance-sized and indigenous trees exist onsite. Onsite trees could be directly impacted in the form of removal, while off-site trees could be severely impacted in the form of root damage during grading efforts. The loss of ordinance-sized trees without further compliance with the City's tree policies would constitute a significant adverse impact of the project.

Mitigation. Ordinance-sized trees will require mitigation for removal and the permittee shall follow the City's tree ordinance requirements.

3.3.11 Conflict with Local Policies and Ordinances: Santa Clara Valley Habitat Conservation Plan

Proposed development of the approximately 8.37-acre site would be considered a covered project under the SCVHP and, as such, would be subject to conditions and fees of the SCVHP. Failure to comply with the SCVHP would constitute a significant impact under CEQA.

3.3.11.1 Fees

Compliance with the SCVHP includes payment of fees according to the "Fee Zone" designation of the property, payment of nitrogen deposition fees related to the number of residential units



and/or anticipated car trips (for non-residential projects) resulting from the development, and any surcharge fees that are required based on site-specific impacts to sensitive habitats or sensitive species. The onsite portion of the proposed project would be subject to Zone B fees, which are currently \$17,698 per acre seasonal wetland (\$503,724 per acre) fees, nitrogen deposition fees, which are currently \$6.33 for each new vehicle trip and \$59.86 per each new single-family residence (2023-2024 rates). For any temporary impacts, all the same fees are applied, but at a fraction of the total cost depending on how long the project expects the temporary impact to last.

3.3.11.2 Conditions on Covered Activities

In addition to fees, the project would be required to comply with applicable conditions of the SCVHP. Conditions of the SCVHP, summarized above (Section 3.2.7), that would apply to the project include Conditions 1, 3, 12, and 15 (Table 3).

TABLE 3. APPLICABLE SANTA CLARA VALLEY HABITAT PLAN (SCVHP) CONDITIONS OF THE PROPOSED PROJECT, LOCATED IN THE CITY OF MORGAN HILL, CALIFORNIA		
Condition (page references ICF International 2012)	Applicable to project	Comments/Requirements
Condition 1 (page 6-7). Avoid Direct Impacts on Legally Protected Plant and Wildlife Species	Applies	This condition requires actions conducted under the SCVHP to comply with existing laws protecting plant and wildlife species including those species not covered as part of the SCVHP. This requires compliance with the Migratory Bird Treaty Act, which prohibits killing or possessing covered migratory birds, their young, nests, feathers, or eggs. Nearly all species of nesting bird that could use the project site are protected by the MBTA. Project mitigations for pre-construction surveys for migratory birds, including for burrowing owls, ensures compliance with this condition.
Condition 2 (page 6-9). Incorporate Urban-Reserve System Interface Design Requirements	N/A	The project is not interfacing with the reserve system.
Condition 3 (page 6-12). Maintain Hydrologic Conditions and Protect Water Quality	Applies	This condition requires all projects to incorporate appropriate measures itemized in the SCVHP's Table 6-2 (refer to ICF International 2012) to minimize indirect and direct effects to covered species and their aquatic habitat. This condition also requires the local jurisdiction (i.e. the City of Morgan Hill) to verify that all appropriate measures from Table 6-2 are implemented. Measures from Table 6-2 shall be incorporated into project engineering and SWPPP plans.
Condition 4 (page 6-14). Avoidance and Minimization for In-Stream Projects	N/A	The project will not impact streams.



TABLE 3. APPLICABLE SANTA CLARA VALLEY HABITAT PLAN (SCVHP) CONDITIONS OF THE PROPOSED PROJECT, LOCATED IN THE CITY OF MORGAN HILL, CALIFORNIA

Condition (page references ICF International 2012)	Applicable to project	Comments/Requirements
Condition 5 (page 6-18). Avoidance and Minimization Measures for In-Stream Operations and Maintenance	N/A	The project will not impact streams.
Condition 6 (Page 6-21). Design and Construction Requirements for Covered Transportation Projects	N/A	The project is not a transportation project.
Condition 7 (page 6-28). Rural Development Design and Construction Requirements	N/A	The project is within the urban service area and is not a rural development.
Condition 8 (page 6-35). Implement Avoidance and Minimization Measures for Rural Road Maintenance	N/A	The project does not involve rural road maintenance.
Condition 9 (page 6-37). Prepare and Implement a Recreation Plan	N/A	The project is not part of the Reserve System.
Condition 10 (page 6-42). Fuel Buffer	N/A	A fuel buffer is not required for this project.
Condition 11 (page 6-44). Stream and Riparian Setbacks	N/A	The project will not impact streams or riparian habitat.
Condition 12 (page 6-56). Wetland and Pond Avoidance and Minimization	Applies	Potential seasonal wetlands in the form of swales occur on the project site, therefore, this condition may apply to the project.
Condition 13 (page 6-58). Serpentine and Associated Covered Species Avoidance and Minimization	N/A	The project does not support serpentine soils and suitable habitat for Covered Plants are absent from the site.
Condition 14 (page 6-60). Valley Oak and Blue Oak Woodland Avoidance and Minimization	N/A	Valley and blue oak woodlands are absent.
Condition 15 (page 6-62). Western Burrowing Owl	Applies	Although the site is outside the burrowing owl fee zone, burrowing owls may occur onsite, and therefore, to comply with Condition 1, this project must also comply with Condition 15, including preconstruction surveys and avoidance measures for owls and nests, and requirements for construction monitoring. Measure 3.3.6 (above) defines the required actions for compliance with this condition.
Condition 16 (page 6-68) Least Bell's Vireo	N/A	Potentially suitable habitat for this species does not exist on the site or within 250 feet of the site.



TABLE 3. APPLICABLE SANTA CLARA VALLEY HABITAT PLAN (SCVHP) CONDITIONS OF THE PROPOSED PROJECT, LOCATED IN THE CITY OF MORGAN HILL, CALIFORNIA

Condition (page references ICF International 2012)	Applicable to project	Comments/Requirements
Condition 17 (page 6-69) Tricolored Blackbird	N/A	Potentially suitable habitat for this species does not exist on the site or within 250 feet of the site.
Condition 18 (page 6-71) San Joaquin Kit Fox	N/A	Project is outside of modeled habitat for the San Joaquin kit fox.
Condition 19 (page 6-74). Plant Salvage when Impacts are Unavoidable	N/A	The project does not support serpentine soils and suitable habitat for Covered Plants are absent from the site.
Condition 20 (page 6-76). Avoid and Minimize Impacts to Covered Plant Occurrences	N/A	The project does not support serpentine soils and suitable habitat for Covered Plants are absent from the site.

Implementation of the measures listed and described above, including payment of Land Zone B and nitrogen deposition fees and compliance with Conditions 1, 3, 12, and 15, would ensure that the project does not conflict with the SCVHP. The project would follow the required measures of the SCVHP; therefore, the project would not conflict with this local policy. To ensure compliance, it is recommended that the project proponent thoroughly review the identified sections of the SCVHP, including Table 6-2.

Mitigation. No mitigation is warranted.



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ATTACHMENT 4
ARBORIST REPORT



License WE-13625A ~ Arborist #WE-6620A ~ Insured PL/PD ~ Workers Compensation ~ 408-722-8942 ~ arborist@garlic.com ~ moki@smithtreespecialists.com

MH Engineering
22561 Poppy Drive
Cupertino, CA 95014
billm@mhengineering.com

August 27, 2022

As per your request we visited the site located at APN #728-02-003 Morgan Hill, CA near Dunne X Hill Av on August 26, 2022 to make observations and recommendations regarding the trees located there.

The trees listed in the tree inventory on page 2 are listed for removal or retention based upon level of impediment to proposed construction, size, health, and value within the property.

There are no protected or heritage trees located within the construction zone. There is one Ordinance size Eucalyptus tree on site.

Proper TPZ (Tree Protection Zone) guidelines are listed on page 3.

We appreciate the opportunity to provide this inventory and comments and look forward to working with you further on this project.

Please feel free to call for further clarification.

Respectfully submitted,

William Smith

William Smith
Arborist #WE-13625A
Smith Tree Specialists, Inc

Inventory:

Tree Id #	Common Name	Species	D.B.H.	Height	Canopy	Condition
4506	Black Oak	<i>Quercus kelloggii</i>	15"	34'	20'	Fair
Recommendations:						
Retain tree and protect according to proper TPZ guidelines.						
4507	Modesto Ash	<i>Fraxinus velutina</i>	18"	26'	20'	Dead
Recommendations:						
Remove tree because it is dead.						
4508	Modesto Ash	<i>Fraxinus velutina</i>	10"	20'	15'	Dead
Recommendations:						
Remove tree because it is dead.						
4509	Modesto Ash	<i>Fraxinus velutina</i>	4"	12'	12'	Dead
Recommendations:						
Remove tree because it is dead.						
4510	Black Oak	<i>Quercus kelloggii</i>	7"	22'	10'	Poor
Recommendations:						
Remove tree due to poor health and proximity to proposed grading.						
4511	Black Oak	<i>Quercus kelloggii</i>	20"	35'	50'	Fair
Recommendations:						
Retain tree and protect according to proper TPZ guidelines.						
4512	Live Oak	<i>Quercus chrysolepis</i>	5"	20'	15'	Fair
Recommendations:						
Retain tree and protect according to proper TPZ guidelines.						
4513	Blue Gum Eucalyptus	<i>Eucalyptus globulus</i>	50"	80'	65'	Good
Recommendations:						
Retain tree and protect according to proper TPZ guidelines.						
4514	Black Oak	<i>Quercus kelloggii</i>	34"	50'	45'	Fair
Recommendations:						
Retain tree and protect according to proper TPZ guidelines.						
4515	Blue Gum Eucalyptus	<i>Eucalyptus globulus</i>	27"	45'	20'	Dead
Recommendations:						
Remove tree because it is dead.						
4516	Pine	<i>Pinus species</i>	10"	24'	10'	Dead
Recommendations:						
Remove tree because it is dead.						
4517	Pine	<i>Pinus species</i>	10"	26'	25'	Dead
Recommendations:						
Remove tree due to poor health and proximity to proposed grading.						
4518	Live Oak	<i>Quercus chrysolepis</i>	6"	16'	6'	Fair
Recommendations:						
Remove tree due to poor health and proximity to proposed grading.						

4519	Modesto Ash	<i>Fraxinus velutina</i>	32"	50'	45'	Fair
Recommendations:						
Remove tree due to poor health and proximity to proposed grading.						
4520	Modesto Ash	<i>Fraxinus velutina</i>	27"	40'	30'	Poor
Recommendations:						
Remove tree due to poor health and proximity to proposed grading.						
4521	Black Oak	<i>Quercus kelloggii</i>	22"	45'	40'	Fair
Recommendations:						
Retain tree and protect according to proper TPZ guidelines.						

4522	Mimosa	<i>Albizia julibrissin</i>	10"	20'	10'	Poor
Recommendations:						
Remove tree due to poor health and proximity to proposed grading.						
4523	Mimosa	<i>Albizia julibrissin</i>	11"	30'	20'	Dead
Recommendations:						
Remove tree due to poor health and proximity to proposed grading.						

Construction Site - Tree Preservation

- Locate structures, grade changes, etc. as far as feasible from the 'dripline' area of the tree.
- Avoid root damage through grading, trenching, compaction, etc., at least within an area 1.5 times the 'dripline' area of trees. Where root damage cannot be avoided, roots encountered (over 1" diameter) should be exposed approximately 12" beyond the area to be disturbed (towards tree stem), by hand excavation, or with specialized hydraulic or pneumatic equipment, cut cleanly with hand pruners or power saw, and immediately back-filled with soil. Avoid tearing, or otherwise disturbing that portion of the root(s) to remain.
- Construct a temporary fence as far from the tree stem (trunk) as possible, completely surrounding the tree, and 6-8 feet in height. Post no parking or storage signs outside / on fencing. Do not attach posting to the mainstem of the tree.
- **Do not allow vehicles, equipment, pedestrian traffic; building materials or debris storage; or disposal of toxic or other materials inside of the fenced off area.**
- Avoid pruning immediately before, during, or immediately after construction impact. Perform only that pruning which is unavoidable due to conflicts with proposed development. Aesthetic pruning should not be performed for at least 1-2 years following completion of construction.
- Trees that will be impacted by construction may benefit from fertilization, ideally performed in the fall, and preferably prior to any construction activities, with not more than 6 lbs. of actual nitrogen per 1,000 square feet of accessible 'drip line' area or beyond.
- Mulch 'rooting' area with an acidic, organic compost or mulch.
- Arrange for periodic (Biannual/Quarterly) inspection of tree's condition, and treatment of damaging conditions (insects, diseases, nutrient deficiencies, etc.) as they occur, or as appropriate.
- Individual trees likely to suffer significant impacts may require specific, more extensive efforts and/or a more detailed specification than those contained within these general guidelines.

ATTACHMENT 5

PRELIMINARY STORMWATER CONTROL PLAN



Preliminary Stormwater Control Plan

for
Serene Hills, LLC
Tract Number: TBD
East Dunne Ave.
Morgan Hill, California 95037

July 24, 2023

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Attachments

- A. Performance Requirement Certifications
- B. Percolation Testing Results
- C. NOAA Rainfall Data
- D. LID Retention Volume Sizing Calculations
- E. HydroCAD Model Output
- F. Hydraflow Pipe Calculations
- G. Stormwater Management Plan & Details



I. Project Data

I.A. Purpose of the Report

The general purpose of this Stormwater Control Plan (SWCP) is to demonstrate compliance with the Central Coast Regional Water Quality Control Board's (CCRWQCB) Post-Construction Stormwater Compliance Resolution R3-2013-0032 and the Stormwater Management Guidance Manual for Low Impact Development & Post Construction Requirements, June 2015, City of Gilroy, City of Morgan Hill and County of Santa Clara.

All new construction and redevelopment projects are required to comply with these regulations if they create and/or replace at least 2,500 square feet of impervious area. The requirements are designed preserve the health of watersheds that may be impacted by the improvement of the subject property. Developments are encouraged to maximize the use of Low Impact Development (LID) techniques and incorporate as many Stormwater Control Measures (SCM) and Best Management Practices (BMP) as possible to reduce contaminants leaving the site and affecting downstream water bodies. A Stormwater Control Plan prepared by, or under the direction of, a Professional Civil Engineer is required to detail the potential impacts and mitigation measures implemented by the project.

Table 1: Project Data Summary

Project Name/Number	23117.5
Application Submittal Date	7/24/2023
Project Location	Northerly terminus of Saddleback Drive and Sorrel Way. Northwest of East Dunne Avenue.
Project Phase	N/A
Project Type and Description	Residential - 1 acre lots
Total Project Area	440,884 SF
Total New Impervious Area	121,027 SF
Total Replaced Impervious Area	0 SF
Total Pre-Project Impervious Area	0 SF
Total Post-Project Impervious Area	121,027 SF
Net Impervious Area	121,027 SF
Watershed Management Zone	1
Design Storm Frequency	95th Percentile
Design Storm Depth	1.65

II. Setting

II.A. Project Location and Description:

This 8.35 acre development is located in the watershed of Tennant Creek to East Little Llagas Creek. There is an existing drainage swale that traverses through this project flowing from the northeast to the southwest. The inflow watershed area to the east is 66.54 acres which extends up the hill to the Holiday Lake Estates development. The terrain is steep, and oak studded for 3,408 feet horizontally and 548 feet vertically. This watershed produces 33 cubic feet per second (cfs) in a ten-year frequency storm and 41 cfs for a 25-year storm.

There is an adjacent watershed located to the southeast that was developed for 7,000 square foot (SF) lots along Saddleback Drive, Sorrel Way and Dunne Avenue. This development has installed storm drains in Dunne Avenue and a stormwater detention facility along the southside of the project. These storm drains outfall into a 36" storm drain which crosses Dunne Avenue into Tennant Creek near Old Hill Road. This will be the same outfall for our project.

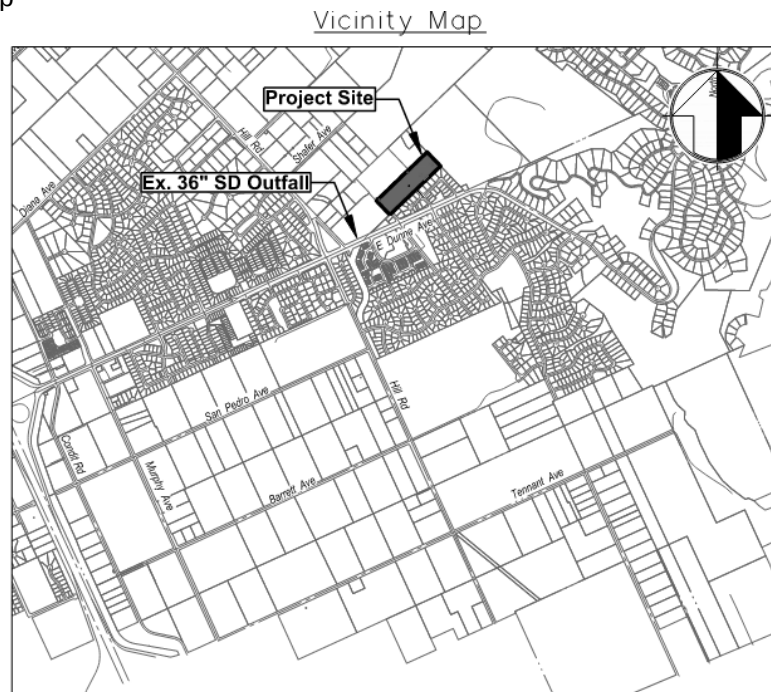
The 8.35 acre project site itself has a natural slope of 6%-7%. These 1 acre lots will be developed with pad grading on approximately one-third acre and the balance of the 1-acre lot will be undisturbed, natural



vegetation. Each lot will have bioswale stormwater treatment that treats the street frontage and the impervious surfaces on the 1/3 of an acre graded pad. That treated runoff will be directed to the swale that flows through the development. The existing drainage swale will be graded slightly to create a defined drainage conveyance system. Saddleback Drive will have culverts under the roadway to convey the water from the east side to the west side. Near Sorrel Way, the low side of the development project, the project proposes to install a storm water detention facility to mitigate the increased flows from development. The outflow of the stormwater detention pond will be conveyed to Dunne Avenue in a 30-inch reinforced concrete pipe to be located in an existing 20 foot wide right of way for roadway purposes to connect to the existing 36" pipe crossing Dunne Avenue to the south.

Hydrographic runoff calculations have also been performed that show the developed runoff rate will not exceed the pre-development runoff rates for the 2-year, 5-year, 10-year, 25-year, 50-year, and 100-year frequency storm.

Figure 1: Vicinity Map



II.B.Existing Site Features and Conditions

The site is located at Saddleback Drive near East Dunne Avenue. Zoning is Residential Estate [RE up to 1 du/ac]. The site is surrounded by rural residential developments to the North, East, and West with medium-density single family residential to the South.

This site is located at the base of a hill with significant tributary area that runs on to the site into an existing drainage swale. Approximately 66.54 acres of steep, oak-studded terrain drains through the site generating up to 41 cfs in a 25-year event. This run-on enters the public storm drainage system via a 36" culvert that crosses Dunne Avenue into Tennant Creek near Old Hill Road.

An existing 18-inch storm drain stub is provided for future development in Saddleback Drive. Due to the significant run on and the requirement to treat all stormwater runoff, the bioretention pond needed to be located at the lowest end of the site near Sorrel Drive. This presented a problem for connecting to the stub in Saddleback Drive as we would have to plumb the pipe back up the hill to connect in Saddleback Drive.



In addition to the elevation problem, the significant run-on tributary to this site required a larger capacity than the 18-inch stub could provide.

The existing segment of Sorrel Way presents an opportunity for the storm drain to connect to the public storm drainage infrastructure located in Dunne Avenue located south of the project; however, the project's run-on from the hillside east of the development poses a problem for connecting to the infrastructure in Dunne Avenue as the existing drainage of this run-on is routed along the driveway located in the 20' easement for roadway purposes and joins the flow from Dunne Avenue west of the existing detention facility along Dunne Avenue. The existing detention facility and storm drainage infrastructure located in Dunne Avenue was not designed with the run-on from this hillside and would need to be upsized to accommodate the increase in flow through the system, causing significant cost impact to the project. The existing detention facility would require additional volume and analysis due to the increased flow through the pond, potentially exceeding the allotted space for this facility. For these reasons, the development has proposed to install a new 30-inch storm drain line to be installed within the 20' easement for roadway purposes directly across the proposed Sorrel Drive and connect to the existing storm drainage infrastructure west of the existing detention facility where the two flows meet in pre-development conditions.

In addition to this significant existing run-on, the terrain has a natural slope of 6%-7% across the site. This creates a challenge to provide significant retention/detention systems while not creating large, unsightly berms. This also presents an opportunity to create a centralized detention pond for areas that are not easily directed into the bioswales proposed on site. Portions of the site can be directed into the natural drainage swale and into a proposed bioretention pond for mitigation without extraordinary deep systems.

II.C.Opportunities and Constraints for Stormwater Control

II.C.1. Opportunities.

Opportunities for stormwater control include measures such as limiting disturbance of natural drainage features, permeable soils, or native vegetation; minimizing impervious areas; routing runoff through vegetation; and use of permeable surfaces such as pavers. Opportunities presented and implemented by this site include:

This site has an existing drainage swale that accepts run-off from approximately 66.54 acres. This presents an opportunity to allow for natural consolidation of run-off into a proposed bioretention pond for treatment of areas that are not able to be drained into the individual bioswales as well as a common detention facility to mitigate the increased run-off generated by the site's development. This drainage swale has been preserved in the proposed design to maintain existing drainage features and patterns through development.

The soil present on site has a percolation rate of approximately 1.4 inches per hour. This allows for retained water to drain within 48 hours after the storm and have adequate storage capacity for follow-up rain events.

The proposed design has minimized the development area to allow for only approximately one-third of each one-acre lot to be disturbed by the development, preserving natural landscape and vegetation, consistent with Performance Requirement 1.

II.C.2. Constraints

Stormwater Control Constraints include site conditions such as impermeable soils, high groundwater, groundwater and/or soil contamination, geotechnical hazards, project density, or high-intensity land use. Constraints presented by this project include:

In addition to being a site opportunity, the existing drainage swale presents the development with a constraint as natural drainage patterns and facilities should be maintained in the proposed development. This drainage swale has been maintained and enhanced through this development, to increase capacity and limit the spread of the run-on flows.

The natural slope of the site is approximately 6%-7%, preventing common facilities for treatment and retention/detention without large visual impacts to the terrain. To conform to the natural landscape as much



as possible, smaller treatment and retention measures have been put on each lot to capture, treat, and infiltrate run-off, thus, minimizing the impact of the central detention pond at the low end of the site.

As mentioned in the project description above, the run-on and existing storm drain infrastructure located in Dunne Avenue poses a significant cost impact to the site as well as changing the existing drainage pattern. The project has significant run-on from the hillside east of the proposed development that joins the existing storm drain near Hill Road. This has been maintained with the proposal of a new 30" storm drain line that is located within a 20' easement for roadway purposes on the neighboring property.

III. Low Impact Development Design Strategies

III.A. Performance Requirements

The CCRWQCB Resolution R3-2013-0032 as well as the *Stormwater Management Guidance Manual for Low Impact Development & Post Construction Requirements, June 2015, City of Gilroy, City of Morgan Hill and County of Santa Clara* describe levels of Post-Construction Requirements based upon the amount of impervious area created/replaced. Below is a discussion of each of the performance requirements and mitigation measures intended to comply with each Performance Requirement Tier.

III.A.1. Performance Requirement No. 1 (PR-1): Site Design and Runoff Reduction

Development projects that create and/or replace at least 2,500 square feet of impervious areas are subject to PR-1. PR-1 requires the following:

- Limit Disturbance of creeks and natural drainage features
- Limit disturbance of highly permeable soils
- Limit disturbance of native vegetation
- Minimize creation and/or replacement of impervious areas
- Minimize runoff using:
 - Cisterns or rain barrels for reuse
 - Route runoff through vegetation
 - Use of permeable pavements

The proposed site development has maintained and enhanced the existing drainage swale on site to accommodate existing run-on through the site. The enhancements of the drainage swale allow for more of the run-on to be contained within the drainage swale and not spread into the proposed lots in higher intensity storm events.

The site has also minimized its impact to native vegetation by consolidating improvements to be in the third of the lot closest to the proposed public roadways. This allows for less disturbance of native soils and maintains natural vegetation and drainage patterns.

The site has also routed all run-off through vegetation and bioswales before being routed to into the public storm drainage system. Each proposed residence routes its roof run-off through vegetation utilizing disconnected downspouts directed to the bioswales on each lot. Roadway runoff is directed into the bioswales using a shallow pipe out of a catch basin that filters and retains runoff.

III.A.2. Performance Requirement No. 2 (PR-2): Water Quality Treatment

Development projects that create and/or replace at least 5,000 square feet (15,000 square feet for Single-Family Detached Homes) Net Impervious Area are subject to PR-2 in addition to PR-1. Net Impervious Area credits apply when the Post-Development Impervious Area is less than Pre-Development Conditions and is calculated below:

Net Impervious Area=(Total Post Development Impervious Area)-(Reduced Impervious Area Credit)

Where

Reduced Impervious Area Credit =
(Total Pre-Development Impervious Area) – (Total Post-Development Impervious Area)



Projects subject to the requirements of PR-2 are responsible for treating any contaminants that are created by the development. Table 2 below corresponds to Table 4 in *Stormwater Management Guidance Manual for Low Impact Development & Post Construction Requirements, June 2015, City of Gilroy, City of Morgan Hill and County of Santa Clara* and is listed in order of preference according to said manual.

Table 2: Water Quality Treatment Measures Design Criteria (Guidance Manual Table 4)

Water Quality Treatment Measure*	Design Criteria
LID Treatment System – <i>Harvesting and use, infiltration, evapotranspiration, and bioretention (without an underdrain) SCMs</i>	Retain stormwater from the 85 th Percentile 24-hour storm event (based on local rainfall data)
Biofiltration Treatment System – <i>Bioretention with raised underdrain, or other facilities at least as effective as a system with the specified design criteria.</i>	Design of rain event of 0.2 in/hr intensity or 2 x 85 th percentile hourly rainfall intensity or other specified design criteria include: • Maximum surface loading rate of 5 in/hr • Minimum surface reservoir depth (6") • Minimum planting minimum depth (24") • Proper plant selection • Subsurface gravel layer (minimum depth of 12") • Underdrain placement near the top of the gravel layer • No compaction of soils beneath the facility • No liners preventing infiltration
Non-Retention Based Treatment Systems – <i>Lined bioretention, flow-through planters, and high rate tree well filters and media filters</i>	<u>Volume Hydraulic Design Basis:</u> 85 th Percentile 24-hour storm event <u>Flow Hydraulic Design Basis:</u> 0.2 in/hr intensity OR 2 x 85 th Percentile hourly rainfall intensity
*Multiple SCMs may be used to collectively achieve the design criteria.	

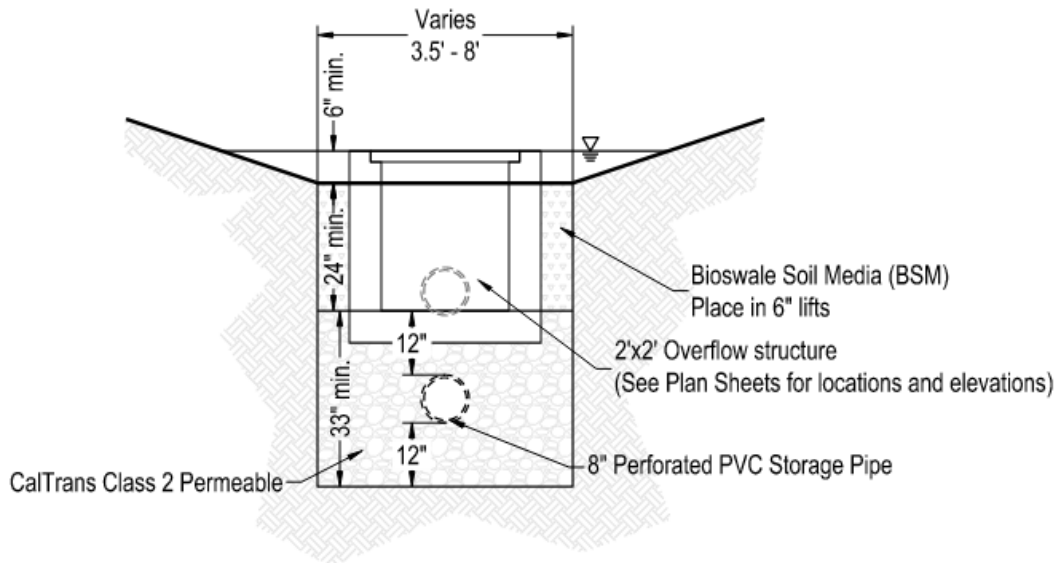
This project utilizes the LID Treatment system using a bioswale with disconnected perforated pipe to retain the 85th Percentile and 95th Percentile 24-hour storm event. Each lot has a bioswale located along the property line that has been designed to accept the runoff from the developed portion of the lot as well as the street frontage for that lot. The street frontage is captured via a City standard curb inlet with a shallow outflow pipe that is directed to release on the surface of the bioswale. DMAs 1-3 and 5-7 utilize a bioswale with six (6) inches of ponding with 3-to-1 side slopes, 24 inches of biomedial sand/compost composite mix, and 33 inches of 1"-2" clean drain rock surrounding an 8-inch perforated pipe for additional storage capacity (See Figure 2 below for detail). DMA 4 utilizes a similar design to the bioswale, however 36 inches of drain rock has been provided for extra storage capacity required (see Figure 3 below for detail). DMA 8 consists of roadway improvements that cannot be directed into the bioswales located on each lot. The bioswales release via a 24" by 24" drainage inlet with the rim elevation set 6 inches above the bottom of the bioswale to allow for the minimum required 6" of ponding. The 8-inch perforated pipe has cleanouts installed at each end of the pipe for routine maintenance, but is not connected to the 24" square outflow box, allowing for full utilization of the storage volume. DMA 8 consists of roadway improvements, drainage swale improvements, and undisturbed land that cannot be directed into the bioswales located on each lot. These areas are directed to a bioretention pond located at the low end of the site that is designed to retain the 85th and 95th Percentile 24-hour storm event using the simplified sizing method per Appendix D of the *Stormwater Management Guidance Manual for Low Impact Development & Post Construction Requirements, June 2015, City of Gilroy, City of Morgan Hill and County of Santa Clara* (See Attachment D of this report for detailed calculations). This bioretention pond has been designed with twelve (12) inches of ponding with 3-to-1 side slopes, 24 inches of biomedial sand/compost mix, and 33 inches of 1"-2" clean drain rock surrounding an 8" perforated pipe for additional storage (see Figure 4 below for detail). The bioretention pond releases via a 48" by 48" drainage inlet with the rim elevation set 0.70 feet above the bottom of the pond that outlets via a 30 inch reinforced concrete pipe that drains across Sorrel Way and down to the existing culvert under Dunne Avenue under Old Hill Road.



Similar to the bioswales on each lot, the 8-inch perforated storage pipe located in the bioretention pond is not connected to the outlet structure to allow for maximum usage of the retention volume provided. See Appendix B for location and details.

In addition to the LID Treatment System, the City of Morgan Hill requires flow-based Biofiltration Treatment Systems. This system uses biofiltration media and special plant selection to break down contaminants in the water before infiltrating into the ground. Figures 2-4 below shows a typical detail for each bioswale and the bioretention pond. The simplified sizing method (also known as the 4% sizing method) was used to size these biofiltration systems. Figure 5 below shows simplified sizing methodology per the *Stormwater Management Guidance Manual for Low Impact Development & Post Construction Requirements, June 2015, City of Gilroy, City of Morgan Hill and County of Santa Clara* and Table 3 below show the sizing of each of the biofiltration SCMs.

Figure 2: Bioswale Detail SCM 1-3 & 5-7

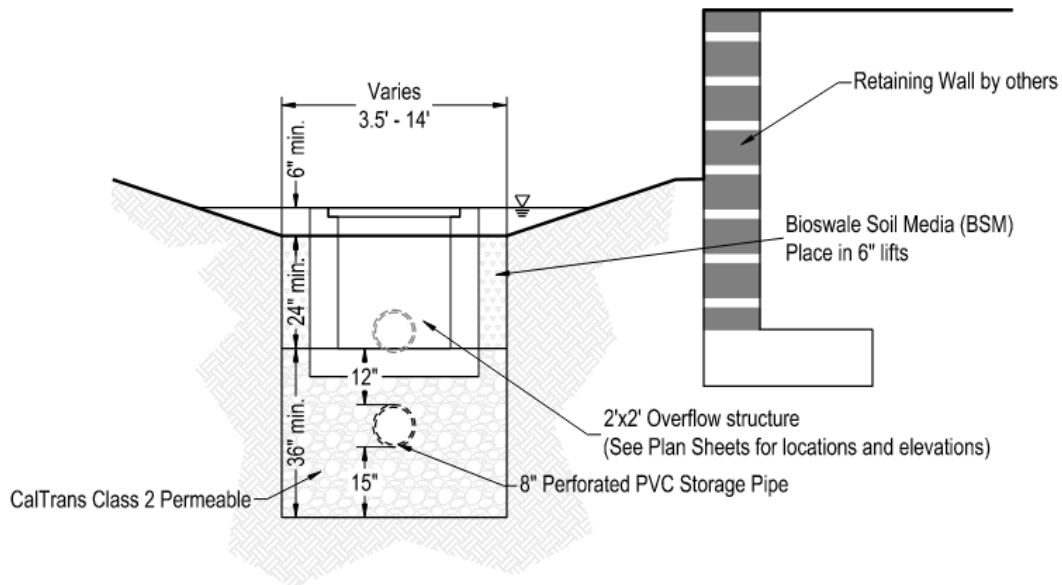


Bioswale Detail: SCMs 1-3, & 5-7

Scale: none



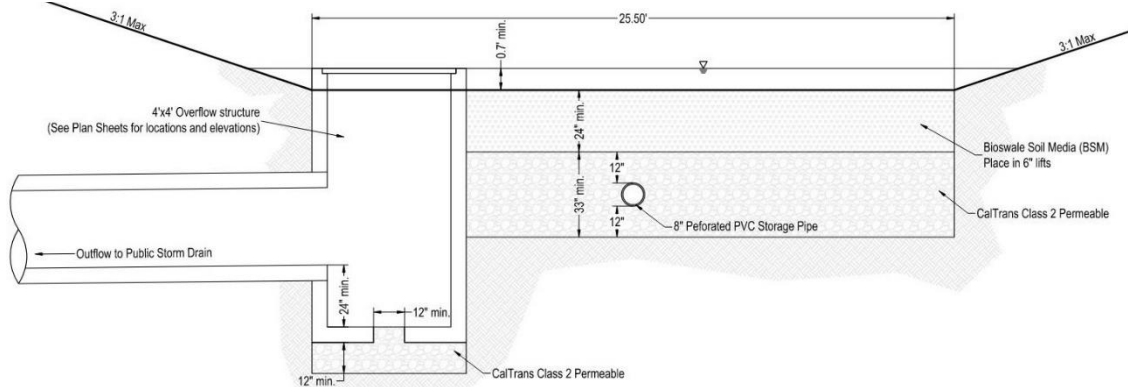
Figure 3: Bioswale Detail SCM 4



Bioswale Detail: SCM 4

Scale: none

Figure 4: Bioretention Pond Detail SCM 8



Bioswale Detail: SCM 8

Scale: none



Figure 5: Simplified Treatment Sizing Methodology

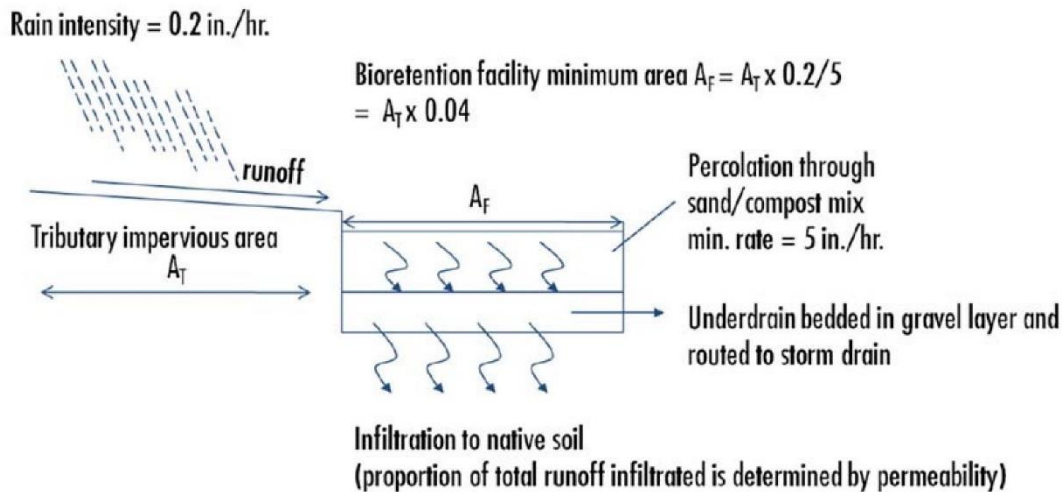


Table 3: LID Treatment Summary

LID Treatment Sizing Table					
DMA	BMP	Total DMA Area	DMA Impervious Area	Required Treatment Area	Provided Treatment Area
1	SCM 1	23,084 SF	10,852 SF	483 SF	500 SF
2	SCM 2	21,799 SF	8,997 SF	411 SF	400 SF
3	SCM 3	25,624 SF	10,185 SF	469 SF	450 SF
4	SCM 4	21,018 SF	12,247 SF	525 SF	486 SF
5	SCM 5	18,342 SF	8,916 SF	394 SF	400 SF
6	SCM 6	29,055 SF	12,286 SF	559 SF	560 SF
7	SCM 7	19,170 SF	8,791 SF	393 SF	400 SF
8	SCM 8	282,792 SF	48,753 SF	2,414 SF	2,487 SF
Total		440,884 SF	121,027 SF	5,648 SF	5,683 SF

III.A.3. Performance Requirement No. 3 (PR-3): Runoff Retention

Development projects that create and/or replace 15,000 square feet of impervious area (Single Family Detached Homes are allowed to use Net Impervious Area as defined in PR-2) and are located within Watershed Management Zones 1, 2, 5, 6, 8, 9, and portions of Watershed Management Zones 4, 7, and 10 that lie in designated Groundwater Basins are subject to Performance Requirement 3 as well as PR-1 and PR-2. PR-3 requires the retention of the volume of runoff that could contain contaminants and that would naturally infiltrate in pre-development conditions. Appendix D of the *Stormwater Management Guidance Manual for Low Impact Development & Post Construction Requirements, June 2015, City of Gilroy, City of Morgan Hill and County of Santa Clara* details the calculations for the required retention volume. Attachment E has detailed calculations for this project following the calculations in Appendix D of said Guidance Manual and is summarized below in Table 4 below.



Table 4: LID Volume Sizing Summary

LID Volume Sizing Table							
DMA	BMP	Total DMA Area	DMA Impervious Area	i	C	Required Retention Volume	Provided Retention Volume
1	SCM 1	23,084 SF	10,852 SF	0.47	0.32	1,018 CF	1,147 CF
2	SCM 2	21,799 SF	8,997 SF	0.41	0.29	860 CF	937 CF
3	SCM 3	25,624 SF	10,185 SF	0.40	0.28	981 CF	1,041 CF
4	SCM 4	21,018 SF	12,247 SF	0.58	0.40	1,144 CF	1,174 CF
5	SCM 5	18,342 SF	8,916 SF	0.49	0.33	834 CF	893 CF
6	SCM 6	29,055 SF	12,286 SF	0.42	0.29	1,169 CF	1,247 CF
7	SCM 7	19,170 SF	8,791 SF	0.46	0.31	827 CF	830 CF
8	SCM 8	282,792 SF	48,753 SF	0.17	0.15	3,502 CF	5,327 CF
Total		440,884 SF	121,027 SF	0.27	0.21	9,384 CF	12,597 CF

This project utilizes the simplified retention sizing method as described in Appendix D of the *Stormwater Management Guidance Manual for Low Impact Development & Post Construction Requirements, June 2015, City of Gilroy, City of Morgan Hill and County of Santa Clara*. This approach provides a conservative volume calculation of volume that would have infiltrated into the ground in pre-development conditions. This volume is known as the 95th Percentile Volume. This project meets this simplified volume calculation using bioretention facilities to comply with Performance Requirement 3. Drainage Management Areas (DMAs) 1 through 7 utilize the bioswales on each lot to retain the required retention volume for each of these DMAs. The DMAs consist of roadway improvements along the property frontage, roofs of the proposed residence, and any site flatwork contained within the developed third of the parcel. The bioswales for DMAs 1-3 and 5-7 consist of six (6) inches of ponding with 3-to-1 side slopes, 24 inches of biomedial sand/compost composite mix, and 33 inches of 1"-2" clean drain rock surrounding an 8-inch perforated pipe for additional storage capacity (See Figure 2 below for detail). DMA 4 utilizes a similar design to the bioswale, however 36 inches of drain rock has been provided for extra storage capacity required (see Figure 3 above for detail). The bioretention pond for DMA 8 has been designed with 0.70 feet of ponding with 3-to-1 side slopes, 24 inches of biomedial sand/compost mix, and 33 inches of 1"-2" clean drain rock surrounding an 8" perforated pipe for additional storage (see Figure 4 above for detail). The biomedial storage has been calculated using a 25% void ratio and the drain rock storage has been calculated utilizing a 40% void ratio. See Attachment D for Retention Volume Calculations.

On-Site percolation testing was performed by Earth Systems Pacific at the approximate location and depth of each bioretention pond. Each bioswale has a design infiltration rate based upon the stabilized testing infiltration rate divided by a factor of safety of two (2) as required by the City of Morgan Hill, see Table 5 below for a summary of design infiltration rates.

Table 5: Design Infiltration Rate Summary

SCM	Percolation Test Hole	Test Rate	Factor of Safety	Design Infiltration Rate
1	3	0.2 in/hr	2	0.1 in/hr
2	4	0.5 in/hr	2	0.25 in/hr
3	5	0.5 in/hr	2	0.25 in/hr
4	6	0.2 in/hr	2	0.1 in/hr
5	7	0.5 in/hr	2	0.25 in/hr
6	8	0.5 in/hr	2	0.25 in/hr
7	9	0.5 in/hr	2	0.25 in/hr
8	1 & 2	1.4 in/hr	2	0.7 in/hr



SCMs 1-7 have a low infiltration rate present in at the depth and location of the proposed bioswales. Drawdown time calculations have been provided in Attachment D of this report and Table 6 below shows a summary of the drawdown times as calculated based upon the design infiltration rates. SCM 8 resulted in a drawdown time of 37 hours based upon the design infiltration rate and infiltration area available. SCMs 1-7 have a longer drawdown time due to their lower infiltration rates; however, since these bioswales are designed using the simplified sizing design criteria (i.e. using Appendix D) and not the routing method, an additional 20% increase in retention volume is not required for this system.

Since these systems have longer drawdown times, an HydroCAD modeling was used to determine when the surface storage would be infiltrated, leaving no standing surface water for potential mosquito breeding. SCMs 2, 3, 5, 6, and 7 all showed water surface elevations below the surface storage by hour 49 of the HydroCAD model, just 35 hours after the end of the storm. SCMs 1 and 4 had a lower infiltration rate, thus a longer drawdown time. HydroCAD models of SCMs 1 and 4 show a water surface elevation below the surface storage by hour 85 of the model, just 61 hours after the end of the storm. Santa Clara County Vector Control requires all surface standing water to be drained in 72 hours after the storm event. All SCMs have been determined to be in compliance with this requirement.

Table 6: SCM Drawdown Time Summary

SCM Drawdown Time Summary				
SCM	Design Infiltration Rate	Infiltration Area	Total Retention Volume	Drawdown Time
1	0.1 in/hr	500 SF	1,147 CF	275 hours
2	0.25 in/hr	400 SF	937 CF	112 hours
3	0.25 in/hr	450 SF	1,041 CF	111 hours
4	0.1 in/hr	486 SF	1,174 CF	290 hours
5	0.25 in/hr	400 SF	893 CF	107 hours
6	0.25 in/hr	560 SF	1,247 CF	107 hours
7	0.25 in/hr	350 SF	830 CF	114 hours
8	0.7 in/hr	2,487 SF	5,327 CF	37 hours

III.A.4. Performance Requirement No. 4 (PR-4): Peak Management

Development Projects that create and/or replace at least 22,500 square feet of impervious areas and within Watershed Management Zones 1, 2, 3, 6, and 9 are required to comply with Performance Requirement 4 in addition to previously discussed performance requirements. PR-4 is intended to mitigate the increased runoff created by the project's increase in impervious areas, thus preventing any adverse flooding conditions downstream of the project. PR-4 requires developments to detain increased runoff from the 2-, 5-, and 10-year events such that they release at rates at, or below, pre-development conditions.

The project is required to mitigate its increased runoff due to site development. Increased peak-flow is mitigated through two methods: decrease in SCS Routing curve number (CN) and the bioretention pond located at the low end of the site.

The existing farrow hillside with soil that is hydrologic soil group D is present through this project has a SCS routing method curve number of 94. This project will disturb and vegetate the existing soil to a point where the curve number is reduced to a value of 85, the standard for 1-acre residential development per the SCS routing methodology. This will inherently reduce the runoff on the site through more infiltration of the soil as the rain falls upon it. Using this reduced curve number creates a weighted curve number that is less than the existing curve number on the site.

In addition to lowering the curve number through disturbance and development, a bioretention pond is being proposed at the lowest point on the site. Due to Performance Requirement 3, this pond is required to retain



as well as detain, providing 5,103 cubic feet of storage before releasing. The bioretention pond has been designed to pond 6 inches before any runoff is to be released from the site. Once the ponding is achieved, the runoff is allowed to leave via a 4 foot by 4 foot drainage inlet located in the pond and out through the 30 - inch reinforced concrete pipe that runs south to Dunne Avenue and Old Hill Road. The outfall elevation and size has been designed to meter the outflow from the project at, or below, pre-development conditions up to the 100-year event. See Section IV below for detailed description of model and results.

III.A.5. Performance Requirement No. 5 (PR-5): Special Circumstances

This Performance Requirement applies to projects that are exempt from the runoff retention and/or peak flow mitigation requirements described in previous performance requirements because they discharge to highly altered channels, flow control facilities, or historic lake and wetland areas.

This project does not fall under this performance requirement.

IV. Documentation of Drainage Design

IV.A. Drainage Management Area Characterization

The Drainage Management Areas (DMAs) shown on Attachment G have been delineated based upon the tributary areas to each Source Control Measure (SCM). The site has been divided into eight (8) DMAs as shown on the Preliminary Stormwater Control Plan, Sheet 6 of the plans. DMAs 1 through 7 direct runoff from the developed portion of each lot and the corresponding street frontage into a bioswale located along the property line. Each bioswale is sized to treat runoff based up on the simplified treatment sizing (4%) methodology and retain the 95% percentile volume based upon the simplified sizing method described in Appendix D of the *Stormwater Management Guidance Manual for Low Impact Development & Post Construction Requirements, June 2015, City of Gilroy, City of Morgan Hill and County of Santa Clara*. SCMs 1-3 and 5-7 consist of 6 inches of surface ponding with 3-to-1 side slopes on 24 inches of biomedial sand/compost mix on 33 inches of 1"-2" clean drain rock surrounding an 8-inch perforated storage pipe. SCM 4 is of similar design to SCMs 1-3 and 5-7; however, the drain rock layer has been deepened to 36 inches to provide additional volume required for the DMA. Each storage pipe is hydraulically disconnected from the outflow structure to maximize the retention volume provided. DMA 8 drains to the bioretention pond located at the lowest point on the site. This bioretention pond treats and retains the runoff generated by the roadways and disturbed areas not captured by SCMs 1-7. SCM 8 consists of 0.70 feet of ponding with 3-to-1 side slopes on 24 inches of biomedial sand/compost mix on 33 inches of 1"-2" clean drain rock surrounding an 8-inch perforated storage pipe. Table 7 below shows a summary of each of the DMAs. See Attachment G for details.

Table 7: DMA Summary Table

DMA Summary Table						
DMA	BMP	Total DMA Area	Existing Impervious Area	Post-Development Impervious Area		
				Replaced	New	Total
1	SCM 1	23,084 SF	0 SF	0 SF	10,852 SF	10,852 SF
2	SCM 2	21,799 SF	0 SF	0 SF	8,997 SF	8,997 SF
3	SCM 3	25,624 SF	0 SF	0 SF	10,185 SF	10,185 SF
4	SCM 4	21,018 SF	0 SF	0 SF	12,247 SF	12,247 SF
5	SCM 5	18,342 SF	0 SF	0 SF	8,916 SF	8,916 SF
6	SCM 6	29,055 SF	0 SF	0 SF	12,286 SF	12,286 SF
7	SCM 7	19,170 SF	0 SF	0 SF	8,791 SF	8,791 SF
8	SCM 8	282,792 SF	0 SF	0 SF	45,861 SF	45,861 SF

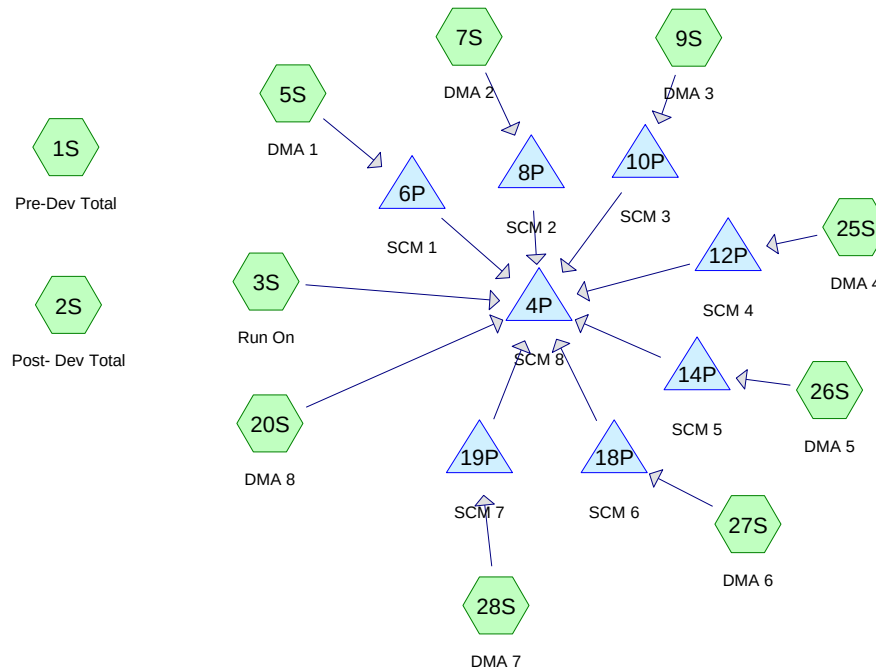
IV.B. Hydrologic Modeling

Hydrologic modeling has been completed for the project utilizing Hydraflow Hydrographs, an extension for Autodesk Civil 3D. This program uses the SCS Unit Hydrograph method to route the design storms through



the proposed SCMs to determine the runoff impact generated by the project. The model utilizes a unit hydrograph of Valley Water's Santa Clara Valley 1956 design storm combined with rainfall depths determined by the National Oceanic and Atmospheric Administration (NOAA). This rainfall data has been determined to be more conservative and provide the worst-case scenario when determining hydrologic impact of the development. Figure 4 below shows a schematic of the model created in HydroCAD. Each DMA has been routed through each of the SCMs before being routed to SCM 8 depicted as Pond 4P in the center of the schematic. This allows for each of the bioswales to stagger the times of concentration at the proposed bioretention pond and lower the peak run-off on the site.

Figure 6: HydroCAD Model Schematic



The maximum water surface elevation in the system for the event has been determined to be 382.73 for the 100-year event. The system is designed to detain the 100-year event; however overland release has been provided over the sidewalk of Sorrel Way and out towards Dunne Avenue via street conveyance. This system would only be used in the event of failure of the outfall system of collection pipes. Table 8 below shows a summary of each event. See Attachment D for detailed model input and output data.

Table 8:Hydraflow Output Summary

Events for Pond 4P: SCM 8

Event	Inflow (cfs)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)	Tertiary (cfs)	Elevation (feet)	Storage (cubic-feet)
1 year	17.53	17.51	0.06	17.45	0.00	382.08	7,715
2 year	23.33	23.31	0.06	23.25	0.00	382.18	8,083
5 year	31.28	31.25	0.06	31.20	0.00	382.31	8,538
10 year	37.94	37.91	0.06	37.85	0.00	382.41	8,906
25 year	47.58	47.55	0.06	47.48	0.00	382.54	9,401
50 year	55.29	55.25	0.06	55.19	0.00	382.64	9,783
100 year	63.45	63.41	0.06	63.35	0.00	382.73	10,174



V. Source Control Measures

V.A. Site activities and potential sources of pollutants

Common sources of potential pollutants in residential projects include pesticides/herbicides from landscape maintenance, fertilizers, oil/fuel leaking from poor vehicle maintenance, and airborne contaminants settling on the site.

V.B. Source Control Table

Table 9: Potential Pollutants and Source Control BMPs

Potential Pollutant Source	Pollutants Associated with Activity						Source Control BMP Proposed
	Sediment/ Litter/ Debris	Nutrients/ Organic Matter	Bacteria	Hydro-carbons	Toxics/ Chemicals/ Paint	Other	
Pets		X	X				Good housekeeping/ Illicit Discharge Control/Pet Waste Station
Parked Vehicles	X			X			Vehicle Maintenance, Fueling and Storage
Roads, Fertilizers, Pesticides, Storm Drains, Etc.	X	X	X	X			Plant Selection and integrated pest management

Table 10: Source Control Measures

Source Control Measure	Description
Storm Drain Inlets	<u>Structural</u> : Inlets clearly marked with "No Dumping" or similar message <u>Operational</u> : Inlets will have routine inspection and cleaning.
Pesticides	<u>Structural</u> : Pest-resistant plans will be selected when possible near impervious surfaces <u>Operational</u> : Landscape maintenance to utilize integrated pest management methods.
Bioswales	<u>Operational</u> : Bi-annual inspections required by the City to assess performance of the filtration media.
Underground Retention System	<u>Structural</u> : Installed sumps for sedimentation and ADS Envirohood for floating contaminants. <u>Operational</u> : Routine inspection and maintenance of sumps.

V.C. Features, Materials, and Methods of Construction of Source Control BMPs

Structural Control Measures are facilities designed and implemented to contain and remove contaminants found in stormwater runoff generated from development. These facilities break down and remove contaminants using filtration, infiltration, sedimentation, and evapotranspiration on the site before releasing runoff from the site.



This project has installed biofiltration facilities for each DMA that will break down contaminants in runoff using special sand and compost material that will filter contaminants in the runoff. These biofiltration facilities feature a special selection of plants that will break down contaminants such as oils and metals that enter the facility. Runoff will pass through the filtration media and enter the storm drain system via an underdrain and be routed to the retention facility to promote infiltration and further treatment of the runoff.

VI. Stormwater Facility Maintenance

VI.A. Ownership and Responsibility for Maintenance in Perpetuity

Projects that trigger Performance Requirements 2, 3, or 4, are required to record a *Stormwater Best Management Practices, Operation, and Maintenance Agreement* with the City and incorporate language into the CC&Rs accepting responsibility for inspection, operation and maintenance of facilities. Contact City staff for the Agreement. Include the executed Stormwater Agreement as an attachment. A Homeowner's Association (HOA) will be established at final permitting to own and maintain the proposed bioretention pond. The HOA will ensure that all bioswales are inspected and maintained in accordance with the BMP Operations and Maintenance Agreement that will be executed at final permitting. Each individual lot owner will be responsible for maintaining the bioswales located on their respective lots.

VI.B. Summary of Maintenance Requirements for Each Stormwater Facility

The Home Owners Associations will be responsible for all drainage and common facilities on a regular basis. See appropriate *BMP RAM Field Protocols* as listed in this document specific to this project. BMP RAM Field Protocol forms will be provided at final permitting stage.

As stated in the *Stormwater Best Management Practices, Operation, and Maintenance Agreement*, the project shall submit two (2) annual inspections per year in perpetuity. One inspection is due every June and shall follow the instructions outlined in the *BMP RAM Field Protocols* (added as attachment). The second inspection shall be submitted every November and will include a certification from the Engineer or QSP verifying all SCM(s) are in working conditions. Maintenance shall be performed whenever the SCM(s) are in poor conditions as per the annual inspections, or regular maintenance.

VII. Construction Checklist

Table 11: Construction Checklist

SWCP Page No.	Structural Control Measure SCMs	Plan Sheet No.
6	1-8	6

VIII. Certifications

The design of stormwater treatment facilities and other stormwater pollution control measures in this plan are in accordance with the Post-Construction Stormwater Management Resolution R3-2013-0032 and the current edition of the City's LID and Post-Construction Requirements Handbook.

See Attachment A for Performance Requirement Certifications



Project: Viji Mana
Project No.: 23117.5
Date: 7/24/2023

Attachment A: Performance Requirement Checklists

**LOW IMPACT DEVELOPMENT
AND
POST-CONSTRUCTION
STORMWATER MANAGEMENT REQUIREMENTS
APPLICANT PACKET
FOR PROJECTS IN SOUTH SANTA CLARA COUNTY**



COUNTY OF SANTA CLARA



PROJECT INFORMATION

County File No: ----

Project Name: Serene Hills

APN#: 728-02-003

Project Address: Northerly Terminus Of Saddleback Drive And Sorrel Way - 728-02-003

Cross Streets: Saddleback Drive And Magnolia Way

Applicant/Developer Name: Serene Hills, LLC

Project Phase(s): 1 of 1 Engineer: Kristian Wallace, PE

Project Type (Check all that apply): ☐ New Development ☐ Redevelopment
☒ Residential ☐ Commercial ☐ Industrial ☐ Mixed Use ☐ Public ☐ Institutional
☐ Restaurant ☐ Uncovered Parking ☐ Retail Gas Outlet ☐ Auto Service (SIC code) _____
☐ Other _____

Project Description: 7 Lot custom single-family detached 1-acre lots.

Project Watershed/Receiving Water (creek, river): Tennant Creek to West Little Llagas Creek

1. Total Project Area	440,884 ft ²
2. Pre-Project	
(a) Impervious Area	0 ft ²
(b) Pervious Area	440,884 ft ²
3. Post-Project	
(a) Replaced Impervious Area	0 ft ²
(b) New Impervious Area	121,027 ft ²
(c) Total Post-Project Impervious Area (<i>sum of Line 3a and Line 3b</i>)	121,027 ft ²
(d) Post-Project Pervious Area	121,027 ft ²
Net Impervious Area	
4. Reduced Impervious Area Credit (<i>Line 2a minus Line 3c</i>)	0 ft ²
5. Net Impervious Area (<i>Line 3c minus Line 4</i>)	121,027 ft ²

Post Construction Stormwater Management Requirements
Project Requirements Determination



6. Is Line 3c greater than or equal to 2,500 sq. ft?

☐ No, the project does not need to meet Post-Construction Stormwater Management Requirements - **STOP HERE.**

☒ Yes, the project is subject to Performance Requirement No. 1: Site Design and Runoff Reduction. Complete the **Site Design and Runoff Reduction Checklist** on **Page 4**. Continue to #7.

7. Is the Project a detached single-family home?

☐ No, go to #8.

☒ Yes, continue to #7.a. below.

7a. Is Line #5, Net Impervious Area greater than or equal to 15,000 sq ft?

☐ No, the project does not have any additional requirements – **STOP HERE.**

☒ Yes, this project is subject to Performance Requirement No. 2: Water Quality Treatment. Complete the **Water Quality Treatment Checklist** on **Page 6**. Continue to #7.b.

☒ Yes, this project is subject to Performance Requirement No. 3: Runoff Retention. Complete the **Runoff Retention Checklists** on **Pages 8-11**. Continue to #7.b.

7b. Is Line #3.c, amount of impervious surface created and/or replaced, greater than or equal to 22,500 sq ft?

☐ No, go to #12.

☒ Yes, this project is subject to Performance Requirement No. 4: Peak Management (refer to the Stormwater Management Guidance Manual for instructions). Go to #12.

~~8. For projects that are not detached single family homes, is Line #5, Net Impervious Area, greater than or equal to 5,000 sq ft?~~

~~☐ No, the project does not have any additional requirements – **STOP HERE.**~~

~~☐ Yes, this project is subject to Performance Requirement No. 2 Water Quality Treatment. Complete the **Water Quality Treatment Checklist** on **Page 6**. Continue to #9.~~

Post Construction Stormwater Management Requirements
Project Requirements Determination



9. Is Line #3.c, amount of impervious surface created and/or replaced, greater than or equal to 15,000 sq ft?

☐ No, go to #11.

☒ Yes, this project is subject to Performance Requirement No. 3 Runoff Retention.
Complete all **Runoff Retention Checklists** on **Pages 8-11**, as applicable.
Continue to #10.

10. Is Line #3.c, amount of impervious surface created and/or replaced, greater than or equal to 22,500 sq ft?

☒ No. Continue to #11.

☐ Yes, this project is subject to Performance Requirement No. 4: Peak Management (refer to the Stormwater Management Guidance Manual for instructions). Continue to #11.

11. Is there a pollutant generating activity or source included in the project (e.g., restaurants, grocery stores, food service operations, outdoor storage, vehicle service facilities, retail gas outlets, outdoor parking lots, loading docks, pools, spas, or fountains)?

☒ No, go to #12.

☐ Yes, your Project is required to implement structural or operational source control measures.
Complete the **Source Control Checklist** on **page 5**. Continue to #12.

12. **Operation and Maintenance Information**

a) Property Owner's Name **Serene Hills, LLC**

b) Responsible Party for Stormwater Treatment/Hydromodification Control O&M:

i. Name: **Serene Hills, LLC**

ii. Address: **22561 Poppy Drive, Cupertino, CA 95014**

iii. Phone/E-mail: **408.396.2706 / manisviji@yahoo.com**

13. Submit a Stormwater Control Plan with the required information, and complete the **Stormwater Control Plan Checklist** on **page 12**.

☒ Yes **See Improvement Plan Sheets 6**

☐ No

PERFORMANCE REQUIREMENT NO. 1: SITE DESIGN AND RUNOFF REDUCTION

Certification

DESIGN STRATEGY	INCORPORATED INTO PROJECT?
1. Limit disturbance of creeks and natural drainage features. <i>Existing drainage swale has been maintained and enhanced to better convey run-on from developments east of the development</i>	☐ yes
2. Minimize compaction of highly permeable soils.	☐ yes
3. Limit clearing and grading of native vegetation at the site to the minimum area needed to build the project, allow access, and provide fire protection.	☐ yes
4. Minimize impervious surfaces by concentrating improvements on the least sensitive areas of the site, while leaving the remaining land in a natural undisturbed state.	☐ yes
5. Minimize stormwater runoff by implementing one or more of the following design measures:	☐ yes
a) Direct roof runoff into cisterns or rain barrels for reuse.	☐ no
b) Direct roof runoff onto vegetated areas safely away from building foundations and footings. <i>yes, runoff is routed through vegetated areas and vegetated swales to bioswales wherever possible.</i>	☐ yes
c) Direct runoff from sidewalks, walkways, and/or patios onto vegetated areas safely away from building foundations and footings. <i>yes, sidewalk, driveway, walkway and patio runoff is directed over adjacent vegetation and routed to bioswales and/or bioretention pond.</i>	☐ yes
d) Direct runoff from driveways and/or uncovered parking lots onto vegetated areas safely away from building foundations and footings. <i>yes, driveway and parking area runoff is directed for collection through vegetated swales wherever possible.</i>	☐ yes
e) Construct bike lanes, driveways, uncovered parking lots, sidewalks, walkways, and patios with permeable surfaces.	☐ no

I, Kristian Wallace, PE, acting as the Project Engineer for Serene Hills, LLC
project, located at Northerly Terminus Of Saddleback Drive And Sorrel Way, hereby state that the Site
Design and Runoff Reduction design strategies indicated above have been incorporated into the design
of the project.

Signature



Date

7/24/2023

SOURCE CONTROL CHECKLIST

On-site Source Control Measures	Incorporated Into Project?
Wash area/racks, drain to sanitary sewer or septic system ¹	☐ N/A
Covered dumpster area, drain to sanitary sewer/septic system ¹ or landscaped area	☐ n/a
Accessible cleanout for draining swimming pool/spa/fountain	☐ N/A
Parking garage floor drains plumbed to sanitary sewer ¹	☐ n/a
Fire sprinkler test water/condensate drain lines drain to sanitary sewer/septic system ¹ or landscaped area	☐ yes
Interior floor drains/boiler drain lines plumbed to sanitary sewer	☐ yes
Beneficial landscaping/IPM (minimize irrigation, runoff, pesticides and fertilizers; promotes treatment)	☐ yes
Outdoor material storage protection	☐ n/a
Covers, drains for loading docks, maintenance bays, fueling areas	☐ n/a
Maintenance (pavement sweeping, catch basin cleaning, good housekeeping)	☐ yes
Storm drain labeling	☐ yes
Other ² <u>all proposed runoff routed through vegetated areas</u>	☐ yes

Notes:

¹ Subject to sanitary sewer authority and/or Department of Environmental Health requirements.

² See CASQA Stormwater BMP Handbook for New Development and Redevelopment for additional BMPs for vehicle service repair facilities, fuel dispensing areas, industrial processes, rooftop equipment and other pollutant generating activities and sources.

<https://www.casqa.org/resources/bmp-handbooks/new-development-redevelopment-bmp-handbook>

PERFORMANCE REQUIREMENT NO. 2: WATER QUALITY TREATMENT

Certification

ON-SITE WATER QUALITY TREATMENT MEASURES	INCORPORATED?
1. Low Impact Development (LID) Treatment Systems designed to retain stormwater runoff generated by the 85 th percentile 24-hour storm. Stormwater Control Measures Implement (check all that apply, design documentation is required)	
a) Harvesting and Use,	☐ No
b) Infiltration,	☐ Yes
c) Evapotranspiration	☐ Yes
2. Biofiltration Treatment Systems ¹ – with the following design parameters:	
a) Maximum surface loading rate appropriate to prevent erosion, scour and channeling within the biofiltration treatment system itself and equal to 5 inches per hour, based on the flow of runoff produced from a rain event equal to or at least:	☐ yes
(a) 0.2 inches per hour intensity; or	
(b) Two times the 85th percentile hourly rainfall intensity for the applicable area, based on historical records of hourly rainfall depth	
b) Minimum surface reservoir volume equal to the biofiltration treatment system surface area times a depth of 6 inches	☐ Yes
c) Minimum planting medium depth of 24 inches. The planting medium must sustain a minimum infiltration rate of 5 inches per hour throughout the life of the project and must maximize runoff retention and pollutant removal. A mixture of sand (60%-70%) meeting the specifications of American Society for Testing and Materials (ASTM) C33 and compost (30%-40%) may be used. A Project may utilize an alternative planting medium if it demonstrates its planting medium is equal to or more effective at attenuating pollutants than the specified planting medium mixture.	☐ Yes
d) Proper plant selection ²	☐ Yes
e) Subsurface drainage/storage (gravel) layer with an area equal to the biofiltration treatment system surface area and having a minimum depth of 12 inches	☐ Yes
f) Underdrain with discharge elevation at top of gravel layer	☐ No - Perforated pipe not connected to outflow structure
g) No compaction of soils beneath the biofiltration facility (ripping/loosening of soils required if compacted)	☐ Yes

Post Construction Stormwater Management Requirements
Source Control Checklist

File No.: ----

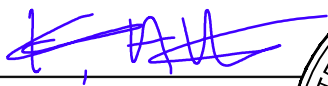
- h) No liners or other barriers interfering with infiltration, except for situations where lateral infiltration is not technically feasible ☐ Yes

3. Non-Retention Based Treatment Systems – designed to meet at least one of the following hydraulic sizing criteria:

- (a) Volume Hydraulic Design Basis – Treatment systems whose primary mode of action depends on volume capacity shall be designed to treat stormwater runoff equal to the volume of runoff generated by the 85th percentile 24-hour storm event, based on local rainfall data. ☐ Yes
- (b) Flow Hydraulic Design Basis – Treatment systems whose primary mode of action depends on flow capacity shall be sized to treat:
- (i) The flow of runoff produced by a rain event equal to at least two times the 85th percentile hourly rainfall intensity for the applicable area, based on historical records of hourly rainfall depths; or
- (ii) The flow of runoff resulting from a rain event equal to at least 0.2 inches per hour intensity. ☐ Yes

I, Kristian Wallace, PE, acting as the Project Engineer for Serene Hills, LLC project, located at Northerly Terminus Of Saddleback Drive And Sorrel Way, hereby state that the Water Quality Treatment Measures indicated above have been incorporated into the design of the project.

Signature



Date

7/24/2023

¹ Facilities or a combination of facilities, of a different design than in Item #2 may be permitted if all of the following measures of equivalent effectiveness are demonstrated: 1) equal or greater amount of runoff infiltrated or evapotranspired; 2) equal or lower pollutant concentrations in runoff that is discharged after biofiltration; 3) equal or greater protection against shock loading and spills; and 4) equal or greater accessibility and ease of inspection and maintenance.

² Technical guidance for designing bioretention facilities is available from the Central Coast LID Initiative. The guidance includes design specifications and plant lists appropriate for the Central Coast climate. (http://www.centralcoastlidi.org/Central_Coast_LIDI/LID_Structural_BMPs.html)

PERFORMANCE REQUIREMENT NO. 3 – RUNOFF RETENTION

Design Rainfall Events & Treatment Requirements for Watershed Management Zones (WMZs)¹

WMZ ²	Treatment Options & Design Rainfall	Check Applicable WMZs
WMZ 1	Via optimized infiltration ³ , prevent offsite discharge from events up to the 95 th percentile 24-hour rainfall event as determined from local rainfall data.	☒
WMZ 2	Via storage, rainwater harvesting, infiltration, and/or evapotranspiration, prevent offsite discharge from events up to the 95 th percentile 24-hour rainfall event as determined from local rainfall data.	☐
WM 4 *	Via optimized infiltration ² , prevent offsite discharge from events up to the 95 th percentile 24-hour rainfall event as determined from local rainfall data.	☐
WMZ 5	Via optimized infiltration ² prevent offsite discharge from events up to the 85 th percentile 24-hour rainfall event as determined from local rainfall data.	☐
WMZ 6	Via storage, rainwater harvesting, infiltration, and/or evapotranspiration, prevent offsite discharge from events up to the 85 th percentile 24-hour rainfall event as determined from local rainfall data.	☐
WMZ 9	Via storage, rainwater harvesting, infiltration, and/or evapotranspiration, prevent offsite discharge from events up to the 85 th percentile 24-hour rainfall event as determined from local rainfall data.	☐
WMZ 10 *	Via optimized infiltration ² , prevent offsite discharge from events up to the 95 th percentile 24-hour rainfall event as determined from local rainfall data	☐

1. Includes only those WMZs located in Santa Clara County.

2. Use the Santa Clara County Department of Planning and Development Online Property Profile database to determine the WMZ in which your project is located: <http://www.sccplanning.org/gisprofile/>

Search for your project site by APN or Address to retrieve the Property Profile. At the bottom of the property profile page, under Special Resources/Hazards/Constraints Areas, look for the “Central Coast Watershed Management Zone Value”.

3. Storage, rainwater harvesting, and/or evapotranspiration may be used when infiltration is optimized.

* Applicable only to those areas that overlay designated Groundwater Basins.

PERFORMANCE REQUIREMENT NO. 3 – RUNOFF RETENTION

LID Site Assessment Checklist

ITEMS TO DOCUMENT:

INCLUDED IN
PROJECT
DOCUMENTS?

- | | |
|---|------------------------------|
| 1. Site topography | ☐ Yes |
| 2. Hydrologic features including contiguous natural areas, wetlands, watercourses, seeps, or springs | ☐ Yes |
| 3. Depth to seasonal high groundwater | ☐ Yes |
| 4. Locations of groundwater wells used for drinking water | ☐ Yes |
| 5. Depth to an impervious layer such as bedrock | ☐ N/A |
| 6. Presence of unique geology (e.g., karst) | ☐ N/A |
| 7. Geotechnical hazards | ☐ N/A |
| 8. Documented soil and/or groundwater contamination | ☐ N/A |
| 9. Soil types and hydrologic soil groups | ☐ Yes |
| 10. Vegetative cover/trees | ☐ Yes |
| 11. Run-on characteristics (source and estimated runoff from offsite which discharges to the project area) | ☐ Yes |
| 12. Existing drainage infrastructure for the site and nearby areas including the location of municipal storm drains | ☐ Yes |
| 13. Structures including retaining walls | ☐ Yes |
| 14. Utilities | ☐ Yes |
| 15. Easements | ☐ Yes |
| 16. Covenants | ☐ No |
| 17. Zoning/Land Use | ☐ Yes |
| 18. Setbacks | ☐ Yes |
| 19. Open space requirements | ☐ N/A |
| 20. Other pertinent overlay(s) | ☐ N/A |

PERFORMANCE REQUIREMENT NO. 3 – RUNOFF RETENTION

LID Site Design Measures

The Project Engineer shall certify the Project design optimizes the use of the following design measures to augment the design strategies required by Performance Requirement No. 1. Initial each runoff retention measure that has been incorporated and optimized into the design or mark NA if not applicable.

PERFORMANCE REQUIREMENT NO. 3 CERTIFICATION OF LID SITE DESIGN MEASURES

DESIGN MEASURE	INCORPORATED/ OPTIMIZED
1. Defining the development envelope, identifying the protected areas, and identifying areas that are most suitable for development and areas to be left undisturbed	<u>Incorporated</u>
2. Identifying conserved natural areas, including existing trees, other vegetation, and soils (shown on the plans)	<u>Incorporated</u>
3. Limit the overall impervious footprint of the project	<u>Incorporated</u>
4. Design of streets, sidewalks, or parking lot aisles to the minimum widths necessary, provided that public safety or mobility uses are not compromised	<u>Incorporated</u>
5. Set back development from creeks, wetlands, and riparian habitats	<u>N/A</u>
6. Design conforms the site layout along natural landforms	<u>Optimized</u>
7. Design avoids excessive grading and disturbance of vegetation and soils	<u>Optimized</u>

I, Kristian Wallace, PE, acting as the Project Engineer for Serene Hills, LLC project, located at Northerly Terminus Of Saddleback Drive And Sorrel Way, hereby state that LID Site Design Measures initialed have been incorporated into the design of the project.

Signature



Date

7/24/2023

PERFORMANCE REQUIREMENT NO. 3 – RUNOFF RETENTION

TECHNICAL INFEASIBILITY CHECKLIST

Site Conditions	Check Applicable
1. Depth to seasonal high groundwater limits infiltration and/or prevents construction of subgrade stormwater control measures ³	☐ N/A
2. Depth to an impervious layer such as bedrock limits infiltration	☐ N/A
3. Sites where soil types significantly limit infiltration	☐ N/A
4. Sites where pollutant mobilization in the soil or groundwater is a documented concern	☐ N/A
5. Space constraints (e.g., infill projects, some redevelopment projects, high density development)	☐ N/A
6. Geotechnical hazards	☐ N/A
7. Stormwater Control Measures located within 100 feet of a groundwater well used for drinking water	☐ N/A
8. Incompatibility with surrounding drainage system (e.g., project drains to an existing stormwater collection system whose elevation or location precludes connection to a properly functioning treatment or flow control facility)	☐ N/A

³ According to the CASQA Frequently Asked Questions about LID, “some MS4 permits and BMP guidance manuals require anywhere from 3-10 feet of separation from the groundwater level for infiltration practices. This distance depends on the soil type, pollutants of concern, and groundwater use. In some cases, however, where there may be groundwater or soil contamination, LID infiltrative practices may be restricted completely. (p. 7 in https://www.casqa.org/Portals/0/LID/CA_LID_FAQ_06-28-2011.pdf)

STORMWATER CONTROL PLAN CHECKLIST

Stormwater Control Plan Required Contents	PR Level	Done?
1. Project Information	All	
• Project name		☒
• Application number		☒
• Address and assessor's parcel number		☒
• Name of Applicant		☒
• Project Phase number (if project is being constructed in phases)		☒
• Project Type (e.g., commercial, industrial, multi-unit residential, mixed-use, public), and description		☒
2. Project Areas	All	
• Total project site area		☒
• Total new impervious surface area		☒
• Total replaced impervious surface area		☒
• Total new pervious area		☒
• Calculation of Net Impervious Area		☒
3. Statement of Performance Requirements that apply to the project:	All	
• Performance Requirement No.1 – Site Design and Runoff Reduction		☒
• Performance Requirement No.2 – Water Quality Treatment		☒
• Performance Requirement No. 3 – Runoff Retention		☒
• Performance Requirement No. 4 – Peak Management		☒
4. Delineation of Drainage Management Areas (DMAs)	All	☒
5. Summary of Site Design and Runoff Reduction Performance Requirement measures selected for the project (see PR-1 checklist)	PR-1	☒
6. Description of Runoff Reduction Measures and Structural Stormwater Control Measures, by Drainage Management Area and for entire site	PR-2, 3, and 4	☒
7. Water quality treatment calculations used to comply with the Water Quality Treatment Performance Requirement and any analysis to support infeasibility determination	PR-2	☒
8. Documentation certifying that the selection, sizing, and design of the Stormwater Control Measures meet the full or partial Water Quality Treatment Performance Requirements (see PR-2 checklist)	PR-2	☒

Stormwater Control Plan Required Contents	PR Level	Done?
9. Statement that Water Quality Treatment Performance Requirement has been met on-site, or, if not achievable: - Documentation of the volume of runoff for which compliance cannot be achieved on-site and the associated off-site compliance requirements - Statement of intent to comply with Water Quality Treatment Performance Requirement through Alternative Compliance	PR-2	☒
10. LID Site Assessment Summary (see PR-3 checklist)	PR-3	☒
11. LID Site Design Measures Used (see PR-3 checklist)	PR-3	☒
12. Supporting calculations used to comply with the applicable Runoff Retention Performance Requirements	PR-3	☒
13. Documentation demonstrating infeasibility where Site Design and Runoff Reduction measures and retention-based Stormwater Control Measures cannot retain required runoff volume	PR-3	☒
14. Documentation demonstrating percentage of the project's Equivalent Impervious Surface Area dedicated to retention-based Stormwater Control Measures	PR-3	☒
15. Statement that Runoff Reduction Performance Requirement has been met on-site, or, if not achievable: - Documentation of the volume of runoff for which compliance cannot be achieved on-site and the associated off-site compliance requirements - Statement of intent to comply with Runoff Retention Performance Requirements through an Alternative Compliance agreement	PR-3	☒
16. Supporting calculations used to comply with the applicable Peak Management Performance Requirements	PR-4	☒
17. Documentation demonstrating infeasibility where on-site compliance with Peak Management Performance Requirements cannot be achieved	PR-4	☒
18. Statement that Peak Management Performance Requirement has been met on-site, or, if not achievable: - Documentation of the volume of runoff for which compliance cannot be achieved on-site and the associated off-site compliance requirements - Statement of intent to comply with Peak Management Requirements through an Alternative Compliance agreement		☒
19. O&M Plan for all structural SCMs to ensure long-term performance	PR-2, 3, and 4	☒
20. Owner of facilities and responsible party for conducting O&M	PR-2, 3, and 4	☒



Project: Viji Mana
Project No.: 23117.5
Date: 7/24/2023

Attachment B: Percolation Test Results



November 3, 2022

File No.: 301138-003

Serene Hills, LLC
Attn. Ms. Viji Mani
22561 Poppy Drive
Cupertino, CA 95014

PROJECT: SERENE HILLS PERCOLATION TESTING
1275B EAST DUNNE AVENUE
MORGAN HILL, CALIFORNIA

SUBJECT: Results of Soil Percolation Rate Testing

Dear Ms. Mani:

Earth Systems Pacific (Earth Systems) conducted soil percolation rate testing of proposed storm water facilities for the planned Serene Hills residential subdivision in Morgan Hill, California. A storm water detention basin is planned on the south corner of the subdivision. The proposed subdivision and Earth Systems' percolation test locations are shown on attached Figures 1 and 2.

A soil profile boring and two percolation rate tests were drilled using a Mobile B-24 drill rig equipped with a 6-inch diameter auger at the proposed detention basin location shown on the attached Boring Location Map. The profile boring was drilled to a depth of 45 feet and no groundwater was encountered. The test holes were drilled to nominal depths of 7½ and 10 feet. Copies of the profile boring log and percolation test results are attached.

The percolation tests were conducted in general accordance with the Shallow Quick Infiltration Testing Methodology, as detailed in the document *Native Soil Assessment for Small Infiltration-Based Stormwater Control Measures* prepared by Earth Systems Pacific for the Central Coast Low Impact Initiative (2013). Perforated PVC pipes were placed in the open borings, and the annular space was backfilled with gravel. The lower four feet of the test holes were then filled with water, and the water level was maintained for approximately 30 minutes (i.e. kept at a constant head). From that point on, the tests were conducted as a falling head test, and measurements were taken as the water level dropped. Copies of the percolation test results are attached.

These test results only indicate the percolation rates at the specific locations and under specific conditions. Sound engineering judgment should be exercised in extrapolating the test results for other conditions or locations. Please note that the test results incorporate both downward and horizontal fluxes of water. Therefore, the test results will need to be adjusted to estimate the



downward percolation rates for assessment of the storm water facilities. Technical design references vary in methods they present for using these types of test results. However, most references include reduction and/or correction factors for several parameters including, but not limited to, the size of the storm water percolation system relative to the test volume, the number of tests conducted, the variability in the soil profile, anticipated silt loading, anticipated biological buildup, anticipated long-term maintenance, and other factors. These considerations should be incorporated into the selection of appropriate reduction and/or correction factors during the design and assessment of the subdivisions' stormwater percolation system

Closure

Our intent was to perform soil percolation testing in a manner consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing in the locality of this project under similar conditions. No representation, warranty, or guarantee is either expressed or implied.

We appreciate the opportunity to have provided services for this project and look forward to working with you again in the future. Please do not hesitate to contact this office if you have any questions regarding this report.

Sincerely,

Earth Systems Pacific

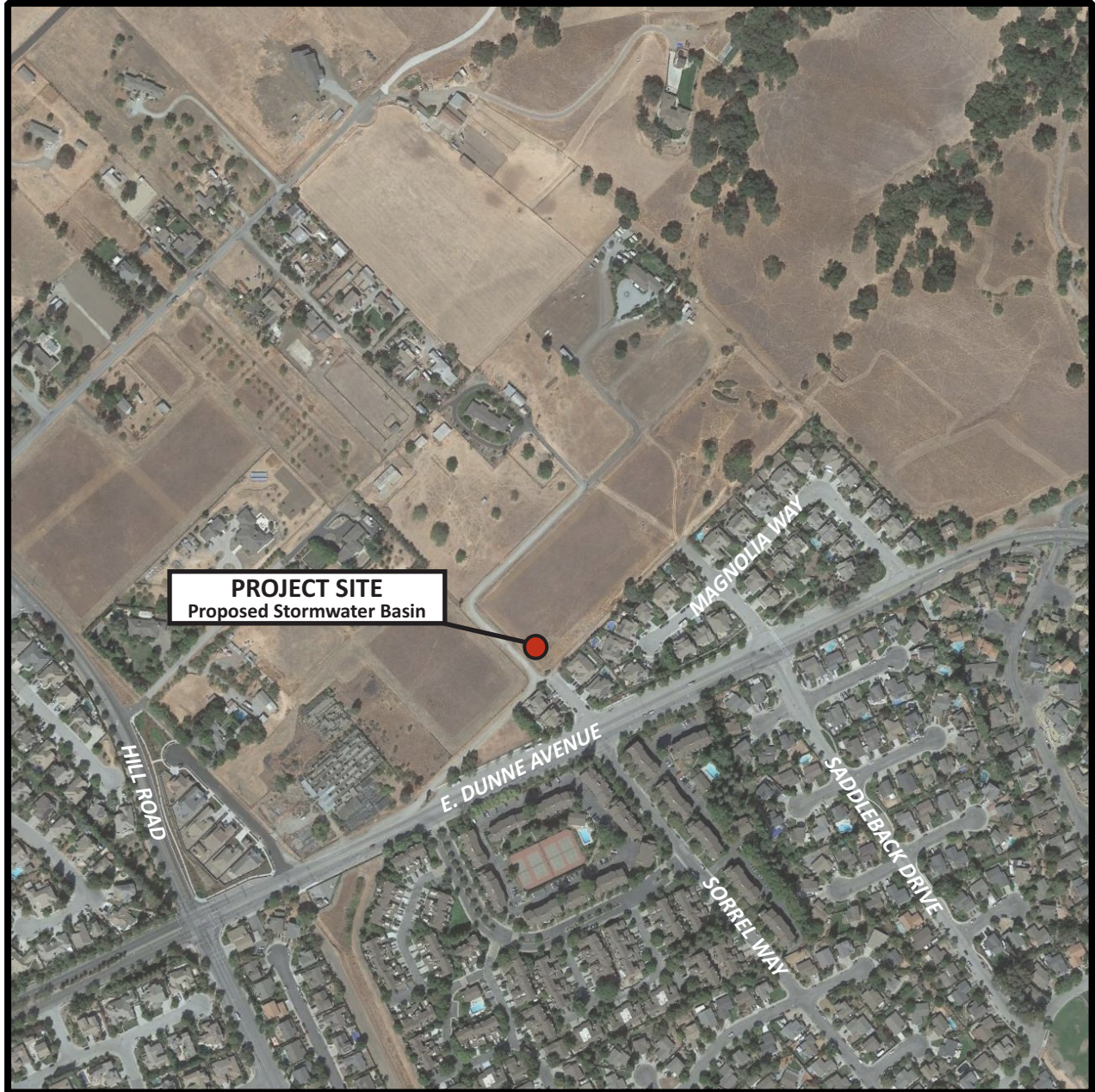
Brett Faust
Engineering Geologist



Attachments: Site Vicinity Map
 Soil Boring Location Map
 Boring Log
 Percolation Test Results

TN
MN
13.5

FIGURE 1



BASE: Google Earth Pro. 2021. Morgan Hill, Calif. Sept 27

EXPLANATION

- **Project Site: Serene Hills**
1275B East Dunne Ave
Morgan Hill, Calif.

0 250 500
Approximate Scale in Feet

NOTE: All features presented are approximated at this scale.



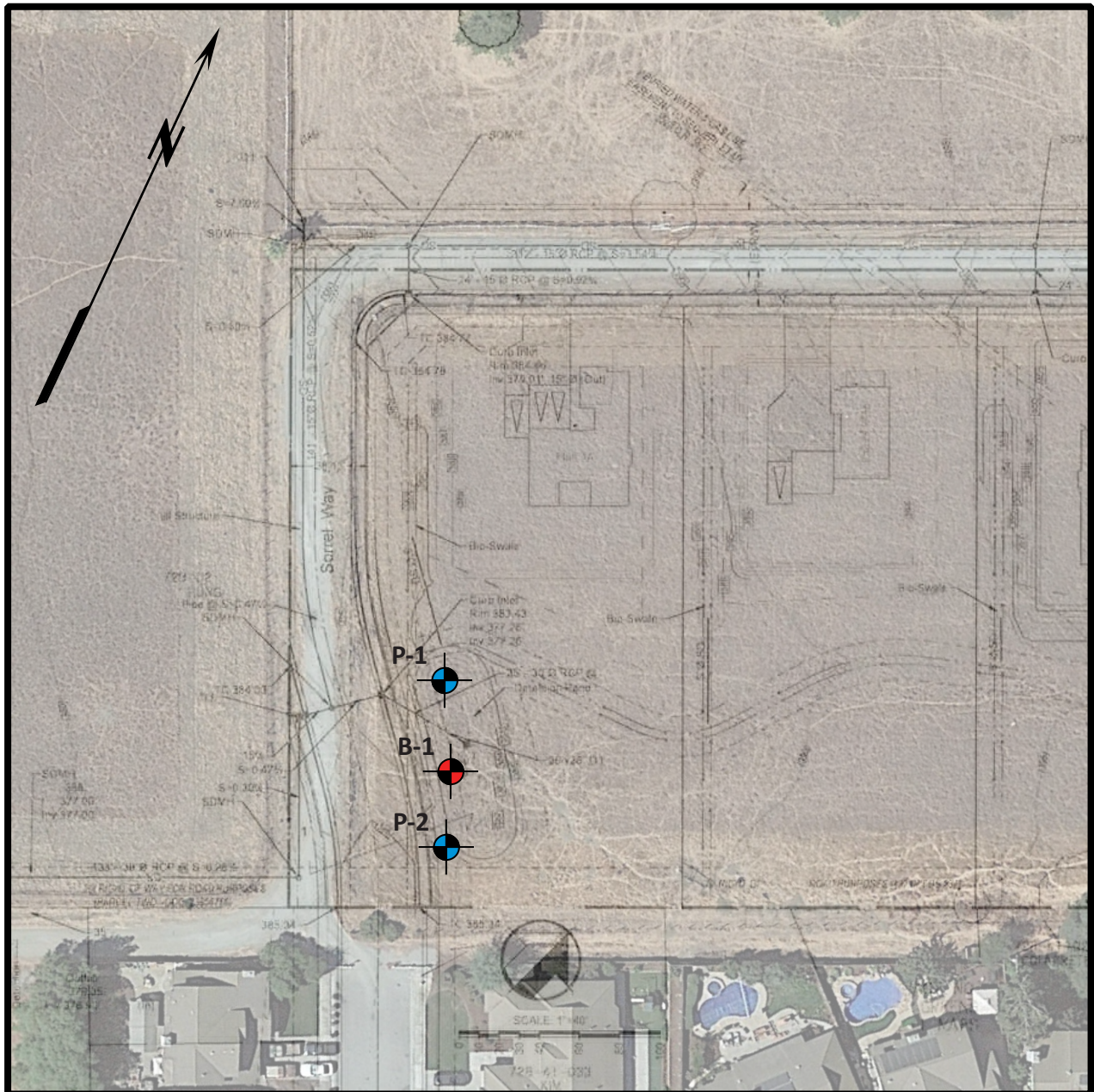
Earth Systems Pacific

Serene Hills Percolation Testing
1275B East Dunne Ave
Morgan Hill, California

SITE VICINITY MAP

301138-003

FIGURE 2



BASE: Google Earth Pro. 2021. Morgan Hill, Calif. Sept 27; MH Engineering Co. 2022. Serene Hills Preliminary Grading Plan, Sheet 3 of 3. Aug

EXPLANATION

- B-1 Boring Location
- P-2 Percolation Test Location

80 0 80
Approximate Scale in Feet

NOTE: All features presented are approximated at this scale.



Earth Systems Pacific

Serene Hills Percolation Testing
1275B East Dunne Ave
Morgan Hill, California

BORING LOCATION MAP

301138-003



Earth Systems Pacific

LOGGED BY: J. Woodard
RIG TYPE: B-24 Drill Rig
AUGER TYPE: 6" Solid Stem Auger

Boring No. 1
PAGE 1 OF 2
FILE NO.: 301138-003
DATE: 10/25/2022

DEPTH (feet)	USCS CLASS	SYMBOL	Serene Hills Percolation Testing Morgan Hill, California	SAMPLE DATA					
			SOIL DESCRIPTION	INTERVAL (feet)	SAMPLE NUMBER	SAMPLE TYPE	DRY DENSITY (pcf)	MOISTURE (%)	BLOWS PER 6 IN. POCKET PEN (t.s.f)
0 - 1 - 2 - 3 - 4 - 5 - 6 - 7	CH		SANDY FAT CLAY; brown, moist, stiff, fine to medium grained sand, trace rootlets - hard, fine sand, trace coarse sand	5.0 - 6.5	1-1	●			6 12 24
7 - 8 - 9 - 10 - 11 - 12 - 13 - 14 - 15 - 16 - 17 - 18 - 19	SC		CLAYEY SAND; brown, moist, medium dense, fine grained sand, trace med and coarse grained sand - very dense, some medium to coarse sand - cobble fragments observed in cuttings	10.0 - 11.5 15.0 - 16.5	1-2 1-3	● ●			6 11 18 13 22 39
20 - 21 - 22 - 23 - 24 - 25 - 26	SP		POORLY-GRADED SAND with GRAVEL; brown, moist, very dense, fine sand, fine and coarse gravel - some two-inch gravel and cobble fragments observed in cuttings - SPT sampler refusal, grab sample collected from cuttings	15.0 - 16.5 25.0 - 26.5	1-4 1-5	● ○			15 27 34

LEGEND: 2.5" Mod Cal Sample Shelby SPT Bulk Sample Groundwater
NOTE: This log of subsurface conditions is a simplification of actual conditions encountered. It applies at the location and time of drilling. Subsurface conditions may differ at other locations and times.



Earth Systems Pacific

LOGGED BY: J. Woodard
RIG TYPE: B-24 Drill Rig
AUGER TYPE: 6" Solid Stem Auger

Boring No. 1
PAGE 2 OF 2
FILE NO.: 301138-003
DATE: 10/25/2022

DEPTH (feet)	USCS CLASS	SYMBOL	Serene Hills Percolation Testing Morgan Hill, California SOIL DESCRIPTION	SAMPLE DATA					
				INTERVAL (feet)	SAMPLE NUMBER	SAMPLE TYPE	DRY DENSITY (pcf)	MOISTURE (%)	BLOWS PER 6 IN. POCKET PEN (t.s.f)
27 -	SP		- some cobble fragments observed in cuttings						
28 -	GP		POORLY-GRADED GRAVEL; gray-brown, moist, coarse gravel						
29 -									
30 -									
31 -			- hard drilling						
32 -									
33 -			- sample collected from cuttings	31.0 - 33.0	1-6				
34 -									
35 -									
36 -			- sample collected from cuttings	35.0 - 36.5	1-7				
37 -									
38 -									
39 -									
40 -			- no sampling at 40 ft due to risk of borehole collapse						
41 -	CH		SANDY FAT CLAY with GRAVEL; brown, moist, medium to coarse sand, fine and coarse gravel						
42 -			- sample collected from cuttings	41.0 - 44.0	1-8				
43 -									
44 -									
45 -			Bottom of boring at 45.0'						
46 -			No groundwater encountered						
47 -			Backfilled with drilling spoils and cement						
48 -									
49 -									
50 -									
51 -									
52 -									
53 -									

LEGEND: 2.5" Mod Cal Sample Shelby SPT Bulk Sample Groundwater

NOTE: This log of subsurface conditions is a simplification of actual conditions encountered. It applies at the location and time of drilling. Subsurface conditions may differ at other locations and times.



Project: Hollister IWTP

File No. 302609-001

PERCOLATION TEST RESULTS

PERCOLATION TEST: P-1

TEST HOLE DIAMETER: 6 inches

DATE DRILLED: 10/25/22

CASING DIAMETER: 3 inches

DATE TESTED: 10/26/22

TEST HOLE DEPTH : 10.17 feet

TECHNICIAN: JW

RISER HEIGHT: 2.67 feet

CONSTANT HEAD DATA

Time of Constant Head: 30 minutes

TEST DURATION: 5 hours

Reference of Measurement: Top of Riser

FALLING HEAD DATA

INTERVAL (Minutes)	READING (Feet)	INCREMENTAL FALL (Feet)	PERCOLATION RATE (Minutes / Inch)	PERCOLATION RATE (Inches / Hour)
Constant Head	6.17	---	---	---
20	5.95	6.21	6.4	9.4
20	6.21	6.42	7.9	7.6
20	6.42	6.51	18.5	3.2
20	6.51	6.60	18.5	3.2
20	6.60	6.64	41.7	1.4
20	6.64	6.69	33.3	1.8
20	6.69	6.76	23.8	2.5
20	6.76	6.80	41.7	1.4
20	6.80	6.84	41.7	1.4
20	6.84	6.88	41.7	1.4
20	6.88	6.93	33.3	1.8
20	6.93	6.98	33.3	1.8
20	6.98	7.02	41.7	1.4
20	7.02	7.06	41.7	1.4
20	7.06	7.10	41.7	1.4



Project: Hollister IWTP

File No. 302609-001

PERCOLATION TEST RESULTS

PERCOLATION TEST: P-2

TEST HOLE DIAMETER: 6 inches

DATE DRILLED: 10/25/22

CASING DIAMETER: 3 inches

DATE TESTED: 10/26/22

TEST HOLE DEPTH : 10.21 feet

TECHNICIAN: JW

RISER HEIGHT: 0.40 feet

CONSTANT HEAD DATA

Time of Constant Head: 30 minutes

TEST DURATION: 5 hours

Reference of Measurement: Top of Riser

FALLING HEAD DATA

INTERVAL (Minutes)	READING (Feet)	INCREMENTAL FALL (Feet)	PERCOLATION RATE (Minutes / Inch)	PERCOLATION RATE (Inches / Hour)
Constant Head	5.81	---	---	---
20	5.38	5.49	15.2	4.0
20	5.49	6.17	2.5	24.5
20	6.17	6.48	5.4	11.2
20	6.48	6.59	15.2	4.0
20	6.59	6.82	7.2	8.3
20	6.82	6.89	23.8	2.5
20	6.89	6.97	20.8	2.9
20	6.97	7.09	13.9	4.3
20	7.09	7.19	16.7	3.6
20	7.19	7.22	55.6	1.1
20	7.22	7.31	18.5	3.2
20	7.31	7.37	27.8	2.2
20	7.37	7.43	27.8	2.2
20	7.43	7.49	27.8	2.2
20	7.49	7.55	27.8	2.2



March 1, 2023

File No.: 301138-003

Serene Hills, LLC
Attn. Ms. Viji Mani
22561 Poppy Drive
Cupertino, CA 95014

PROJECT: SERENE HILLS PERCOLATION TESTING
2275B EAST DUNNE AVENUE
MORGAN HILL, CALIFORNIA

SUBJECT: Results of Additional Soil Percolation Rate Testing

REFS: Plan Sheet 1: Serene Hills Site Development Plan, #23117.5 by MH Engineering Co., dated December 5, 2022

Revised Results of Soil Percolation Testing, Serene Hills Percolation Testing, 2275B East Dunne Avenue, Morgan Hill, California, Doc. No. 2211-003.RPT.REV1, dated November 3, 2022

Dear Ms. Mani:

In accordance with your authorization, Earth Systems Pacific (Earth Systems) conducted soil percolation rate testing of proposed stormwater facilities for the planned Serene Hills residential subdivision in Morgan Hill, California. The percolation testing was completed in two stages. The first stage consisted of two tests in the planned detention basin at the south corner of the subdivision. These results were presented in Earth Systems' revised report referenced above. The second stage consisted of testing the seven lot-specific bio-swales for each of the planned parcels. The project site and our percolation test locations are shown on the attached Site Vicinity Map (Figure 1) and Percolation Test Location Map (Figure 2). It should be noted that the second stage of testing was performed during an extended period of rain and the ground surface was saturated and surface ponding of water was locally present throughout the site.

On January 31, 2023, Earth System drilled and installed seven percolation test holes (P-3 through P-9) to nominal depths of approximately 5-6 feet at the bio-swale locations identified and marked in the field by MH Engineering.

On February 6, 2023, Earth Systems performed percolation rate testing. The percolation tests were conducted in general accordance with our Shallow Quick Infiltration Testing Methodology, as detailed in the document *Native Soil Assessment for Small Infiltration-Based Stormwater Control Measures* prepared by Earth Systems Pacific for the Central Coast Low Impact Initiative (2013). Perforated PVC pipes were placed in the open borings, and the annular space was



backfilled with gravel. The test holes were then filled to surface with water, and the water level was maintained for approximately 30 minutes (i.e. kept at a constant head). From that point on, the tests were conducted as a falling head test, and measurements were taken as the water level dropped. Copies of the percolation test results are attached.

These test results only indicate the percolation rates at the specific locations and under specific conditions. Sound engineering judgment should be exercised in extrapolating the test results for other conditions or locations. Please note that the test results incorporate both downward and horizontal fluxes of water. Therefore, the test results will need to be adjusted to estimate the downward percolation rates for assessment of the storm water facilities. Technical design references vary in methods they present for using these types of test results. However, most references include reduction and/or correction factors for several parameters including, but not limited to, the size of the storm water percolation system relative to the test volume, the number of tests conducted, the variability in the soil profile, anticipated silt loading, anticipated biological buildup, anticipated long-term maintenance, and other factors. These considerations should be incorporated into the selection of appropriate reduction and/or correction factors during the design and assessment of the subdivisions' stormwater percolation system

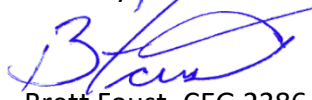
Closure

Our intent was to perform soil percolation testing in a manner consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing in the locality of this project under similar conditions. No representation, warranty, or guarantee is either expressed or implied.

We appreciate the opportunity to have provided services for this project and look forward to working with you again in the future. Please do not hesitate to contact this office if you have any questions regarding this report.

Sincerely,

Earth Systems Pacific


Brett Faust, CEG 2386
Engineering Geologist




Jim Woodard, GIT 1498
Staff Geologist

Attachments: Figure 1 -Site Vicinity Map
Figure 2 – Percolation Test Location Map
Percolation Test Results: P-3 to P-9

TN
MN
13.5

FIGURE 1



EXPLANATION

 **Project Site: Serene Hills Subdivision**
1275B East Dunne Ave
Morgan Hill, Calif.

0 250 500

Approximate Scale in Feet

NOTE: All features presented are approximated at this scale.



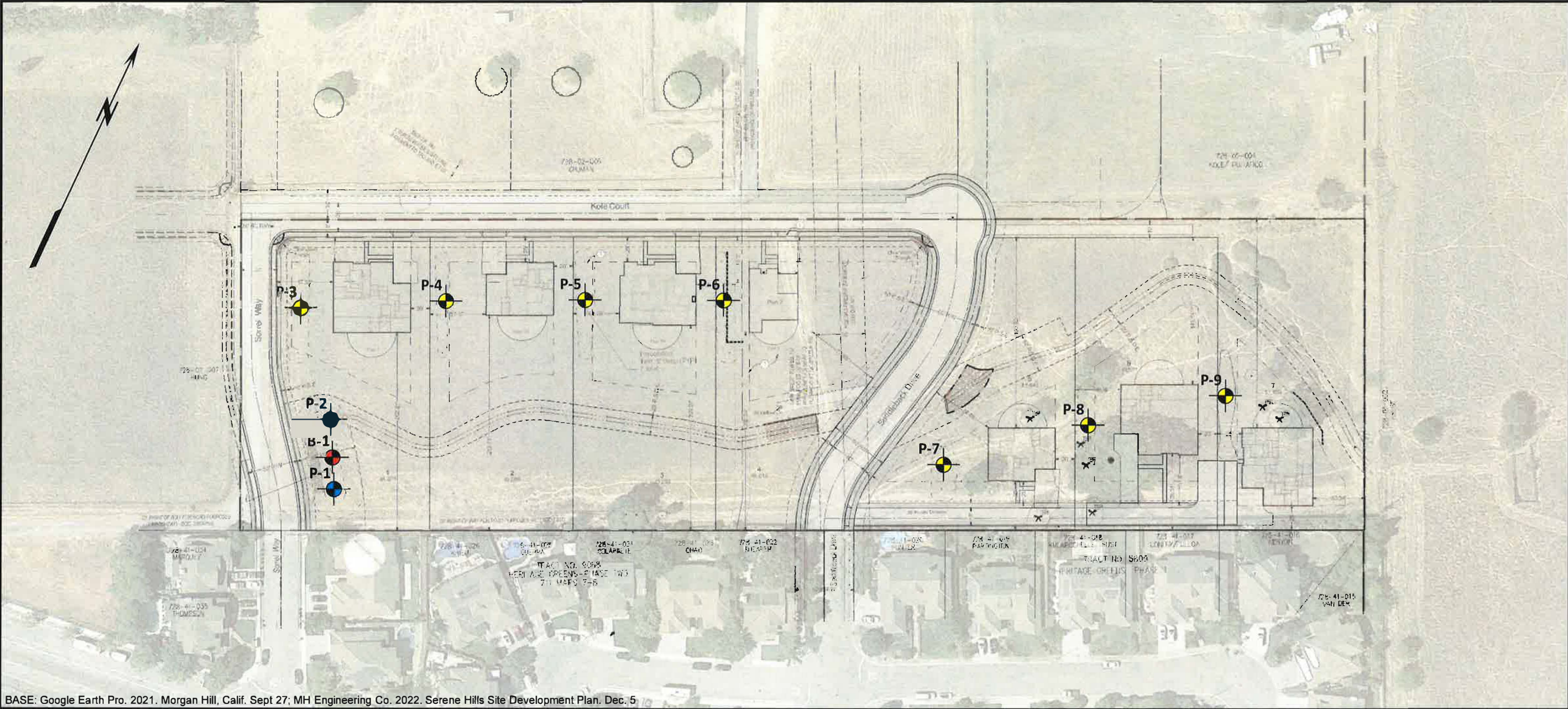
Earth Systems Pacific

Serene Hills Percolation Testing
2275B East Dunne Ave
Morgan Hill, California

SITE VICINITY MAP

301138-003

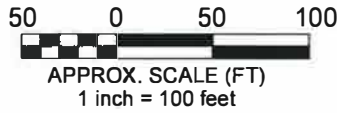
Figure 2



BASE: Google Earth Pro. 2021. Morgan Hill, Calif. Sept 27; MH Engineering Co. 2022. Serene Hills Site Development Plan. Dec. 5

EXPLANATION

- B-1** Boring Location (10/26/22) **P-1** Percolation Test Location (10/26/22) **P-3** Percolation Test Location (02/06/23)



NOTE: All features presented are approximated at this scale.



Earth Systems Pacific

Serene Hills Percolation Testing
2275B East Dunne Avenue
Morgan Hill, California

PERCOLATION TEST LOCATION MAP
301138-003

PERCOLATION TEST: P-3

TEST HOLE DIAMETER: 6 inches

CASING DIAMETER: 3 inches

TEST HOLE DEPTH: 5.44 feet

RISER HEIGHT: 2.52 feet

TEST DURATION: 4 hours

Reference of Measurement: Top of Riser

[illegible]

PERCOLATION TEST: P-4

DATE DRILLED: 01/31/23

DATE TESTED: 02/06/23

TECHNICIAN: JW

CONSTANT HEAD DATA

Time of Constant Head: 30 minutes

Reference of Measurement: Top of Riser

[illegible]

PERCOLATION TEST RESULTS

PERCOLATION TEST: P-5

TEST HOLE DIAMETER: 6 inches

DATE DRILLED: 01/31/23

CASING DIAMETER: 3 inches

DATE TESTED: 02/06/23

TEST HOLE DEPTH: 5.18 feet

TECHNICIAN: JW

RISER HEIGHT: 2.96 feet

CONSTANT HEAD DATA

TEST DURATION: 4 hours

Time of Constant Head: 30 minutes

Reference of Measurement: Top of Riser

FALLING HEAD DATA

[illegible]

PERCOLATION TEST: P-6

TEST HOLE DIAMETER: 6 inches

CASING DIAMETER: 3 inches

TEST HOLE DEPTH: 5.78 feet

RISER HEIGHT: 2.35 feet

TEST DURATION: 4 hours

Reference of Measurement: Top of Riser

[illegible]

PERCOLATION TEST: P-7

TEST HOLE DIAMETER: 6 inches

CASING DIAMETER: 3 inches

TEST HOLE DEPTH: 5.56 feet

TECHNICIAN: JW

RISER HEIGHT: 2.53 feet

TEST DURATION: 4 hours

Reference of Measurement: Top of Riser

[illegible]

PERCOLATION TEST: P-8

TEST HOLE DIAMETER: 6 inches

DATE DRILLED: 01/31/23

CASING DIAMETER: 3 inches

DATE TESTED: 02/06/23

TEST HOLE DEPTH: 5.27 feet

TECHNICIAN: JW

RISER HEIGHT: 2.86 feet

CONSTANT HEAD DATA

TEST DURATION: 4 hours

Time of Constant Head: 30 minutes

Reference of Measurement: Top of Riser

[illegible]

PERCOLATION TEST RESULTS

PERCOLATION TEST: P-9

TEST HOLE DIAMETER: 6 inches

DATE DRILLED: 01/31/23

CASING DIAMETER: 3 inches

DATE TESTED: 02/06/23

TEST HOLE DEPTH: 5.59 feet

TECHNICIAN: JW

RISER HEIGHT: 2.40 feet

CONSTANT HEAD DATA

TEST DURATION: 4 hours

Time of Constant Head: 30 minutes

Reference of Measurement: Top of Riser

FALLING HEAD DATA

[illegible]



A summary has been provided below of all test results, factors of safety used, and design infiltration rates for each SCM location

SCM	Percolation Test Hole	Test Rate	Factor of Safety	Design Infiltration Rate
1	3	0.2 in/hr	2	0.1 in/hr
2	4	0.5 in/hr	2	0.25 in/hr
3	5	0.5 in/hr	2	0.25 in/hr
4	6	0.2 in/hr	2	0.1 in/hr
5	7	0.5 in/hr	2	0.25 in/hr
6	8	0.5 in/hr	2	0.25 in/hr
7	9	0.5 in/hr	2	0.25 in/hr
8	1 & 2	1.4 in/hr	2	0.7 in/hr



MH engineering Co.

16075 Vineyard Blvd., Morgan Hill, CA 95037 - (408) 779-7381

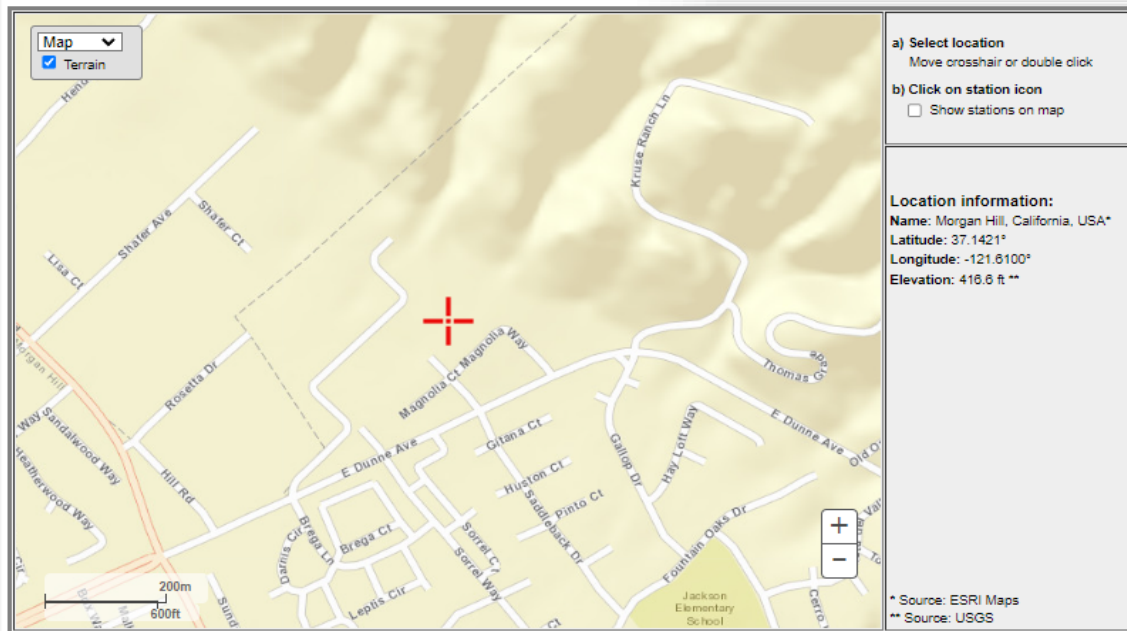
Project: Viji Mana
Project No.: 23117.5
Date: 7/24/2023

Attachment C: NOAA Rainfall Data



Project: Viji Mana
Project No.: 23117.5
Date: 7/24/2023

Rainfall Data



POINT PRECIPITATION FREQUENCY (PF) ESTIMATES WITH 90% CONFIDENCE INTERVALS AND SUPPLEMENTARY INFORMATION NOAA Atlas 14, Volume 6, Version 2

PF tabular

PF graphical

Supplementary information

Print page

PDS-based precipitation frequency estimates with 90% confidence intervals (in inches)¹

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.120 (0.105-0.138)	0.153 (0.134-0.177)	0.199 (0.173-0.231)	0.237 (0.204-0.278)	0.291 (0.239-0.356)	0.333 (0.267-0.420)	0.377 (0.293-0.492)	0.424 (0.317-0.574)	0.490 (0.347-0.699)	0.543 (0.368-0.809)
10-min	0.171 (0.150-0.198)	0.220 (0.192-0.254)	0.285 (0.248-0.331)	0.340 (0.292-0.399)	0.416 (0.343-0.511)	0.477 (0.382-0.602)	0.541 (0.419-0.705)	0.608 (0.464-0.822)	0.702 (0.497-1.00)	0.778 (0.527-1.16)
15-min	0.207 (0.181-0.239)	0.266 (0.232-0.307)	0.345 (0.300-0.400)	0.411 (0.354-0.482)	0.504 (0.415-0.618)	0.577 (0.462-0.728)	0.654 (0.507-0.852)	0.735 (0.550-0.994)	0.849 (0.601-1.21)	0.941 (0.637-1.40)
30-min	0.289 (0.253-0.334)	0.370 (0.324-0.428)	0.480 (0.418-0.557)	0.573 (0.493-0.672)	0.702 (0.578-0.861)	0.804 (0.644-1.01)	0.912 (0.707-1.19)	1.02 (0.786-1.39)	1.18 (0.838-1.69)	1.31 (0.888-1.96)
60-min	0.435 (0.381-0.502)	0.558 (0.487-0.645)	0.723 (0.629-0.839)	0.862 (0.742-1.01)	1.06 (0.870-1.30)	1.21 (0.970-1.53)	1.37 (1.08-1.79)	1.54 (1.15-2.09)	1.78 (1.26-2.54)	1.97 (1.34-2.94)
2-hr	0.688 (0.585-0.771)	0.858 (0.749-0.992)	1.11 (0.969-1.29)	1.33 (1.14-1.56)	1.63 (1.34-2.00)	1.86 (1.49-2.35)	2.11 (1.64-2.75)	2.37 (1.77-3.20)	2.73 (1.94-3.90)	3.03 (2.05-4.51)
3-hr	0.840 (0.738-0.989)	1.08 (0.941-1.25)	1.40 (1.22-1.62)	1.67 (1.44-1.96)	2.04 (1.68-2.51)	2.34 (1.87-2.95)	2.65 (2.09-3.45)	2.98 (2.23-4.03)	3.44 (2.43-4.90)	3.80 (2.68-5.67)
6-hr	1.20 (1.05-1.38)	1.54 (1.34-1.78)	1.99 (1.74-2.31)	2.38 (2.05-2.79)	2.92 (2.40-3.58)	3.35 (2.68-4.23)	3.80 (2.95-4.95)	4.28 (3.20-5.78)	4.95 (3.50-7.06)	5.48 (3.72-8.18)
12-hr	1.62 (1.42-1.87)	2.07 (1.81-2.40)	2.70 (2.35-3.14)	3.24 (2.79-3.89)	3.99 (3.29-4.99)	4.61 (3.69-5.84)	5.25 (4.07-6.84)	5.94 (4.44-8.04)	6.93 (4.99-9.89)	7.73 (5.23-11.5)
24-hr	2.11 (1.90-2.38)	2.71 (2.44-3.07)	3.54 (3.18-4.02)	4.24 (3.78-4.88)	5.26 (4.53-6.22)	6.08 (5.13-7.35)	6.95 (5.73-8.61)	7.89 (6.32-10.0)	9.23 (7.09-12.2)	10.3 (7.66-14.2)



Project: Viji Mana
Project No.: 23117.5
Date: 7/24/2023

Attachment D: Retention Volume Calculations



Project: Viji Mana
 Project No.: 23117.5
 Date: 7/24/2023

Retention Volume Calculations

Post Construction Storm Water Management Calculations
 Per Resolution No. R3-2013-0032

1.) Determination of the Retention Tributary Area

a.)

Impervious Areas										
DMA	Pre-Development			Post-Development						
				Replaced			New			
	Roof	PCC	AC	Roof	PCC	AC	Roof	PCC	AC	
1	0	0	0	0	0	0	5,300	3,266	2,287	
2	0	0	0	0	0	0	3,463	3,197	2,337	
3	0	0	0	0	0	0	4,631	3,217	2,337	
4	0	0	0	0	0	0	4,631	3,866	3,750	
5	0	0	0	0	0	0	3,464	2,937	2,516	
6	0	0	0	0	0	0	5,300	3,522	3,463	
7	0	0	0	0	0	0	5,300	2,191	1,300	
8	0	0	0	0	0	0	0	9,874	38,879	
Pervious vs Impervious Areas										
DMA	Total Area	Pre-Development		Post-Development					i	C
		Pervious	Impervious	Pervious	Impervious					
					Replaced	New	Total			
1	23,084	23,084	0	12,232	0	10,852	10,852	0.47	0.32	
2	21,799	21,799	0	12,803	0	8,997	8,997	0.41	0.29	
3	25,624	25,624	0	15,439	0	10,185	10,185	0.40	0.28	
4	21,018	21,018	0	8,771	0	12,247	12,247	0.58	0.40	
5	18,342	18,342	0	9,425	0	8,916	8,916	0.49	0.33	
6	29,055	29,055	0	16,769	0	12,286	12,286	0.42	0.29	
7	19,170	19,170	0	10,380	0	8,791	8,791	0.46	0.31	
8	282,792	282,792	0	234,038	0	48,753	48,753	0.17	0.15	
Total	440,884	440,884	0	319,858	0	121,027	121,027	0.27	0.21	

A_{total} = drainage area (sf)

A_{roofs} = roof areas (sf)

$A_{\text{pcc-walks/parking}}$ = area of pcc walks & parking lot

$A_{\text{pcc-streets}}$ = area of pcc walks and curbs (sf)

$A_{\text{AC-streets}}$ = Street pavement areas (sf)

A_{pervious} = Planted & Open Areas (sf)

$A_{\text{impervious}}$ = total impervious roof areas, PCC areas & AC areas (sf)



i = fraction of the tributary area that is impervious = $A_{\text{impervious}} / A_{\text{area}}$

$C_{\text{area\#}}$ = Area runoff coefficient = $C = 0.858i^3 - 0.78i^2 + 0.774i + 0.04$

b.) adjustments for redevelopment project

DMA	DMA Area	A_{PA}	A_{other}	A_{replaced}	$A_{\text{retention}}$
1	23,084	0	0	0	23,084
2	21,799	0	0	0	21,799
3	25,624	0	0	0	25,624
4	21,018	0	0	0	21,018
5	18,342	0	0	0	18,342
6	29,055	0	0	0	29,055
7	19,170	0	0	0	19,170
8	282,792	118,120	0	0	164,672
Total	440,884	118,120	0	0	322,765

A_{PA} = Undisturbed or Self-Retaining Planted or Open Areas

A_{other} = Impervious Areas that discharge to independent infiltrating Areas

A_{replaced} = Replaced Impervious Areas

$A_{\text{retention}}$ = Retention Tributary Area = DMA Area - A_{PA} - A_{other} - (0.5 x A_{replaced})

2.) Determination of Retention Volume

a.) retention requirement

1 = WMZ = watershed management zone per WMZ map Hollister,

b.) WMZ 1 Runoff Retention Requirement = Retain 95th percentile 24-hour rainfall event

1.05 = D_{85} = 85th Percentile Rainfall Depth

1.65 = D_{95} = 95th Percentile Rainfall Depth

c.) compute the runoff coefficient

DMA	DMA Area	Impervious Area	i	C
1	23,084	10,852	0.47	0.32
2	21,799	8,997	0.41	0.29
3	25,624	10,185	0.40	0.28
4	21,018	12,247	0.58	0.40
5	18,342	8,916	0.49	0.33
6	29,055	12,286	0.42	0.29
7	19,170	8,791	0.46	0.31
8	282,792	48,753	0.17	0.15
Total	440,884	121,027	0.27	0.21

$C = 0.858i^3 - 0.78i^2 + 0.774i + 0.04$

i = fraction of the tributary area that is impervious = $A_{\text{impervious}} / A_{\text{project}}$

**d.) Project Type**

Residential

e.) Compute Retention Volume required

DMA	A _{retention}	i	C	D ₈₅	V ₈₅	D ₉₅	V ₉₅
1	23,084	0.47	0.32	1.05	648	1.65	1,018
2	21,799	0.41	0.29	1.05	547	1.65	860
3	25,624	0.40	0.28	1.05	624	1.65	981
4	21,018	0.58	0.40	1.05	728	1.65	1,144
5	18,342	0.49	0.33	1.05	530	1.65	834
6	29,055	0.42	0.29	1.05	744	1.65	1,169
7	19,170	0.46	0.31	1.05	526	1.65	827
8	164,672	0.17	0.15	1.05	2,228	1.65	3,502
Total	322,765	0.27	0.21	1.05	5,972	1.65	9,384

$$C = 0.858i^3 - 0.78i^2 + 0.774i + 0.04$$

i = fraction of the tributary area that is impervious = $A_{\text{impervious}} / A_{\text{project}}$

V_{retention} = Required Retention Volume = $A_{\text{retention}} \times C \times (D_{95}/12)$

3.) Retention Volume Provided**3a.) Provided Retention Volume SCM #1**

Surface Volume Calculations			
Elevation	Surface Area	Incremental Volume	Cumulative Volume
382.25	500.00 SF	0.00 CF	0.00 CF
382.75	822.07 SF	330.52 SF	330.52 SF

Bioretention Volume				
Material	Area	Depth	% Voids	Volume
Biomedica	500.00 SF	24 in.	25%	250.00 CF

Pipe and Rock VolumePipe Diameter = D_{pipe} = 8 in.

Rock Width 5 Ft.

Pipe Outer Diameter = OD = 9 in.

Rock Length 100 Ft.

No. of Rows = n_{rows} = 1

Rock Depth 33 in.

Pipe Length = L_{rows} = 98 Ft.

Rock Voids 40%

$$\text{Pipe Volume} = V_{\text{pipe}} = (D_{\text{pipe}}/2)^2 \times \pi \times n_{\text{rows}} \times L_{\text{rows}} = 34 \text{ CF}$$

$$\text{Rock Volume} = V_{\text{rock}} = [(W_{\text{rock}} \times H_{\text{rock}} \times L_{\text{rock}}) - V_{\text{pipe}}] \times \text{Voids} = 533 \text{ CF}$$

$$V_{\text{pipe+rock}} = V_{\text{pipe}} + V_{\text{rock}} = 567 \text{ CF}$$

**Total Volume Provided SCM 1**

$$\text{Total Volume: } V_{\text{total}} = V_{\text{surface}} + V_{\text{biomedia}} + V_{\text{pipe+rock}} = 1,147 \text{ CF}$$

1,147 CF ≥ 648 CF; therefore complies with PC-2

1,147 CF ≥ 1,018 CF; therefore complies with PC-3

3a.) Provided Retention Volume SCM #2

Surface Volume Calculations			
Elevation	Surface Area	Incremental Volume	Cumulative Volume
388.50	400.00 SF	0.00 CF	0.00 CF
389.00	719.07 SF	279.77 SF	279.77 SF

Bioretention Volume				
Material	Area	Depth	% Voids	Volume
Biomedia	400.00 SF	24 in.	25%	200.00 CF

Pipe and Rock Volume

Pipe Diameter = $D_{\text{pipe}} = 8$ in.

Rock Width 4 Ft.

Pipe Outer Diameter = $OD = 9$ in.

Rock Length 100 Ft.

No. of Rows = $n_{\text{rows}} = 1$

Rock Depth 33 in.

Pipe Length = $L_{\text{rows}} = 98$ Ft.

Rock Voids 40%

$$\text{Pipe Volume} = V_{\text{pipe}} = (D_{\text{pipe}}/2)^2 \times \pi \times n_{\text{rows}} \times L_{\text{rows}} = 34 \text{ CF}$$

$$\text{Rock Volume} = V_{\text{rock}} = [(W_{\text{rock}} \times H_{\text{rock}} \times L_{\text{rock}}) - V_{\text{pipe}}] \times \text{Voids} = 423 \text{ CF}$$

$$V_{\text{pipe+rock}} = V_{\text{pipe}} + V_{\text{rock}} = 457 \text{ CF}$$

Total Volume Provided SCM 2

$$\text{Total Volume: } V_{\text{total}} = V_{\text{surface}} + V_{\text{biomedia}} + V_{\text{pipe+rock}} = 937 \text{ CF}$$

937 CF ≥ 547 CF; therefore complies with PC-2

937 CF ≥ 860 CF; therefore complies with PC-3

3a.) Provided Retention Volume SCM #3

Surface Volume Calculations			
Elevation	Surface Area	Incremental Volume	Cumulative Volume
393.00	450.00 SF	0.00 CF	0.00 CF
393.50	770.57 SF	305.14 SF	305.14 SF

Bioretention Volume				
Material	Area	Depth	% Voids	Volume
Biomedia	450.00 SF	24 in.	25%	225.00 CF

**Pipe and Rock Volume**

Pipe Diameter = $D_{\text{pipe}} = 8$ in. Rock Width 4.5 Ft.
 Pipe Outer Diameter = $OD = 9$ in. Rock Length 100 Ft.
 No. of Rows = $n_{\text{rows}} = 1$ Rock Depth 33 in.
 Pipe Length = $L_{\text{rows}} = 93$ Ft. Rock Voids 40%

$$\begin{aligned}
 \text{Pipe Volume} &= V_{\text{pipe}} = (D_{\text{pipe}}/2)^2 \times \pi \times n_{\text{rows}} \times L_{\text{rows}} = 32 \text{ CF} \\
 \text{Rock Volume} &= V_{\text{rock}} = [(W_{\text{rock}} \times H_{\text{rock}} \times L_{\text{rock}}) - V_{\text{pipe}}] \times \text{Voids} = 479 \text{ CF} \\
 V_{\text{pipe+rock}} &= V_{\text{pipe}} + V_{\text{rock}} = 511 \text{ CF}
 \end{aligned}$$

Total Volume Provided SCM 3

$$\begin{aligned}
 \text{Total Volume: } V_{\text{total}} &= V_{\text{surface}} + V_{\text{biomedia}} + V_{\text{pipe+rock}} = 1,041 \text{ CF} \\
 1,041 \text{ CF} &\geq 624 \text{ CF; therefore complies with PC-2} \\
 1,041 \text{ CF} &\geq 981 \text{ CF; therefore complies with PC-3}
 \end{aligned}$$

3a.) Provided Retention Volume SCM #4

Surface Volume Calculations			
Elevation	Surface Area	Incremental Volume	Cumulative Volume
400.11	486.00 SF	0.00 CF	0.00 CF
400.61	839.00 SF	331.25 SF	331.25 SF

Bioretention Volume				
Material	Area	Depth	% Voids	Volume
Biomedia	486.21 SF	24 in.	25%	243.10 CF

Pipe and Rock Volume

Pipe Diameter = $D_{\text{pipe}} = 8$ in. Rock Bottom Area 486.00 SF
 Pipe Outer Diameter = $OD = 9$ in. Rock Depth 36 in.
 No. of Rows = $n_{\text{rows}} = 1$ Rock Voids 40%
 Pipe Length = $L_{\text{rows}} = 98$ Ft.

$$\begin{aligned}
 \text{Pipe Volume} &= V_{\text{pipe}} = (D_{\text{pipe}}/2)^2 \times \pi \times n_{\text{rows}} \times L_{\text{rows}} = 34 \text{ CF} \\
 \text{Rock Volume} &= V_{\text{rock}} = [(W_{\text{rock}} \times H_{\text{rock}} \times L_{\text{rock}}) - V_{\text{pipe}}] \times \text{Voids} = 566 \text{ CF} \\
 V_{\text{pipe+rock}} &= V_{\text{pipe}} + V_{\text{rock}} = 600 \text{ CF}
 \end{aligned}$$

Total Volume Provided SCM 4

$$\begin{aligned}
 \text{Total Volume: } V_{\text{total}} &= V_{\text{surface}} + V_{\text{biomedia}} + V_{\text{pipe+rock}} = 1,174 \text{ CF} \\
 1,174 \text{ CF} &\geq 728 \text{ CF; therefore complies with PC-2} \\
 1,174 \text{ CF} &\geq 1,144 \text{ CF; therefore complies with PC-3}
 \end{aligned}$$



3a.) Provided Retention Volume SCM #5

Surface Volume Calculations			
Elevation	Surface Area	Incremental Volume	Cumulative Volume
408.90	400.00 SF	0.00 CF	0.00 CF
409.40	581.07 SF	245.27 SF	245.27 SF

Bioretention Volume				
Material	Area	Depth	% Voids	Volume
Biomedica	400.00 SF	24 in.	25%	200.00 CF

Pipe and Rock Volume

Pipe Diameter = $D_{\text{pipe}} = 8$ in. Rock Width 8 Ft.
 Pipe Outer Diameter = $OD = 9$ in. Rock Length 50 Ft.
 No. of Rows = $n_{\text{rows}} = 1$ Rock Depth 33 in.
 Pipe Length = $L_{\text{rows}} = 46$ Ft. Rock Voids 40%

$$\begin{aligned}
 \text{Pipe Volume} &= V_{\text{pipe}} = (D_{\text{pipe}}/2)^2 \times \pi \times n_{\text{rows}} \times L_{\text{rows}} = 16 \text{ CF} \\
 \text{Rock Volume} &= V_{\text{rock}} = [(W_{\text{rock}} \times H_{\text{rock}} \times L_{\text{rock}}) - V_{\text{pipe}}] \times \text{Voids} = 432 \text{ CF} \\
 V_{\text{pipe+rock}} &= V_{\text{pipe}} + V_{\text{rock}} = 448 \text{ CF}
 \end{aligned}$$

Total Volume Provided SCM 5

$$\text{Total Volume: } V_{\text{total}} = V_{\text{surface}} + V_{\text{biomedica}} + V_{\text{pipe+rock}} = 893 \text{ CF}$$

893 CF ≥ 530 CF; therefore complies with PC-2

893 CF ≥ 834 CF; therefore complies with PC-3

3a.) Provided Retention Volume SCM #6

Surface Volume Calculations			
Elevation	Surface Area	Incremental Volume	Cumulative Volume
416.65	560.00 SF	0.00 CF	0.00 CF
417.15	801.07 SF	340.27 SF	340.27 SF

Bioretention Volume				
Material	Area	Depth	% Voids	Volume
Biomedica	560.00 SF	24 in.	25%	280.00 CF

Pipe and Rock Volume

Pipe Diameter = $D_{\text{pipe}} = 8$ in. Rock Width 8 Ft.
 Pipe Outer Diameter = $OD = 9$ in. Rock Length 70 Ft.
 No. of Rows = $n_{\text{rows}} = 1$ Rock Depth 33 in.
 Pipe Length = $L_{\text{rows}} = 63$ Ft. Rock Voids 40%



$$\begin{aligned}\text{Pipe Volume} &= V_{\text{pipe}} = (D_{\text{pipe}}/2)^2 \times \pi \times n_{\text{rows}} \times L_{\text{rows}} = 22 \text{ CF} \\ \text{Rock Volume} &= V_{\text{rock}} = [(W_{\text{rock}} \times H_{\text{rock}} \times L_{\text{rock}}) - V_{\text{pipe}}] \times \text{Voids} = 605 \text{ CF} \\ V_{\text{pipe+rock}} &= V_{\text{pipe}} + V_{\text{rock}} = 627 \text{ CF}\end{aligned}$$

Total Volume Provided SCM 6

$$\text{Total Volume: } V_{\text{total}} = V_{\text{surface}} + V_{\text{biomedia}} + V_{\text{pipe+rock}} = 1,247 \text{ CF}$$

1,247 CF ≥ 744 CF; therefore complies with PC-2

1,247 CF ≥ 1,169 CF; therefore complies with PC-3

3a.) Provided Retention Volume SCM #7

Surface Volume Calculations			
Elevation	Surface Area	Incremental Volume	Cumulative Volume
424.80	350.00 SF	0.00 CF	0.00 CF
425.30	667.57 SF	254.39 SF	254.39 SF

Bioretention Volume				
Material	Area	Depth	% Voids	Volume
Biomedia	350.00 SF	24 in.	25%	175.00 CF

Pipe and Rock Volume

Pipe Diameter = D_{pipe} = 8 in.	Rock Width 3.5 Ft.
Pipe Outer Diameter = OD = 9 in.	Rock Length 100 Ft.
No. of Rows = n_{rows} = 1	Rock Depth 33 in.
Pipe Length = L_{rows} = 92 Ft.	Rock Voids 40%

$$\begin{aligned}\text{Pipe Volume} &= V_{\text{pipe}} = (D_{\text{pipe}}/2)^2 \times \pi \times n_{\text{rows}} \times L_{\text{rows}} = 32 \text{ CF} \\ \text{Rock Volume} &= V_{\text{rock}} = [(W_{\text{rock}} \times H_{\text{rock}} \times L_{\text{rock}}) - V_{\text{pipe}}] \times \text{Voids} = 369 \text{ CF} \\ V_{\text{pipe+rock}} &= V_{\text{pipe}} + V_{\text{rock}} = 401 \text{ CF}\end{aligned}$$

Total Volume Provided SCM 7

$$\text{Total Volume: } V_{\text{total}} = V_{\text{surface}} + V_{\text{biomedia}} + V_{\text{pipe+rock}} = 830 \text{ CF}$$

830CF ≥ 827; therefore ok

3a.) Provided Retention Volume SCM #8

Surface Volume Calculations			
Elevation	Surface Area	Incremental Volume	Cumulative Volume
380.90	2,486.89 SF	0.00 CF	0.00 CF
381.40	2,846.62 SF	1,333.38 CF	1,333.38 CF

Bioretention Volume				
Material	Area	Depth	% Voids	Volume
Biomedia	2,486.89 SF	24 in.	25%	1,243.45 CF



Pipe and Rock Volume

Pipe Diameter = $D_{\text{pipe}} = 8$ in. Rock Bottom Area 2,486.89 SF
Pipe Outer Diameter = OD = 9 in. Rock Depth 33 in.
No. of Rows = $n_{\text{rows}} = 1$ Rock Voids 40%
Pipe Length = $L_{\text{rows}} = 84$ Ft.

$$\begin{aligned}\text{Pipe Volume} &= V_{\text{pipe}} = (D_{\text{pipe}}/2)^2 \times \pi \times n_{\text{rows}} \times L_{\text{rows}} = 29 \text{ CF} \\ \text{Rock Volume} &= V_{\text{rock}} = [(W_{\text{rock}} \times H_{\text{rock}} \times L_{\text{rock}}) - V_{\text{pipe}}] \times \text{Voids} = 2,721 \text{ CF} \\ V_{\text{pipe+rock}} &= V_{\text{pipe}} + V_{\text{rock}} = 2,750 \text{ CF}\end{aligned}$$

Total Volume Provided SCM 8

$$\begin{aligned}\text{Total Volume: } V_{\text{total}} &= V_{\text{surface}} + V_{\text{biomedia}} + V_{\text{rock}} = 5,327 \text{ CF} \\ 5,327 \text{ CF} &\geq 2,228 \text{ CF; therefore complies with PC-2} \\ 5,327 \text{ CF} &\geq 3,502 \text{ CF; therefore complies with PC-3}\end{aligned}$$

4.) Summary of Hydraflow Hydrographs Output

0.7 in/hr = Exfiltration Rate (See Attachment B for details)

Return	Pre Dev. (cfs)	Post Dev. (cfs)	Out from SCM 8 (cfs)
2 year	23.42	23.31	23.25
5 year	31.36	31.25	31.20
10 year	38.02	37.91	37.85
25 year	47.65	47.55	47.48
100 year	63.52	63.41	63.35

see detailed Output on following sheets

5.) Drawdown Time Calculations

5a.) SCM 1

Retention Volume = 1,147 CF
Infiltration Area = 500.00 SF
Design Infiltration Rate = 0.1 in/hr

Infiltration Flow Rate = Infiltration Area x Design Infiltration Rate x (1 ft./12 in) = 4.17 CF/Hour

Drawdown Time = (Storage Volume/Infiltration Flow Rate) = 275 hours



Due to low infiltration rates, this SCM does not fully drain within 48 hours; however, since this SCM has been sized using the simplified method, additional volume is not required.

HydroCAD modeling shows a watersurface elevation below the bottom of the surface storage is achieved by hour 85 in the model, 61 hours after the end of the storm. This removes the potential vector control issue within 72 hours after the end of the storm.

5b.) SCM 2

Retention Volume = 937 CF

Infiltration Area = 400.00 SF

Design Infiltration Rate = 0.25 in/hr

Infiltration Flow Rate = Infiltration Area x Design Infiltration Rate x (1 ft./12 in) = 8.33 CF/Hour

Drawdown Time = (Storage Volume/Infiltration Flow Rate) = 112 hours

Due to low infiltration rates, this SCM does not fully drain within 48 hours; however, since this SCM has been sized using the simplified method, additional volume is not required.

HydroCAD modeling shows a watersurface elevation below the bottom of the surface storage is achieved by hour 49 in the model, 35 hours after the end of the storm. This removes the potential vector control issue within 72 hours after the end of the storm.

5c.) SCM 3

Retention Volume = 1,041 CF

Infiltration Area = 450.00 SF

Design Infiltration Rate = 0.25 in/hr

Infiltration Flow Rate = Infiltration Area x Design Infiltration Rate x (1 ft./12 in) = 9.38 CF/Hour

Drawdown Time = (Storage Volume/Infiltration Flow Rate) = 111 hours

Due to low infiltration rates, this SCM does not fully drain within 48 hours; however, since this SCM has been sized using the simplified method, additional volume is not required.

HydroCAD modeling shows a watersurface elevation below the bottom of the surface storage is achieved by hour 49 in the model, 35 hours after the end of the storm. This removes the potential vector control issue within 72 hours after the end of the storm.

5d.) SCM 4

Retention Volume = 1,174 CF

Infiltration Area = 486.21 SF

Design Infiltration Rate = 0.1 in/hr

Infiltration Flow Rate = Infiltration Area x Design Infiltration Rate x (1 ft./12 in) = 4.05 CF/Hour



$$\text{Drawdown Time} = (\text{Storage Volume} / \text{Infiltration Flow Rate}) = 290 \text{ hours}$$

Due to low infiltration rates, this SCM does not fully drain within 48 hours; however, since this SCM has been sized using the simplified method, additional volume is not required.

HydroCAD modeling shows a watersurface elevation below the bottom of the surface storage is achieved by hour 85 in the model, 61 hours after the end of the storm. This removes the potential vector control issue within 72 hours after the end of the storm.

5e.) SCM 5

Retention Volume = 893 CF

Infiltration Area = 400.00 SF

Design Infiltration Rate = 0.25 in/hr

$$\text{Infiltration Flow Rate} = \text{Infiltration Area} \times \text{Design Infiltration Rate} \times (1 \text{ ft./12 in}) = 8.33 \text{ CF/Hour}$$

$$\text{Drawdown Time} = (\text{Storage Volume} / \text{Infiltration Flow Rate}) = 107 \text{ hours}$$

Due to low infiltration rates, this SCM does not fully drain within 48 hours; however, since this SCM has been sized using the simplified method, additional volume is not required.

HydroCAD modeling shows a watersurface elevation below the bottom of the surface storage is achieved by hour 49 in the model, 35 hours after the end of the storm. This removes the potential vector control issue within 72 hours after the end of the storm.

5f.) SCM 6

Retention Volume = 1,247 CF

Infiltration Area = 560.00 SF

Design Infiltration Rate = 0.25 in/hr

$$\text{Infiltration Flow Rate} = \text{Infiltration Area} \times \text{Design Infiltration Rate} \times (1 \text{ ft./12 in}) = 11.67 \text{ CF/Hour}$$

$$\text{Drawdown Time} = (\text{Storage Volume} / \text{Infiltration Flow Rate}) = 107 \text{ hours}$$

Due to low infiltration rates, this SCM does not fully drain within 48 hours; however, since this SCM has been sized using the simplified method, additional volume is not required.

HydroCAD modeling shows a watersurface elevation below the bottom of the surface storage is achieved by hour 49 in the model, 35 hours after the end of the storm. This removes the potential vector control issue within 72 hours after the end of the storm.

5g.) SCM 7

Retention Volume = 830 CF

Infiltration Area = 350.00 SF

Design Infiltration Rate = 0.25 in/hr



Infiltration Flow Rate = Infiltration Area x Design Infiltration Rate x (1 ft./12 in) = 7.29 CF/Hour

Drawdown Time = (Storage Volume/Infiltration Flow Rate) = 114 hours

Due to low infiltration rates, this SCM does not fully drain within 48 hours; however, since this SCM has been sized using the simplified method, additional volume is not required.

HydroCAD modeling shows a watersurface elevation below the bottom of the surface storage is achieved by hour 49 in the model, 35 hours after the end of the storm. This removes the potential vector control issue within 72 hours after the end of the storm.

5h.) SCM 8

Retention Volume = 5,327 CF

Infiltration Area = 2,486.89 SF

Design Infiltration Rate = 0.7 in/hr

Infiltration Flow Rate = Infiltration Area x Design Infiltration Rate x (1 ft./12 in) = 145.07 CF/Hour

Drawdown Time = (Storage Volume/Infiltration Flow Rate) = 37 hours



Project: Viji Mana
Project No.: 23117.5
Date: 7/24/2023

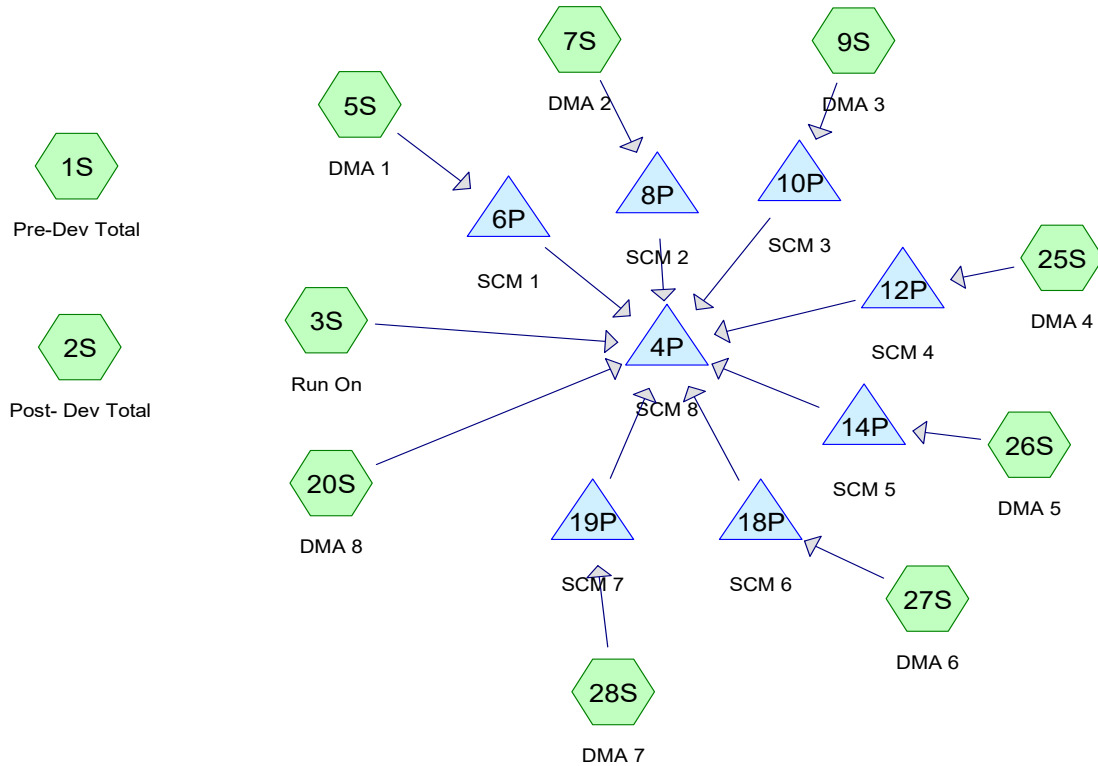
Attachment E: HydroCAD SCS Modeling Output



Project: Viji Mana
Project No.: 23117.5
Date: 7/24/2023

SCS Routing

Event Summary



Events for Subcatchment 1S: Pre-Dev Total

Events for Subcatchment 2S: Post- Dev Total

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)	Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 year	2.11	17.61	9.381	1.50	1 year	2.11	17.61	9.381	1.50
2 year	2.71	23.42	12.954	2.07	2 year	2.71	23.42	12.954	2.07
5 year	3.54	31.36	17.984	2.87	5 year	3.54	31.36	17.984	2.87
10 year	4.24	38.02	22.271	3.56	10 year	4.24	38.02	22.271	3.56
25 year	5.26	47.65	28.557	4.56	25 year	5.26	47.65	28.557	4.56
50 year	6.08	55.36	33.633	5.38	50 year	6.08	55.36	33.633	5.38
100 year	6.95	63.52	39.030	6.24	100 year	6.95	63.52	39.030	6.24



Events for Pond 4P: SCM 8

Event	Inflow (cfs)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)	Tertiary (cfs)	Elevation (feet)	Storage (cubic-feet)
1 year	17.53	17.51	0.06	17.45	0.00	382.08	7,715
2 year	23.33	23.31	0.06	23.25	0.00	382.18	8,083
5 year	31.28	31.25	0.06	31.20	0.00	382.31	8,538
10 year	37.94	37.91	0.06	37.85	0.00	382.41	8,906
25 year	47.58	47.55	0.06	47.48	0.00	382.54	9,401
50 year	55.29	55.25	0.06	55.19	0.00	382.64	9,783
100 year	63.45	63.41	0.06	63.35	0.00	382.73	10,174

Event = rainfall event

Inflow = total inflow into storm water control

Outflow = total outflow from storm water control (discarded+primary+tertiary)

Discarded = flow via infiltration

Primary = Flow released into the City Storm Drain at Saddleback Drive. (occurs above elevation 381.60)

Tertiary = Overflow over the back of sidewalk at Saddleback Drive. (occurs above elevation 384.10)

Pre-Development Summary

Summary for Subcatchment 1S: Pre-Dev Total

Runoff = 63.52 cfs @ 18.12 hrs, Volume= 39.030 af, Depth= 6.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
SCWD 1956 Storm 100 year Rainfall=6.95"

Area (sf)	CN	Description
3,270,256	94	Fallow, bare soil, HSG D
3,270,256		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Post-Development Total Summary

Summary for Subcatchment 2S: Post- Dev Total

Runoff = 63.52 cfs @ 18.12 hrs, Volume= 39.030 af, Depth= 6.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
SCWD 1956 Storm 100 year Rainfall=6.95"

Area (sf)	CN	Description
* 2,829,371	94	Run On
204,631	84	1 acre lots, 20% imp, HSG D
* 118,134	98	New Impervious
* 118,120	94	Undisturbed



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3,270,256	94	Weighted Average
3,111,196		95.14% Pervious Area
159,060		4.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

DMA 1 Summary

Summary for Subcatchment 5S: DMA 1

Runoff = 0.44 cfs @ 18.14 hrs, Volume= 0.260 af, Depth= 5.89"
Routed to Pond 6P : SCM 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
SCWWD 1956 Storm 100 year Rainfall=6.95"

	Area (sf)	CN	Description
	12,232	84	1 acre lots, 20% imp, HSG D
*	5,300	98	Roof
*	3,266	98	PCC
*	2,287	98	AC
	23,085	91	Weighted Average
	9,786		42.39% Pervious Area
	13,299		57.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Post-Development Event Summary For DMA 1

Events for Subcatchment 5S: DMA 1

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 year	2.11	0.11	0.056	1.26
2 year	2.71	0.15	0.080	1.80
5 year	3.54	0.21	0.114	2.58
10 year	4.24	0.26	0.143	3.25
25 year	5.26	0.33	0.187	4.23
50 year	6.08	0.38	0.222	5.04
100 year	6.95	0.44	0.260	5.89



SCM 1 Summary

Summary for Pond 6P: SCM 1

Inflow Area = 0.530 ac, 57.61% Impervious, Inflow Depth = 5.89" for 100 year event
 Inflow = 0.44 cfs @ 18.14 hrs, Volume= 0.260 af
 Outflow = 0.44 cfs @ 18.16 hrs, Volume= 0.243 af, Atten= 0%, Lag= 1.1 min
 Discarded = 0.00 cfs @ 18.16 hrs, Volume= 0.012 af
 Primary = 0.44 cfs @ 18.16 hrs, Volume= 0.231 af
 Routed to Pond 4P : SCM8

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 Peak Elev= 382.81' @ 18.16 hrs Surf.Area= 863 sf Storage= 1,186 cf

Plug-Flow detention time= 189.4 min calculated for 0.243 af (93% of inflow)
 Center-of-Mass det. time= 154.5 min (1,064.5 - 910.0)

Volume	Invert	Avail.Storage	Storage Description	
#1	377.50'	3,141 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
377.50	500	0.0	0	0
377.51	500	40.0	2	2
380.25	500	40.0	548	550
380.26	500	25.0	1	551
382.24	500	25.0	248	799
382.25	500	100.0	5	804
382.75	822	100.0	331	1,134
383.25	1,158	100.0	495	1,629
383.75	1,509	100.0	667	2,296
384.25	1,873	100.0	846	3,141

Device	Routing	Invert	Outlet Devices
#1	Primary	382.75'	24.0" x 24.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Discarded	377.50'	0.100 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.00 cfs @ 18.16 hrs HW=382.81' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.39 cfs @ 18.16 hrs HW=382.81' (Free Discharge)
 ↑**1=Orifice/Grate** (Weir Controls 0.39 cfs @ 0.81 fps)

Post-Development Event Summary For SCM 1

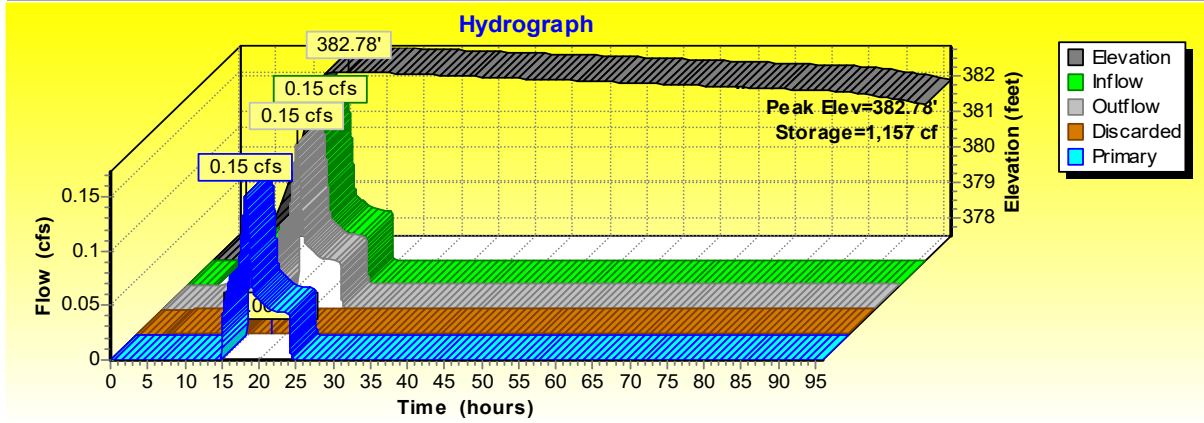
Events for Pond 6P: SCM 1

Event	Inflow (cfs)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Storage (cubic-feet)
1 year	0.11	0.11	0.00	0.11	382.77	1,153
2 year	0.15	0.15	0.00	0.15	382.78	1,157
5 year	0.21	0.21	0.00	0.21	382.78	1,163
10 year	0.26	0.26	0.00	0.26	382.79	1,167
25 year	0.33	0.33	0.00	0.33	382.80	1,174



50 year	0.38	0.38	0.00	0.38	382.80	1,180
100 year	0.44	0.44	0.00	0.44	382.81	1,186

SCM 1 Hydrograph - 2-year Event



Elevation = water surface elevation

Inflow = all inflow into the storm water control

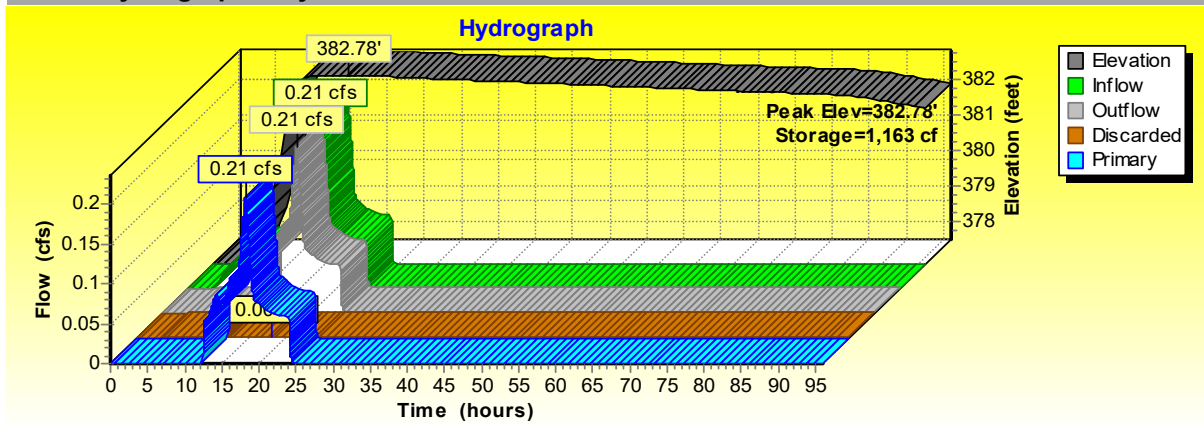
Outflow = sum of all outflow (discarded+primary+tertiary)

Discarded = flow out via infiltration

Primary = flow out via 24" square inlet grate. (occurs when water surface elevation exceeds 382.75)

Note: Infiltration of the surface storage occurs at hour 85.

SCM 1 Hydrograph - 5-year Event



Elevation = water surface elevation

Inflow = all inflow into the storm water control

Outflow = sum of all outflow (discarded+primary+tertiary)

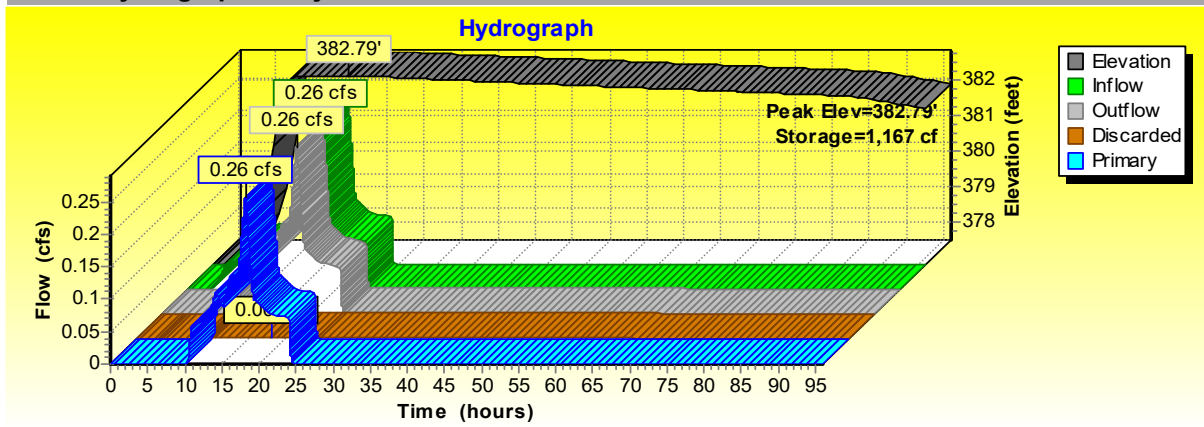
Discarded = flow out via infiltration

Primary = flow out via 24" square inlet grate. (occurs when water surface elevation exceeds 382.75)

Note: Infiltration of the surface storage occurs at hour 85.



SCM 1 Hydrograph - 10-year Event



Elevation = water surface elevation

Inflow = all inflow into the storm water control

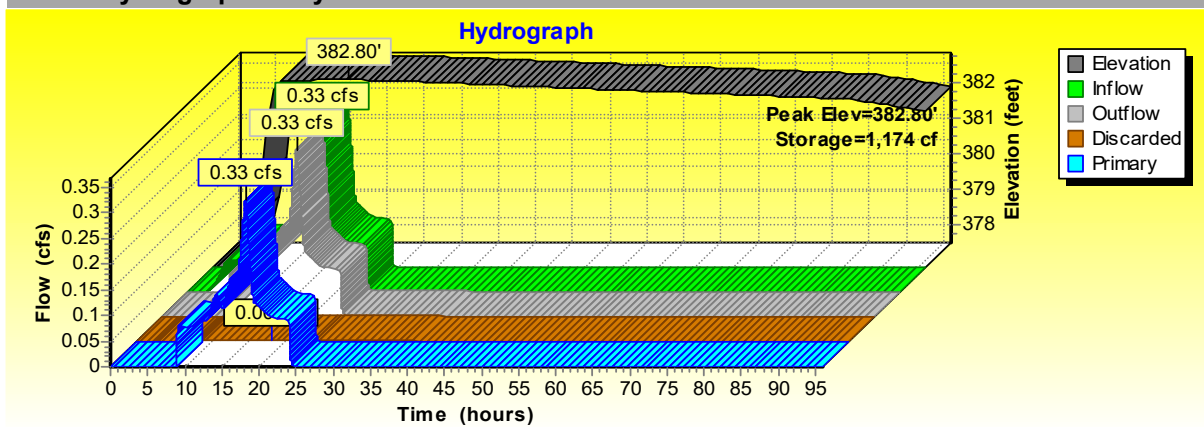
Outflow = sum of all outflow (discarded+primary+tertiary)

Discarded = flow out via infiltration

Primary = flow out via 24" square inlet grate. (occurs when water surface elevation exceeds 382.75)

Note: Infiltration of the surface storage occurs at hour 85.

SCM 1 Hydrograph - 25-year Event



Elevation = water surface elevation

Inflow = all inflow into the storm water control

Outflow = sum of all outflow (discarded+primary+tertiary)

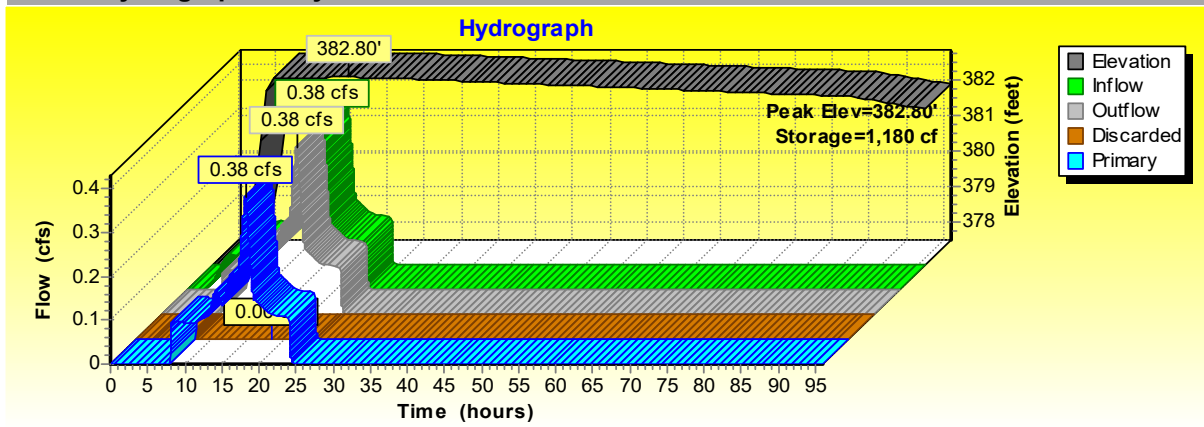
Discarded = flow out via infiltration

Primary = flow out via 24" square inlet grate. (occurs when water surface elevation exceeds 382.75)

Note: Infiltration of the surface storage occurs at hour 85.



SCM 1 Hydrograph - 50-year Event



Elevation = water surface elevation

Inflow = all inflow into the storm water control

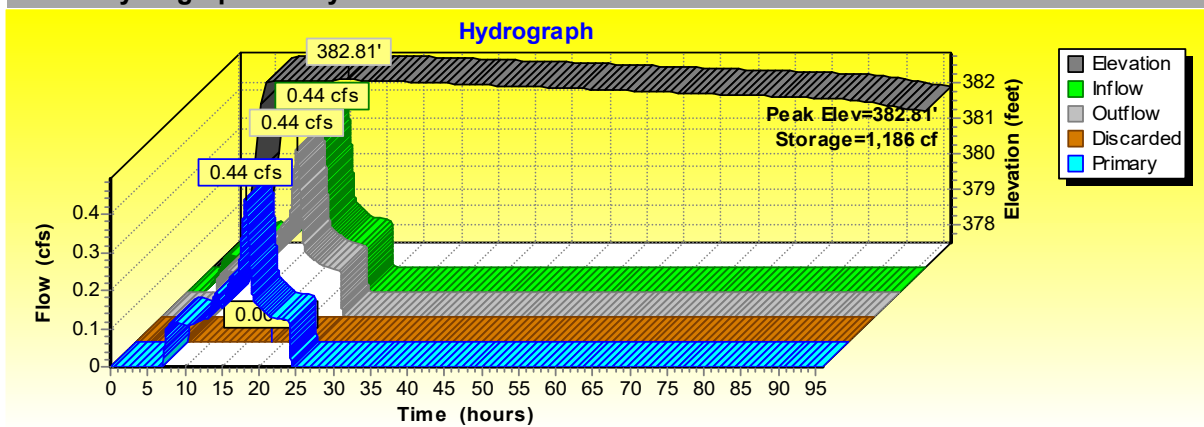
Outflow = sum of all outflow (discarded+primary+tertiary)

Discarded = flow out via infiltration

Primary = flow out via 24" square inlet grate. (occurs when water surface elevation exceeds 382.75)

Note: Infiltration of the surface storage occurs at hour 85.

SCM 1 Hydrograph - 100-year Event



Elevation = water surface elevation

Inflow = all inflow into the storm water control

Outflow = sum of all outflow (discarded+primary+tertiary)

Discarded = flow out via infiltration

Primary = flow out via 24" square inlet grate. (occurs when water surface elevation exceeds 382.75)

Note: Infiltration of the surface storage occurs at hour 85.



DMA 2 Summary

Summary for Subcatchment 7S: DMA 2

Runoff = 0.41 cfs @ 18.14 hrs, Volume= 0.241 af, Depth= 5.77"
Routed to Pond 8P : SCM2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
SCWWD 1956 Storm 100 year Rainfall=6.95"

	Area (sf)	CN	Description
	12,803	84	1 acre lots, 20% imp, HSG D
*	3,463	98	Roof
*	3,197	98	PCC
*	2,337	98	AC
	21,800	90	Weighted Average
	10,242		46.98% Pervious Area
	11,558		53.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Post-Development Event Summary For DMA 2

Events for Subcatchment 7S: DMA 2

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 year	2.11	0.10	0.050	1.19
2 year	2.71	0.14	0.072	1.72
5 year	3.54	0.20	0.104	2.49
10 year	4.24	0.24	0.131	3.15
25 year	5.26	0.31	0.172	4.13
50 year	6.08	0.36	0.205	4.92
100 year	6.95	0.41	0.241	5.77

SCM 2 Summary

Summary for Pond 8P: SCM 2

Inflow Area = 0.500 ac, 53.02% Impervious, Inflow Depth = 5.77" for 100 year event
Inflow = 0.41 cfs @ 18.14 hrs, Volume= 0.241 af
Outflow = 0.41 cfs @ 18.15 hrs, Volume= 0.235 af, Atten= 0%, Lag= 0.7 min
Discarded = 0.00 cfs @ 18.15 hrs, Volume= 0.023 af
Primary = 0.41 cfs @ 18.15 hrs, Volume= 0.213 af
Routed to Pond 4P : SCM8

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Peak Elev= 389.06' @ 18.15 hrs Surf.Area= 759 sf Storage= 967 cf

Plug-Flow detention time= 232.0 min calculated for 0.235 af (98% of inflow)
Center-of-Mass det. time= 220.1 min (1,136.8 - 916.7)



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Volume	Invert	Avail.Storage	Storage Description
#1	383.75'	1,365 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
383.75	400	0.0	0	0
383.76	400	40.0	2	2
386.50	400	40.0	438	440
386.51	400	25.0	1	441
388.49	400	25.0	198	639
388.50	400	100.0	4	643
389.00	719	100.0	280	923
389.50	1,052	100.0	443	1,365

Device	Routing	Invert	Outlet Devices
#1	Primary	389.00'	24.0" x 24.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Discarded	383.75'	0.250 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.00 cfs @ 18.15 hrs HW=389.06' (Free Discharge)
 ↑ **2=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.38 cfs @ 18.15 hrs HW=389.06' (Free Discharge)
 ↑ **1=Orifice/Grate** (Weir Controls 0.38 cfs @ 0.80 fps)

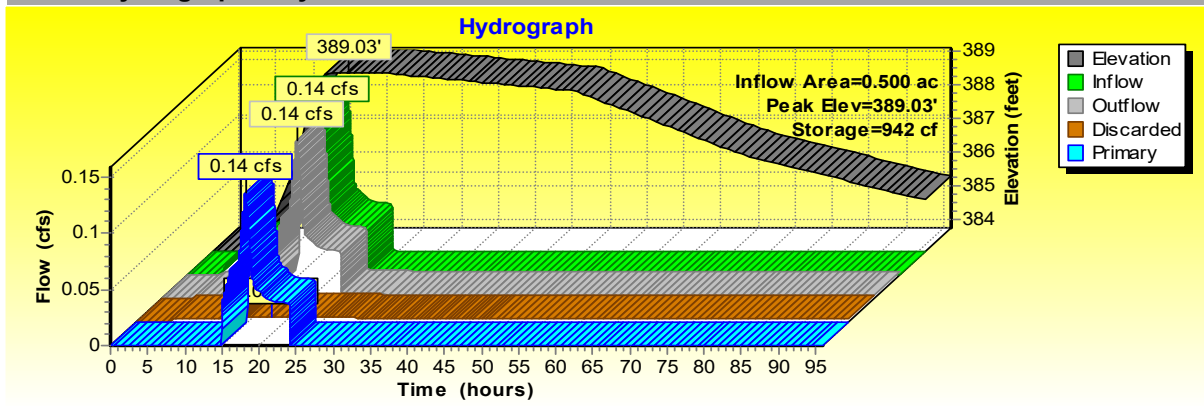
Post-Development Event Summary For SCM 2

Events for Pond 8P: SCM 2

Event	Inflow (cfs)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Storage (cubic-feet)
1 year	0.10	0.10	0.00	0.10	389.02	936
2 year	0.14	0.14	0.00	0.14	389.03	942
5 year	0.20	0.19	0.00	0.19	389.04	949
10 year	0.24	0.24	0.00	0.24	389.04	954
25 year	0.31	0.31	0.00	0.30	389.05	959
50 year	0.36	0.36	0.00	0.35	389.05	963
100 year	0.41	0.41	0.00	0.41	389.06	967



SCM 2 Hydrograph - 2-year Event



Elevation = water surface elevation

Inflow = all inflow into the storm water control

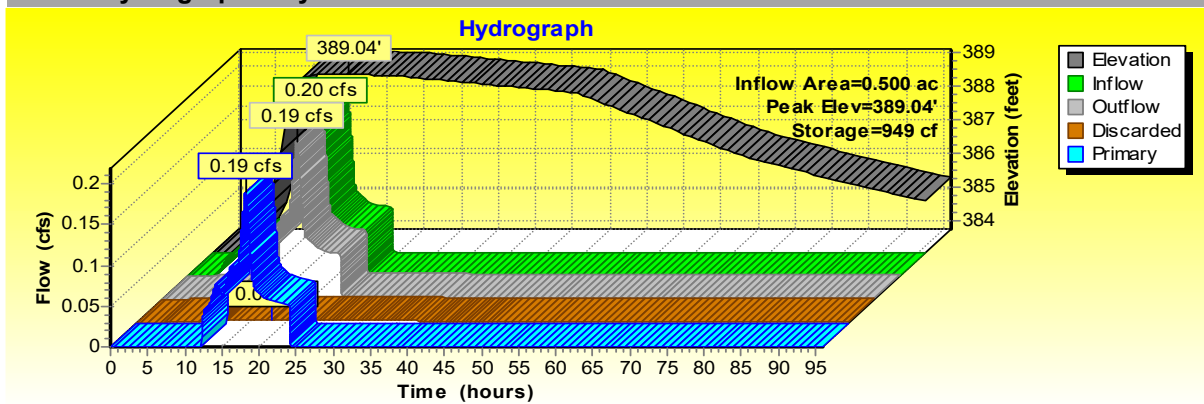
Outflow = sum of all outflow (discarded+primary+tertiary)

Discarded = flow out via infiltration

Primary = flow out via 24" square inlet grate. (occurs when water surface elevation exceeds 389.00)

Note: Infiltration of the surface storage occurs at hour 49.

SCM 2 Hydrograph - 5-year Event



Elevation = water surface elevation

Inflow = all inflow into the storm water control

Outflow = sum of all outflow (discarded+primary+tertiary)

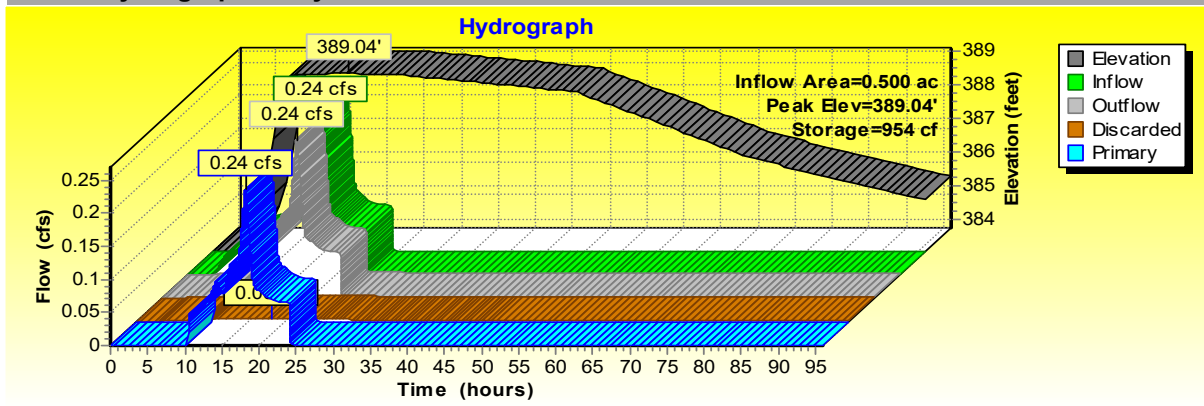
Discarded = flow out via infiltration

Primary = flow out via 24" square inlet grate. (occurs when water surface elevation exceeds 389.00)

Note: Infiltration of the surface storage occurs at hour 49.



SCM 2 Hydrograph - 10-year Event



Elevation = water surface elevation

Inflow = all inflow into the storm water control

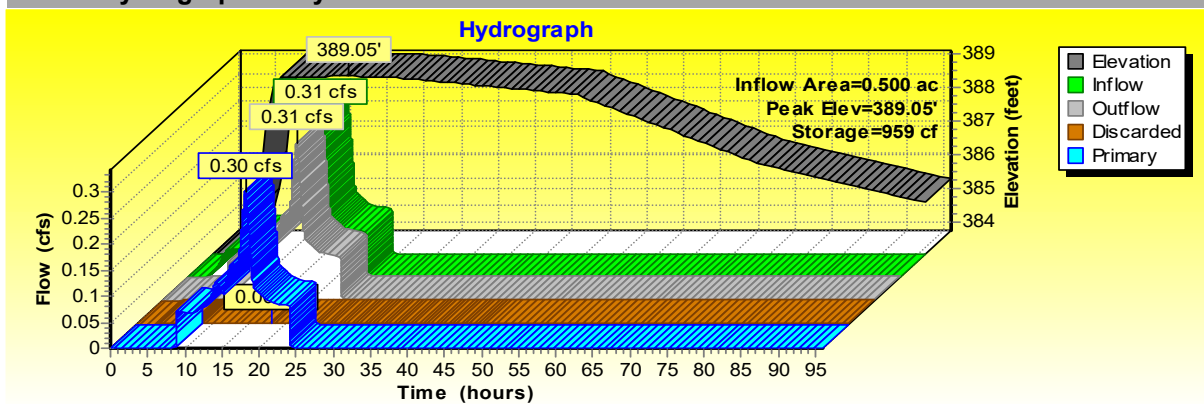
Outflow = sum of all outflow (discarded+primary+tertiary)

Discarded = flow out via infiltration

Primary = flow out via 24" square inlet grate. (occurs when water surface elevation exceeds 389.00)

Note: Infiltration of the surface storage occurs at hour 49.

SCM 2 Hydrograph - 25-year Event



Elevation = water surface elevation

Inflow = all inflow into the storm water control

Outflow = sum of all outflow (discarded+primary+tertiary)

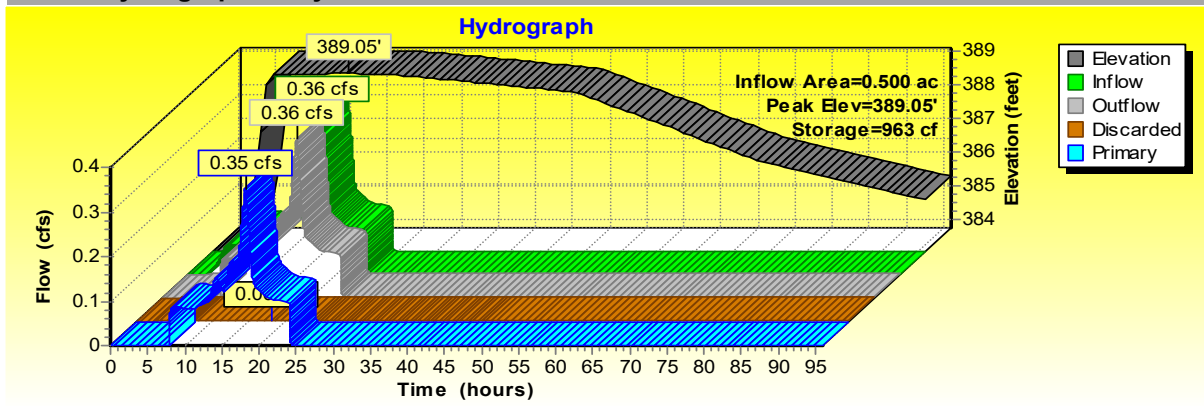
Discarded = flow out via infiltration

Primary = flow out via 24" square inlet grate. (occurs when water surface elevation exceeds 389.00)

Note: Infiltration of the surface storage occurs at hour 49.



SCM 2 Hydrograph - 50-year Event



Elevation = water surface elevation

Inflow = all inflow into the storm water control

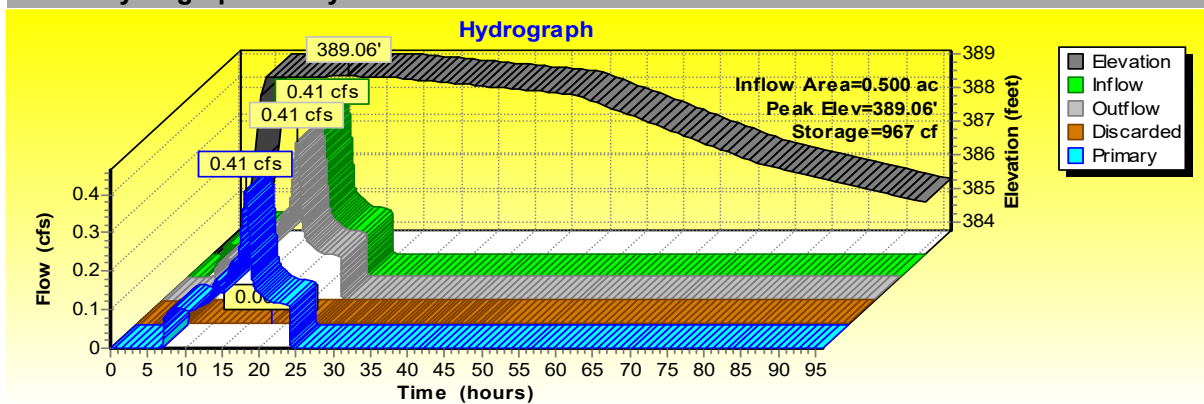
Outflow = sum of all outflow (discarded+primary+tertiary)

Discarded = flow out via infiltration

Primary = flow out via 24" square inlet grate. (occurs when water surface elevation exceeds 389.00)

Note: Infiltration of the surface storage occurs at hour 49.

SCM 2 Hydrograph - 100-year Event



Elevation = water surface elevation

Inflow = all inflow into the storm water control

Outflow = sum of all outflow (discarded+primary+tertiary)

Discarded = flow out via infiltration

Primary = flow out via 24" square inlet grate. (occurs when water surface elevation exceeds 389.00)

Note: Infiltration of the surface storage occurs at hour 49.



DMA 3 Summary

Summary for Subcatchment 9S: DMA 3

Runoff = 0.49 cfs @ 18.14 hrs, Volume= 0.283 af, Depth= 5.77"
Routed to Pond 10P : SCM3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
SCWWD 1956 Storm 100 year Rainfall=6.95"

	Area (sf)	CN	Description
	15,439	84	1 acre lots, 20% imp, HSG D
*	4,631	98	Roof
*	3,217	98	PCC
*	2,337	98	AC
	25,624	90	Weighted Average
	12,351		48.20% Pervious Area
	13,273		51.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Post-Development Event Summary For DMA 3

Events for Subcatchment 9S: DMA 3

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 year	2.11	0.12	0.058	1.19
2 year	2.71	0.17	0.084	1.72
5 year	3.54	0.23	0.122	2.49
10 year	4.24	0.28	0.154	3.15
25 year	5.26	0.36	0.202	4.13
50 year	6.08	0.42	0.241	4.92
100 year	6.95	0.49	0.283	5.77

SCM 3 Summary

Summary for Pond 10P: SCM 3

Inflow Area = 0.588 ac, 51.80% Impervious, Inflow Depth = 5.77" for 100 year event
Inflow = 0.49 cfs @ 18.14 hrs, Volume= 0.283 af
Outflow = 0.49 cfs @ 18.15 hrs, Volume= 0.277 af, Atten= 0%, Lag= 0.8 min
Discarded = 0.00 cfs @ 18.15 hrs, Volume= 0.025 af
Primary = 0.48 cfs @ 18.15 hrs, Volume= 0.252 af
Routed to Pond 4P : SCM8

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Peak Elev= 393.57' @ 18.15 hrs Surf.Area= 815 sf Storage= 1,081 cf

Plug-Flow detention time= 221.3 min calculated for 0.277 af (98% of inflow)
Center-of-Mass det. time= 209.8 min (1,126.6 - 916.7)



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Volume	Invert	Avail.Storage	Storage Description
#1	388.25'	1,498 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
388.25	450	0.0	0	0
388.26	450	40.0	2	2
391.00	450	40.0	493	495
391.01	450	25.0	1	496
392.99	450	25.0	223	719
393.00	450	100.0	4	723
393.50	771	100.0	305	1,029
394.00	1,105	100.0	469	1,498

Device	Routing	Invert	Outlet Devices
#1	Primary	393.50'	24.0" x 24.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Discarded	388.25'	0.250 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.00 cfs @ 18.15 hrs HW=393.57' (Free Discharge)
 ↑ **2=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.45 cfs @ 18.15 hrs HW=393.57' (Free Discharge)
 ↑ **1=Orifice/Grate** (Weir Controls 0.45 cfs @ 0.84 fps)

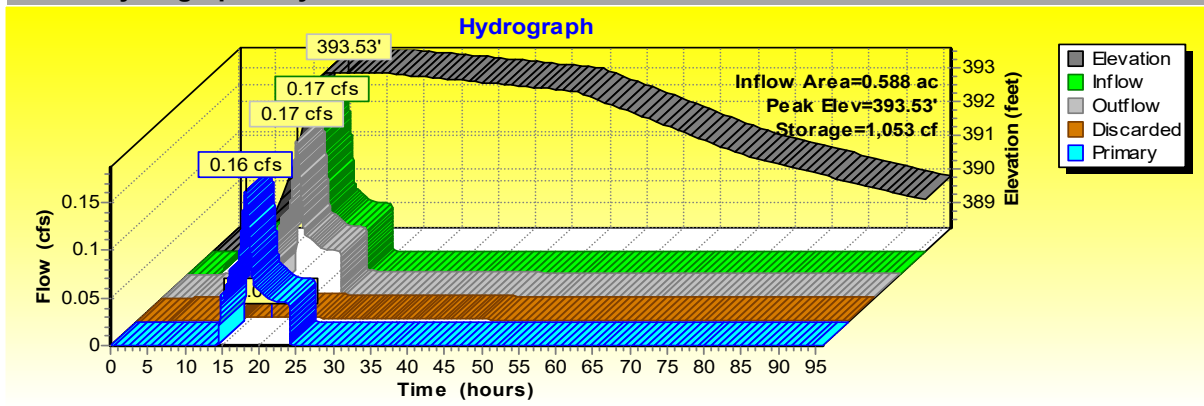
Post-Development Event Summary For SCM 3

Events for Pond 10P: SCM 3

Event	Inflow (cfs)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Storage (cubic-feet)
1 year	0.12	0.12	0.00	0.12	393.52	1,046
2 year	0.17	0.17	0.00	0.16	393.53	1,053
5 year	0.23	0.23	0.00	0.23	393.54	1,061
10 year	0.28	0.28	0.00	0.28	393.55	1,065
25 year	0.36	0.36	0.00	0.35	393.55	1,071
50 year	0.42	0.42	0.00	0.42	393.56	1,076
100 year	0.49	0.49	0.00	0.48	393.57	1,081



SCM 3 Hydrograph - 2-year Event



Elevation = water surface elevation

Inflow = all inflow into the storm water control

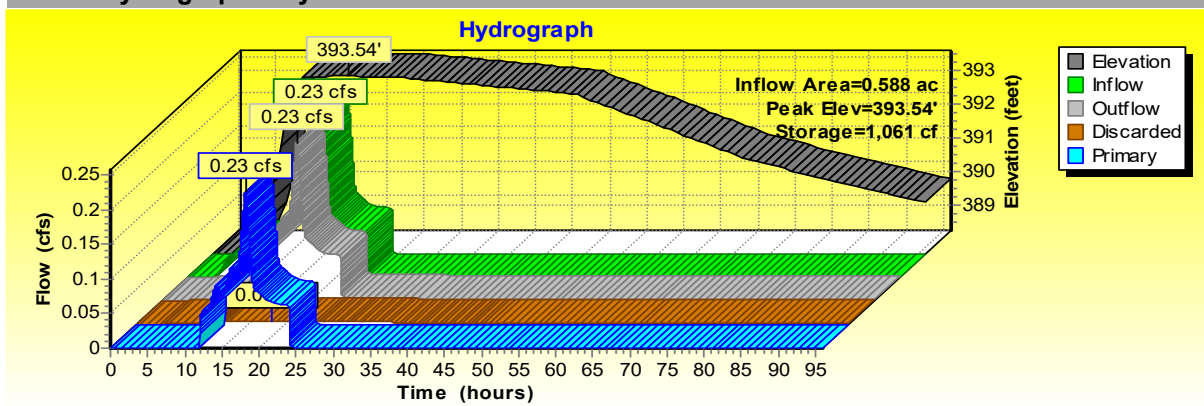
Outflow = sum of all outflow (discarded+primary+tertiary)

Discarded = flow out via infiltration

Primary = flow out via 24" square inlet grate. (occurs when water surface elevation exceeds 393.50)

Note: Infiltration of the surface storage occurs at hour 49.

SCM 3 Hydrograph - 5-year Event



Elevation = water surface elevation

Inflow = all inflow into the storm water control

Outflow = sum of all outflow (discarded+primary+tertiary)

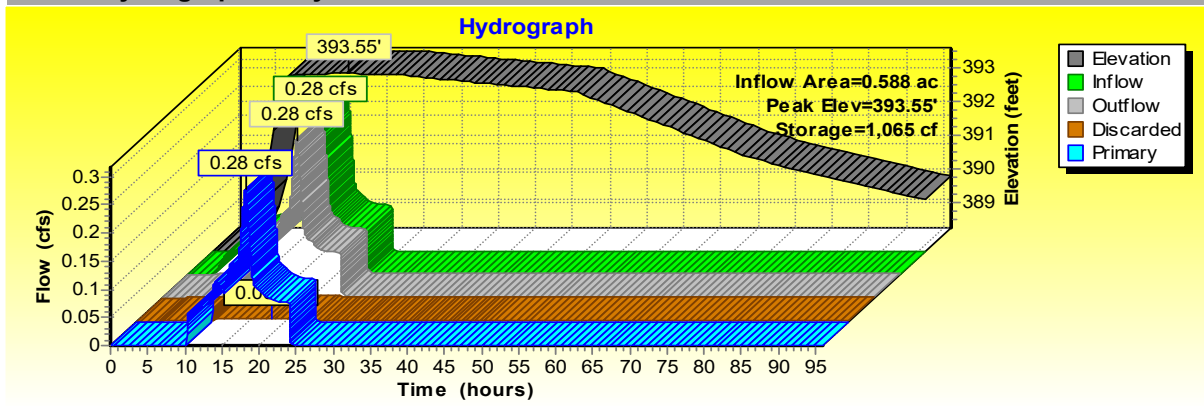
Discarded = flow out via infiltration

Primary = flow out via 24" square inlet grate. (occurs when water surface elevation exceeds 393.50)

Note: Infiltration of the surface storage occurs at hour 49.



SCM 3 Hydrograph - 10-year Event



Elevation = water surface elevation

Inflow = all inflow into the storm water control

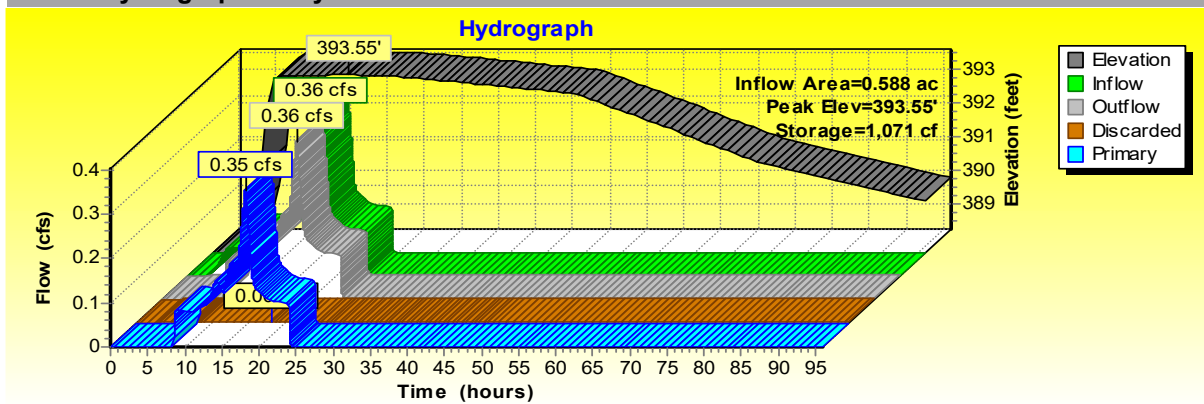
Outflow = sum of all outflow (discarded+primary+tertiary)

Discarded = flow out via infiltration

Primary = flow out via 24" square inlet grate. (occurs when water surface elevation exceeds 393.50)

Note: Infiltration of the surface storage occurs at hour 49.

SCM 3 Hydrograph - 25-year Event



Elevation = water surface elevation

Inflow = all inflow into the storm water control

Outflow = sum of all outflow (discarded+primary+tertiary)

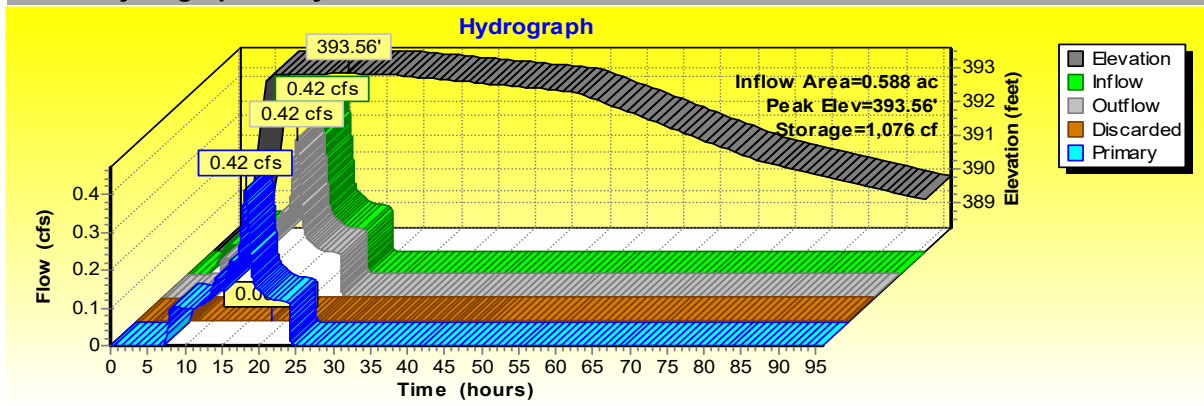
Discarded = flow out via infiltration

Primary = flow out via 24" square inlet grate. (occurs when water surface elevation exceeds 393.50)

Note: Infiltration of the surface storage occurs at hour 49.



SCM 3 Hydrograph - 50-year Event



Elevation = water surface elevation

Inflow = all inflow into the storm water control

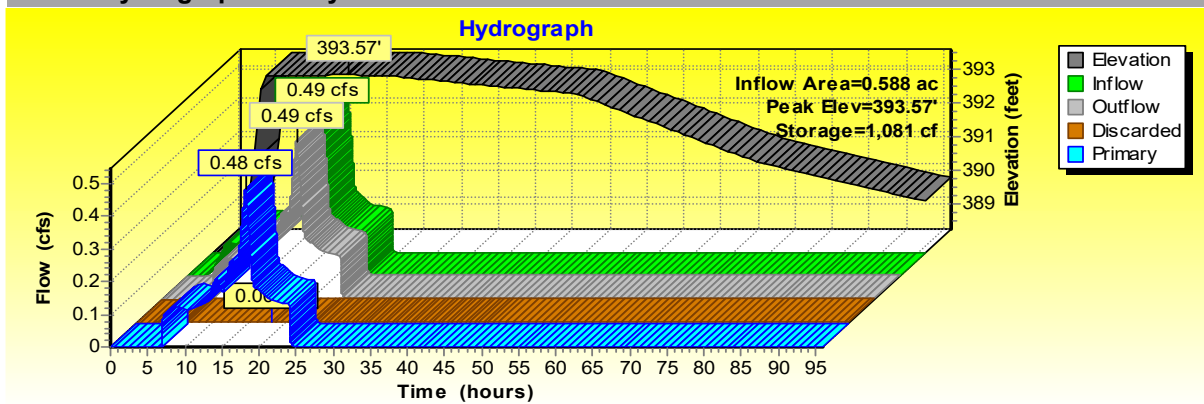
Outflow = sum of all outflow (discarded+primary+tertiary)

Discarded = flow out via infiltration

Primary = flow out via 24" square inlet grate. (occurs when water surface elevation exceeds 393.50)

Note: Infiltration of the surface storage occurs at hour 49.

SCM 3 Hydrograph - 100-year Event



Elevation = water surface elevation

Inflow = all inflow into the storm water control

Outflow = sum of all outflow (discarded+primary+tertiary)

Discarded = flow out via infiltration

Primary = flow out via 24" square inlet grate. (occurs when water surface elevation exceeds 393.50)

Note: Infiltration of the surface storage occurs at hour 49.



DMA 4 Summary

Summary for Subcatchment 25S: DMA 4

Runoff = 0.40 cfs @ 18.14 hrs, Volume= 0.241 af, Depth= 6.01"
Routed to Pond 12P : SCM4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
SCWWD 1956 Storm 100 year Rainfall=6.95"

	Area (sf)	CN	Description
	8,771	84	1 acre lots, 20% imp, HSG D
*	4,631	98	Roof
*	3,866	98	PCC
*	3,750	98	AC
	21,018	92	Weighted Average
	7,017		33.38% Pervious Area
	14,001		66.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Post-Development Event Summary For DMA 4

Events for Subcatchment 25S: DMA 4

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 year	2.11	0.11	0.054	1.34
2 year	2.71	0.14	0.076	1.89
5 year	3.54	0.20	0.108	2.68
10 year	4.24	0.24	0.135	3.35
25 year	5.26	0.30	0.175	4.34
50 year	6.08	0.35	0.207	5.15
100 year	6.95	0.40	0.241	6.01

SCM 4 Summary

Summary for Pond 12P: SCM 4

Inflow Area = 0.483 ac, 66.62% Impervious, Inflow Depth = 6.01" for 100 year event
Inflow = 0.40 cfs @ 18.14 hrs, Volume= 0.241 af
Outflow = 0.40 cfs @ 18.15 hrs, Volume= 0.225 af, Atten= 0%, Lag= 0.9 min
Discarded = 0.00 cfs @ 18.15 hrs, Volume= 0.012 af
Primary = 0.40 cfs @ 18.15 hrs, Volume= 0.213 af
Routed to Pond 4P : SCM8

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Peak Elev= 400.67' @ 18.15 hrs Surf.Area= 882 sf Storage= 1,163 cf

Plug-Flow detention time= 201.8 min calculated for 0.225 af (93% of inflow)
Center-of-Mass det. time= 164.8 min (1,067.8 - 903.0)



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Volume	Invert	Avail.Storage	Storage Description
#1	395.36'	1,624 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
395.36	486	0.0	0	0
395.37	486	40.0	2	2
398.11	486	40.0	533	535
398.12	486	25.0	1	536
400.10	486	25.0	241	776
400.11	486	100.0	5	781
400.61	839	100.0	331	1,112
401.11	1,206	100.0	511	1,624

Device	Routing	Invert	Outlet Devices
#1	Primary	400.61'	24.0" x 24.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Discarded	395.36'	0.100 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.00 cfs @ 18.15 hrs HW=400.67' (Free Discharge)
 ↑ **2=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.37 cfs @ 18.15 hrs HW=400.67' (Free Discharge)
 ↑ **1=Orifice/Grate** (Weir Controls 0.37 cfs @ 0.79 fps)

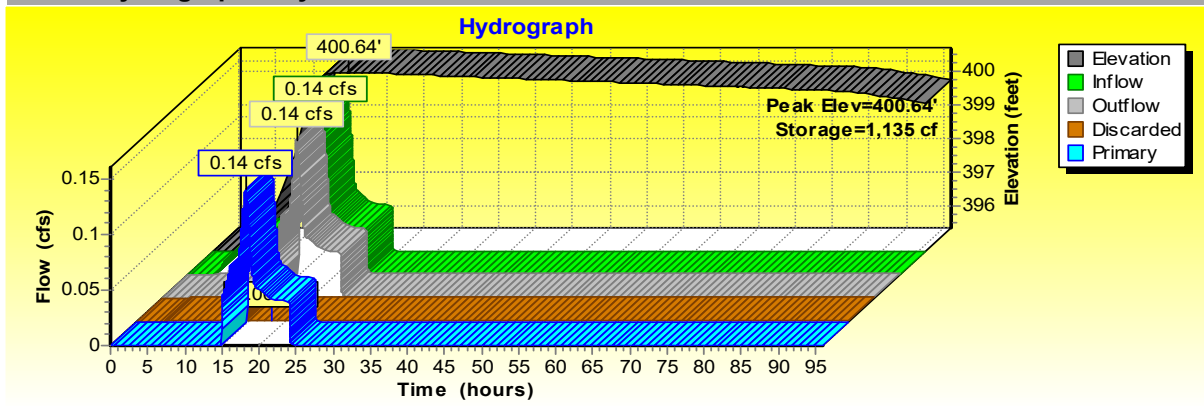
Post-Development Event Summary For SCM 4

Events for Pond 12P: SCM 4

Event	Inflow (cfs)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Storage (cubic-feet)
1 year	0.11	0.11	0.00	0.10	400.63	1,129
2 year	0.14	0.14	0.00	0.14	400.64	1,135
5 year	0.20	0.19	0.00	0.19	400.65	1,144
10 year	0.24	0.24	0.00	0.24	400.65	1,149
25 year	0.30	0.30	0.00	0.30	400.66	1,154
50 year	0.35	0.35	0.00	0.35	400.66	1,159
100 year	0.40	0.40	0.00	0.40	400.67	1,163



SCM 4 Hydrograph - 2-year Event



Elevation = water surface elevation

Inflow = all inflow into the storm water control

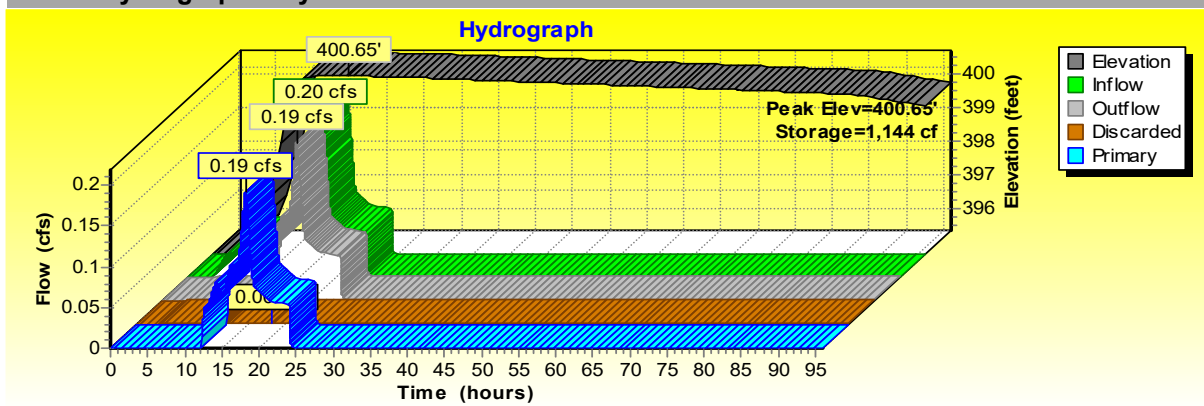
Outflow = sum of all outflow (discarded+primary+tertiary)

Discarded = flow out via infiltration

Primary = flow out via 24" square inlet grate. (occurs when water surface elevation exceeds 400.61)

Note: Infiltration of the surface storage occurs at hour 85.

SCM 4 Hydrograph - 5-year Event



Elevation = water surface elevation

Inflow = all inflow into the storm water control

Outflow = sum of all outflow (discarded+primary+tertiary)

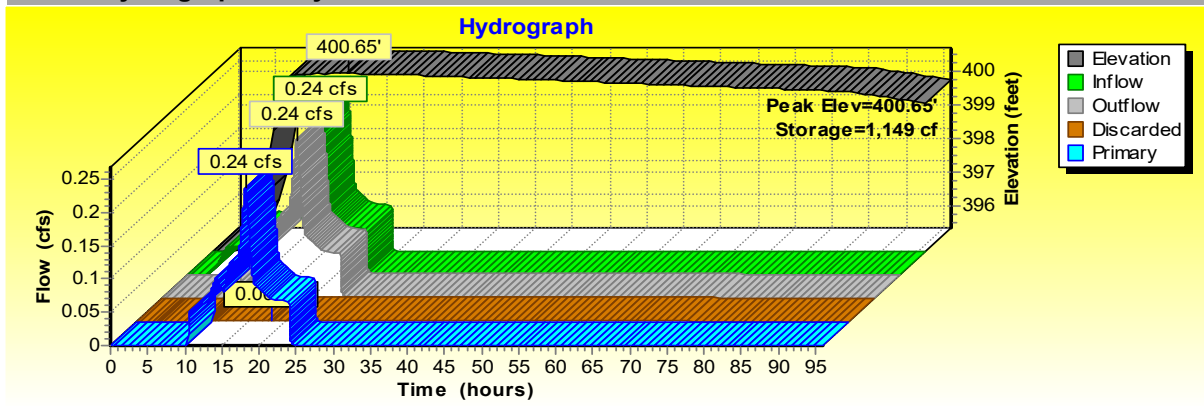
Discarded = flow out via infiltration

Primary = flow out via 24" square inlet grate. (occurs when water surface elevation exceeds 400.61)

Note: Infiltration of the surface storage occurs at hour 85.



SCM 4 Hydrograph - 10-year Event



Elevation = water surface elevation

Inflow = all inflow into the storm water control

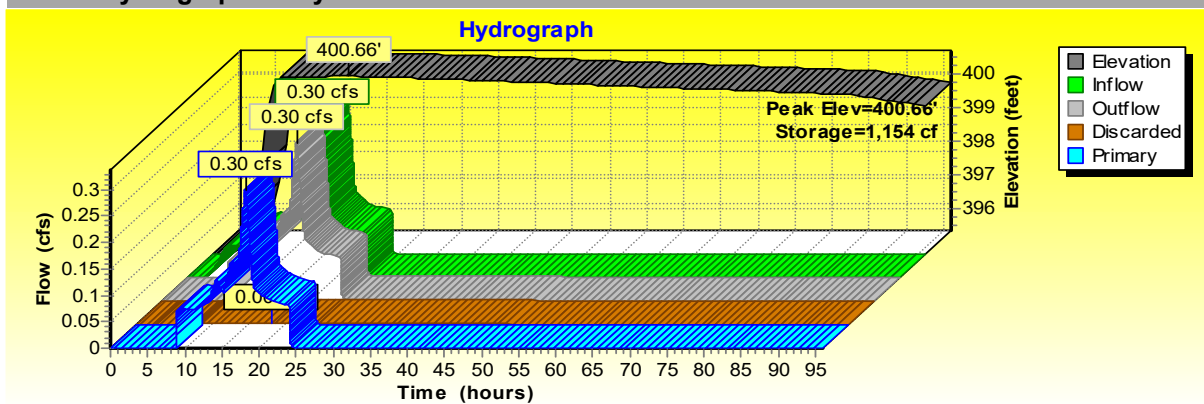
Outflow = sum of all outflow (discarded+primary+tertiary)

Discarded = flow out via infiltration

Primary = flow out via 24" square inlet grate. (occurs when water surface elevation exceeds 400.61)

Note: Infiltration of the surface storage occurs at hour 85.

SCM 4 Hydrograph - 25-year Event



Elevation = water surface elevation

Inflow = all inflow into the storm water control

Outflow = sum of all outflow (discarded+primary+tertiary)

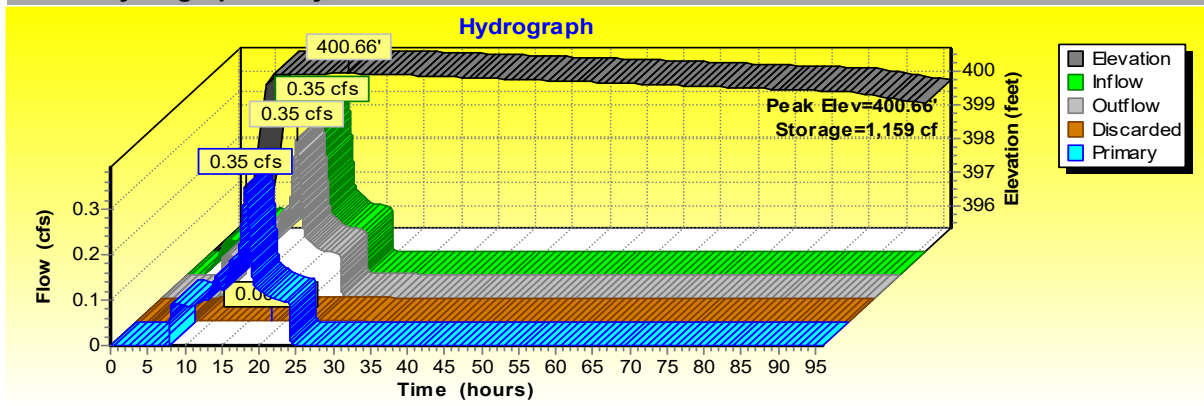
Discarded = flow out via infiltration

Primary = flow out via 24" square inlet grate. (occurs when water surface elevation exceeds 400.61)

Note: Infiltration of the surface storage occurs at hour 85.



SCM 4 Hydrograph - 50-year Event



Elevation = water surface elevation

Inflow = all inflow into the storm water control

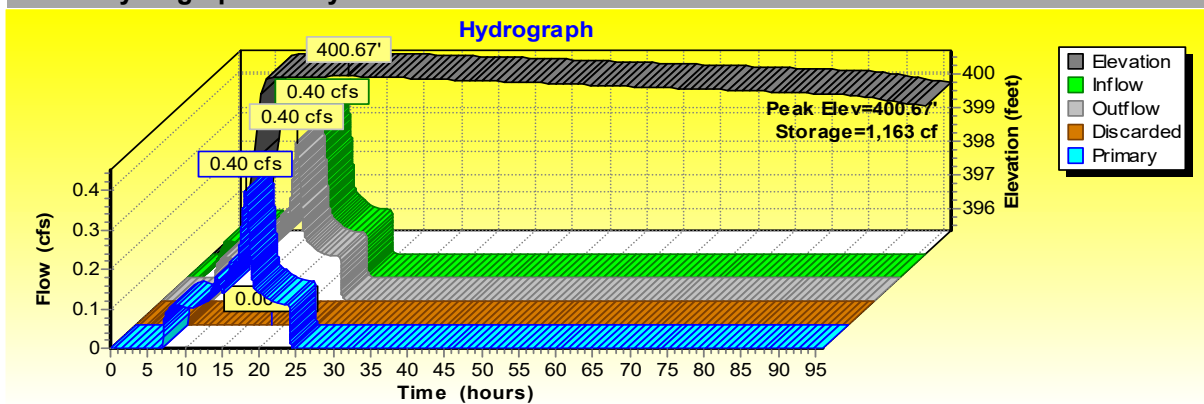
Outflow = sum of all outflow (discarded+primary+tertiary)

Discarded = flow out via infiltration

Primary = flow out via 24" square inlet grate. (occurs when water surface elevation exceeds 400.61)

Note: Infiltration of the surface storage occurs at hour 85.

SCM 4 Hydrograph - 100-year Event



Elevation = water surface elevation

Inflow = all inflow into the storm water control

Outflow = sum of all outflow (discarded+primary+tertiary)

Discarded = flow out via infiltration

Primary = flow out via 24" square inlet grate. (occurs when water surface elevation exceeds 400.61)

Note: Infiltration of the surface storage occurs at hour 85.



DMA 5 Summary

Summary for Subcatchment 26S: DMA 5

Runoff = 0.35 cfs @ 18.14 hrs, Volume= 0.207 af, Depth= 5.89"
Routed to Pond 14P : SCM5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
SCWWD 1956 Storm 100 year Rainfall=6.95"

	Area (sf)	CN	Description
	9,425	84	1 acre lots, 20% imp, HSG D
*	3,464	98	Roof
*	2,937	98	PCC
*	2,516	98	AC
	18,342	91	Weighted Average
	7,540		41.11% Pervious Area
	10,802		58.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Post-Development Event Summary For DMA 5

Events for Subcatchment 26S: DMA 5

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 year	2.11	0.09	0.044	1.26
2 year	2.71	0.12	0.063	1.80
5 year	3.54	0.17	0.090	2.58
10 year	4.24	0.21	0.114	3.25
25 year	5.26	0.26	0.149	4.23
50 year	6.08	0.30	0.177	5.04
100 year	6.95	0.35	0.207	5.89

SCM 5 Summary

Summary for Pond 14P: SCM 5

Inflow Area = 0.421 ac, 58.89% Impervious, Inflow Depth = 5.89" for 100 year event
Inflow = 0.35 cfs @ 18.14 hrs, Volume= 0.207 af
Outflow = 0.35 cfs @ 18.15 hrs, Volume= 0.201 af, Atten= 0%, Lag= 0.5 min
Discarded = 0.00 cfs @ 18.15 hrs, Volume= 0.021 af
Primary = 0.35 cfs @ 18.15 hrs, Volume= 0.180 af
Routed to Pond 4P : SCM8

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Peak Elev= 409.45' @ 18.15 hrs Surf.Area= 602 sf Storage= 920 cf

Plug-Flow detention time= 264.6 min calculated for 0.201 af (97% of inflow)
Center-of-Mass det. time= 250.0 min (1,160.0 - 910.0)



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Volume	Invert	Avail.Storage	Storage Description
#1	404.15'	1,227 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
404.15	400	0.0	0	0
404.16	400	40.0	2	2
406.90	400	40.0	438	440
406.91	400	25.0	1	441
408.89	400	25.0	198	639
408.90	400	100.0	4	643
409.40	581	100.0	245	888
409.90	776	100.0	339	1,227

Device	Routing	Invert	Outlet Devices
#1	Primary	409.40'	24.0" x 24.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Discarded	404.15'	0.250 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.00 cfs @ 18.15 hrs HW=409.45' (Free Discharge)
 ↑ **2=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.32 cfs @ 18.15 hrs HW=409.45' (Free Discharge)
 ↑ **1=Orifice/Grate** (Weir Controls 0.32 cfs @ 0.76 fps)

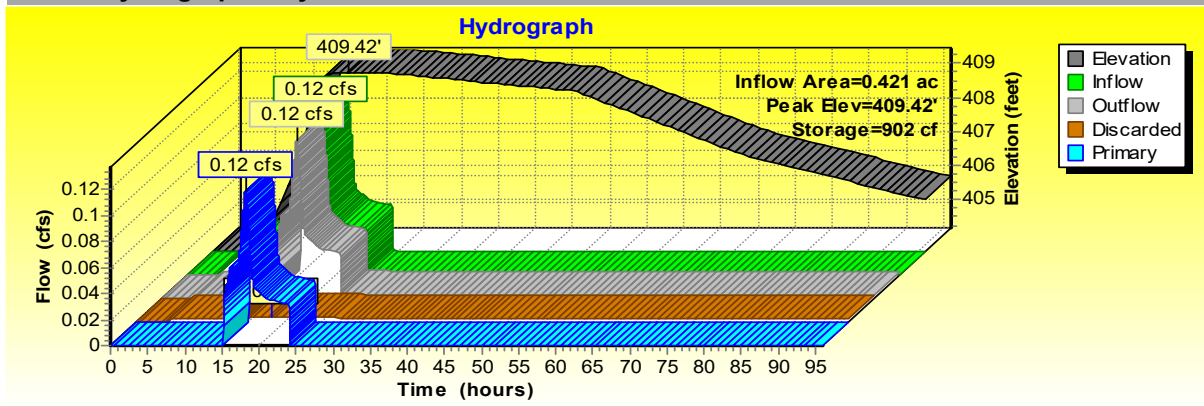
Post-Development Event Summary For SCM 5

Events for Pond 14P: SCM 5

Event	Inflow (cfs)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Storage (cubic-feet)
1 year	0.09	0.09	0.00	0.09	409.42	898
2 year	0.12	0.12	0.00	0.12	409.42	902
5 year	0.17	0.17	0.00	0.16	409.43	907
10 year	0.21	0.21	0.00	0.20	409.44	911
25 year	0.26	0.26	0.00	0.26	409.44	915
50 year	0.30	0.30	0.00	0.30	409.45	917
100 year	0.35	0.35	0.00	0.35	409.45	920



SCM 5 Hydrograph - 2-year Event



Elevation = water surface elevation

Inflow = all inflow into the storm water control

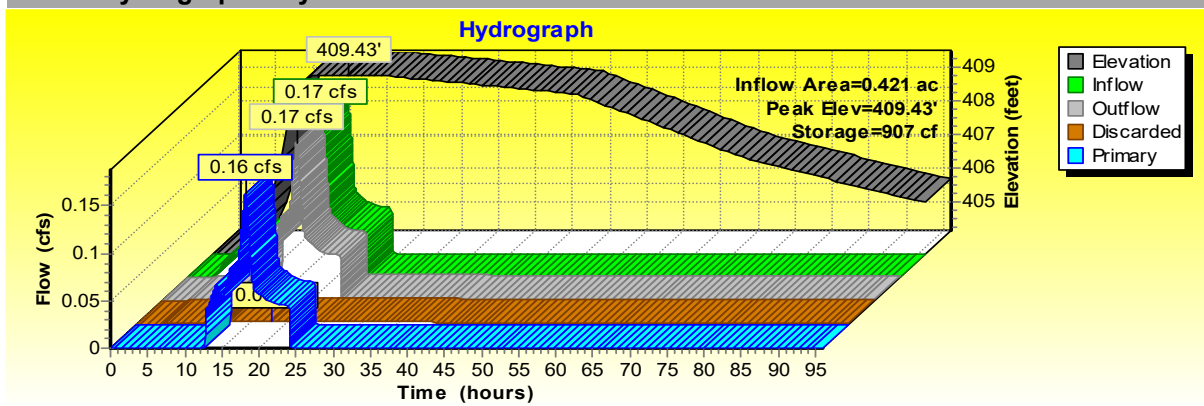
Outflow = sum of all outflow (discarded+primary+tertiary)

Discarded = flow out via infiltration

Primary = flow out via 24" square inlet grate. (occurs when water surface elevation exceeds 409.40)

Note: Infiltration of the surface storage occurs at hour 49.

SCM 5 Hydrograph - 5-year Event



Elevation = water surface elevation

Inflow = all inflow into the storm water control

Outflow = sum of all outflow (discarded+primary+tertiary)

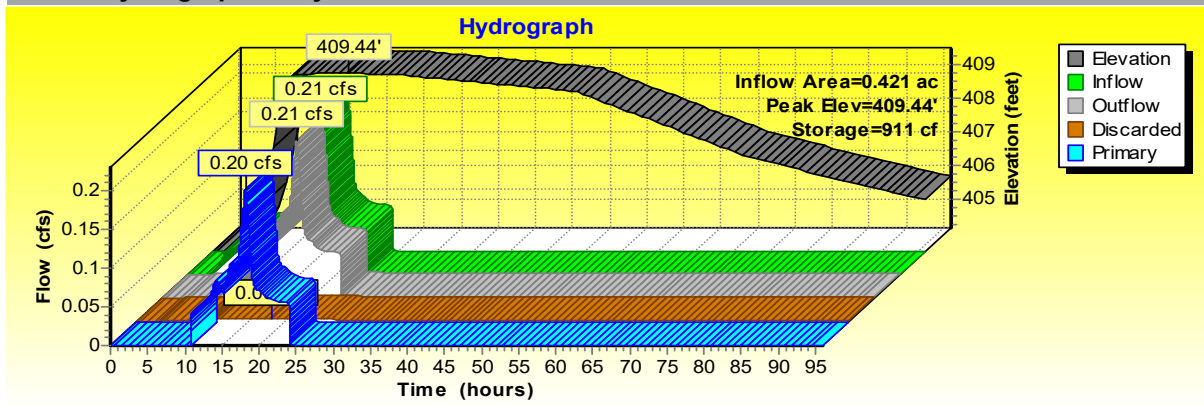
Discarded = flow out via infiltration

Primary = flow out via 24" square inlet grate. (occurs when water surface elevation exceeds 409.40)

Note: Infiltration of the surface storage occurs at hour 49.



SCM 5 Hydrograph - 10-year Event



Elevation = water surface elevation

Inflow = all inflow into the storm water control

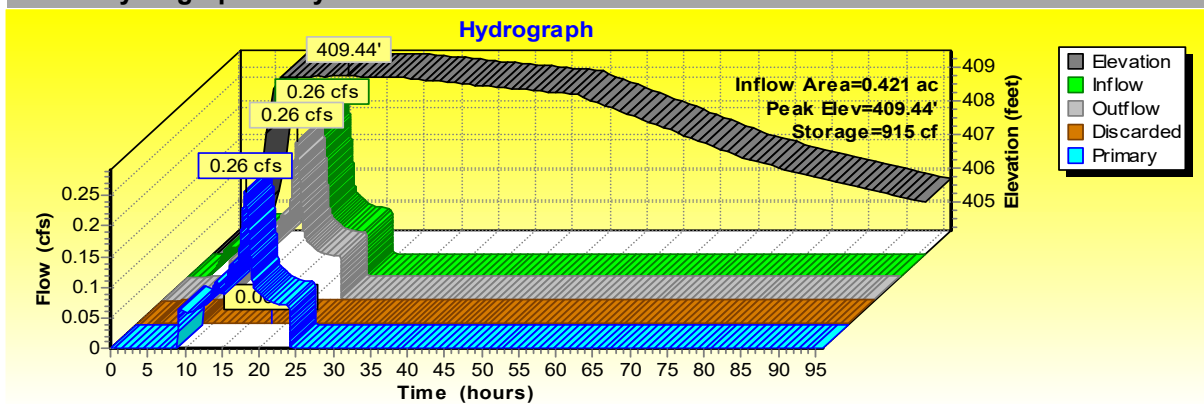
Outflow = sum of all outflow (discarded+primary+tertiary)

Discarded = flow out via infiltration

Primary = flow out via 24" square inlet grate. (occurs when water surface elevation exceeds 409.40)

Note: Infiltration of the surface storage occurs at hour 49.

SCM 5 Hydrograph - 25-year Event



Elevation = water surface elevation

Inflow = all inflow into the storm water control

Outflow = sum of all outflow (discarded+primary+tertiary)

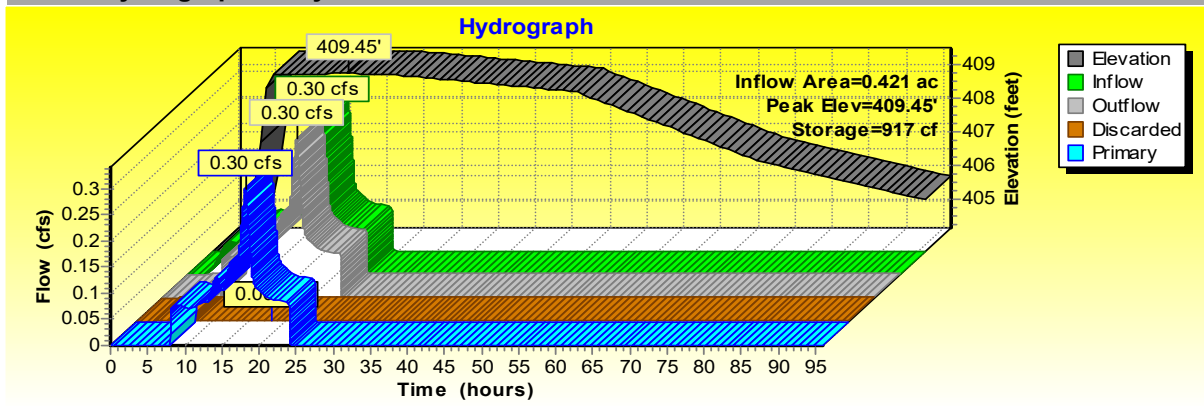
Discarded = flow out via infiltration

Primary = flow out via 24" square inlet grate. (occurs when water surface elevation exceeds 409.40)

Note: Infiltration of the surface storage occurs at hour 49.



SCM 5 Hydrograph - 50-year Event



Elevation = water surface elevation

Inflow = all inflow into the storm water control

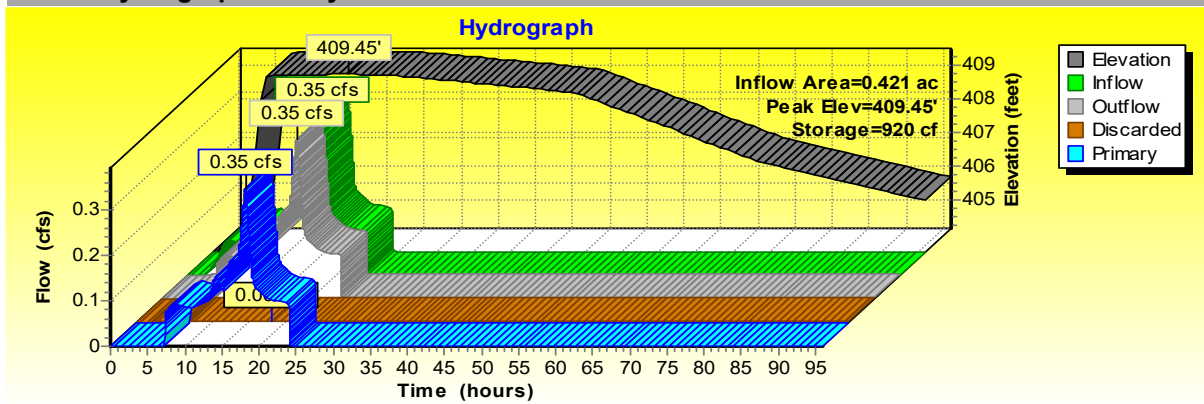
Outflow = sum of all outflow (discarded+primary+tertiary)

Discarded = flow out via infiltration

Primary = flow out via 24" square inlet grate. (occurs when water surface elevation exceeds 409.40)

Note: Infiltration of the surface storage occurs at hour 49.

SCM 5 Hydrograph - 100-year Event



Elevation = water surface elevation

Inflow = all inflow into the storm water control

Outflow = sum of all outflow (discarded+primary+tertiary)

Discarded = flow out via infiltration

Primary = flow out via 24" square inlet grate. (occurs when water surface elevation exceeds 409.40)

Note: Infiltration of the surface storage occurs at hour 49.



DMA 6 Summary

Summary for Subcatchment 27S: DMA 6

Runoff = 0.55 cfs @ 18.14 hrs, Volume= 0.321 af, Depth= 5.77"
Routed to Pond 18P : SCM6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
SCWWD 1956 Storm 100 year Rainfall=6.95"

	Area (sf)	CN	Description
	16,769	84	1 acre lots, 20% imp, HSG D
*	5,300	98	Roof
*	3,522	98	PCC
*	3,463	98	AC
	29,054	90	Weighted Average
	13,415		46.17% Pervious Area
	15,639		53.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Post-Development Event Summary For DMA 6

Events for Subcatchment 27S: DMA 6

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 year	2.11	0.14	0.066	1.19
2 year	2.71	0.19	0.096	1.72
5 year	3.54	0.26	0.138	2.49
10 year	4.24	0.32	0.175	3.15
25 year	5.26	0.41	0.229	4.13
50 year	6.08	0.48	0.274	4.92
100 year	6.95	0.55	0.321	5.77

SCM 6 Summary

Summary for Pond 18P: SCM 6

Inflow Area = 0.667 ac, 53.83% Impervious, Inflow Depth = 5.77" for 100 year event
Inflow = 0.55 cfs @ 18.14 hrs, Volume= 0.321 af
Outflow = 0.55 cfs @ 18.15 hrs, Volume= 0.313 af, Atten= 0%, Lag= 0.8 min
Discarded = 0.00 cfs @ 18.15 hrs, Volume= 0.028 af
Primary = 0.55 cfs @ 18.15 hrs, Volume= 0.285 af
Routed to Pond 4P : SCM8

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Peak Elev= 417.22' @ 18.15 hrs Surf.Area= 817 sf Storage= 1,292 cf

Plug-Flow detention time= 237.1 min calculated for 0.313 af (98% of inflow)
Center-of-Mass det. time= 224.6 min (1,141.3 - 916.7)



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Volume	Invert	Avail.Storage	Storage Description
#1	411.90'	1,692 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
411.90	560	0.0	0	0
411.91	560	40.0	2	2
414.65	560	40.0	614	616
414.66	560	25.0	1	617
416.64	560	25.0	277	895
416.65	560	100.0	6	900
417.15	776	100.0	334	1,234
417.65	1,056	100.0	458	1,692

Device	Routing	Invert	Outlet Devices
#1	Primary	417.15'	24.0" x 24.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Discarded	411.90'	0.250 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.00 cfs @ 18.15 hrs HW=417.22' (Free Discharge)
 ↑ **2=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.52 cfs @ 18.15 hrs HW=417.22' (Free Discharge)
 ↑ **1=Orifice/Grate** (Weir Controls 0.52 cfs @ 0.88 fps)

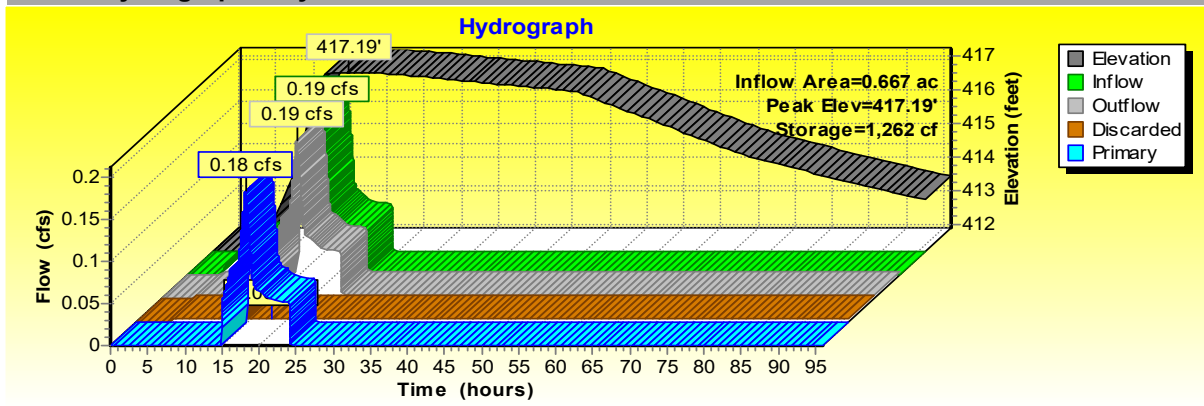
Post-Development Event Summary For SCM 6

Events for Pond 18P: SCM 6

Event	Inflow (cfs)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Storage (cubic-feet)
1 year	0.14	0.14	0.00	0.13	417.18	1,254
2 year	0.19	0.19	0.00	0.18	417.19	1,262
5 year	0.26	0.26	0.00	0.26	417.19	1,269
10 year	0.32	0.32	0.00	0.32	417.20	1,274
25 year	0.41	0.41	0.00	0.40	417.21	1,281
50 year	0.48	0.48	0.00	0.47	417.22	1,286
100 year	0.55	0.55	0.00	0.55	417.22	1,292



SCM 6 Hydrograph - 2-year Event



Elevation = water surface elevation

Inflow = all inflow into the storm water control

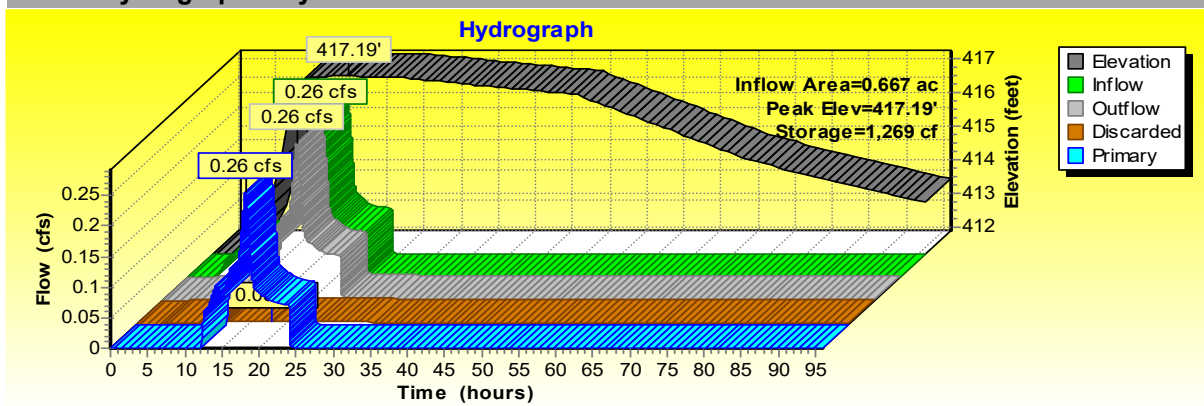
Outflow = sum of all outflow (discarded+primary+tertiary)

Discarded = flow out via infiltration

Primary = flow out via 24" square inlet grate. (occurs when water surface elevation exceeds 417.15)

Note: Infiltration of the surface storage occurs at hour 49.

SCM 6 Hydrograph - 5-year Event



Elevation = water surface elevation

Inflow = all inflow into the storm water control

Outflow = sum of all outflow (discarded+primary+tertiary)

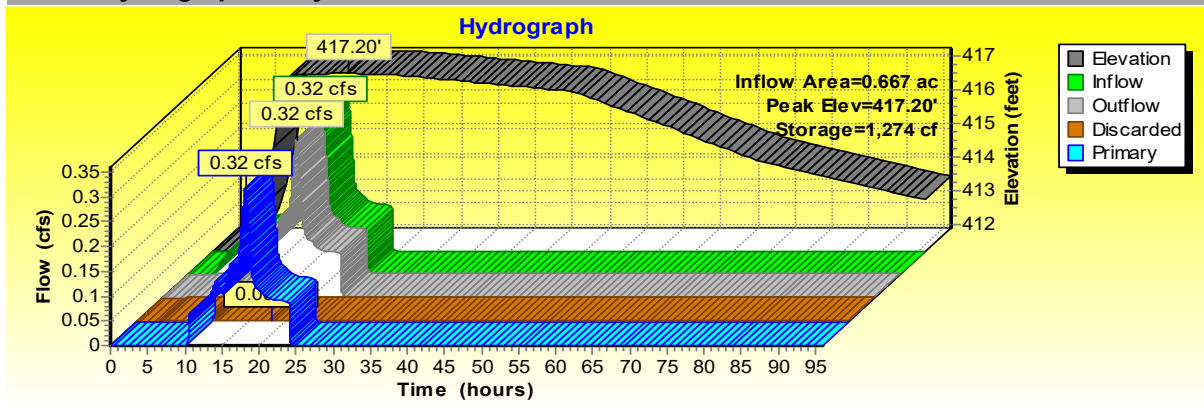
Discarded = flow out via infiltration

Primary = flow out via 24" square inlet grate. (occurs when water surface elevation exceeds 417.15)

Note: Infiltration of the surface storage occurs at hour 49.



SCM 6 Hydrograph - 10-year Event



Elevation = water surface elevation

Inflow = all inflow into the storm water control

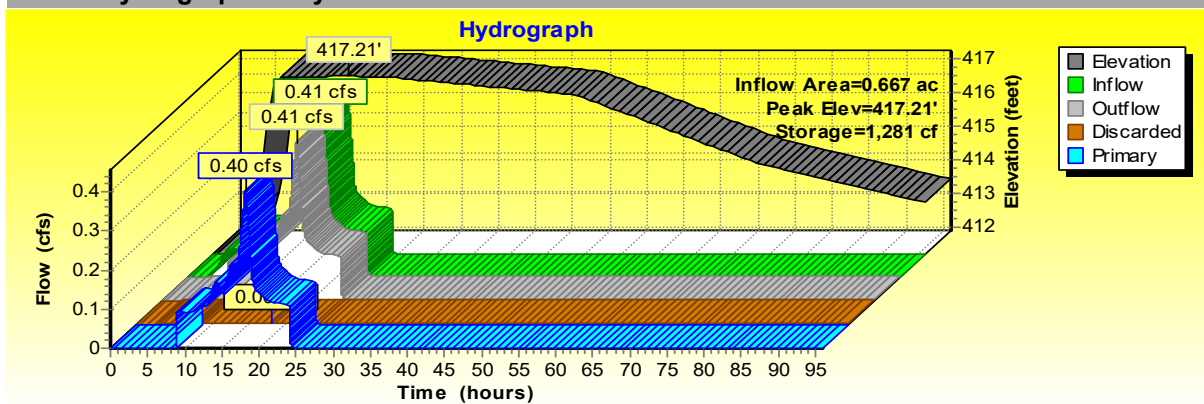
Outflow = sum of all outflow (discarded+primary+tertiary)

Discarded = flow out via infiltration

Primary = flow out via 24" square inlet grate. (occurs when water surface elevation exceeds 417.15)

Note: Infiltration of the surface storage occurs at hour 49.

SCM 6 Hydrograph - 25-year Event



Elevation = water surface elevation

Inflow = all inflow into the storm water control

Outflow = sum of all outflow (discarded+primary+tertiary)

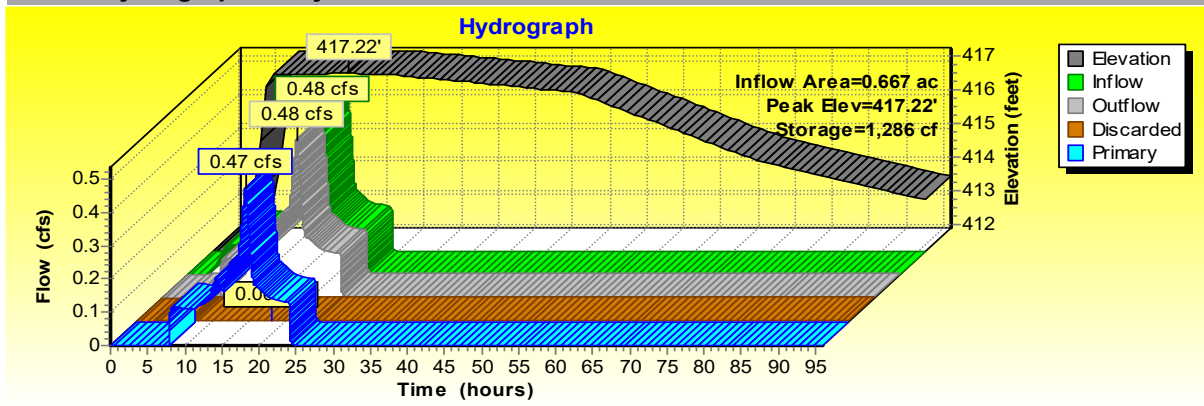
Discarded = flow out via infiltration

Primary = flow out via 24" square inlet grate. (occurs when water surface elevation exceeds 417.15)

Note: Infiltration of the surface storage occurs at hour 49.



SCM 6 Hydrograph - 50-year Event



Elevation = water surface elevation

Inflow = all inflow into the storm water control

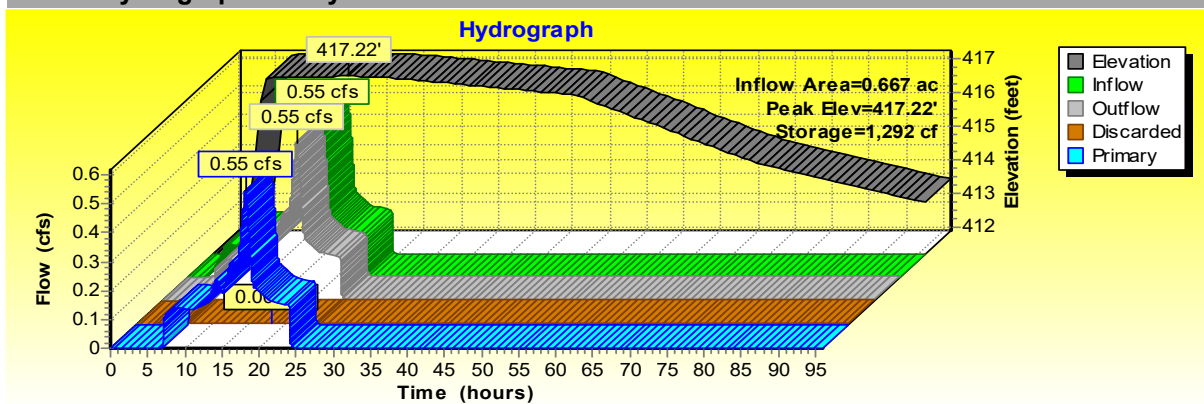
Outflow = sum of all outflow (discarded+primary+tertiary)

Discarded = flow out via infiltration

Primary = flow out via 24" square inlet grate. (occurs when water surface elevation exceeds 417.15)

Note: Infiltration of the surface storage occurs at hour 49.

SCM 6 Hydrograph - 100-year Event



Elevation = water surface elevation

Inflow = all inflow into the storm water control

Outflow = sum of all outflow (discarded+primary+tertiary)

Discarded = flow out via infiltration

Primary = flow out via 24" square inlet grate. (occurs when water surface elevation exceeds 417.15)

Note: Infiltration of the surface storage occurs at hour 49.



DMA 7 Summary

Summary for Subcatchment 28S: DMA 7

Runoff = 0.36 cfs @ 18.14 hrs, Volume= 0.212 af, Depth= 5.77"
Routed to Pond 19P : SCM7

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
SCWWD 1956 Storm 100 year Rainfall=6.95"

	Area (sf)	CN	Description
	10,380	84	1 acre lots, 20% imp, HSG D
*	5,300	98	Roof
*	2,191	98	PCC
*	1,300	98	AC
	19,171	90	Weighted Average
	8,304		43.32% Pervious Area
	10,867		56.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Post-Development Event Summary For DMA 7

Events for Subcatchment 28S: DMA 7

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 year	2.11	0.09	0.044	1.19
2 year	2.71	0.12	0.063	1.72
5 year	3.54	0.17	0.091	2.49
10 year	4.24	0.21	0.115	3.15
25 year	5.26	0.27	0.151	4.13
50 year	6.08	0.32	0.181	4.92
100 year	6.95	0.36	0.212	5.77

SCM 7 Summary

Summary for Pond 19P: SCM 7

Inflow Area = 0.440 ac, 56.68% Impervious, Inflow Depth = 5.77" for 100 year event
Inflow = 0.36 cfs @ 18.14 hrs, Volume= 0.212 af
Outflow = 0.36 cfs @ 18.15 hrs, Volume= 0.207 af, Atten= 0%, Lag= 0.7 min
Discarded = 0.00 cfs @ 18.15 hrs, Volume= 0.020 af
Primary = 0.36 cfs @ 18.15 hrs, Volume= 0.187 af
Routed to Pond 4P : SCM8

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Peak Elev= 425.35' @ 18.15 hrs Surf.Area= 704 sf Storage= 855 cf

Plug-Flow detention time= 232.8 min calculated for 0.207 af (98% of inflow)
Center-of-Mass det. time= 220.5 min (1,137.3 - 916.7)



MH engineering Co.

16075 Vineyard Blvd., Morgan Hill, CA 95037 - (408) 779-7381

Volume	Invert	Avail.Storage	Storage Description
#1	420.05'	1,234 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
420.05	350	0.0	0	0
420.06	350	40.0	1	1
422.80	350	40.0	384	385
422.81	350	25.0	1	386
424.79	350	25.0	173	559
424.80	350	100.0	3	563
425.30	668	100.0	255	817
425.80	999	100.0	417	1,234

Device	Routing	Invert	Outlet Devices
#1	Primary	425.30'	24.0" x 24.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Discarded	420.05'	0.250 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.00 cfs @ 18.15 hrs HW=425.35' (Free Discharge)
 ↑ **2=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.33 cfs @ 18.15 hrs HW=425.35' (Free Discharge)
 ↑ **1=Orifice/Grate** (Weir Controls 0.33 cfs @ 0.76 fps)

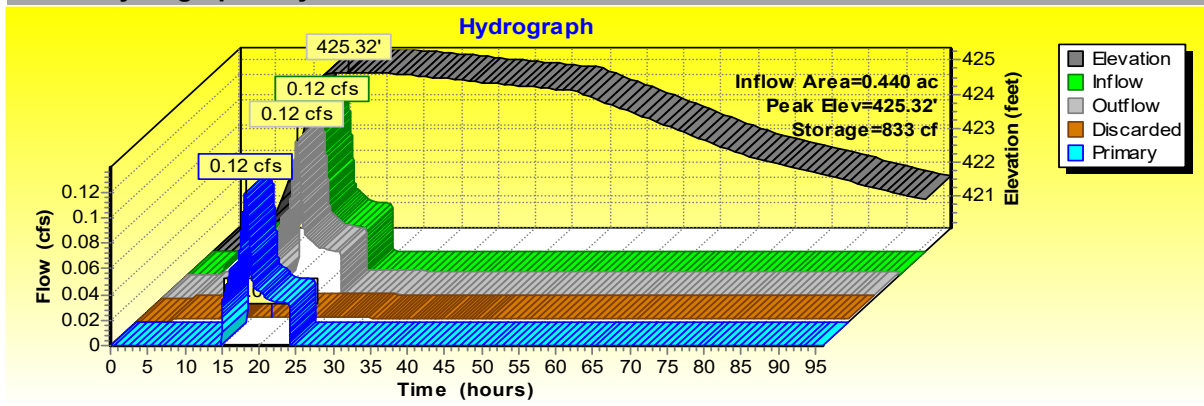
Post-Development Event Summary For SCM 7

Events for Pond 19P: SCM 7

Event	Inflow (cfs)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Storage (cubic-feet)
1 year	0.09	0.09	0.00	0.09	425.32	828
2 year	0.12	0.12	0.00	0.12	425.32	833
5 year	0.17	0.17	0.00	0.17	425.33	839
10 year	0.21	0.21	0.00	0.21	425.34	844
25 year	0.27	0.27	0.00	0.27	425.35	848
50 year	0.32	0.32	0.00	0.31	425.35	851
100 year	0.36	0.36	0.00	0.36	425.35	855



SCM 7 Hydrograph - 2-year Event



Elevation = water surface elevation

Inflow = all inflow into the storm water control

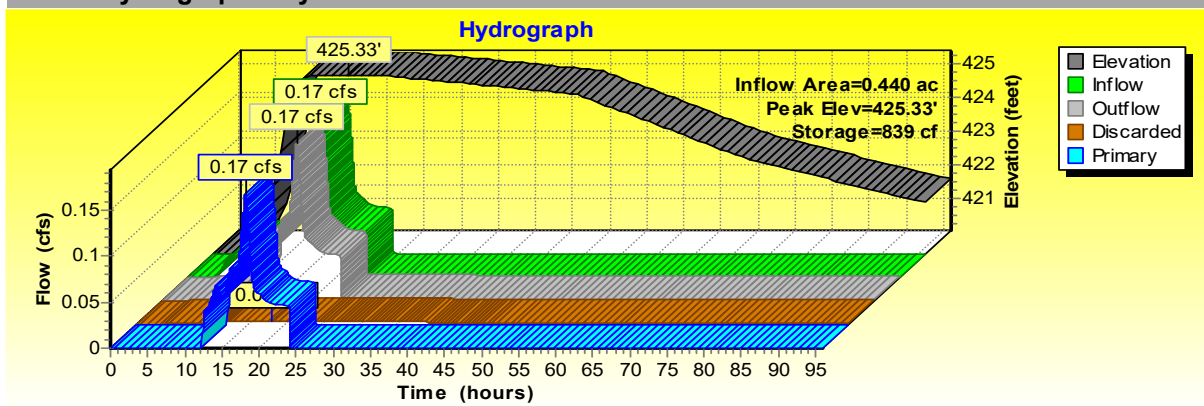
Outflow = sum of all outflow (discarded+primary+tertiary)

Discarded = flow out via infiltration

Primary = flow out via 24" square inlet grate. (occurs when water surface elevation exceeds 425.30)

Note: Infiltration of the surface storage occurs at hour 49.

SCM 7 Hydrograph - 5-year Event



Elevation = water surface elevation

Inflow = all inflow into the storm water control

Outflow = sum of all outflow (discarded+primary+tertiary)

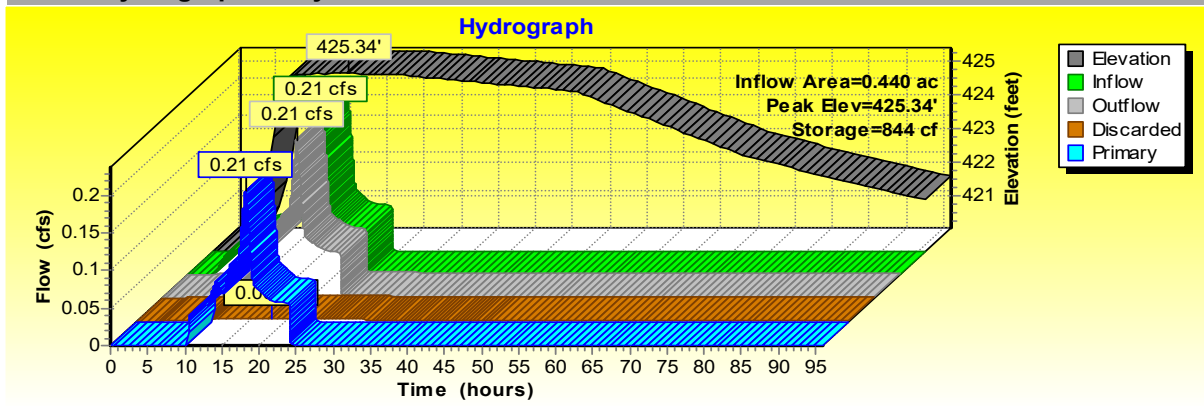
Discarded = flow out via infiltration

Primary = flow out via 24" square inlet grate. (occurs when water surface elevation exceeds 425.30)

Note: Infiltration of the surface storage occurs at hour 49.



SCM 7 Hydrograph - 10-year Event



Elevation = water surface elevation

Inflow = all inflow into the storm water control

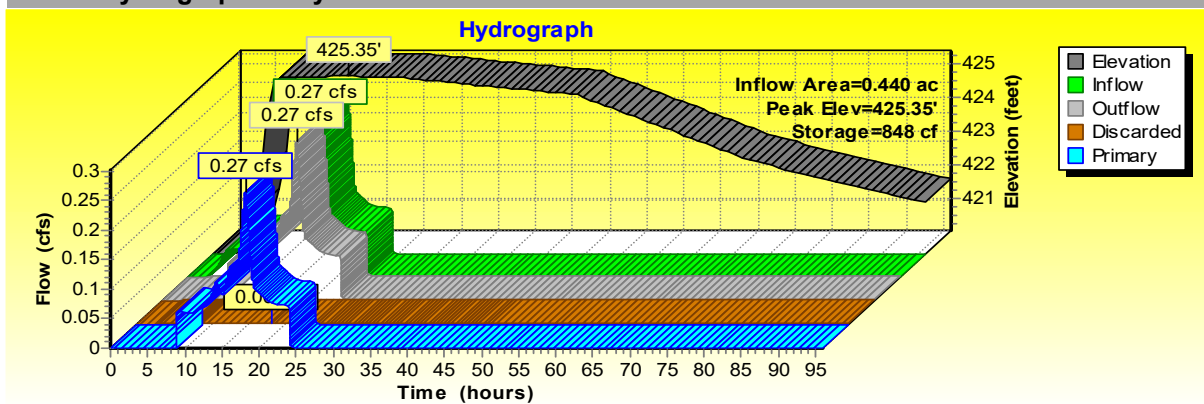
Outflow = sum of all outflow (discarded+primary+tertiary)

Discarded = flow out via infiltration

Primary = flow out via 24" square inlet grate. (occurs when water surface elevation exceeds 425.30)

Note: Infiltration of the surface storage occurs at hour 49.

SCM 7 Hydrograph - 25-year Event



Elevation = water surface elevation

Inflow = all inflow into the storm water control

Outflow = sum of all outflow (discarded+primary+tertiary)

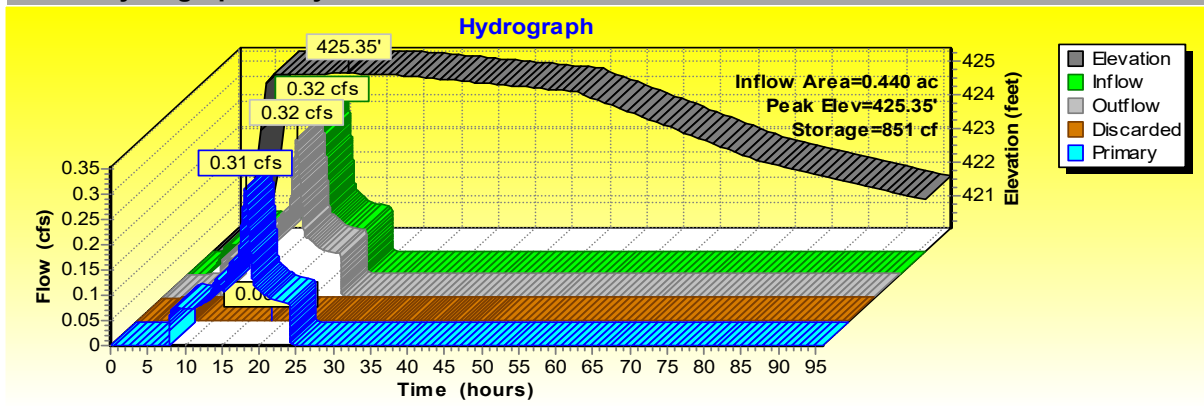
Discarded = flow out via infiltration

Primary = flow out via 24" square inlet grate. (occurs when water surface elevation exceeds 425.30)

Note: Infiltration of the surface storage occurs at hour 49.



SCM 7 Hydrograph - 50-year Event



Elevation = water surface elevation

Inflow = all inflow into the storm water control

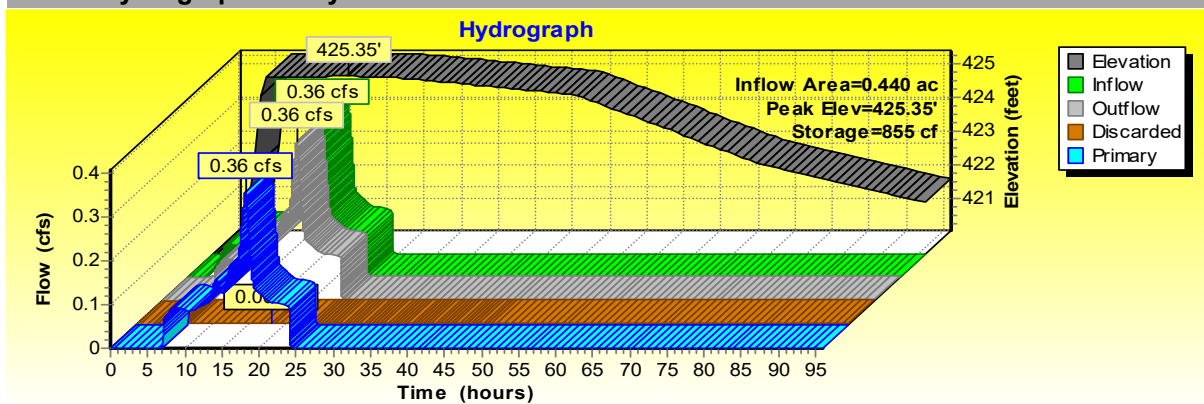
Outflow = sum of all outflow (discarded+primary+tertiary)

Discarded = flow out via infiltration

Primary = flow out via 24" square inlet grate. (occurs when water surface elevation exceeds 425.30)

Note: Infiltration of the surface storage occurs at hour 49.

SCM 7 Hydrograph - 100-year Event



Elevation = water surface elevation

Inflow = all inflow into the storm water control

Outflow = sum of all outflow (discarded+primary+tertiary)

Discarded = flow out via infiltration

Primary = flow out via 24" square inlet grate. (occurs when water surface elevation exceeds 425.30)

Note: Infiltration of the surface storage occurs at hour 49.



Run-On Summary

Summary for Subcatchment 3S: Run On

Runoff = 54.96 cfs @ 18.12 hrs, Volume= 33.768 af, Depth= 6.24"
 Routed to Pond 4P : SCM8

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 SCWWD 1956 Storm 100 year Rainfall=6.95"

Area (sf)	CN	Description
2,829,371	94	Fallow, bare soil, HSG D
2,829,371		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Post-Development Event Summary For Run-On

Events for Subcatchment 3S: Run On

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 year	2.11	15.24	8.117	1.50
2 year	2.71	20.26	11.207	2.07
5 year	3.54	27.14	15.560	2.87
10 year	4.24	32.89	19.268	3.56
25 year	5.26	41.23	24.707	4.56
50 year	6.08	47.90	29.098	5.38
100 year	6.95	54.96	33.768	6.24

DMA 8 Summary

Summary for Subcatchment 20S: DMA 8

Runoff = 5.52 cfs @ 18.12 hrs, Volume= 3.439 af, Depth= 6.36"
 Routed to Pond 4P : SCM8

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 SCWWD 1956 Storm 100 year Rainfall=6.95"

Area (sf)	CN	Description
* 236,931	94	Undisturbed Areas
* 9,862	98	PCC
* 35,999	98	AC
282,792	95	Weighted Average
236,931		83.78% Pervious Area
45,861		16.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,



Post-Development Event Summary For DMA 8

Events for Subcatchment 20S: DMA 8

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 year	2.11	1.57	0.859	1.59
2 year	2.71	2.06	1.172	2.17
5 year	3.54	2.75	1.611	2.98
10 year	4.24	3.32	1.984	3.67
25 year	5.26	4.15	2.530	4.68
50 year	6.08	4.81	2.971	5.49
100 year	6.95	5.52	3.439	6.36

SCM 8 Summary

Summary for Pond 4P: SCM 8

Inflow Area = 75.075 ac, 4.14% Impervious, Inflow Depth = 6.20" for 100 year event
 Inflow = 63.45 cfs @ 18.14 hrs, Volume= 38.766 af
 Outflow = 63.41 cfs @ 18.15 hrs, Volume= 38.767 af, Atten= 0%, Lag= 0.3 min
 Discarded = 0.06 cfs @ 18.15 hrs, Volume= 0.248 af
 Primary = 63.35 cfs @ 18.15 hrs, Volume= 38.518 af
 Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2
 Peak Elev= 382.73' @ 18.15 hrs Surf.Area= 3,967 sf Storage= 10,174 cf

Plug-Flow detention time= 10.1 min calculated for 38.762 af (100% of inflow)
 Center-of-Mass det. time= 10.3 min (901.4 - 891.1)

Volume	Invert	Avail.Storage	Storage Description	
#1	376.15'	16,251 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
376.15	2,487	0.0	0	0
376.16	2,487	40.0	10	10
378.90	2,487	40.0	2,726	2,736
378.91	2,487	25.0	6	2,742
380.89	2,487	25.0	1,231	3,973
380.90	2,786	100.0	26	3,999
381.40	3,094	100.0	1,470	5,469
381.90	3,413	100.0	1,627	7,096
382.40	3,741	100.0	1,789	8,885
382.90	4,079	100.0	1,955	10,840
383.40	4,427	100.0	2,127	12,966
383.90	4,785	100.0	2,303	15,269
384.10	5,033	100.0	982	16,251



Device	Routing	Invert	Outlet Devices
#0	Tertiary	384.10'	Automatic Storage Overflow (Discharged without head) 48.0" x 48.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads 0.700 in/hr Exfiltration over Surface area
#1	Primary	381.60'	
#2	Discarded	376.15'	

Discarded OutFlow Max=0.06 cfs @ 18.15 hrs HW=382.73' (Free Discharge)

↑**2=Exfiltration** (Exfiltration Controls 0.06 cfs)

Primary OutFlow Max=63.23 cfs @ 18.15 hrs HW=382.73' (Free Discharge)

↑**1=Orifice/Grate** (Weir Controls 63.23 cfs @ 3.48 fps)

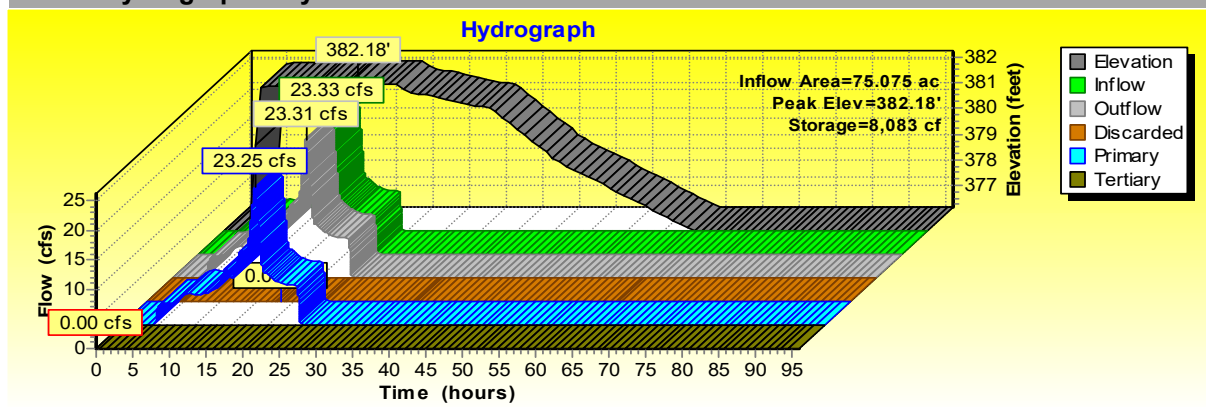
Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=376.15' (Free Discharge)

Post-Development Event Summary For SCM 8

Events for Pond 4P: SCM 8

Event	Inflow (cfs)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)	Tertiary (cfs)	Elevation (feet)	Storage (cubic-feet)
1 year	17.53	17.51	0.06	17.45	0.00	382.08	7,715
2 year	23.33	23.31	0.06	23.25	0.00	382.18	8,083
5 year	31.28	31.25	0.06	31.20	0.00	382.31	8,538
10 year	37.94	37.91	0.06	37.85	0.00	382.41	8,906
25 year	47.58	47.55	0.06	47.48	0.00	382.54	9,401
50 year	55.29	55.25	0.06	55.19	0.00	382.64	9,783
100 year	63.45	63.41	0.06	63.35	0.00	382.73	10,174

SCM 8 Hydrograph - 2-year Event



Elevation = water surface elevation

Inflow = all inflow into the storm water control

Outflow = sum of all outflow (discarded+primary+tertiary)

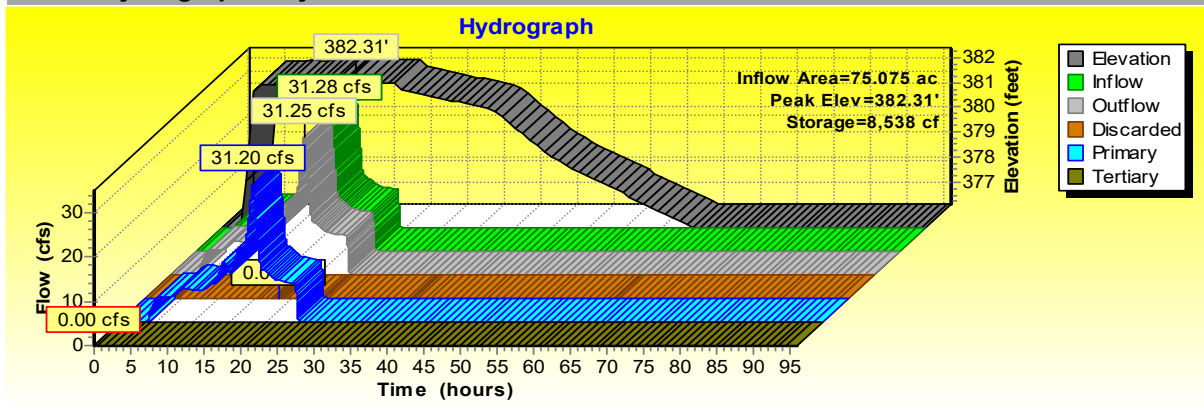
Discarded = flow out via infiltration

Primary = flow out via 48" square inlet grate. (occurs when water surface elevation exceeds 381.60)

Note: Full dewatering of the pond occurs by hour 65



SCM 8 Hydrograph - 5-year Event



Elevation = water surface elevation

Inflow = all inflow into the storm water control

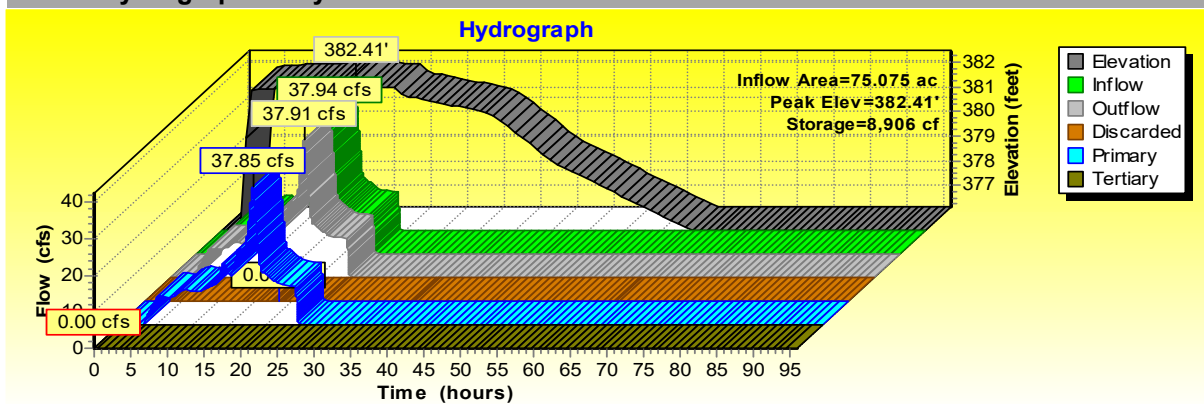
Outflow = sum of all outflow (discarded+primary+tertiary)

Discarded = flow out via infiltration

Primary = flow out via 48" square inlet grate. (occurs when water surface elevation exceeds 381.60)

Note: Full dewatering of the pond occurs by hour 65

SCM 8 Hydrograph - 10-year Event



Elevation = water surface elevation

Inflow = all inflow into the storm water control

Outflow = sum of all outflow (discarded+primary+tertiary)

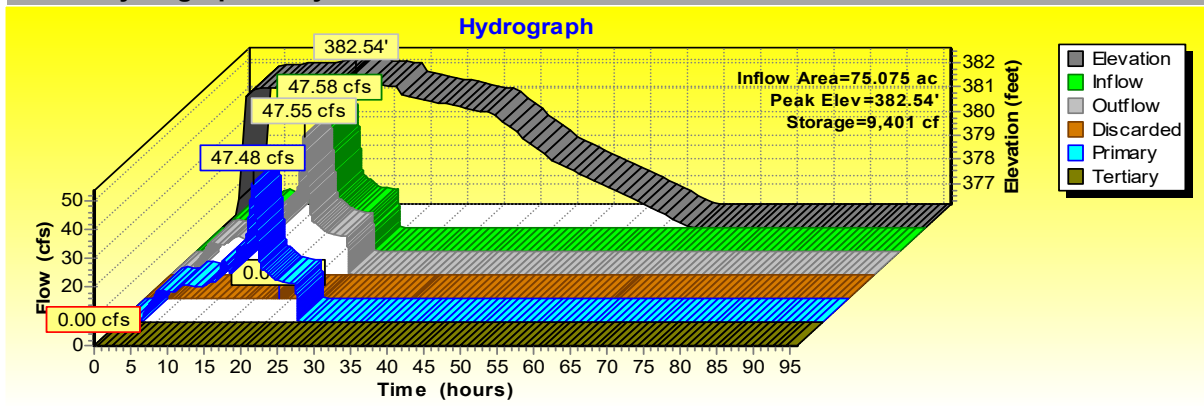
Discarded = flow out via infiltration

Primary = flow out via 48" square inlet grate. (occurs when water surface elevation exceeds 381.60)

Note: Full dewatering of the pond occurs by hour 65



SCM 8 Hydrograph - 25-year Event



Elevation = water surface elevation

Inflow = all inflow into the storm water control

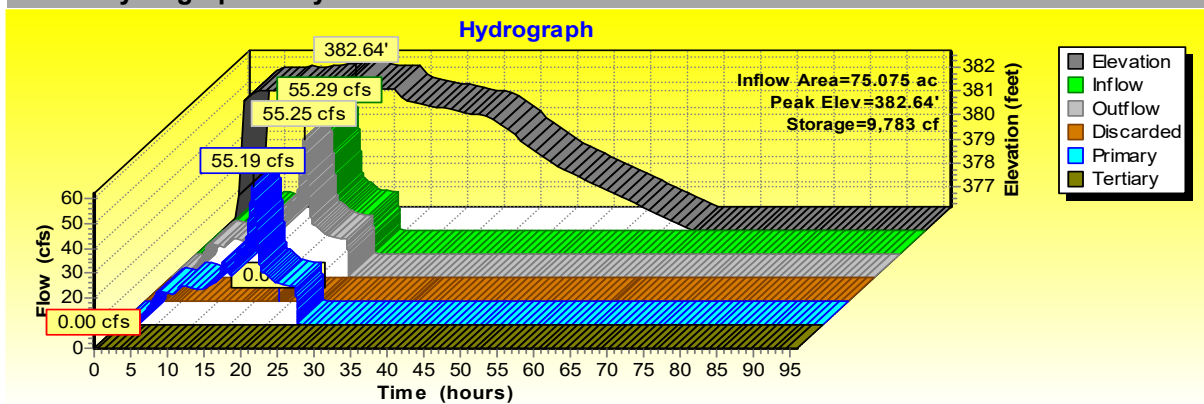
Outflow = sum of all outflow (discarded+primary+tertiary)

Discarded = flow out via infiltration

Primary = flow out via 48" square inlet grate. (occurs when water surface elevation exceeds 381.60)

Note: Full dewatering of the pond occurs by hour 65

SCM 8 Hydrograph - 50-year Event



Elevation = water surface elevation

Inflow = all inflow into the storm water control

Outflow = sum of all outflow (discarded+primary+tertiary)

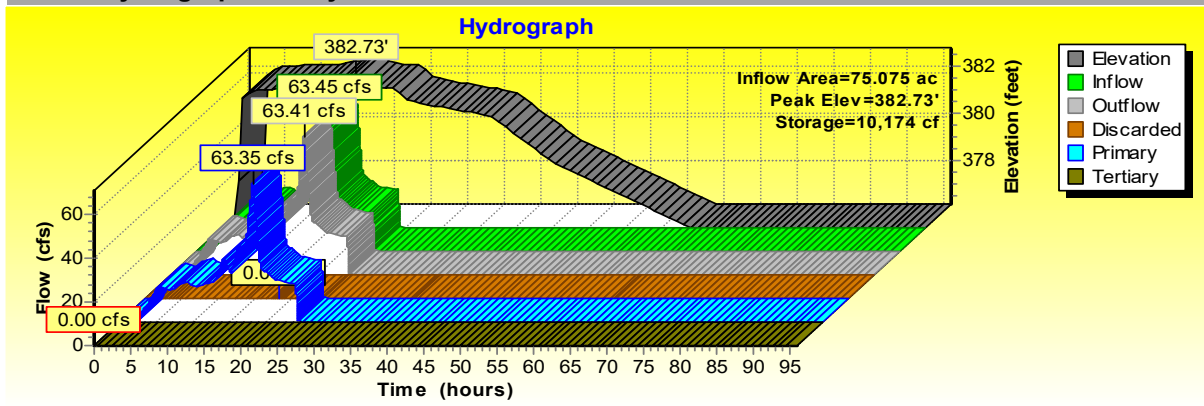
Discarded = flow out via infiltration

Primary = flow out via 48" square inlet grate. (occurs when water surface elevation exceeds 381.60)

Note: Full dewatering of the pond occurs by hour 65



SCM 8 Hydrograph - 100-year Event



Elevation = water surface elevation

Inflow = all inflow into the storm water control

Outflow = sum of all outflow (discarded+primary+tertiary)

Discarded = flow out via infiltration

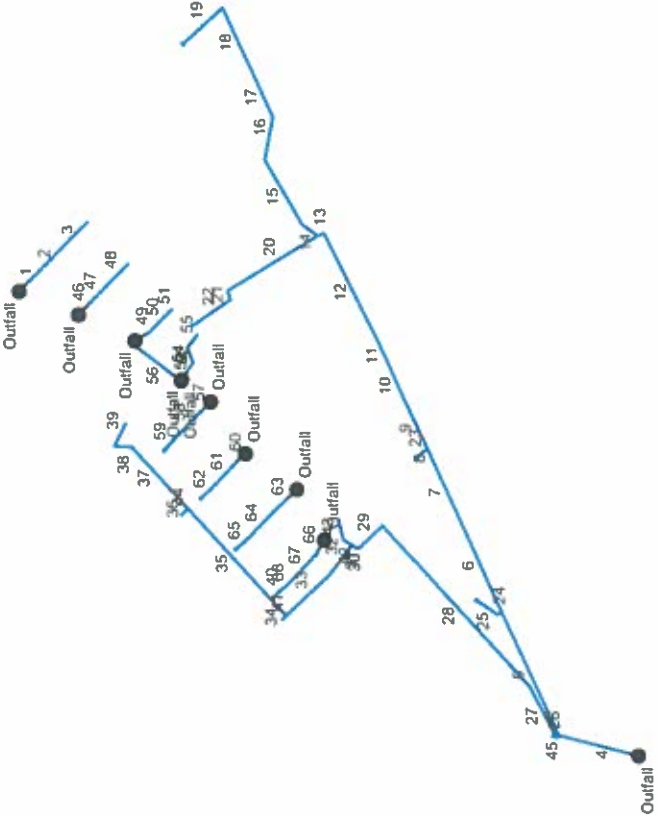
Primary = flow out via 48" square inlet grate. (occurs when water surface elevation exceeds 381.60)

Note: Full dewatering of the pond occurs by hour 65

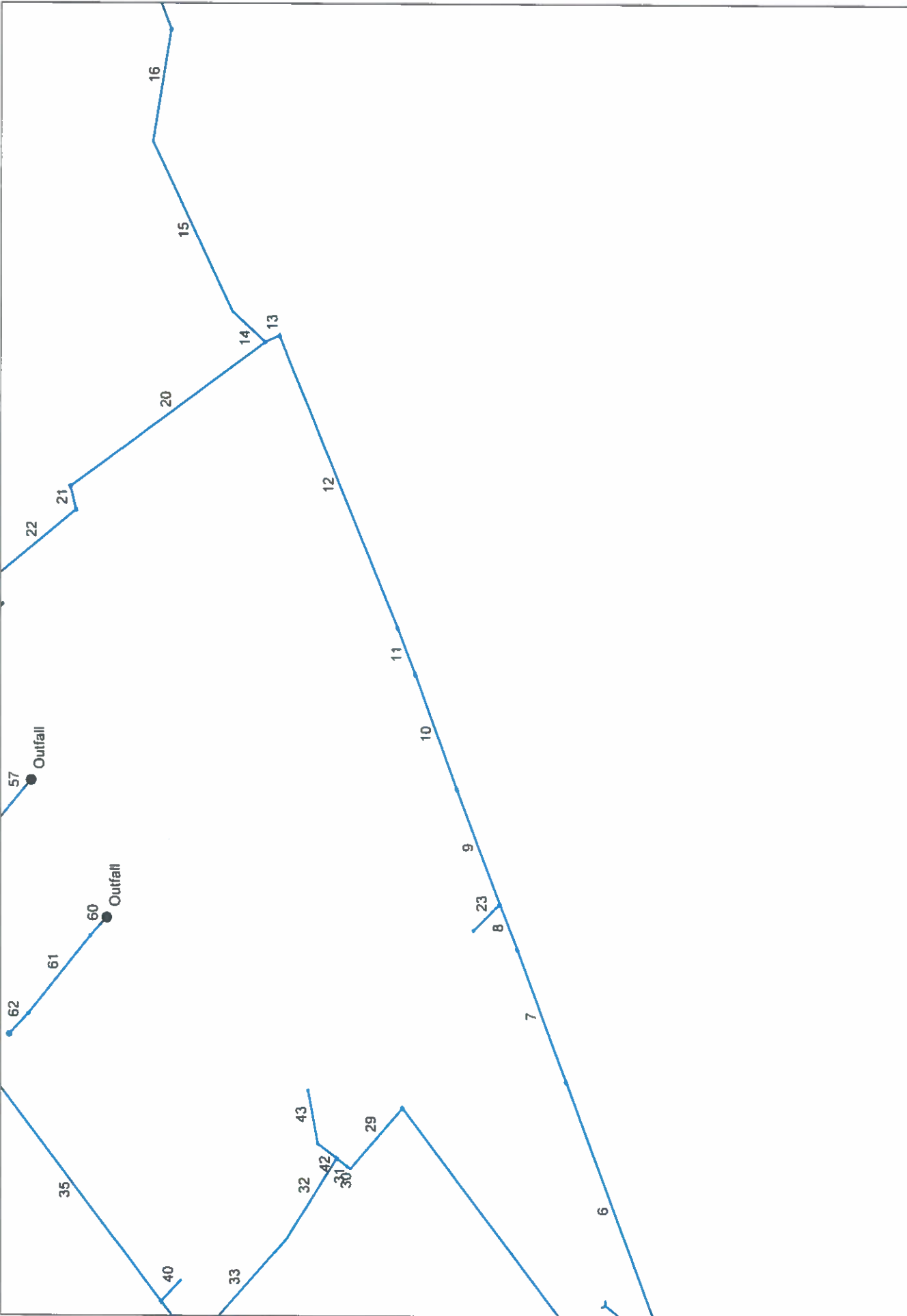


Project: Viji Mana
Project No.: 23117.5
Date: 7/24/2023

Attachment F: Pipe Sizing Calculations

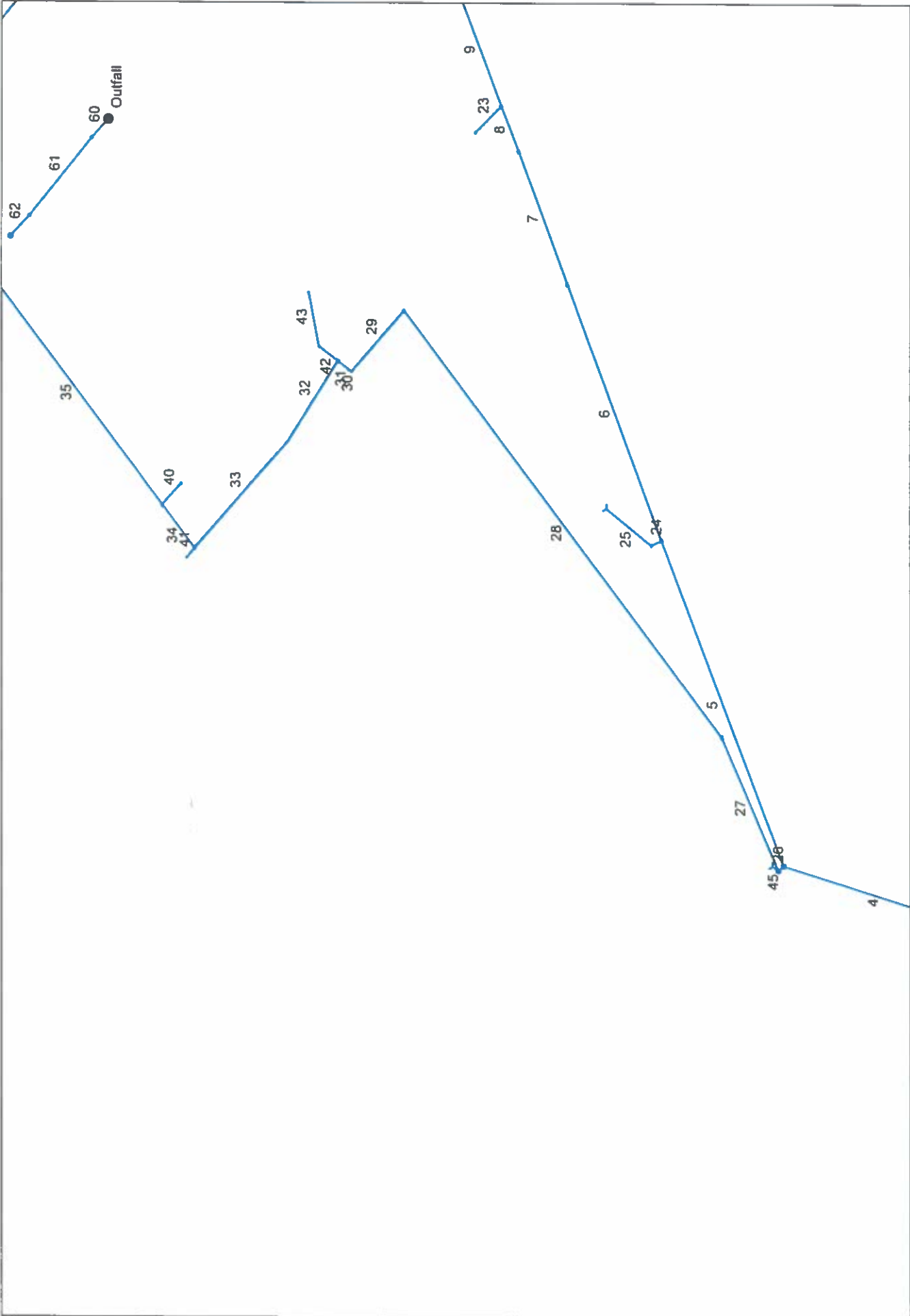


Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan



Project File: 23117.5 Storm Calcs New.stm		Number of lines: 62	Date: 11/15/2022
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Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan



Project File: 23117.5 Storm Calcs New.stm	Number of lines: 62	Date: 11/15/2022
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Storm Sewer Summary Report

Page 1

Line No.	Line ID	Flow rate (cfs)	Line Size (in)	Line shape	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line Slope (%)	HGL Down (ft)	HGL Up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns Line No.	Junction Type
62		0.12	8	Cir	28,000	393.20	393.48	1.000	393.33	393.64	n/a	393.64	61	Curb-
61	Pipe - (49)	0.35	8	Cir	97,310	389.91	391.96	2.107	390.23	392.23	n/a	392.23 j	60	DropGrate
60	Pipe - (50)	0.35	8	Cir	24,806	388.09	389.91	7.337	390.18	390.18	0.05	390.23	End	DropGrate
59		0.18	8	Cir	28,000	399.43	399.71	1.000	399.60	399.90	n/a	399.90	58	Curb-
58	Pipe - (47)	0.38	8	Cir	98,000	396.46	398.05	1.622	396.81	398.34	n/a	398.34 j	57	DropGrate
57	Pipe - (48)	0.38	8	Cir	34,254	395.43	396.46	3.007	396.75	396.77	0.04	396.81	End	DropGrate
56	Pipe - (42)	32.99	24	Cir	142,764	397.86	404.99	4.994	399.04	406.89	n/a	406.89	End	OpenHeadwall
55	Pipe - (43)	0.06	15	Cir	36,711	401.14	401.62	1.307	401.36	401.72	n/a	401.72 j	54	DropCurb
54	Pipe - (44)	0.32	15	Cir	30,000	400.02	401.14	3.733	400.21	401.36	0.10	401.36	53	DropCurb
53	Pipe - (45)	0.32	24	Cir	8,550	399.61	400.02	4.795	399.87	400.21	n/a	400.21 j	52	DropCurb
52	Pipe - (46)	0.57	24	Cir	48,595	398.78	399.61	1.708	399.87	399.87	n/a	399.87 j	End	DropCurb
51	Pipe - (39)	0.29	8	Cir	27,461	406.56	406.83	0.983	406.91	407.08	n/a	407.08 j	50	DropCurb
50	Pipe - (40)	0.29	8	Cir	48,302	406.08	406.56	0.994	406.87	406.89	0.02	406.91	49	DropGrate
49	Pipe - (41)	0.29	8	Cir	41,816	405.66	406.08	1.004	406.84*	406.86*	0.01	406.87	End	DropGrate
48	Pipe - (36)	0.46	8	Cir	89,967	414.06	415.89	2.034	414.38	416.21	n/a	416.21	47	DropCurb
47	Pipe - (37)	0.46	8	Cir	48,431	413.57	414.06	1.012	413.96	414.38	n/a	414.38 j	46	DropGrate
46	Pipe - (38)	0.46	8	Cir	30,683	411.58	413.57	6.486	413.89	413.90	0.05	413.96	End	DropGrate
45		1.99	30	Cir	8,062	363.02	366.50	43.164	369.36*	369.36*	0.00	369.36	26	OpenHeadwall
44		0.41	15	Cir	22,443	397.51	398.54	4.589	397.65	398.79	0.09	398.79	35	Curb-
43	Pipe - (58)	36.82	30	Cir	48,822	374.18	374.67	1.004	381.41*	381.80*	0.87	382.68	42	DropGrate
42	Pipe - (59)	37.34	30	Cir	25,062	373.94	374.18	0.958	380.19*	380.40*	1.01	381.41	31	DropCurb
41	Pipe - (57)	0.53	15	Cir	12,695	379.36	380.00	5.041	380.21	380.28	n/a	380.28 j	33	DropGrate
40	Pipe - (56)	0.01	15	Cir	28,000	379.68	380.00	1.143	380.17	380.04	n/a	380.04	34	DropCurb

Project File: 23117.5 Storm Calcs New.slm

Number of lines: 62

Run Date: 11/15/2022

NOTES: Return period = 10 Yrs. ; *Surcharged (HGL above crown). ; j - Line contains hyd. jump.

Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line Size (in)	Line shape	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line Slope (%)	HGL Down (ft)	HGL Up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns Line No.	Junction Type
39	Pipe - (21)	0.49	18	Cir	57.000	410.56	411.07	0.895	410.86	411.33	n/a	411.33 j	38	DropGrate
38	Pipe - (22)	0.67	18	Cir	40.124	409.29	410.56	3.165	409.48	410.86	0.16	410.86	37	DropGrate
37	Pipe - (23)(2)	0.66	24	Cir	138.000	397.18	400.36	2.304	397.49	400.64	n/a	400.64 j	36	Manhole
36	Pipe - (23)	0.59	24	Cir	60.000	397.00	397.18	0.300	397.30	397.48	0.01	397.49	35	Manhole
35	Pipe - (24)	0.86	24	Cir	292.000	379.88	388.44	2.932	380.17	388.76	n/a	388.76	34	Manhole
34	Pipe - (25)	0.72	24	Cir	52.432	379.36	379.88	0.992	380.21	380.17	n/a	380.17	33	Manhole
33	Pipe - (26)	1.08	24	Cir	140.838	377.47	379.36	1.342	380.19	380.20	0.01	380.21	32	Manhole
32	Pipe - (27)	1.05	24	Cir	89.869	376.57	377.47	1.001	380.19*	380.19*	0.00	380.19	31	None
31	Pipe - (28)	37.55	30	Cir	13.488	376.43	376.57	1.038	379.17*	379.28*	0.91	380.19	30	Manhole
30	Pipe - (29)	37.56	30	Cir	4.018	376.40	376.43	0.747	378.62	378.65	0.52	379.17	29	DropCurb
29	Pipe - (30)	37.56	30	Cir	79.746	375.60	376.40	1.003	377.67	378.47	1.12	378.47	28	Manhole
28	Pipe - (31)	37.56	30	Cir	517.000	365.68	375.60	1.919	370.60	377.67	n/a	377.67 j	27	Manhole
27		37.55	30	Cir	134.000	363.00	365.68	2.000	369.36*	370.32*	0.28	370.60	26	Manhole
26		40.04	36	Cir	7.064	362.91	363.02	1.557	368.84*	368.86*	0.50	369.36	4	Manhole
25	Pipe - (60)	38.42	18	Cir	60.097	369.93	370.53	0.998	387.24*	395.29*	7.35	402.64	24	OpenHeadwall
24	Pipe - (61)	38.42	18	Cir	12.240	369.81	369.93	0.980	376.12*	377.76*	9.48	387.24	5	DropCurb
23	Pipe - (20)	1.38	18	Cir	37.714	380.03	380.42	1.034	380.39	380.86	0.16	380.86	8	DropCurb
22	Pipe - (17)	0.01	18	Cir	109.943	397.97	399.89	1.746	399.47	399.92	n/a	399.93 j	21	DropCurb
21	Pipe - (18)	0.00	18	Cir	21.646	397.75	397.97	1.016	397.99	399.47	0.00	399.47	20	DropCurb
20	Pipe - (19)	0.42	18	Cir	251.000	395.30	397.75	0.976	395.51	397.99	0.12	397.99	13	DropCurb
19	Pipe - (16)	9.75	18	Cir	126.888	418.73	420.00	1.001	419.87	421.20	0.64	421.20	18	OpenHeadwall
18	Pipe - (1)	9.69	18	Cir	166.146	410.50	418.21	4.640	411.70	419.41	0.64	419.41	17	Manhole
17	Pipe - (2)	9.61	18	Cir	118.321	405.42	410.50	4.293	406.12	411.70	n/a	411.70	16	Manhole
Project File: 23117.5 Storm Calcs New.stm										Number of lines: 62			Run Date: 11/15/2022	

NOTES: Return period = 10 Yrs. ; *Surcharged (HGL above crown). ; j - Line contains hyd. jump.

Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line Size (in)	Line shape	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line Slope (%)	HGL Down (ft)	HGL Up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns Line No.	Junction Type
16	Pipe - (3)	9.56	18	Cir	102.596	396.22	404.42	7.993	399.52	405.61	n/a	405.61 j	15	Manhole
15	Pipe - (4)	11.87	18	Cir	175.129	394.47	396.22	0.999	396.54*	398.78*	0.74	399.52	14	DropCurb
14	Pipe - (5)	11.79	18	Cir	45.823	394.01	394.47	1.004	395.51*	396.09*	0.46	396.54	13	DropCurb
13	Pipe - (6)	2.97	18	Cir	16.228	393.84	394.01	1.048	395.22	394.66	0.40	394.66	12	DropCurb
12	Pipe - (7)	14.74	24	Cir	291.693	385.53	393.84	2.849	387.38	395.22	n/a	395.22 j	11	Manhole
11	Pipe - (8)	14.74	18	Cir	46.157	384.81	385.53	1.560	386.31*	387.22*	0.16	387.38	10	Manhole
10	Pipe - (9)	14.75	24	Cir	112.134	379.81	384.81	4.459	380.57	386.19	n/a	386.19	9	Manhole
9	Pipe - (10)	14.75	24	Cir	112.903	374.94	376.37	1.267	377.19	377.75	n/a	377.75 j	8	Manhole
8	Pipe - (11)	15.03	24	Cir	44.346	374.44	374.94	1.128	376.65	376.81	0.38	377.19	7	Manhole
7	Pipe - (12)	15.12	30	Cir	130.269	372.86	374.44	1.213	376.48	376.62	0.03	376.65	6	Manhole
6	Pipe - (13)	15.12	30	Cir	250.463	369.81	372.86	1.218	376.12*	376.46*	0.02	376.48	5	Manhole
5	Pipe - (14)	53.45	30	Cir	319.794	362.91	369.81	2.158	368.84*	374.27*	1.84	376.12	4	Manhole
4	Pipe - (15)	90.59	36	Cir	197.815	359.76	362.91	1.592	363.12*	366.77*	2.07	368.84	End	Manhole
3	Pipe - (33)	0.29	8	Cir	109.825	422.79	423.88	0.992	423.03	424.13	0.09	424.13	2	DropCurb
2	Pipe - (34)	0.28	8	Cir	49.190	422.29	422.79	1.016	422.54	423.03	n/a	423.03	1	DropGrate
1	Pipe - (35)	0.28	8	Cir	72.463	420.36	422.29	2.663	420.61	422.54	n/a	422.54 j	End	DropGrate

Project File: 23117 5 Storm Calcs New.stm

Number of lines: 62

Run Date: 11/15/2022

NOTES: Return period = 10 Yrs. ; *Surcharged (HGL above crown). ; j - Line contains hyd. jump.

Line No.	Line ID	Line Length (ft)	Line Size (in)	Line Type	Invert Dn (ft)	Invert Up (ft)	Line Slope (%)	Capac Full (cfs)	Flow Rate (cfs)	HGL Dn (ft)	HGL Up (ft)	Gnd/Rim El Up (ft)	Total Area (ac)
62		28.000	8	Cir	393.20	393.48	1.00	1.31	0.12	393.33	393.64	395.34	0.09
61	Pipe - (49)	97.310	8	Cir	389.91	391.96	2.11	1.90	0.35	390.23	392.23 j	393.50	0.43
60	Pipe - (50)	24.806	8	Cir	388.09	389.91	7.34	3.54	0.35	390.18	390.18	393.50	0.44
59		28.000	8	Cir	399.43	399.71	1.00	1.31	0.18	399.60	399.90	402.01	0.14
58	Pipe - (47)	98.000	8	Cir	396.46	398.05	1.62	1.67	0.38	396.81	398.34 j	399.50	0.43
57	Pipe - (48)	34.254	8	Cir	395.43	396.46	3.01	2.27	0.38	396.75	396.77	399.50	0.44
56	Pipe - (42)	142.764	24	Cir	397.86	404.99	4.99	50.55	32.99	399.04	406.89	407.42	66.59
55	Pipe - (43)	36.711	15	Cir	401.14	401.62	1.31	7.38	0.06	401.36	401.72 j	406.10	0.05
54	Pipe - (44)	30.000	15	Cir	400.02	401.14	3.73	12.48	0.32	400.21	401.36	405.97	0.30
53	Pipe - (45)	8.550	24	Cir	399.61	400.02	4.80	49.53	0.32	399.87	400.21 j	404.50	0.31
52	Pipe - (46)	48.595	24	Cir	398.78	399.61	1.71	29.56	0.57	399.87	399.87 j	404.11	0.56
51	Pipe - (39)	27.461	8	Cir	406.56	406.83	0.98	1.30	0.29	406.91	407.08 j	410.52	0.40
50	Pipe - (40)	48.302	8	Cir	406.08	406.56	0.99	1.30	0.29	406.87	406.89	410.50	0.41
49	Pipe - (41)	41.816	8	Cir	405.66	406.08	1.00	1.31	0.29	406.84	406.86	410.50	0.42
48	Pipe - (36)	89.967	8	Cir	414.06	415.89	2.03	1.87	0.46	414.38	416.21	419.58	0.65
47	Pipe - (37)	48.431	8	Cir	413.57	414.06	1.01	1.32	0.46	413.96	414.38 j	417.50	0.66
46	Pipe - (38)	30.683	8	Cir	411.58	413.57	6.49	3.33	0.46	413.89	413.90	417.50	0.67
45		8.062	30	Cir	363.02	366.50	43.16	291.90	1.99	369.36	369.36	366.62	3.10
44		22.443	15	Cir	397.51	398.54	4.59	14.99	0.41	397.65	398.79	404.02	0.64
43	Pipe - (58)	48.822	30	Cir	374.18	374.67	1.00	41.09	36.82	381.41	381.80	384.00	2.02
42	Pipe - (59)	25.062	30	Cir	373.94	374.18	0.96	40.13	37.34	380.19	380.40	383.50	2.43
41	Pipe - (57)	12.695	15	Cir	379.36	380.00	5.04	14.50	0.53	380.21	380.28 j	384.73	0.99

Project File: 23117.5 Storm Calcs New.stm

Number of lines: 62

Date: 11/15/2022

NOTES: ** Critical depth

Line No.	Line ID	Line Length (ft)	Line Size (in)	Line Type	Invert Dn (ft)	Invert Up (ft)	Line Slope (%)	Capac Full (cfs)	Flow Rate (cfs)	HGL Dn (ft)	HGL Up (ft)	Gnd/Rim El Up (ft)	Total Area (ac)	
40	Pipe - (56)	28.000	15	Cir	379.68	380.00	1.14	6.90	0.01	380.17	380.04	384.38	0.01	
39	Pipe - (21)	57.000	18	Cir	410.56	411.07	0.89	9.93	0.49	410.86	411.33 j	415.78	0.80	
38	Pipe - (22)	40.124	18	Cir	409.29	410.56	3.17	18.68	0.67	409.48	410.86	416.00	1.17	
37	Pipe - (23)(2)	138.000	24	Cir	397.18	400.36	2.30	34.33	0.66	397.49	400.64 j	413.58	1.18	
36	Pipe - (23)	60.000	24	Cir	397.00	397.18	0.30	12.39	0.59	397.30	397.48	407.03	1.19	
35	Pipe - (24)	292.000	24	Cir	379.88	388.44	2.93	38.73	0.86	380.17	388.76	396.33	1.84	
34	Pipe - (25)	52.432	24	Cir	379.36	379.88	0.99	22.52	0.72	380.21	380.17	385.83	1.86	
33	Pipe - (26)	140.838	24	Cir	377.47	379.36	1.34	26.20	1.08	380.19	380.20	385.03	2.86	
32	Pipe - (27)	89.869	24	Cir	376.57	377.47	1.00	22.63	1.05	380.19	380.19	379.90	2.87	
31	Pipe - (28)	13.488	30	Cir	376.43	376.57	1.04	41.79	37.55	379.17	379.28	383.44	5.31	
30	Pipe - (29)	4.018	30	Cir	376.40	376.43	0.75	35.43	37.56	378.62	378.65	383.47	5.32	
29	Pipe - (30)	79.746	30	Cir	375.60	376.40	1.00	41.08	37.56	377.67	378.47	383.06	5.33	
28	Pipe - (31)	517.000	30	Cir	365.68	375.60	1.92	56.81	37.56	370.60	377.67 j	383.40	5.34	
27		134.000	30	Cir	363.00	365.68	2.00	62.83	37.55	369.36	370.32	366.62	5.35	
26		7.064	36	Cir	362.91	363.02	1.56	90.15	40.04	368.84	368.86	366.54	12.45	
25	Pipe - (60)	60.097	18	Cir	369.93	370.53	1.00	10.49	38.42	387.24	395.29	375.81	0.25	
24	Pipe - (61)	12.240	18	Cir	369.81	369.93	0.98	10.40	38.42	376.12	377.76	372.19	0.26	
23	Pipe - (20)	37.714	18	Cir	380.03	380.42	1.03	10.68	1.38	380.39	380.86	385.13	2.00	
22	Pipe - (17)	109.943	18	Cir	397.97	399.89	1.75	13.88	0.01	399.47	399.92 j	404.60	0.01	
21	Pipe - (18)	21.646	18	Cir	397.75	397.97	1.02	10.59	0.00	397.99	399.47	403.27	0.02	
20	Pipe - (19)	251.000	18	Cir	395.30	397.75	0.98	10.37	0.42	395.51	397.99	404.04	2.97	
19	Pipe - (16)	126.888	18	Cir	418.73	420.00	1.00	10.51	9.75	419.87	421.20	422.21	15.81	

Project File: 23117.5 Storm Calcs New slm

Number of lines: 62

Date: 11/15/2022

NOTES: ** Critical depth

Line No.	Line ID	Line Length (ft)	Line Size (in)	Line Type	Invert Dn (ft)	Invert Up (ft)	Line Slope (%)	Capac Full (cfs)	Flow Rate (cfs)	HGL Dn (ft)	HGL Up (ft)	Gnd/Rim El Up (ft)	Total Area (ac)	
18	Pipe - (1)	166.146	18	Cir	410.50	418.21	4.64	22.62	9.69	411.70	419.41	422.92	15.82	
17	Pipe - (2)	118.321	18	Cir	405.42	410.50	4.29	21.76	9.61	406.12	411.70	415.53	15.83	
16	Pipe - (3)	102.596	18	Cir	396.22	404.42	7.99	29.69	9.56	399.52	405.61 j	410.14	15.84	
15	Pipe - (4)	175.129	18	Cir	394.47	396.22	1.00	10.50	11.87	396.54	398.78	408.89	19.84	
14	Pipe - (5)	45.823	18	Cir	394.01	394.47	1.00	10.52	11.79	395.51	396.09	403.45	19.85	
13	Pipe - (6)	16.228	18	Cir	393.84	394.01	1.05	10.75	2.97	395.22	394.66	401.47	22.83	
12	Pipe - (7)	291.693	24	Cir	385.53	393.84	2.85	38.18	14.74	387.38	395.22 j	400.73	22.84	
11	Pipe - (8)	46.157	18	Cir	384.81	385.53	1.56	13.12	14.74	386.31	387.22	390.85	22.85	
10	Pipe - (9)	112.134	24	Cir	379.81	384.81	4.46	47.76	14.75	380.57	386.19	389.52	22.86	
9	Pipe - (10)	112.903	24	Cir	374.94	376.37	1.27	25.45	14.75	377.19	377.75 j	387.02	22.87	
8	Pipe - (11)	44.346	24	Cir	374.44	374.94	1.13	24.02	15.03	376.65	376.81	384.85	24.88	
7	Pipe - (12)	130.269	30	Cir	372.86	374.44	1.21	45.17	15.12	376.48	376.62	384.24	25.55	
6	Pipe - (13)	250.463	30	Cir	369.81	372.86	1.22	45.26	15.12	376.12	376.46	380.85	25.56	
5	Pipe - (14)	319.794	30	Cir	362.91	369.81	2.16	60.24	53.45	368.84	374.27	373.44	25.83	
4	Pipe - (15)	197.815	36	Cir	359.76	362.91	1.59	84.16	90.59	363.12	366.77	366.54	38.29	
3	Pipe - (33)	109.825	8	Cir	422.79	423.88	0.99	1.30	0.29	423.03	424.13	427.57	0.40	
2	Pipe - (34)	49.190	8	Cir	422.29	422.79	1.02	1.32	0.28	422.54	423.03	426.00	0.41	
1	Pipe - (35)	72.463	8	Cir	420.36	422.29	2.66	2.14	0.28	420.61	422.54 j	426.01	0.42	

Project File: 23117.5 Storm Calcs New.stm

Number of lines: 62

Date: 11/15/2022

NOTES: ** Critical depth

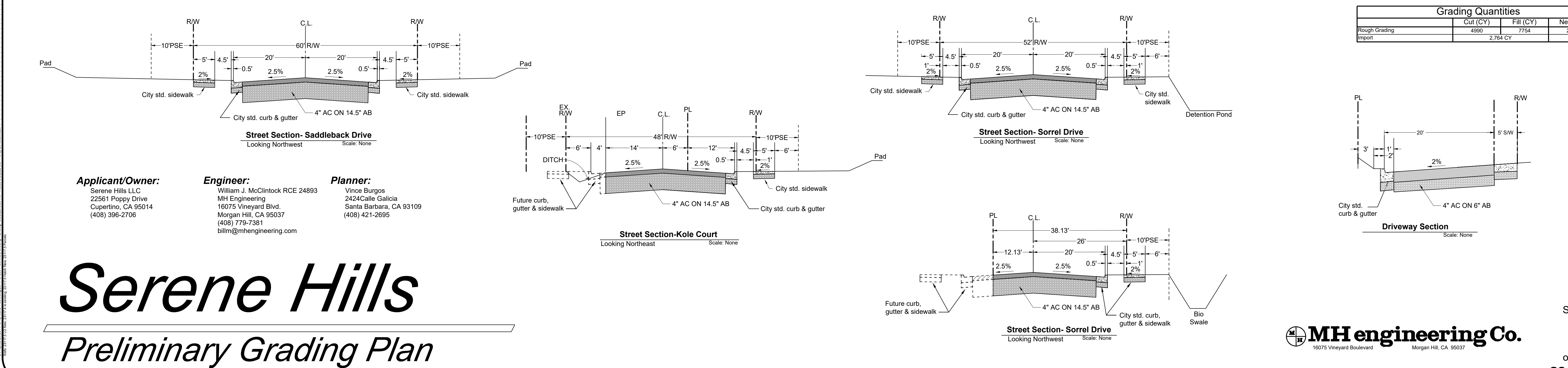
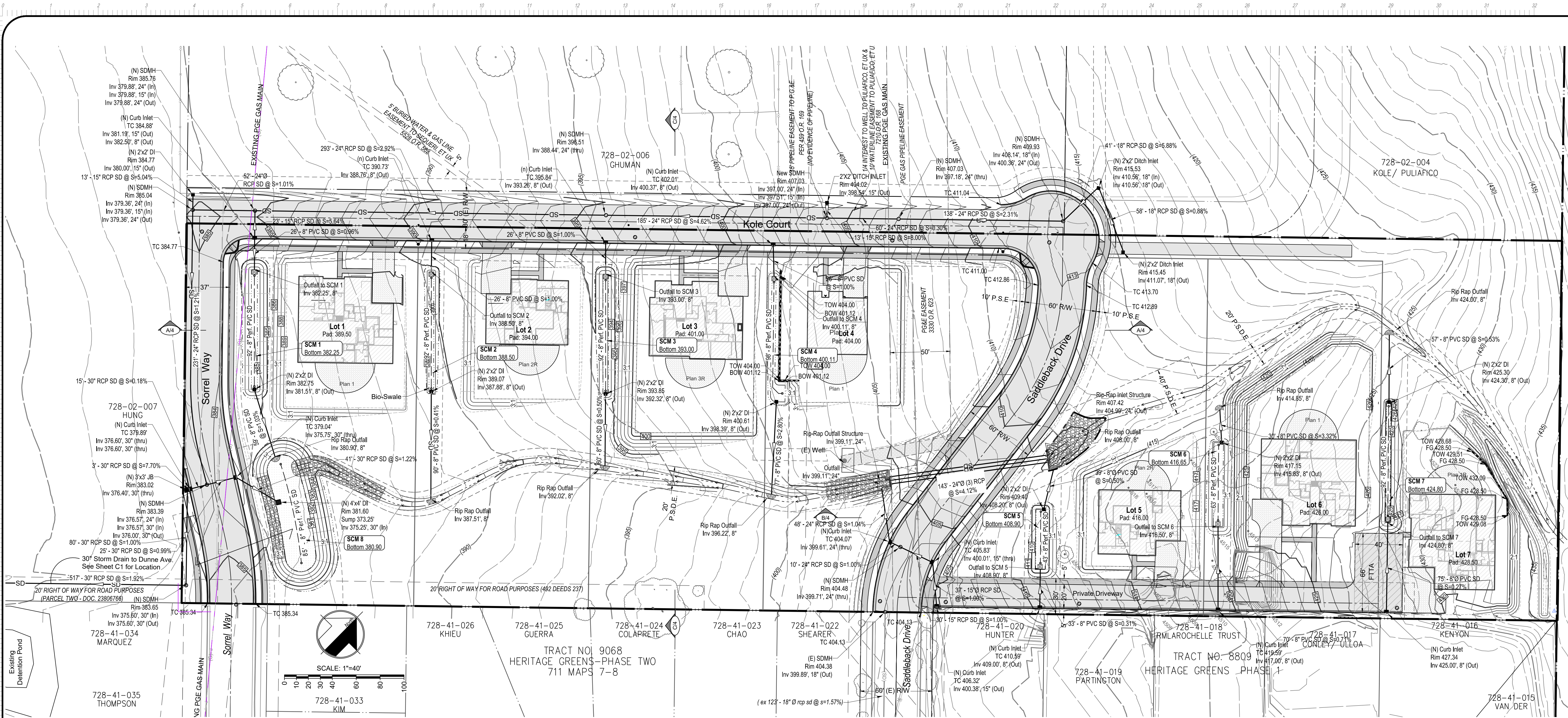


MH engineering Co.

16075 Vineyard Blvd., Morgan Hill, CA 95037 - (408) 779-7381

Project: Viji Mana
Project No.: 23117.5
Date: 7/24/2023

Attachment G: Preliminary Stormwater Control Plan Sheet



Serene Hills

Preliminary Grading Plan

Applicant/Owner:
Serene Hills LLC
22561 Poppy Drive
Cupertino, CA 95014
(408) 396-2706

Engineer:
William J. McClintock RCE 24893
MH Engineering
16075 Vineyard Blvd.
Morgan Hill, CA 95037
(408) 779-7381
billm@mhengineering.com

Planner:
Vince Burgos
2424 Calle Galicia
Santa Barbara, CA 93109
(408) 421-2695

MH engineering Co.
16075 Vineyard Boulevard
Morgan Hill, CA 95037

Broadband Standards

CITY OF MORGAN HILL

For Broadband connectivity, a project is required to install conduits in all the public rights-of-way fronting the project site to accommodate multiple broadband providers. The following standards apply:

A. Design Plans

- The project is required to submit design plans to include an engineering plan and profile of each street showing the location of existing underground utilities in the proposed path of the broadband conduit installation.
- The design plans shall also include the approximate locations and dimensions for surface restoration.

B. Broadband Conduit

- Provide a minimum of two (2) conduits each with at least two pull cables. At least one conduit shall remain empty and reserved for use by a potential future broadband service provider.
- Each conduit shall be a 4" diameter PVC pipe, non-pressure type but has adequate stiffness for direct burial usage without encasement in concrete. The type of pipe shall be consistent with industry standards and be orange in color.
- Broadband system designers shall field-verify the locations of existing utilities and surface features along and adjacent to the proposed conduit alignment.
- The preferred horizontal conduit alignment is at centerline of sidewalk or as approved by the City Engineer.
 - For conduits allowed in the street: Locate new conduit 3' from face of curb. Conduits shall be located parallel to the street centerline, where practicable, and shall not meander along the street. Street crossings shall be perpendicular to the street centerline.
- Horizontal Clearance:
 - Minimum 1' horizontal clearance from new conduit to other existing utilities, excluding water mains, gas lines, and electric lines.

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- Minimum 3' horizontal clearance from new conduit to existing water main.

- The applicant is responsible for checking with owners of adjacent non-City utilities (ex. gas and electric lines) to verify their required horizontal separation requirements.

- All conduits shall be installed underground using directional boring method or open trench.

a. For Directional Bore Design

- Plans shall include a layout plan and profile sheets for directional bores. All existing utilities must be shown to scale on the plan and profile views.

- Vertical Clearance: Provide 3' minimum vertical clearance from all utilities. This includes minor services, such as water services and sewer laterals. For deep crossings, provide a minimum of 5' clearance from utilities and structures. The applicant is responsible for checking with owners of adjacent non-City utilities (ex. gas and electric lines) to verify their required vertical separation requirements.

- Boring and Receiving Pits: Show the length, width, depth, and location of the boring and receiving pits on the plans and profiles. The pits are to be located to minimize the construction impact to the adjacent properties and streets. Pits should not be in front of existing driveways, restaurants, bus stops, fire hydrants, and within street intersections.

- Conflicts with Trees: If trees are in the way of the directional bore, the conduit shall be bored 8' to 12' underneath the tree roots rather than around the tree.

b. For Trench Design

- For open-trench construction in the street: Conduit shall have a minimum cover of 36" above the top of the conduit and allow at least 6" between the top of the conduit and the bottom of the street structural pavement section.

- For a trench outside the street section: Conduit shall have a minimum cover of 30".

- Open trenches deeper than 60" must comply with Cal/OSHA standards, requiring protective systems, such as shoring.

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- Vertical Clearance: Provide 12" minimum vertical clearance from all other utility lines and services, including other telecommunication lines.

- Tracer Wire: The conduits shall be installed with a tracer wire.

- Install tracer wire in the trench or bore with all underground conduits. Ensure the tracer wire provides end-to-end electrical continuity for electronically locating the underground conduit system.

- In a trenching operation, install the tracer wire no more than 3" above the conduit.

- In a boring operation, install the tracer wire in an encasement.

- Identification Tape: A 6" wide, orange magnetically detectable identification tape shall be installed 12 inches above the entire length of the conduit route. The tape shall be continuously imprinted with "BROADBAND CONDUIT".

C. Pullboxes

- Indicate locations of all pullboxes, other service boxes and manholes on the design plans.

- Pullboxes shall be a No. 8 pullbox per City of Morgan Hill Standard E-6.

- Pullboxes and splice boxes shall be located within the park strip/planter strip or at the back of sidewalk unless the City Engineer approves an alternative location.

- The maximum distance between any two pull boxes shall not exceed 1,200 feet. Within the 1,200-feet distance, provide pullboxes at locations wherever the cumulative change of direction of the conduit exceeds 180 degrees.

- The minimum bending radius for conduit shall be 3 feet.

- Pullboxes shall be located a minimum of 12 inches from all structures.

D. Manholes

- A detail of the manhole must be shown on the plans.

- Manholes for broadband conduit shall not be allowed in the street unless an exception is granted by the City Engineer.

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- Manholes allowed to be in the street must have cast iron frames and covers.

- Manholes that are in sidewalks shall have a concrete polymer frame and cover that matches the color and texture of the sidewalk.

- Manholes shall not be placed within a driveway approach or within the curb return at intersections.

- All manholes must be rated for a minimum H-20 wheel load.

- The name "BROADBAND" shall be permanently cast into or engraved on the manhole covers.

E. Related Work

Refer to the City's Design Standards and Standard Details for Construction for pavement materials, trench limits of restoration, backfill for boring, and backfill for trenching.

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Legend

Proposed	Description	Existing
	Project Property Boundary	
	Centerline	
	Easement, as noted	
	Curb and Gutter	
	Driveway Approach	
	Storm Drain	
	Perforated Storm Drain	
	Sanitary Sewer	
	Water Main	
	Irrigation Line	
	Fire Service	
	Gas Main	
	Underground Electric	
	Overhead Electric	
	Overhead Telephone	
	Joint Trench/Broadband	
	Chainlink Fence	
	Wood Fence	
	Street Barricade	
	Major Contour	
	Minor Contour	
	Benchmark	
	Monument, Type as shown	
	Revision	
	Section	
	Swale Slope	
	Storm Drain Manhole	
	Curb Inlet	
	Drop Inlet	
	Sanitary Sewer Manhole	
	Fire Hydrant	
	Cleanout	
	Gate Valve	
	Utility Pole	
	Electroliner	
	Sewer Service	
	Water Service	
	AC Pavement	
	AB Areas	
	PCC walks/driveways	
	Structures	
	Bio-Retention Area	
	Decorative Pavers	

* existing features are labeled in italics and parenthesis, typical

Serene Hills

Preliminary Grading Cross Sections

Applicant/Owner:

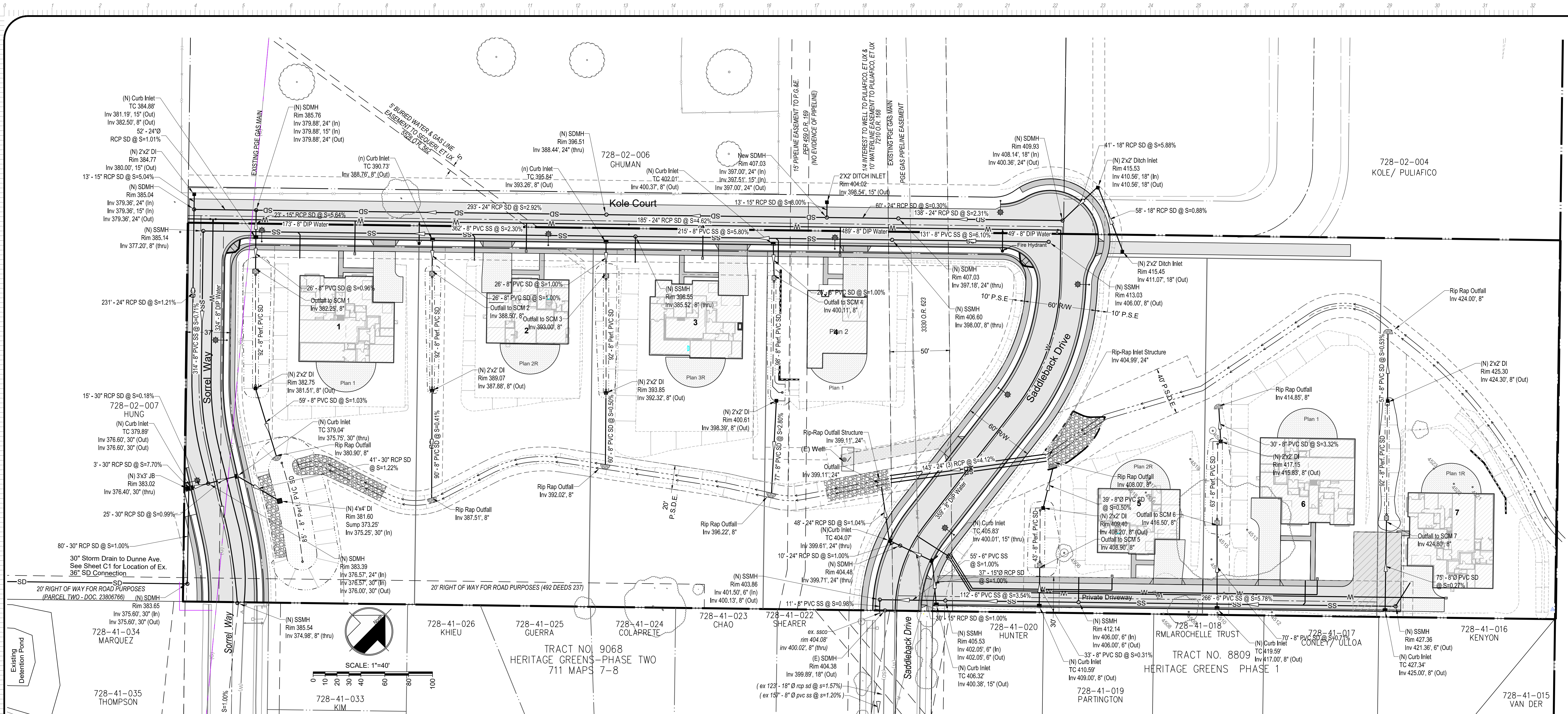
Serene Hills LLC
22561 Poppy Drive
Cupertino, CA 95014
(408) 396-2706

Engineer:

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(408) 779-7381
billm@mhengineering.com

Planner:

Vince Burgos
2424 Calle Galicia
Santa Barbara, CA 93109
(408) 421-2695



Fire Hydrant Location Identifier:
Prior to project final inspection, the general contractor shall ensure that an approved ("Blue Dot") fire hydrant location identifier has been placed in the roadway, as directed by the fire department.

Utility Note:
Underground all existing overhead utilities along Kole Court and within the project boundary in accordance with city standards and affected utility company standards.

Applicant/Owner:
Serene Hills LLC
22561 Poppy Drive
Cupertino, CA 95014
(408) 396-2706

Engineer:
William J. McClintock RCE 24893
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16075 Vineyard Blvd.
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(408) 779-7381
billm@mhengineering.com

Planner:
Vince Burgos
2424 Calle Galicia
Santa Barbara, CA 93109
(408) 421-2695

Serene Hills

Preliminary Utility Plan

MH engineering Co.
16075 Vineyard Boulevard
Morgan Hill, CA 95037

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23117.5

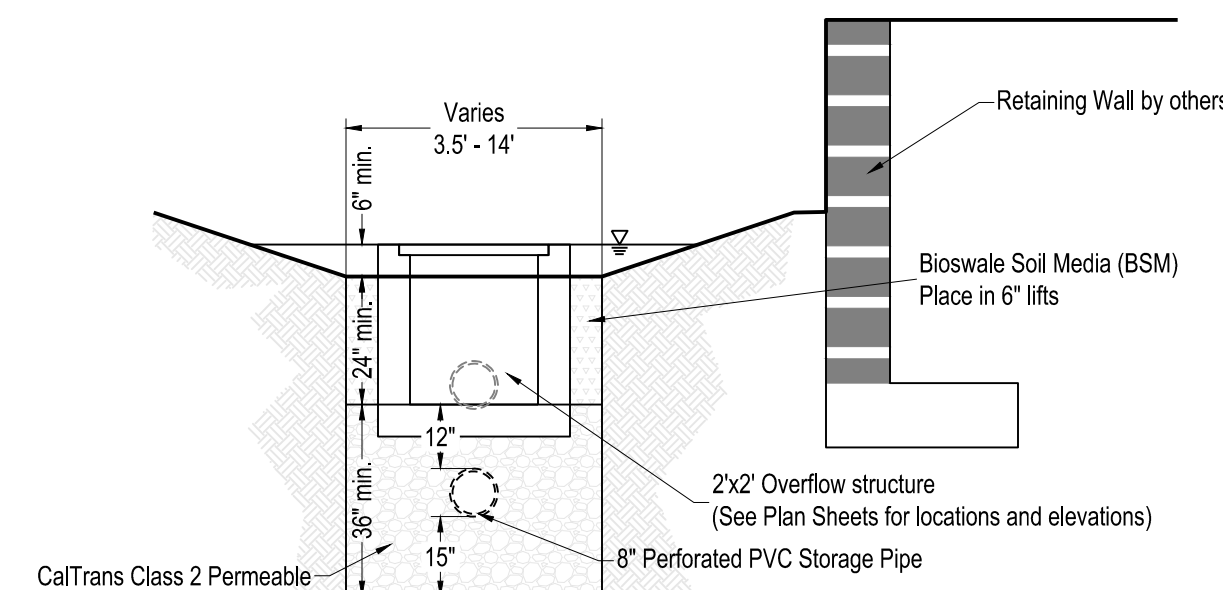
DATE: 3/20/23 DRAWN: RS CHECKED: WJM

Serene Hills

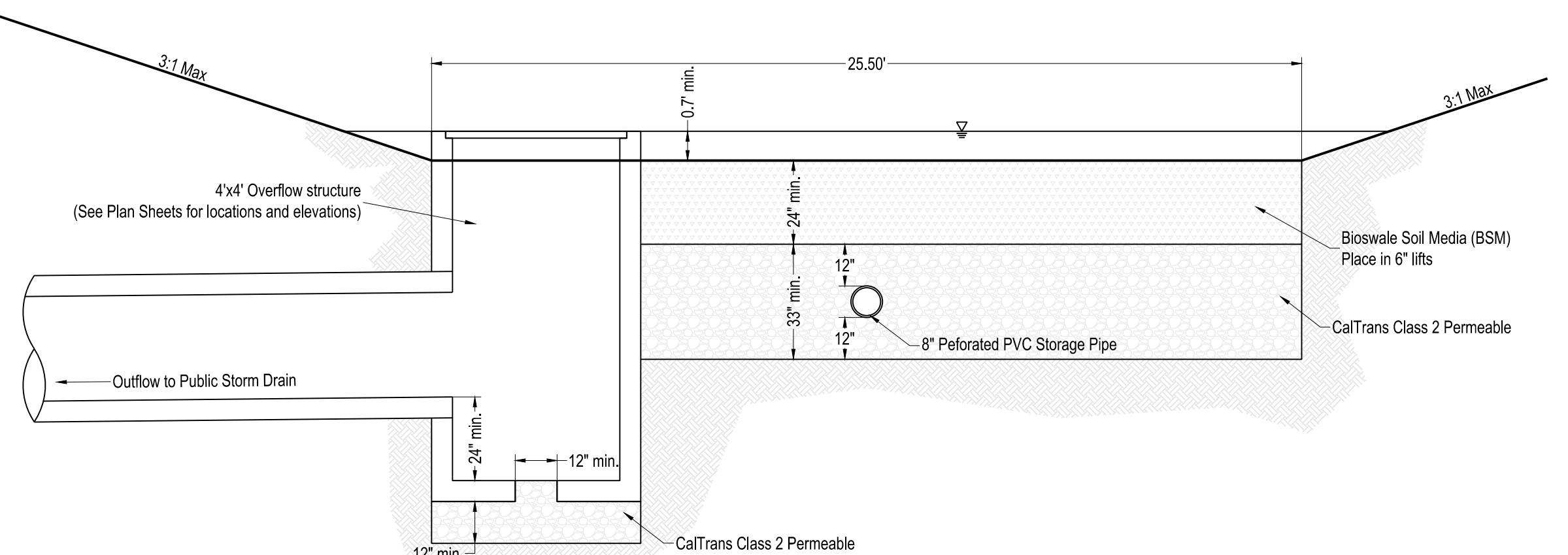
Preliminary Stormwater Control Plan

LID Sizing Table										
DMA	BMP	Description	Total DMA Area	DMA Impervious Area	i	C	Required Treatment Area	Provided Treatment Area	Required Retention Volume	Provided Retention Volume
1	SCM 1	Bioswale	23,084 SF	10,852 SF	0.47	0.32	434 SF	500 SF	1,018 CF	1,147 CF
2	SCM 2	Bioswale	21,799 SF	8,997 SF	0.41	0.29	360 SF	400 SF	860 CF	937 CF
3	SCM 3	Bioswale	34,456 SF	10,185 SF	0.40	0.28	407 SF	450 SF	981 CF	1,041 CF
4	SCM 4	Bioswale	53,317 SF	12,247 SF	0.58	0.40	490 SF	486 SF	1,144 CF	1,174 CF
5	SCM 5	Bioswale	18,342 SF	8,916 SF	0.49	0.33	357 SF	400 SF	834 CF	893 CF
6	SCM 6	Bioswale	29,055 SF	12,286 SF	0.42	0.29	491 SF	560 SF	1,169 CF	1,247 CF
7	SCM 7	Bioswale	19,170 SF	8,791 SF	0.46	0.31	352 SF	400 SF	827 CF	830 CF
8	SCM 8	Bioretention/ Detention Pond	282,792 SF	45,861 SF	0.16	0.15	1,834 SF	1,867 SF	3,366 CF	4,622 CF
Total			482,016 SF	118,134 SF	0.27	0.21	4,725 SF	5,063 SF	10,198 CF	11,892 CF

Bioswale Detail: SCMs 1-3, & 5-7
Scale: none



Bioswale Detail: SCM 4
Scale: none



Bioswale Detail: SCM 8
Scale: none

Legend:

- SCM # Source Control Measure
- DMA Boundary
- Undisturbed Landscape

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DATE: 3/20/23 DRAWN: RS CHECKED: WJM

Sheet

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ATTACHMENT 6

INITIAL GEOTECHNICAL INVESTIGATION

TYPE OF SERVICES	Initial Geotechnical Investigation
PROJECT NAME	East Dunne Avenue Development
LOCATION	2275 East Dunne Avenue Morgan Hill, California
CLIENT	David J. Powers & Associates
PROJECT NUMBER	118-101-1
DATE	April 23, 2018

GEOTECHNICAL

Type of Services	Initial Geotechnical Study
Project Name	East Dunne Avenue Development
Location	2275 East Dunne Avenue Morgan Hill, California
Client	David J. Powers & Associates
Client Address	1871 The Alameda, Suite 200 San Jose, California
Project Number	118-101-1
Date	April 23, 2018

Prepared by

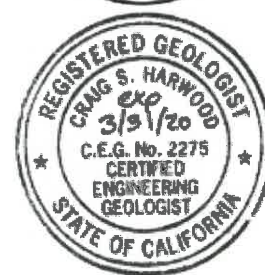
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Type of Services	Initial Geotechnical Study
Project Name	East Dunne Avenue Development
Location	2275 East Dunne Avenue Morgan Hill, California

SECTION 1: INTRODUCTION

This report has been prepared for the proposed future development at the above referenced property. The location of the site is shown on the Vicinity Map, Figure 1 and Site Plan and Site Geology, Figure 2.

For our use, we were provided with the following document:

- A Vicinity Map showing subject property prepared by Hanna- Brunetti, un-dated.

1.1 PROJECT DESCRIPTION

The project site is located at 2275 East Dunne Avenue in Morgan Hill, California. We have discussed the site with you, reviewed relatively recent aerial photographs of the site, and visited the site. The site is currently an open undeveloped area covered with grass. We understand that changing of the land use of about 8.5 acres (APN 728-02-002 &003) from residential estate to residential detached and rezoning is planned.

1.2 SCOPE OF SERVICES

Our scope of services was presented in our agreement dated February 27, 2018, and includes geologic research and consolidation of data, site reconnaissance, identification of potential geologic, seismic and geotechnical impacts, a discussion of potential mitigation measures, drafting and report preparation.

SECTION 2: REGIONAL SETTING

2.1 REGIONAL SEISMICITY

The San Andreas Fault is the dominant structural feature in the region and is a fundamental geologic boundary between two of the earth's tectonic plates. The fault system follows a northwest-trending path through most of California, arising in the south from a set of transform faults in the Gulf of California and joining, to the north, the Mendocino Fracture Zone offshore of the northern part of the state. The San Francisco Bay region is within a zone of distributed

active deformation associated with the North America-Pacific plate boundary. The plate boundary zone has had a complex history that has involved, over time, plate subduction, and crustal extension and contraction in association with dextral (right-lateral) strike-slip movements along faults within the boundary zone. The present-day seismotectonic setting of the region is marked by high rates of earthquake occurrence, right-lateral shear deformation along the San Andreas Fault system, and components of contractional strain, both oblique and normal to the San Andreas Fault.

The San Francisco Bay area region is one of the most seismically active areas in the Country. While seismologists cannot predict earthquake events, geologists from the U.S. Geological Survey have recently updated earlier estimates from their 2014 Uniform California Earthquake Rupture Forecast (Version 3) publication. The estimated probability of one or more magnitude 6.7 earthquakes (the size of the destructive 1994 Northridge earthquake) expected to occur somewhere in the San Francisco Bay Area has been revised (increased) to 72 percent for the period 2014 to 2043 (Aagaard et al., 2016). The faults in the region with the highest estimated probability of generating damaging earthquakes between 2014 and 2043 are the Hayward (33%), Rodgers Creek (33%), Calaveras (26%), and San Andreas Faults (22%). During such an earthquake the danger of fault ground rupture at the sites is slight, but strong to very strong ground shaking would occur.

The faults considered capable of generating significant earthquakes are generally associated with the well-defined areas of crustal movement, which trend northwesterly. The table below presents the State-considered active faults within 25 kilometers of the site.

Table 1: Approximate Fault Distances

Fault Name	Distance (miles)	Distance (kilometers)
Calaveras (South)	2.3	3.7
Sargent	8.4	13.5
Hayward Fault(Southeast)	10.7	17.2
San Andreas	11.9	19.2
Monte Vista - Shannon	12.5	20.1
Zayante - Vergeles	14.5	23.4

*Distances are from estimated surface projection of each fault.

A regional fault map is presented as Figure 4, illustrating the relative distances from the site to significant fault zones.

Within relatively recent historical times, several earthquakes have resulted in damage in the Morgan Hill area including earthquakes in 1906, 1979, 1984 and in 1989. The M 5.9 1979 "Coyote Lake" earthquake on the Calaveras Fault just east of Morgan Hill, and the M 6.2 1984 Morgan Hill earthquake also struck along the Calaveras Fault about 16 miles northwest of downtown. Damage from the 1984 earthquake was reported to be about 7.5 million dollars, with most of that occurring in or near Morgan Hill (PGE, 1991). The October 17, 1989, magnitude 7.1 Loma Prieta earthquake caused widespread damage throughout the area but locally only a few houses were seriously damaged, and only a few chimneys fell. Although the epicenter of the earthquake was only about 15 miles from downtown, local shaking intensities were surprisingly low. Nevertheless, damaging earthquakes can be expected to occur during the design life of

structures within the region.

2.2 REGIONAL GEOLOGICAL SETTING

The subject property is located in an area where the southern Santa Clara Valley abuts the Mt. Diablo Range (on the northeast). The interface between these two physiographic regions is defined by a band of front-range faults, along which the mountains have risen and been thrust over the valley over the past 5 to 10 million years. As already mentioned, within the region, the San Andreas Fault system, which distributes shearing across a complex assemblage of primarily right lateral, strike-slip, parallel and sub-parallel faults that includes the Hayward and Calaveras faults. Western traces of a segment of the Calaveras Fault occur within the Diablo Range in the northeastern corner of the quadrangle.

Several published maps cover the general south-central portion of the Santa Clara Valley region and, more locally, the Morgan Hill and Mt. Sizer 7.5' Quadrangles. These regional scale maps include: Dibblee (1973, 2005), Pacific Geotechnical Engineering (1991), Wentworth et al., (1999), Knudsen et al., (2000) and the California Geological Survey (CGS, 2006). Bedrock exposed in the Morgan Hill and Mt. Sizer Quadrangles consists of Franciscan Complex rocks that are structurally overlain by the Coast Range Ophiolite and Mesozoic marine deposits of the Great Valley Sequence (Wentworth and others, 1998). Wentworth and others (1998) divided this area into several distinct fault-bounded structural blocks, each with a contrasting geologic history. Relevant to the local vicinity, the Coyote Block is located between the San Jose Fault (of Hanna and Brabb, 1981) and the Calaveras Fault (on the northeast). The Coyote Block consists of Coast Range Ophiolite rocks overlain by Cretaceous strata of the Great Valley Sequence and Tertiary strata. The oldest rocks in the map area consist of Cretaceous sandstone, mudstone and conglomerate ("Kcsm") within the Great Valley Sequence.

2.3 SITE GEOLOGY

Of the published maps covering the area of the site, the mapping of Pacific Geotechnical (compiled at a scale of 1" = 200') is the most useful of the published maps in terms of scale and accuracy. The attached local geologic map (Figure 3) is a partial reproduction from Pacific Geotechnical Engineering (1991).

Quaternary alluvial deposits overlie the bedrock units on the floor of the Santa Clara Valley as well as along the transition along base of the western and eastern hillside areas. The relative ages of the Quaternary deposits are determined using: landform shape, relative geomorphic position, cross-cutting relationships, superposition, depth and degree of surface dissection, and relative degree of soil profile development. Further out into the valley bottom, the majority of which have been deposited by Coyote Creek and its tributaries. Much of the sediment in the Coyote Creek system within this portion of the Santa Clara Valley was derived from rocks in the hills to the east of Santa Clara Valley.

Along the mountain ranges bordering either side of the valley, alluvial fan complex is responsible for the majority of the quaternary alluvium in these areas. The mapping of PGE indicates the old alluvial surface ("Qoa") at the base of the range front is overlain locally by alluvial fans (Qfd") which emanate or extend southwesterly from steep-side drainages within the steep hills on the northeast. These fans dominate the geomorphology within the northeastern $\frac{3}{4}$

of the property whereas within the ground surface transitions into an essentially flat alluvial plain within the far southwestern portion of the property. The alluvial fans have formed in response to drainage events coming out of the two drainage canyons located just to the northeast of the site. CGS assigns a Holocene age to the alluvial fan deposits underlying the area of the site (map symbol: "Qhf"), whereas the valley fill alluvium located stratigraphically beneath the Ofd fan deposits and further to the southwest of the site is assigned a "Late Pleistocene" age (CGS, 2006, Knudsen and others, 2000). The CGS has compiled 99 geotechnical laboratory tests conducted within this mapping unit. Their compilation indicates the Qhf unit within the quadrangle consists on average of: 38% lean clay; 22% lean silt, 15% well graded gravel, and 25% other soil constituents.

2.3.1 Review of Aerial Photographs

Six sets of black and white, stereo-paired aerial photographs were reviewed and one pair of color infrared photos were reviewed as a part of our study. These photographs were taken during the years from 1953 to 1981 and range in scale from 1:12,000 to 1:30,000. In addition to the stereoscopic pairs of aerial photographs, we also reviewed selected individual (non-stereoscopic) aerial photographs. A complete listing of the stereoscopic pairs of photographs reviewed is included in the "References" section. Additionally, we reviewed Google Earth® images spanning from 1998 through 2012. A summary of our observations is provided below.

At the time of the 1956 photos the site was essentially in agricultural mode with some cultivated row crops contained within the central portion of the property. A structure, potentially a residence, was located just beyond the southeast property corner on the adjacent Kruse Ranch property. These photos clearly show a seasonal creek or drainage that emanates from the foothill beyond the northeast of the site and into the site. This drainage delivers runoff from the steeper range front on the northeast onto the alluvial plain and the subject site to the southwest. It is confirmed by historical topographic published maps of the Morgan Hill Quadrangle (1917) as well as more modern topographic quadrangle maps. This drainage, which extends southwesterly through the site, is parallel with the southeast property line. The site is largely dominated by grasses and weeds but locally Oak and Eucalyptus trees are located along the path of this drainage. The 1963 photos show that a residential structure and detached building, most likely a garage, were constructed in the central portion of the site near the drainage channel. This development required in-filling of the central portion of the drainage channel and diverting it into an arcing path toward the north, and then southwesterly so that drainage was diverted around the central portion of the site. By 1965 the agricultural activity at the site appears restricted to the southwestern half of the site, which is in row crop. The drainage ditch continued to extend all the way to the far southwest property line, trending just north of the south property line. There are now two ancillary structures associated with the main developed area in the south-central portion of the property. Google Earth images indicate the residence was demolished and removed from the site sometime between August 2016 and December, 2016.

Subtle tonal patterns located just beyond the northeast property line suggest the presence of the Ranger front thrust fault extending through the area. A spring located in this same area may be at least partially due to the presence of the fault zone. No geomorphic or tonal patterns were noted in the aerial photography that would suggest evidence of landsliding was observed on the site or adjacent to it.

SECTION 3: SITE CONDITIONS

3.1 SURFACE CONDITIONS

The property is located at the base of the range front where coalescing alluvial fans drape onto the valley surface of the Santa Clara Valley. Onsite the land surface dips gently (2 to 3 degrees) toward the southwest and in the far southwestern portion of the site the land is essentially flat. A drainage that exists within the northeastern and the southwestern portions of the site is generally less than 5 feet deep in the northeast, and less than 3 feet deep in the southwest. The overall relief at the site is approximately 50 feet with the highest point at the northeast property line and the lowest point at the southwest property line.

The site is overgrown with grasses and various understory shrubs and localized clusters of Eucalyptus, Oak, and California Pepper trees. An abandoned paved road accesses the property from the southwest property line. The dirt road currently trends along a PG&E underground utility easement. Existing single-family residential properties are on the south and southeast. Rural residential and undeveloped land to the north, east, and west. The site of the former home and ancillary structures in the southeast-central portion of the property are associated with evidence of man-made materials, disturbed soils and localized fills placed to level the development area. As a result of this previous grading and development, the former drainage channel was in-filled and diverted around the development within that portion of the site.

According to the classification scheme presented on the City of Morgan Hill Ground Movement Potential Map series (Figure 5), the site is located within the “Sx” zone (PGE, 1991). This zone is characterized by PGE according to the following; “Moderately to highly expansive alluvial or colluvial soil on flat or nearly flat ground. Subject to seasonal shrinking and swelling, soil creep, and settlement. May include localized areas of non-expansive soil.”

3.2 GROUND WATER

The CGS Seismic Hazard Zone Report for the Mt. Sizer Quadrangle (2006) shows historic ground water levels in the immediate area around the site as being between 50 and 60 feet below the ground surface. The CGS evaluation was based on; ground-water elevation contours in USGS Water Supply Papers (Clark 1917), ground-water information obtained from the Santa Clara Valley Water District (Reymers and Hemmeter, 2002), and from geotechnical borehole logs acquired from the City of Morgan Hill, Santa Clara County, and Pacific Geotechnical Engineering. Fluctuations in ground water levels occur due to many factors including seasonal fluctuation, underground drainage patterns, regional fluctuations, and other factors.

SECTION 4: GEOLOGIC HAZARDS

4.1 FAULT RUPTURE

The San Andreas Fault and related major branching faults dominate the geologic structural and geomorphological patterns of the San Francisco Bay Region and Santa Clara Valley. The Hayward Fault is farther west, near the base of the San Jose Foothills. Several smaller transpressive faults also are mapped within the quadrangle, primarily along the western portion

of the Diablo Range where it meets the Santa Clara Valley. They include the Evergreen, Quimby Fault, Piercy Fault, and the Clayton Fault. More local to Morgan Hill are the Coyote Creek Thrust Fault and the Range Front Thrust Fault.

No significant historic earthquake has been attributed to either the Coyote Creek Thrust Fault ("CCTF") or the Range Front Thrust Fault ("RFTF"). Nevertheless, the structural position of both of these faults with respect to the Calaveras Fault suggests that it should be considered to be at least potentially active. The fault was originally recognized by Dibblee (1973) defined by (in the immediate area) on a juxtaposition of Holocene and Pleistocene alluvial fan deposits (on the southwest) against Santa Clara Formation (on the northeast) with the fault dipping steeply to moderately into the hillside. Dibblee shows the fault transitioning into an anticlinal fold axis just southeast of the site (Dibblee, 1973, 2005). That interpretation has been further modified by the more recent mapping by John Coyle for the work of Pacific Geotechnical Engineering. The Range Front Thrust Fault is mapped as trending along the base of the range front along a significant break in slope just beyond the northeast property line (PGE, 1991). PGE noted evidence for their inference for the presence of the fault zone: 1) Old Alluvium (Late Pleistocene) northeast of Maple Avenue [1.8 miles southeast of the site] is interpreted to be uplifted about 40 feet by the fault, and 2) the strikingly linear base of the Diablo Range (particularly when compared with the base of the Santa Cruz Mountains on the opposite side of the valley) is interpreted to represent uplift due to faulting. The RFTF appears to be the most western of the three thrust faults splaying to the west of the Calaveras fault. The mapping of PGE suggests the fault zone extends through the area with a trend that varies from N53°W to N67°W. The fault is projected as intersecting the northeast property corner of the subject site. For this reason, the northeast portion of the site is located within a county-designated Fault Rupture Hazard Zone as well as a City of Morgan Hill Fault Rupture Hazard Zone or "Paf" zone (PGE, 1991). The Paf zone is characterized as a "Zone of potential permanent ground displacement due to horizontal or vertical movement along the trace of an active or potentially active fault."

Our review of published sources, historic aerial photos and site reconnaissance indicates there is compelling evidence (i.e., topographic, geologic as well as soil moisture patterns) of the fault zone trending long the base of the range front, however, it is generally concealed beneath colluvial accumulations and alluvial fans along the base of the range front, and therefore, its precise location cannot be determined without subsurface investigation. Adding to the difficulty in discerning the actual trend of the fault surface trace is the possibility of localized scouring and erosion in the proximal areas of alluvial fans, which overlie the RFTF.

In general, surface fault rupture involves shearing, differential movement, and ground breakage along the trace of the fault during moderate to strong earthquakes. The resulting movement can severely damage structures and utilities that are located across the fault trace. Thus, studies are undertaken to identify the location of fault traces, and to determine the activity of the fault. Evaluation of surface fault rupture is based on the premise that future fault rupture will take place along previous ruptures. Consequently, accurate determination of the location and character of previous fault ruptures is required for surface fault hazard assessment. In terms of fault rupture hazard evaluations, faults are considered "active" if they display evidence of movement within Holocene time (the last 11,000 years), and "potentially active" if they display evidence of movement within Quaternary time (i.e., within the last 1.6 million years).

As part of their 2017 Addendum to their geologic hazards evaluation of the Kruse Ranch site located on the northeast, ES Geotechnologies, excavated and logged a continuous fault trench (T-3) on the gently inclined alluvial fan just beyond the northeast property line of the subject site. This trench was 83 feet long and varied in depth from 8 to 11 feet. The T-3 trench log characterized the stratigraphy as consisting of surficial soil and alluvium throughout the depth and length of the trench except at the southwestern end where Santa Clara Formation ("QTsc") is exposed locally (is positioned stratigraphically higher) within the basal portion of the trench. That is, the QTsc unit was apparently encountered at a depth of approximately 8 feet within the southwest portion of their trench and presumably would have been encountered throughout the trench if it were extended to a greater depth if the trenching depth had been extended. The T-3 log suggests that both the alluvial fans deposits and the underlying QTsc units are devoid of structure. Given that the alluvial fan deposits are Holocene, and the RFTF has not been known to disrupt Holocene deposits, and they did not discern or comment on stratigraphic detail or note variations in soil color or moisture, it is unclear how they were able to "clear the area" of faulting by virtue of this particular trench. A slightly deeper trench exposing QTsc throughout and noting stratigraphic/structural details would have sufficed to answer the question. The log of the previous trench located more southerly (T-6) was not available for our review but presumable they had interpreted that area to be devoid of evidence of faulting as well as the fault was plotted northeasterly of Trench T-6. The actual trend of the RFTF along the base of the hillside can only be projected and inferred.

4.2 LANDSLIDING

A review of available published maps indicates no landslides have been mapped as occurring or extending into the subject site. The subject site is not included in a state, county or city designated landslide hazard regulatory zone. The site slopes are within the "Sx" geotechnical zone: "Areas of relatively stable ground". This zone is described as; "Moderately to highly expansive alluvial or colluvial soil on flat or nearly flat ground (Figure 5). Subject to seasonal shrinking and swelling, soil creep, and settlement. May include localized areas of non-expansive soil."

The Lands of Kruse located immediately to the northeast is comprised of generally moderately inclined (west facing) to steep terrain and is incised by steep-sided, southwesterly flowing drainages. This particular area is located within a state-designated earthquake induced landslide zone, a county landslide hazard zone and a City of Morgan Hill landslide hazard zone. These steep-sided drainages and westerly facing slopes are located within the City of Morgan Hill "Pd" and "Ps" zones. These designations are not based on site-specific studies but are based on interpretation using remote sensing and applying generalized characteristics of bedrock conditions, structural trends and steepness of slopes. A few small-scale landslides (earth flow and debris flow scars) are mapped on the site just to the northeast (PGE, 1991; CGS, 2006; Delattre, 2006; CGS, 2015). This mapping is also based on remote sensing techniques. More local-based mapping by consultants [ES Geotechnology and Cornerstone Earth Group (2017)] confirms the presence of small-scale slumps within the drainage to the northeast of the site. However, these slope failures are very limited in physical extent and, based on the evaluations of ES Geotechnologies, are not considered a potential hazard for slope instability.

The steep slopes within the drainages emanating from the hillside on the northeast are

classified on the City's GMP map as being within their "Pdf" zone. The Pdf zone is characterized as; "Hillside areas subject to fast-moving landslides; Includes flow path."

The CGS (2006) and the Landslide Inventory Map of the quadrangle (Delattre, 2006) shows two moderate sized landslides on the slope above the adjacent site (on the southeast) but neither of these slides potentially impact the subject site as they are topographically isolated from the subject site.

4.3 ESTIMATED GROUND SHAKING

Moderate to severe (design-level) earthquakes can cause strong ground shaking, which is the case for most sites within the Bay Area. A peak ground acceleration (PGA_M) was estimated for analysis using a value equal to $FPGA \times PGA$, as allowed in the 2016 edition of the California Building Code. For our liquefaction screening we used a PGA_M of 0.764g.

4.4 LIQUEFACTION POTENTIAL

The site is not located within a State-designated Liquefaction Hazard Zone (CGS, Mt. Sizer Quadrangle, 2006). Based on historic ground water in the area by CGS (2006), a laterally continuous groundwater table in the area can vary between 50 and 60 feet beneath the ground surface. The presence of a seasonal drainage extending through the site and springing located adjacent to the upslope edge of the site can contribute to localized conditions such as limited perched groundwater. PGE indicates the site in an area within: "Valley floor terrain with a low potential for ground surface movement due to soil liquefaction." The PGE evaluation was based on review of geotechnical subsurface data from "logs of over 200 borings reviewed for the study indicate that, with very few exceptions, density and compositional characteristics of the subsurface soils suggest a very low potential for liquefaction." Additionally, PGE notes that there is no historical account of soil liquefaction occurring in the Morgan Hill area during the 1906, 1984, or 1989 earthquakes.

4.4.1 Liquefaction Associated Ground Rupture Potential

The methods used to estimate liquefaction settlements assume that there is a sufficient cap of non-liquefiable material to prevent ground rupture or sand boils. For ground rupture to occur, the pore water pressure within the liquefiable soil layer will need to be great enough to break through the overlying non-liquefiable layer, which could cause significant ground deformation and settlement. The work of Youd and Garris (1995) is typically used to estimate the potential for liquefaction associated ground rupture; however, the site does not appear to be susceptible to liquefaction, therefore, the potential for ground rupture appears low.

4.5 LATERAL SPREADING

Lateral spreading is horizontal/lateral ground movement of relatively flat-lying soil deposits towards a free face such as an excavation, channel, or open body of water; typically, lateral spreading is associated with liquefaction of one or more subsurface layers near the bottom of the exposed slope.

There are no open faces within a distance considered susceptible to lateral spreading. Although there is a 4 to 6 foot deep drainage channel that traverses the site, since the potential for liquefaction is considered low. In our opinion, the potential for lateral spreading to affect the site is low.

SECTION 5: CONCLUSIONS

5.1 SUMMARY

From a geotechnical viewpoint, the project is feasible provided the concerns listed below are addressed and mitigated in a future design-level geologic and geotechnical investigation for the project. The preliminary conclusions regarding potential geologic hazards that follow are intended for conceptual planning and preliminary design. A design-level geotechnical investigation should be performed once site development plans are prepared indicating where proposed structures are planned. The design-level investigation findings will be used to confirm the preliminary conclusions of this report and to develop detailed recommendations for design and construction. Descriptions of each geologic/geotechnical concern with brief outlines of our preliminary recommendations follow the listed concerns.

- Fault Surface Rupture
- Landsliding/Debris Flows
- Presence of Highly Expansive Soils
- Naturally Occurring Asbestos
- Capture and Control/Conveyance of Runoff
- Presence of Undocumented Fill

5.1.1 Fault Surface Rupture

As already mentioned, the RFTF fault trends through the area but its precise trend is not known and can only be inferred through projection from distal points and interpretation of landforms. This uncertainty in the location of the fault has not been alleviated through the trenching on the adjacent parcel to the northeast. The northeast portion of the subject site is in a regulatory zone of potential ground deformation due to fault surface rupture (City of Morgan Hill; PGE, 1991). Without knowing the actual location of the fault, building exclusion zones cannot be established for the project site at this juncture. If habitable structures are proposed for the portion of the site located within the "Paf" zone, that portion of the site should be trenched in order to locate the fault zone.

5.1.2 Landsliding/Debris Flows

The site is not located within a regulatory landslide hazard zone (CGS, 2006; County of Santa Clara, 2002; City of Morgan Hill, 1991). Portions of the hillside located just northeast of the site are contained within a county-designated landslide hazard zone as well as the City designated landslide hazard zone. The portion of drainage located on the adjacent property situated beyond the northeast of the property line is located at the State designated landslide hazard zone.

We noted no evidence for earthflow or slump type landslides just northeast of the site and the Santa Clara Formation materials appear to have performed relatively well over time in terms of gross stability. We agree with the previous findings of ES Geotechnologies regarding the relatively low potential for slope instability potential of those slopes. The drainage that emanates from the base of the hillside on the adjacent parcel beyond the northeastern property line of the site is located within a debris flow hazard zone ("Pdf"). Although the subject site is not located within a "pdf" zone the runout area emanating from the drainage on the adjacent site is projected toward the subject site. The City's consultant (Pacific Geotechnical Engineering) indicated, "In all instances where a land use to be located within a 500-foot radius from and below the elevation of an arrow [indicated on GMP map] in a Pdf ground movement potential category, the use will not be permitted unless geologic data and/or engineering data will permit the use." We recommend that a debris flow analysis be performed as part of a future design level study of the site. Potential debris flow mitigation measures to be located onsite may include a combination of walls (deflection wall or catchment wall) and/or catchments basin and debris grate/catch basin. The actual recommended mitigation measures would be dependent on the debris flow analysis conducted as part of a future design level study of the subject project site.

5.1.3 Expansive Soils

Based on our experience in the vicinity and published sources, we anticipate the site to be blanketed by highly expansive surficial soils. Expansive soils can undergo significant volume change with changes in moisture content. They shrink and harden when dried and expand and soften when wetted. If structures are underlain by expansive soils it is important that foundation systems be capable of tolerating or resisting any potentially damaging soil movements. In addition, it is important to limit moisture changes in the surficial soils by using positive drainage away from buildings as well as limiting landscaping watering. Interior and exterior slabs will need to be underlain by a substantial section of non-expansive soil to mitigate the effect of expansive soils. Final design recommendations for mitigation will be included as part of a final design-level geotechnical investigation.

5.1.4 Naturally Occurring Asbestos

Greenstone can contain ultra-mafic rocks such as serpentine that contain Naturally Occurring Asbestos (NOA). The geologic setting of the site and immediately adjacent areas is such that these geologic formations are unlikely to contain serpentine or greenstone bedrock either inside or as a sedimentary component. The site lies within an area where depositional processes dominate the geologic setting and alluvium from upstream sources have deposited sediment. However, the general lack of bedrock types that could contain NOA up-drainage of the site makes it unlikely that the site would be potentially impacted by this particular hazard. There is a minimal probability NOA was deposited aurally. Therefore, NOA is not anticipated to be present at the site based on the site geology.

5.1.5 Capture and Control/Conveyance of Runoff

The drainage ditch that delivers runoff to the northeast property line should be evaluated by a civil engineer in order to determine if the existing facility is adequate to convey runoff volumes

(based on the engineer's calculations). It is probable that hard measures (i.e. catch basins, culverts) would be required in this area in order to provide for adequate drainage facilities. Additionally, a debris flow analysis should be performed as part of a design level investigation in order to determine if mitigation measures are needed at the northeast property line.

5.1.6 Presence of Undocumented Fill

The establishment of a residence and associated structures at the site, and the demolition of those structures, may have resulted in the presence of undocumented fill. These accumulations of fill should be explored and its aerial extent delineated on an accurate base map as part of a future design level investigation of the site. All fills identified in a future investigation of the site should be completely removed from within building areas and to a lateral distance of at least 5 feet beyond the building footprint or to a lateral distance equal to fill depth below the perimeter footing, whichever is greater.

SECTION 6: CLOSURE AND LIMITATIONS

We hope this report provides the information needed at this time. This report, an instrument of professional service, has been prepared for the sole use of David J. Powers & Associates and their representatives specifically to support their review of the 2275 East Dunne Avenue Development in Morgan Hill, California. The opinions and conclusions presented in this report have been formulated in accordance with accepted geotechnical engineering and engineering geology practices that exist in Northern California at the time this report was prepared. No warranty, expressed or implied, is made or should be inferred.

Recommendations in this report are based upon literature review and professional experience. No subsurface exploration of the project area was performed for this study. If variations or unsuitable conditions are encountered during construction, Cornerstone should be contacted to provide supplemental recommendations, as needed.

David J. Powers & Associates may have provided Cornerstone with plans, reports and other documents prepared by others. David J. Powers & Associates understands that Cornerstone reviewed and relied on the information presented in these documents and cannot be responsible for their accuracy.

Cornerstone prepared this report with the understanding that it is the responsibility of the owner or his representatives to see that the recommendations contained in this report are presented to other members of the design team and incorporated into the project plans and specifications, and that appropriate actions are taken to implement the geotechnical recommendations during construction.

Conclusions and recommendations presented in this report are valid as of the present time for the development as currently planned. Changes in the condition of the property or adjacent properties may occur with the passage of time, whether by natural processes or the acts of other persons. In addition, changes in applicable or appropriate standards may occur through legislation or the broadening of knowledge. Therefore, the conclusions and recommendations presented in this report may be invalidated, wholly or in part, by changes beyond Cornerstone's control. This report should be reviewed by Cornerstone after a period of three (3) years has

elapsed from the date of this report. In addition, if the current project design is changed, then Cornerstone must review the proposed changes and provide supplemental recommendations, as needed.

An electronic transmission of this report may also have been issued. While Cornerstone has taken precautions to produce a complete and secure electronic transmission, please check the electronic transmission against the hard copy version for conformity.

Recommendations provided in this report are based on the assumption that Cornerstone will be retained to provide observation and testing services during construction to confirm that conditions are similar to that assumed for design, and to form an opinion as to whether the work has been performed in accordance with the project plans and specifications. If we are not retained for these services, Cornerstone cannot assume any responsibility for any potential claims that may arise during or after construction as a result of misuse or misinterpretation of Cornerstone's report by others. Furthermore, Cornerstone will cease to be the Geotechnical-Engineer-of-Record if we are not retained for these services.

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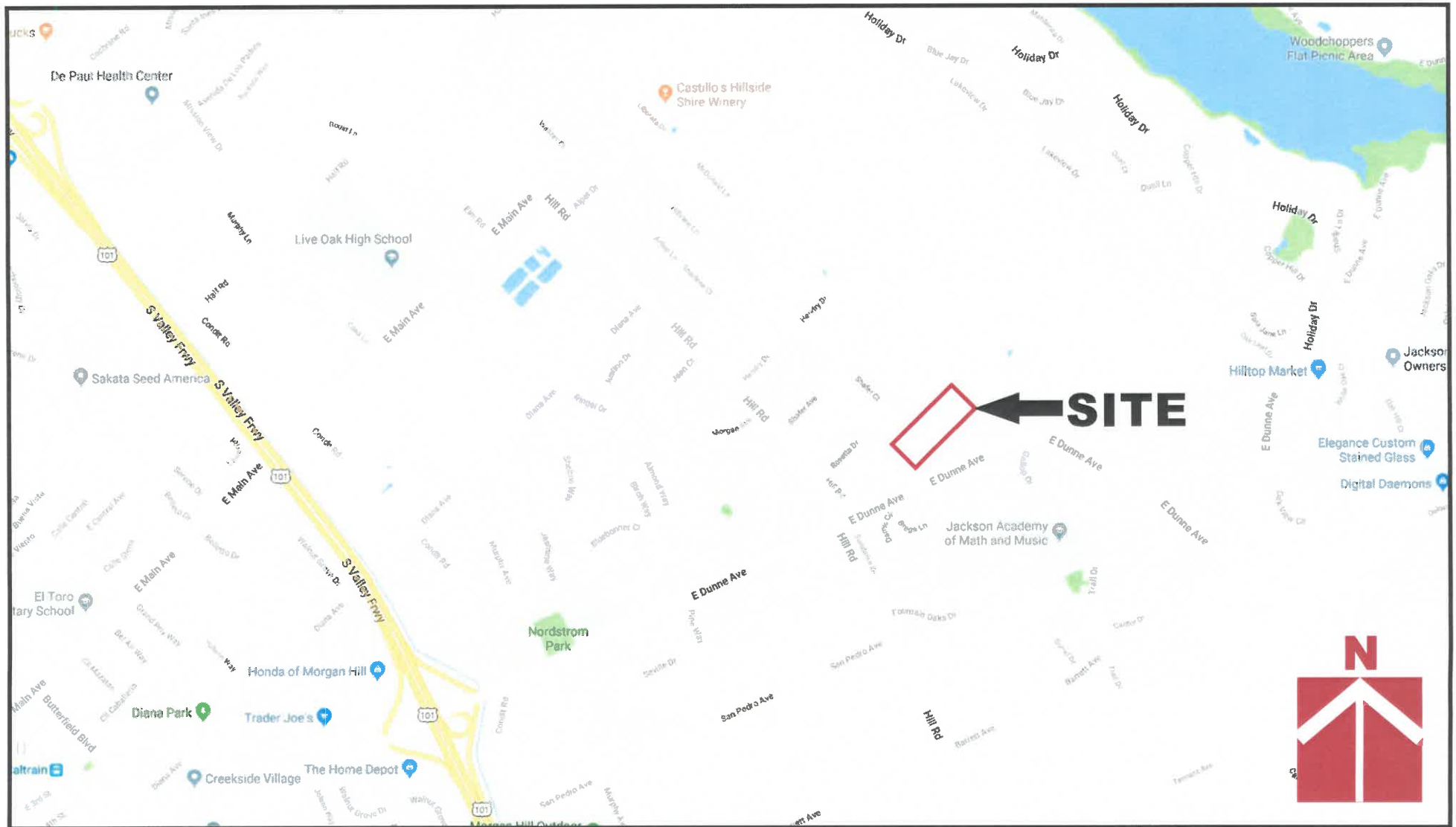
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Stereoscopic Aerial Photographs

Date	Scale	Photo ID	Type	Source
08/10/1953	1:23,600	GS-YF-5-146, 147	B/W	USGS
9/28/1963	1:20,000	CIV-6DD-210, 211	BW	USGS
5/27/1965	1:12,000	SCL-24-51, 52	B/W	USGS
04/30/1981	1:24,000	GS-VEZR 4-274, 275	BW	USGS

Note: USGS refers to U.S. Geological Survey, Menlo Park, California



**CORNERSTONE
EARTH GROUP**

Vicinity Map

**2275 East Dunne Avenue Development
Morgan Hill, CA**

Project Number

118-101-1

Figure Number

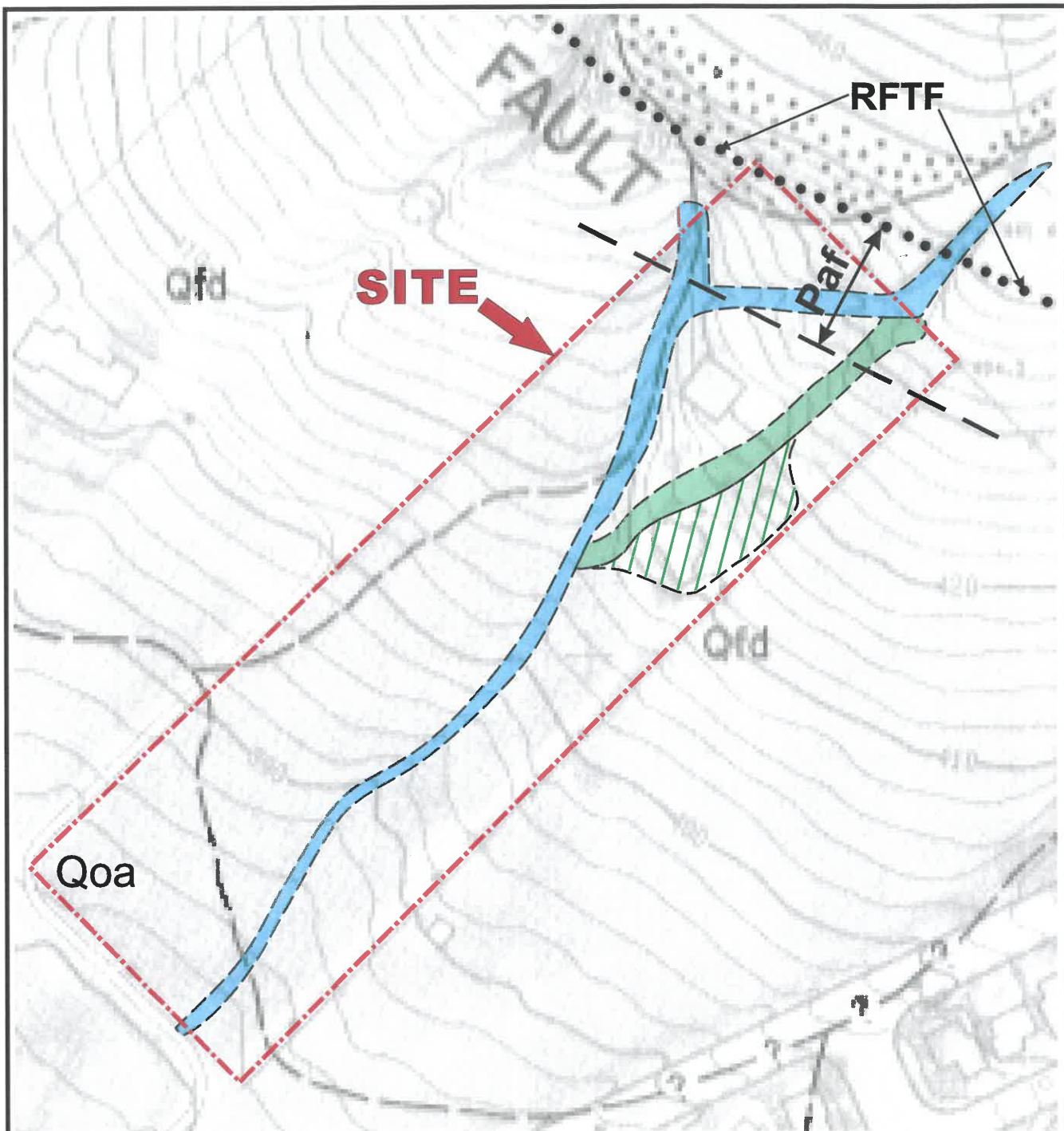
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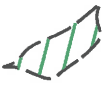
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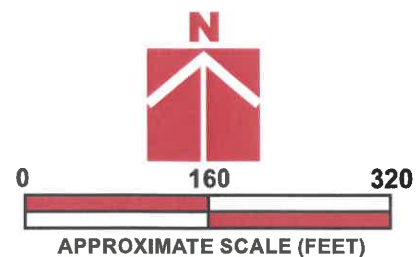
March 2018

Drawn By

RRN



Geologic Units		Explanation
Qfd	Alluvial Fan Deposits (Holocene)	 Active drainage swale
Qoa	Old Alluvium (Late Pleistocene)	 Infilled (with fill) former drainage swale
RFTF	Range Front Thrust Fault (concealed beneath alluvial fan deposits). Per PGE, 1991	 Area of previous ground disturbance and surficial fills
Paf	Regulatory Zone: Zone of potential permanent ground displacement	



Base: Geology, Geologic, and Geotechnical Hazards, City of Morgan Hill, dated December 1991.



**CORNERSTONE
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Site Plan and Site Geology

2275 East Dunne Avenue Development
Morgan Hill, CA

Project Number

118-101-1

Figure Number

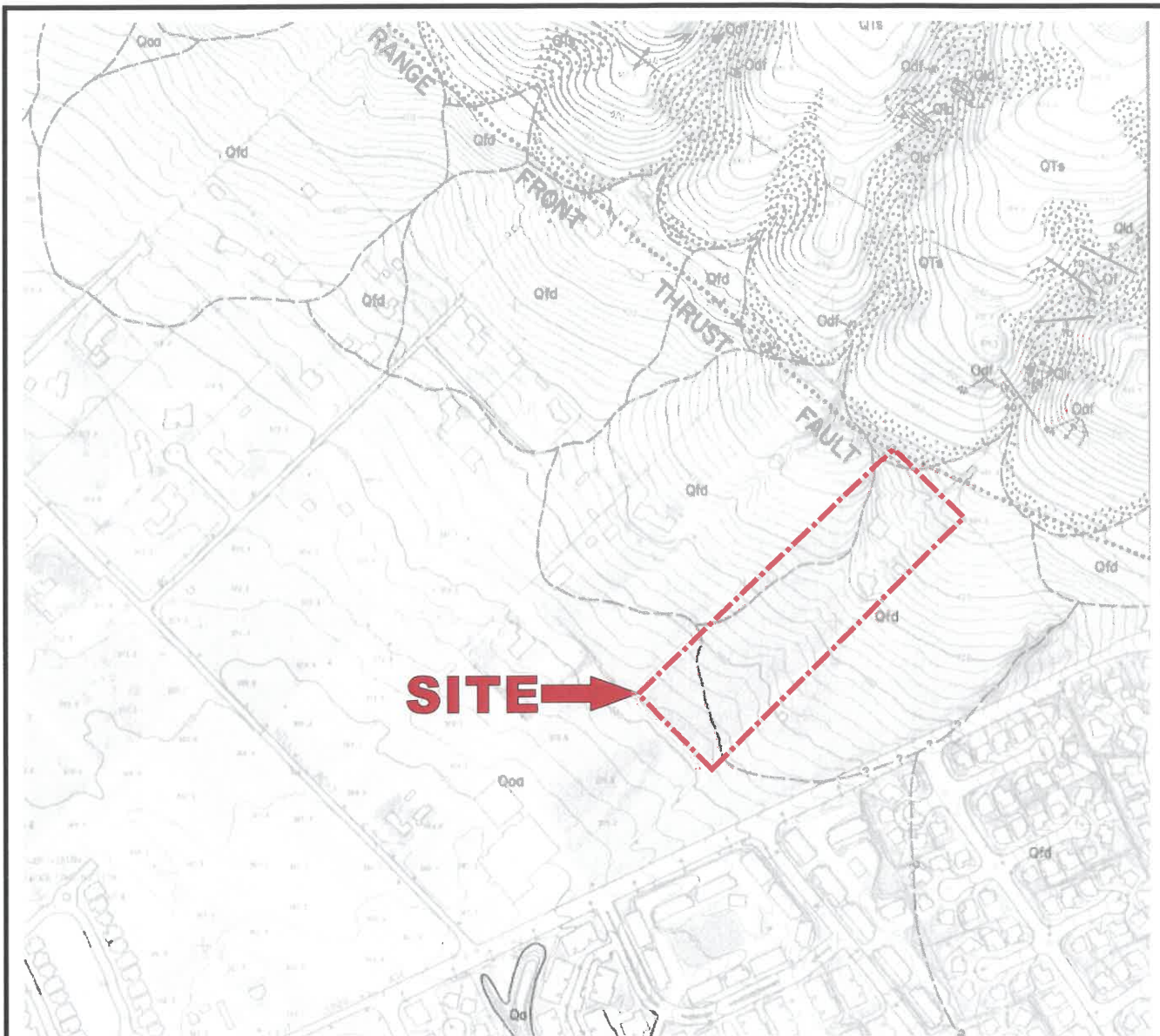
Figure 2

Date

March 2017

Drawn By

RRN



Geologic Units

Qf	Fill
Qcd	Colluvium
Qfd	Alluvial Fan Deposits (Holocene)
Qoa	Old Alluvium (Late Pleistocene)
Qlr	Recent Landslide
Qld	Dormant Landslide
Qdf	Old Debris Flow/Slide
Qts	Santa Clara Formation (Plio-Pleistocene)

Explanation

	Contact- dashed where approximate, dotted where concealed
	Range Front Thrust Fault, dotted where concealed



APPROXIMATE SCALE (FEET)

Base: Geology, Geologic, and Geotechnical Hazards, City of Morgan Hill, dated December 1991.



**CORNERSTONE
EARTH GROUP**

Local Geologic Map

**2275 East Dunne Avenue Development
Morgan Hill, CA**

Project Number

118-101-1

Figure Number

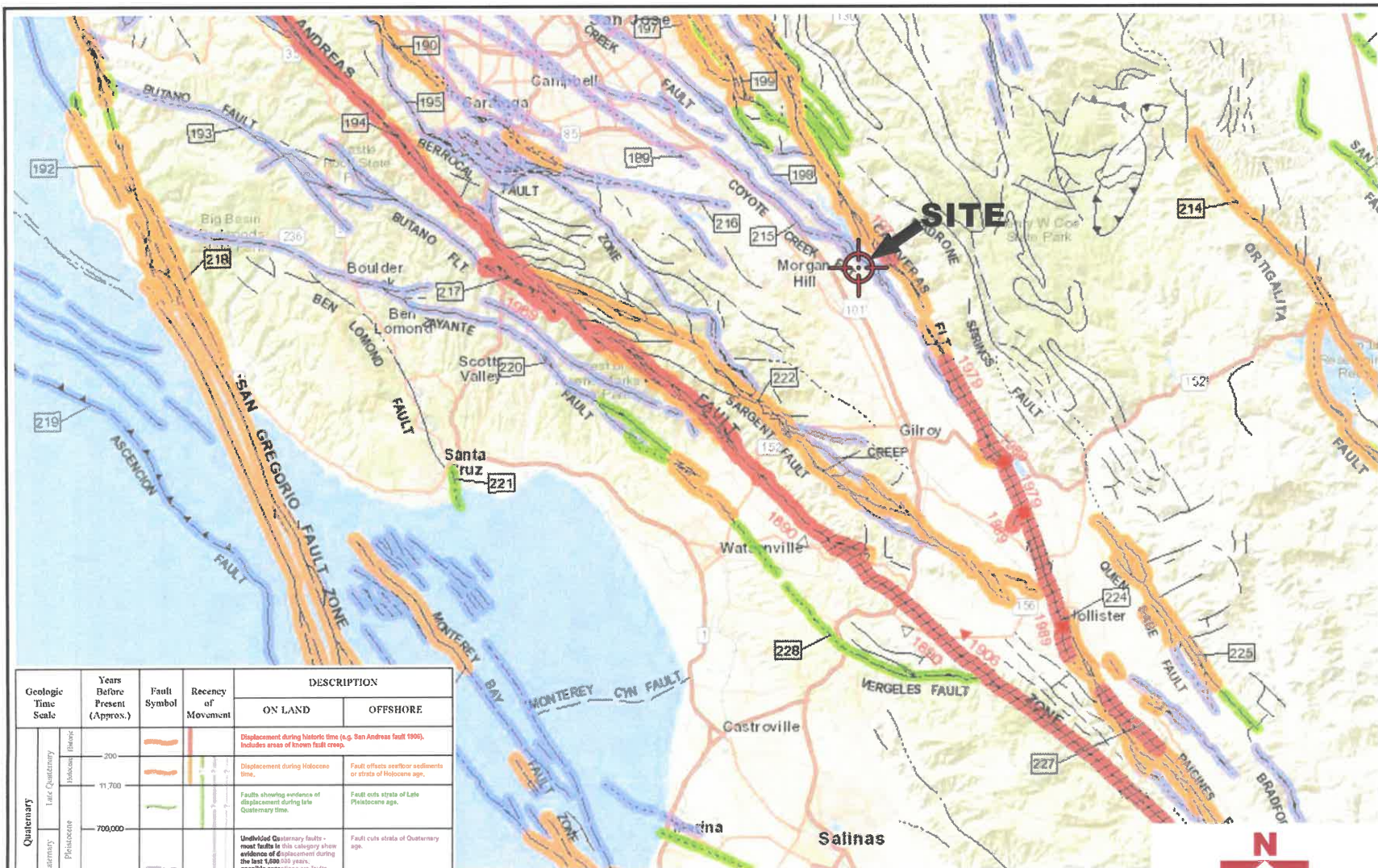
Figure 3

Date

March 2017

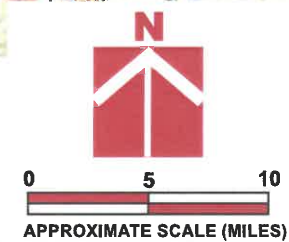
Drawn By

RRN

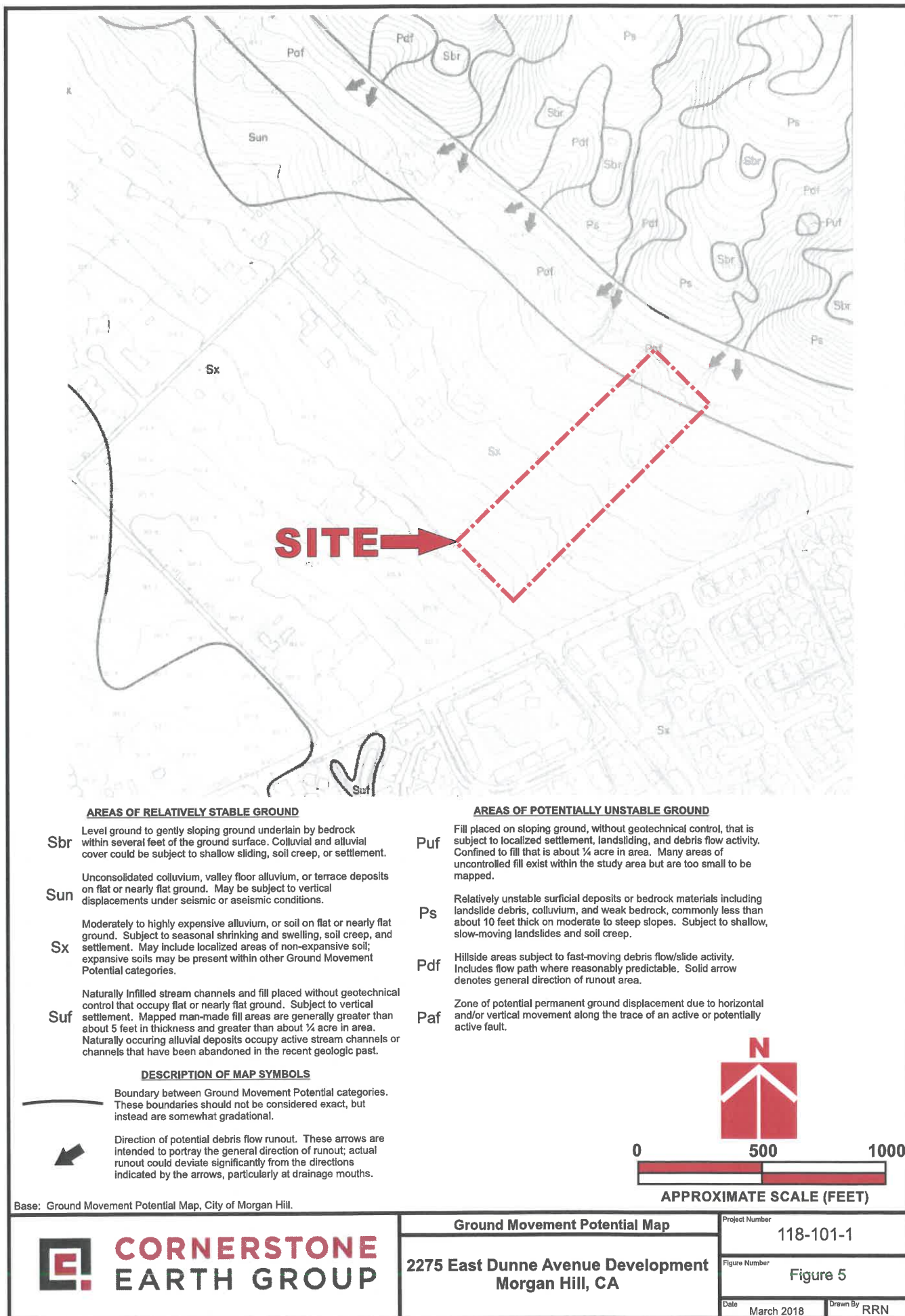


Geologic Time Scale	Years Before Present (Approx.)	Fault Symbol	Recency of Movement	DESCRIPTION	
				ON LAND	OFFSHORE
Quaternary	Late Quaternary (Holocene / Recent)			Displacement during historic time (e.g. San Andreas fault 1906). Includes areas of known fault creep.	
	200 - 11,700			Displacement during Holocene time.	Fault effects on/offshore sediments or strata of Holocene age.
	11,700 - 700,000			Faults showing evidence of displacement during late Quaternary time.	Fault cuts strata of Late Pleistocene age.
Pre-Quaternary	700,000 - 1,000,000			Undifferentiated Quaternary faults - most faults in this category show evidence of displacement during the last 1,000,000 years, possible exceptions are faults which displace rocks of undifferentiated Plio-Pleistocene age.	Fault cuts strata of Quaternary age.
	1,000,000 - 4.5 billion (Age of Earth)			Faults without recognized Quaternary displacement or showing evidence of no displacement during Quaternary time. Not necessarily inactive.	Fault cuts strata of Pliocene or older age.

Base by California Geological Survey - 2010 Fault Activity Map of California (Jennings and Bryant, 2010)



CORNERSTONE EARTH GROUP	Regional Fault Map		Project Number 118-101-1
	2275 East Dunne Avenue Development Morgan Hill, CA		Figure Number Figure 4
		Date March 2018	Drawn By RBN



ATTACHMENT 7

LIMITED PHASE II SUBSURFACE INVESTIGATION REPORT



Limited Phase II Subsurface Investigation Report

REPORT DATE: January 19, 2023

SITE INFORMATION

2275 East Dunne Avenue
Morgan Hill, Santa Clara County, California 95037

PROJECT INFORMATION

AEI Project No. 473272

PREPARED FOR

Serene Hills LLC
22561 Poppy Drive
Cupertino, California 95014

PREPARED BY

AEI Consultants
2500 Camino Diablo
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925.746.6000

AEI Consultants
2500 Camino Diablo
Walnut Creek, California 94597



January 19, 2023

Viji Mani
Serene Hills LLC
22561 Poppy Drive
Cupertino, California 95014

Subject: Limited Phase II Subsurface Investigation Report
2275 East Dunne Avenue
Morgan Hill, California 95037
AEI Project No. 473272

Dear Viji Mani,

This report presents the results of the Limited Phase II Subsurface Investigation Report (Phase II) conducted by AEI Consultants (AEI) at 2275 East Dunne Avenue, Morgan Hill, California ("the Site"). The investigation was performed in general accordance with the scope of services outlined in our proposal dated January 3, 2023 (AEI Proposal Number 88765), which was subsequently authorized on January 4, 2023.

AEI appreciates the opportunity to support this important project. If you have any questions, please do not hesitate to contact me.

Sincerely,

Senior Vice President
AEI Consultants
408.559.7600
tgolino@aeiconsultants.com

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FIGURES

Figure 1	Site Location Map
Figure 2	Site Map

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Table 1	Soil Sample Data Summary
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APPENDICES

Appendix A	Field Notes
Appendix B	Laboratory Analytical Report

1.0 PURPOSE

This investigation was performed in order to evaluate whether the subsurface conditions (i.e., shallow soil) at the Site have been significantly impacted by the recognized environmental condition (REC) identified in the December 29, 2022 *Draft Phase I Environmental Site Assessment* (ESA) report (AEI Project Number 473272). Information regarding the Site description, background, scope of work, findings, conclusions, and recommendations are provided in the following sections.

2.0 SITE DESCRIPTION AND BACKGROUND

Details on the Site description and background are presented below.

2.1 Site Description

The Site is located north of East Dunne Avenue at the northwest terminuses of Sorrel Way and Saddleback Drive in Morgan Hill, California. The Site consists of approximately 8.34 acres of vacant land and consists of one parcel, Assessor's Parcel Number (APN) 728-02-003. The location of the Site is shown on Figure 1. Figure 2 presents the Site Map.

The ground surface at the Site and nearby properties gently slopes toward the southwest and is situated between an elevation of approximately 385 and 435 feet above mean sea level. According to the information obtained from the State Water Resources Control Board's (SWRCB) Geotracker database for the surrounding area, groundwater is expected to be encountered from a depth of approximately 10 to 30 feet below ground surface (bgs). Groundwater flow direction beneath the Site is inferred to follow the topographic gradient and flows toward the southwest.

2.2 Background

Based on the Draft Phase I ESA, the Site was historically used for agricultural purposes. The potential that agricultural chemicals, such as pesticides, herbicides, and fertilizers were used on-Site, and that the Site has been impacted by the use of such agricultural chemicals represents a REC.

3.0 FIELD INVESTIGATION AND OBSERVATIONS

AEI was contracted to perform a Limited Phase II Subsurface Investigation to evaluate if the subsurface at the Site has been adversely impacted by the REC identified in the Draft Phase I ESA report referenced above. Investigation efforts included the collection of shallow soil samples spaced evenly throughout the Site. The locations of the soil samples are shown on Figure 2.

3.1 Health and Safety Plan

A Site-specific health and safety plan was prepared, reviewed by on-site personnel, and kept on the Site for the duration of the fieldwork.

3.2 Shallow Soil Sampling

On January 11, 2023, a shallow soil sampling program was completed which was consistent with the protocol outlined in the DTSC *Interim Guidance for Sampling Agricultural Properties (Third Revision)* dated August 7, 2008. For the shallow sampling program, eighteen separate sampling areas (S-1 through S-18) were evenly spaced across the Site.

Prior to sampling, a small hole was dug to a depth of approximately six inches, within first encountered native soil, with hand tools. A hand shovel was then used to scrape soil from the sides of the hole at a depth of between three and six inches and transfer the soil to clean, laboratory-supplied, 8-ounce glass jars. Upon collection, each sample was labeled with the project name, project number, and the sampling date and time. After labeling, each sample was placed into an insulated, chilled cooler containing ice for transport to the analytical laboratory. Chain-of-custody documentation was prepared and accompanied the samples to the analytical laboratory.

3.3 Headspace Testing

Headspace testing was performed with a photoionization detector (PID) equipped with an electrodeless 10.6 eV ultraviolet lamp or equivalent for detecting the presence of total volatile organic compounds (VOCs) in the soil samples. To initiate the headspace testing procedure, portions of the soil samples were placed into labeled, plastic bags, and sealed for conducting the tests. After sufficient time had elapsed for gas build-up inside the bag, each bag was punctured with the probe tip of the PID to allow for measurement of the headspace. Measurements of the headspace were obtained in the parts per million (ppm) range for total VOCs. The PID readings were recorded on the field notes presented in Appendix A.

3.4 Decontamination Procedures and Investigation-Derived Waste

The hand sampling equipment was decontaminated prior to and/or after collecting each soil sample. The equipment was cleaned using a triple-rinse method, which consisted of an initial wash containing an Alconox detergent and water solution, followed by two potable water rinses.

As the sample locations were backfilled with excavated soil, no investigation-derived waste was left at the Site.

3.5 Laboratory Analyses

Soil samples were submitted to a State of California certified laboratory, Torrent Laboratory, Inc. (Torrent) of Milpitas, California. Eighteen soil samples were collected and composited by the laboratory into five (5) 3 to 4-point composite samples for organochlorine pesticides (OCPs) using United States Environmental Protection Agency (US EPA) Testing Method 8081B. Additionally, five (5) discrete soil samples were analyzed for lead and arsenic using US EPA

Testing Method 6010B. Chain-of-custody documentation and the certified analytical report are provided in Appendix B.

4.0 FINDINGS

For the purpose of providing context to the data obtained during this investigation, analytical results were compared to available regulatory screening levels. The San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels (ESLs) (revised July 2019) were used for comparison values under a residential land use scenario as well as for direct exposure human health risk levels under any land use for construction workers. The ESLs are considered to be conservative. Under most circumstances, and within the limitations described in the ESLs, the presence of a chemical in soil at concentrations below the corresponding ESL does not pose an unacceptable risk to human health and the environment. Additional evaluation may be necessary at sites where a chemical is present at concentrations above the corresponding ESL or other appropriate screening level. The investigation findings are presented below.

4.1 Soil Sample Analytical Results

Table 1 presents a summary of the soil sample analytical results and comparison screening levels. Chain-of-custody documentation and the certified analytical report are provided in Appendix B. The analytical results can be summarized as follows:

- Arsenic was detected in each of the shallow soil samples collected and analyzed, observed at concentrations ranging between 1.57 milligrams per kilogram (mg/kg) in S-6 and 2.63 mg/kg in S-14. Each of the observed concentrations exceed the residential and the construction worker direct exposure ESLs of 0.067 mg/kg and 0.98 mg/kg, respectively. Although the detected concentrations of arsenic in soil are above the residential and construction worker ESLs, these concentrations of arsenic are likely representative of background conditions from naturally occurring sources. Background levels of arsenic are generally accepted as an appropriate screening criterion for naturally occurring metals. The concentrations detected are within the range to be expected of background conditions (background threshold of 11 mg/kg) as established in the San Francisco Bay Area, as established in the study *Establishing Background Arsenic in Soil of the Urbanized San Francisco Bay Region* by Dylan Duverge.
- Lead was detected in each of the shallow soil samples collected and analyzed at concentrations ranging between 3.00 in S-1 and 88.0 mg/kg in S-14. The concentration of lead observed in S-14 exceeds the residential direct exposure ESL of 82 mg/kg, however, does not exceed the construction worker direct exposure ESL of 160 mg/kg or the generally accepted maximum background concentration of 97.1 mg/kg.
- Pesticides gamma-Chlordane, alpha-Chlordane, 4,4-DDE, and 4,4-DDT were detected in the laboratory composited sample Comp-4, however, do not exceed their respective residential or construction worker direct exposure ESLs, where applicable.

5.0 SUMMARY AND CONCLUSIONS

AEI was requested to perform a Phase II subsurface investigation, including the collection of soil samples to evaluate whether the Site has been impacted by former agricultural use. The scope of work included the collection of eighteen evenly spaced shallow soil samples across the Site. The investigation findings can be summarized as follows:

- Relatively low concentrations of pesticides were observed in the laboratory composited sample Comp-4, however, do not exceed their respective ESL values, where applicable. Based on this investigation, pesticide impacts from former agricultural use were not identified.
- Although arsenic was observed at concentrations that exceed its residential ESL, these concentrations of arsenic are below the California Maximum Background Concentration and likely representative of background conditions from naturally occurring sources.
- Shallow soil sample S-14 yielded a lead concentration slightly above the residential ESL, but below the construction worker ESL and the generally accepted maximum background concentration. Other detections of lead in soil were well below the residential ESL, therefore further investigation of lead in soil is not warranted at this time.

AEI understands that the Site is scheduled for future redevelopment and it is anticipated that during the planning process, a soil management plan (SMP) may be required to be approved by a regulatory agency prior to development. The SMP can be developed to address the potential to encounter lead-impacted soil.

6.0 REFERENCES

- AEI, 2022. *Draft Phase I Environmental Site Assessment, 2275 East Dunne Avenue, Morgan Hill, California 95037*, (AEI Project No. 473272), dated December 29.
- Bradford, G.R., et. al. 1996. *Background Concentrations of Trace and Major Elements in California Soils*. March.
- Duverg , D.J., 2011. *Establishing Background Arsenic in Soil of the Urbanized San Francisco Bay Region*, San Francisco State University, MS Thesis. December.
- San Francisco Bay Regional Water Quality Control Board. 2019. *User's Guide: Application and Derivation of Environmental Screening Levels (ESLs). Interim Final 2019*. Revision 2, July 2019.

7.0 REPORT LIMITATIONS AND RELIANCE

This report presents a summary of work completed by AEI Consultants. The completed work includes observations and descriptions of site conditions encountered. Where appropriate, it includes analytical results for samples taken during the course of the work. The number and location of samples are chosen to provide the requested information, subject to scope of work for which AEI was retained and limitations inherent in this type of work, but it cannot be assumed that they are representative of areas not sampled. This report should not be regarded as a guarantee that no further contamination beyond that which could have been detected within the scope of this investigation is present beneath the Site. Undocumented, unauthorized releases of hazardous material, the remains of which are not readily identifiable by visual inspection and are of different chemical constituents, are difficult and often impossible to detect within the scope of a chemical specific investigation.

Any conclusions and/or recommendations are based on these analyses and observations, and the governing regulations. Conclusions beyond those stated and reported herein should not be inferred from this document. These services were performed in accordance with generally accepted practices, in the environmental engineering and construction field, which existed at the time and location of the work. No other warranty, either expressed or implied, has been made.

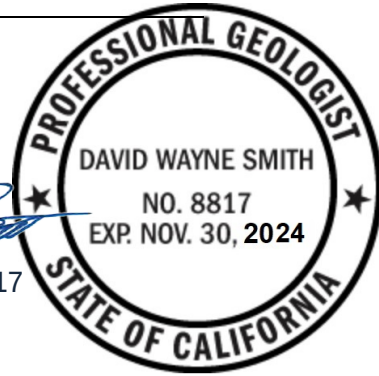
This investigation was prepared for the sole use and benefit of Serene Hills LLC. Both verbal and written, whether in draft or final, are for the benefit of Serene Hills LLC. This report has no other purpose and may not be relied upon by any other person or entity without the written consent of AEI. Either verbally or in writing, third parties may come into possession of this report or all or part of the information generated as a result of this work. In the absence of a written agreement with AEI granting such rights, no third parties shall have rights of recourse or recovery whatsoever under any course of action against AEI, its officers, employees, vendors, successors or assigns. Reliance is provided in accordance with AEI's Proposal and Standard Terms & Conditions executed by Viji Mani. The limitation of liability defined in the Terms and Conditions is the aggregate limit of AEI's liability to the client and all relying parties.

8.0 SIGNATURES

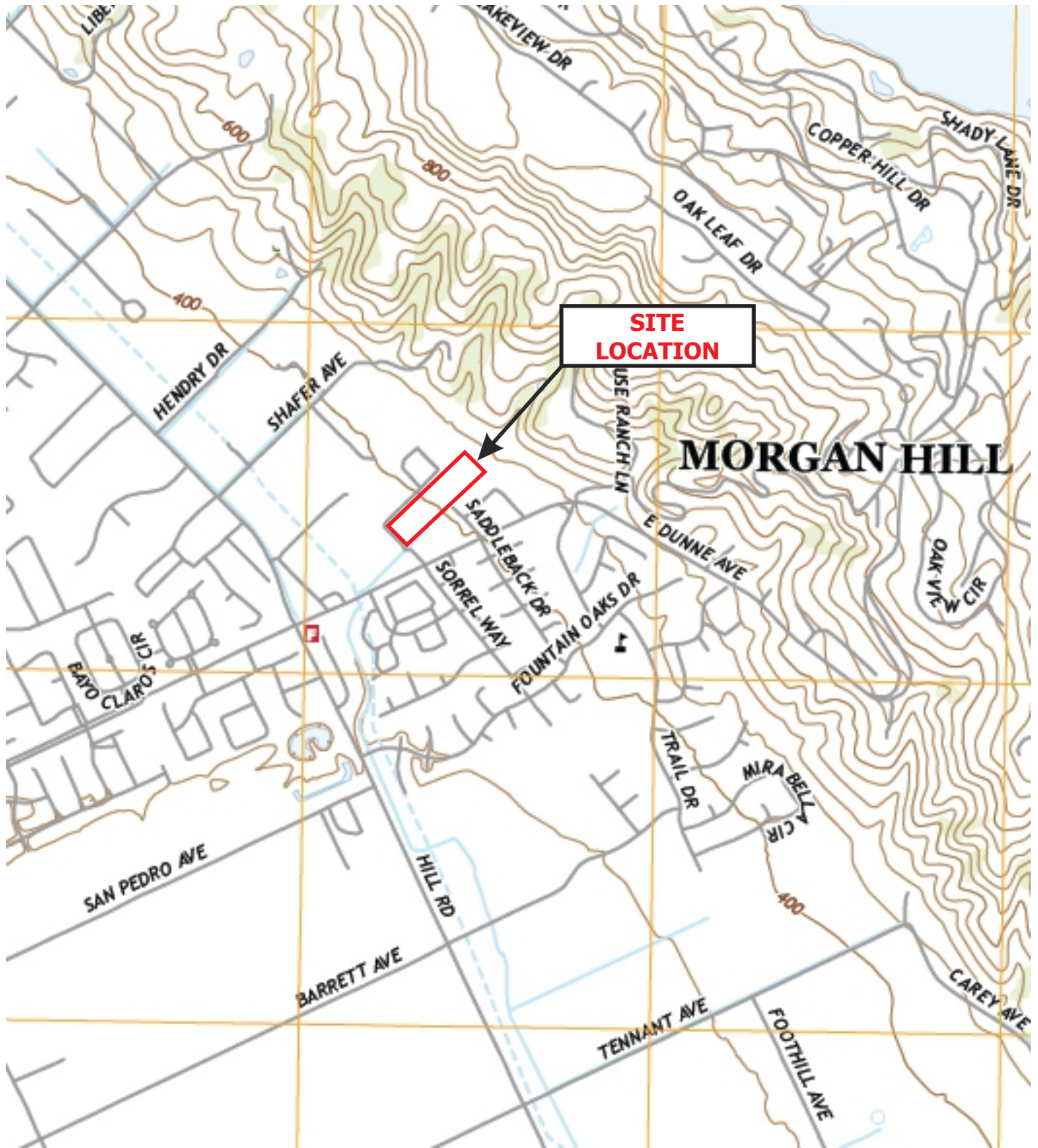
This document was prepared by, or under the direction of, the undersigned.


Jeff Stromberg
Staff Geologist


David Smith, P.G. 8817
Senior Geologist



FIGURES



LEGEND

— Approximate Site Boundary



Map: Mount Sizer, California
Date: 2021
Source: USGS

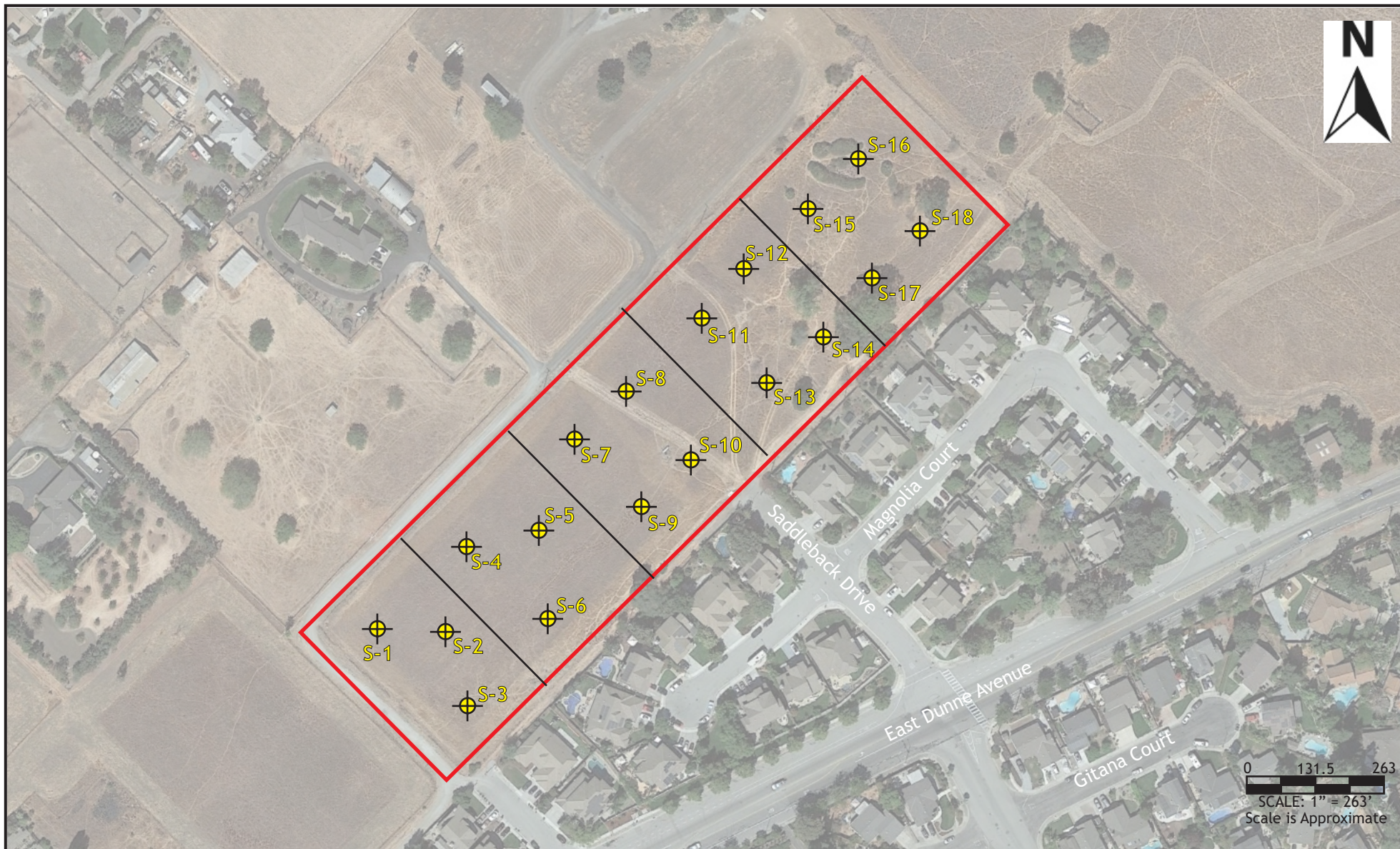
0 600 1,200
SCALE: 1" = 1,200'
Scale is Approximate

SITE LOCATION MAP



2275 East Dunne Avenue
Morgan Hill, California 95037

FIGURE 1
Project No. 473272



LEGEND

- Approximate Site Boundary
- S-1  Shallow Soil Sampling Location

SITE MAP



2275 East Dunne Avenue
Morgan Hill, California 95037

FIGURE 2
Project No. 473272

TABLES

TABLE 1: SOIL SAMPLE DATA SUMMARY
2275 East Dunne Avenue, Morgan Hill, California

U.S. EPA Method 8081B							U.S. EPA Method 6010B		
Location ID	Date	Depth (feet bgs)	gamma-Chlordane (mg/kg)	alpha-Chlordane (mg/kg)	4,4-DDE (mg/kg)	4,4-DDT (mg/kg)	Remaining OCPs (mg/kg)	Arsenic (mg/kg)	Lead (mg/kg)
<u>Shallow Soil Sampling</u>									
S-1	1/11/2023	0.5	--	--	--	--	--	1.95	3.00
S-6	1/11/2023	0.5	--	--	--	--	--	1.57	4.08
S-8	1/11/2023	0.5	--	--	--	--	--	2.30	3.00
S-14	1/11/2023	0.5	--	--	--	--	--	2.63	88.0
S-16	1/11/2023	0.5	--	--	--	--	--	1.97	13.0
<u>Laboratory Composite Sample</u>									
Comp-1	1/11/2023	0.5	<0.015	<0.0036	<0.0061	<0.0074	<MDL	--	--
Comp-2	1/11/2023	0.5	<0.015	<0.0036	<0.0061	<0.0074	<MDL	--	--
Comp-3	1/11/2023	0.5	<0.0030	<0.0020	<0.0020	<0.0020	<PQL	--	--
Comp-4	1/11/2023	0.5	0.0152 J	0.0168 J	0.00708 J	0.0143 J	<MDL	--	--
Comp-5	1/11/2023	0.5	<0.015	<0.0036	<0.0061	<0.0074	<MDL	--	--
<u>Comparison Values:</u>									
ESL Direct Exposure - R			NE	NE	1.8	1.9	Various	0.067 ¹	82
ESL Direct Exposure - CW			NE	NE	57	57	Various	0.98 ¹	160
Maximum Background Concentrations			NE	NE	NE	NE	NE	11.0	97.1

Notes:

mg/kg	milligrams per kilogram
<MDL	less than the laboratory method detection limit
<PQL	less than the laboratory practical quantitation limit
bgs	below ground surface
1	Arsenic concentrations from Establishing Background Arsenic in Soil of the San Francisco Bay Region, December 2011 study indicate background levels of arsenic in California Bay Area soil typically range between 1.2 and 11 mg/kg.
--	not analyzed
DDE	Dichlorodiphenyldichloroethylene
DDT	Dichlorodiphenyltrichloroethane
OCPs	Organochlorine pesticides
NE	not established
J	Indicates a value between the method MDL and PQL and that the reported concentration should be considered as estimated rather the quantitative
Bold	result exceeds a regulatory screening level

Comparison Values:

ESL Direct Exposure - R:	Environmental Screening Levels (ESLs) showing Direct Exposure Human Health Residential (R) Use exposure risks from July 2019 (Rev. 2) ESL Summary Tables, prepared by the San Francisco Bay Regional Water Quality Control Board
ESL Direct Exposure - CW:	Environmental Screening Levels (ESLs) showing Direct Exposure Human Health Construction Worker (CW) Use exposure risks from July 2019 (Rev. 2) ESL Summary Tables, prepared by the San Francisco Bay Regional Water Quality Control Board
Max. Background:	Typical background concentrations provided here are based on "Establishing Background Arsenic in Soil of the Urbanized San Francisco Bay Region" by Duvergé, D.J., dated December 2011 for arsenic and "Background Concentrations of Trace and Major Elements in California Soils", by Bradford, G.R., et. al., dated March 1996 for remaining metals.

APPENDIX A FIELD NOTES

AEI CONSULTANTS
DAILY FIELD REPORT

PAGE 1 OF 1

Project Name: _____
Location: 2275 E Dunne Avenue, Morgan Hill, CA
Project No.: 473272 Date: 01/11/23

Field Person: JRS / GO
Project Manager: K. Lamb
Weather: Overcast

Daily Summary: Shallow Soil Sampling

Subcontractors: NA

Equipment: Hand Tools / PID

Materials: _____

TIME	SUMMARIZE FIELD ACTIVITIES		BREATHING ZONE	
			Time	PPM
0745	Mob to Site	1130 COC / offsite		
0845	AEI (diff) onsite / 40 onsite			
	PID:			
0924	S-1	0.2 Pb/As		
0926	S-2	0.2		
0918	S-3	0.3		
0939	S-4	0.7		
0934	S-5	0.4		
0932	S-6	0.3 Pb/As		
0944	S-7	0.8		
0951	S-8	0.6 Pb/As		
0940	S-9	0.5		
0945	S-10	0.9		
0958	S-11	0.2		
1001	S-12	0.3		
0948	S-13	0.7		
0953	S-14	0.4 Pb/As		
1005	S-15	0.5		
1010	S-16	1.1 Pb/As		
1004	S-17	0.7		
1009	S-18	0.6 Pb/As		

Field Person Signature: _____
Project Manager Signature: _____

Date: 1/11/23
Date: _____

APPENDIX B

LABORATORY ANALYTICAL REPORT



AEI Consultants
2500 Camino Diablo
Walnut Creek, California 94597
Tel: 925-746-6048

RE:

Work Order No.: 2301087

Dear Kate Lamb:

Torrent Laboratory, Inc. received 18 sample(s) on January 11, 2023 for the analyses presented in the following Report.

All data for associated QC met EPA or laboratory specification(s) except where noted in the case narrative.

Torrent Laboratory, Inc. is certified by the State of California, ELAP #1991. If you have any questions regarding these test results, please feel free to contact the Project Management Team at (408)263-5258; ext 204.

A handwritten signature in blue ink that reads "Kathie Evans". The signature is written in a cursive, flowing style.

Kathie Evans
Project Manager

January 16, 2023

Date



Date: 1/16/2023

Client: AEI Consultants

Project:

Work Order: 2301087

CASE NARRATIVE

Unless otherwise indicated in the following narrative, no issues encountered with the receiving, preparation, analysis or reporting of the results associated with this work order.

Unless otherwise indicated in the following narrative, no results have been method and/or field blank corrected.

Reported results relate only to the items/samples tested by the laboratory.

This report shall not be reproduced, except in full, without the written approval of Torrent Laboratory, Inc.



Sample Result Summary

Report prepared for: Kate Lamb
AEI Consultants

Date Received: 01/11/23

Date Reported: 01/16/23

S-1

2301087-001

<u>Parameters:</u>	<u>Analysis Method</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Results</u>	<u>Unit</u>
Arsenic	SW6010B	1	0.15	1.3	1.95	mg/Kg
Lead	SW6010B	1	0.12	3.0	3.00	mg/Kg

S-6

2301087-006

<u>Parameters:</u>	<u>Analysis Method</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Results</u>	<u>Unit</u>
Arsenic	SW6010B	1	0.15	1.3	1.57	mg/Kg
Lead	SW6010B	1	0.12	3.0	4.08	mg/Kg

S-8

2301087-008

<u>Parameters:</u>	<u>Analysis Method</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Results</u>	<u>Unit</u>
Arsenic	SW6010B	1	0.15	1.3	2.30	mg/Kg
Lead	SW6010B	1	0.12	3.0	3.00	mg/Kg

S-14

2301087-014

<u>Parameters:</u>	<u>Analysis Method</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Results</u>	<u>Unit</u>
Arsenic	SW6010B	1	0.15	1.3	2.63	mg/Kg
Lead	SW6010B	1	0.12	3.0	88.0	mg/Kg

S-16

2301087-016

<u>Parameters:</u>	<u>Analysis Method</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Results</u>	<u>Unit</u>
Arsenic	SW6010B	1	0.15	1.3	1.97	mg/Kg
Lead	SW6010B	1	0.12	3.0	13.0	mg/Kg

COMP-1

2301087-019

<u>Parameters:</u>	<u>Analysis Method</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Results</u>	<u>Unit</u>
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All compounds were non-detectable for this sample.

COMP-2

2301087-020

<u>Parameters:</u>	<u>Analysis Method</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Results</u>	<u>Unit</u>
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All compounds were non-detectable for this sample.

COMP-3

2301087-021

<u>Parameters:</u>	<u>Analysis Method</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Results</u>	<u>Unit</u>
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All compounds were non-detectable for this sample.



Sample Result Summary

Report prepared for: Kate Lamb
AEI Consultants

Date Received: 01/11/23

Date Reported: 01/16/23

COMP-4

2301087-022

<u>Parameters:</u>	<u>Analysis Method</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Results</u>	<u>Unit</u>
gamma-Chlordane	SW8081B	10	15	30	15.2	ug/Kg
alpha-Chlordane	SW8081B	10	3.6	20	16.8	ug/Kg
4,4'-DDE	SW8081B	10	6.1	20	7.08	ug/Kg
4,4'-DDT	SW8081B	10	7.4	20	14.3	ug/Kg

COMP-5

2301087-023

<u>Parameters:</u>	<u>Analysis Method</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Results</u>	<u>Unit</u>
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All compounds were non-detectable for this sample.



SAMPLE RESULTS

Report prepared for: Kate Lamb
AEI Consultants

Date/Time Received: 01/11/23, 2:40 pm
Date Reported: 01/16/23

Client Sample ID:	S-1	Lab Sample ID:	2301087-001A
Project Name/Location:		Sample Matrix:	Soil
Project Number:	473272		
Date/Time Sampled:	01/11/23 / 9:24		
SDG:			

Prep Method:	3050B	Prep Batch Date/Time:	1/11/23	7:00:00PM
Prep Batch ID:	1147893	Prep Analyst:	TNGO	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Arsenic	SW6010B	1	0.15	1.3	1.95		mg/Kg	01/12/23	14:57	AT	471873
Lead	SW6010B	1	0.12	3.0	3.00		mg/Kg	01/12/23	14:57	AT	471873



SAMPLE RESULTS

Report prepared for: Kate Lamb
AEI Consultants

Date/Time Received: 01/11/23, 2:40 pm
Date Reported: 01/16/23

Client Sample ID:	S-6	Lab Sample ID:	2301087-006A
Project Name/Location:		Sample Matrix:	Soil
Project Number:	473272		
Date/Time Sampled:	01/11/23 / 9:32		
SDG:			

Prep Method:	3050B	Prep Batch Date/Time:	1/11/23	7:00:00PM
Prep Batch ID:	1147893	Prep Analyst:	TNGO	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Arsenic	SW6010B	1	0.15	1.3	1.57		mg/Kg	01/12/23	15:06	AT	471873
Lead	SW6010B	1	0.12	3.0	4.08		mg/Kg	01/12/23	15:06	AT	471873



SAMPLE RESULTS

Report prepared for: Kate Lamb
AEI Consultants

Date/Time Received: 01/11/23, 2:40 pm
Date Reported: 01/16/23

Client Sample ID:	S-8	Lab Sample ID:	2301087-008A
Project Name/Location:		Sample Matrix:	Soil
Project Number:	473272		
Date/Time Sampled:	01/11/23 / 9:51		
SDG:			

Prep Method:	3050B	Prep Batch Date/Time:	1/11/23	7:00:00PM
Prep Batch ID:	1147893	Prep Analyst:	TNGO	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Arsenic	SW6010B	1	0.15	1.3	2.30		mg/Kg	01/12/23	15:07	AT	471873
Lead	SW6010B	1	0.12	3.0	3.00		mg/Kg	01/12/23	15:07	AT	471873



SAMPLE RESULTS

Report prepared for: Kate Lamb
AEI Consultants

Date/Time Received: 01/11/23, 2:40 pm
Date Reported: 01/16/23

Client Sample ID:	S-14	Lab Sample ID:	2301087-014A
Project Name/Location:		Sample Matrix:	Soil
Project Number:	473272		
Date/Time Sampled:	01/11/23 / 9:53		
SDG:			

Prep Method:	3050B	Prep Batch Date/Time:	1/11/23	7:00:00PM
Prep Batch ID:	1147893	Prep Analyst:	TNGO	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Arsenic	SW6010B	1	0.15	1.3	2.63		mg/Kg	01/12/23	15:09	AT	471873
Lead	SW6010B	1	0.12	3.0	88.0		mg/Kg	01/12/23	15:09	AT	471873



SAMPLE RESULTS

Report prepared for: Kate Lamb
AEI Consultants

Date/Time Received: 01/11/23, 2:40 pm
Date Reported: 01/16/23

Client Sample ID:	S-16	Lab Sample ID:	2301087-016A
Project Name/Location:		Sample Matrix:	Soil
Project Number:	473272		
Date/Time Sampled:	01/11/23 / 10:10		
SDG:			

Prep Method:	3050B	Prep Batch Date/Time:	1/11/23	7:00:00PM
Prep Batch ID:	1147893	Prep Analyst:	TNGO	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Arsenic	SW6010B	1	0.15	1.3	1.97		mg/Kg	01/12/23	15:11	AT	471873
Lead	SW6010B	1	0.12	3.0	13.0		mg/Kg	01/12/23	15:11	AT	471873



SAMPLE RESULTS

Report prepared for: Kate Lamb
AEI Consultants

Date/Time Received: 01/11/23, 2:40 pm
Date Reported: 01/16/23

Client Sample ID:	COMP-1	Lab Sample ID:	2301087-019A
Project Name/Location:		Sample Matrix:	Soil
Project Number:	473272		
Date/Time Sampled:	01/11/23 /		
SDG:			

Prep Method: 3546_OCP	Prep Batch Date/Time: 1/11/23 9:51:00AM
Prep Batch ID: 1147867	Prep Analyst: AKIZ

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
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The results shown below are reported using their MDL.

alpha-BHC	SW8081B	10	2.5	20	ND		ug/Kg	01/12/23	15:02	LA	471877
gamma-BHC (Lindane)	SW8081B	10	7.1	20	ND		ug/Kg	01/12/23	15:02	LA	471877
beta-BHC	SW8081B	10	4.4	20	ND		ug/Kg	01/12/23	15:02	LA	471877
delta-BHC	SW8081B	10	6.5	20	ND		ug/Kg	01/12/23	15:02	LA	471877
Heptachlor	SW8081B	10	2.7	20	ND		ug/Kg	01/12/23	15:02	LA	471877
Aldrin	SW8081B	10	2.9	20	ND		ug/Kg	01/12/23	15:02	LA	471877
Heptachlor Epoxide	SW8081B	10	3.1	20	ND		ug/Kg	01/12/23	15:02	LA	471877
gamma-Chlordane	SW8081B	10	15	30	ND		ug/Kg	01/12/23	15:02	LA	471877
alpha-Chlordane	SW8081B	10	3.6	20	ND		ug/Kg	01/12/23	15:02	LA	471877
4,4'-DDE	SW8081B	10	6.1	20	ND		ug/Kg	01/12/23	15:02	LA	471877
Endosulfan I	SW8081B	10	2.9	20	ND		ug/Kg	01/12/23	15:02	LA	471877
Dieldrin	SW8081B	10	2.5	20	ND		ug/Kg	01/12/23	15:02	LA	471877
Endrin	SW8081B	10	7.9	20	ND		ug/Kg	01/12/23	15:02	LA	471877
4,4'-DDD	SW8081B	10	6.4	20	ND		ug/Kg	01/12/23	15:02	LA	471877
Endosulfan II	SW8081B	10	3.4	20	ND		ug/Kg	01/12/23	15:02	LA	471877
4,4'-DDT	SW8081B	10	7.4	20	ND		ug/Kg	01/12/23	15:02	LA	471877
Endrin Aldehyde	SW8081B	10	5.1	20	ND		ug/Kg	01/12/23	15:02	LA	471877
Methoxychlor	SW8081B	10	26	60	ND		ug/Kg	01/12/23	15:02	LA	471877
Endosulfan Sulfate	SW8081B	10	5.1	20	ND		ug/Kg	01/12/23	15:02	LA	471877
Endrin Ketone	SW8081B	10	4.3	20	ND		ug/Kg	01/12/23	15:02	LA	471877
Chlordane, Technical	SW8081B	10	27	200	ND		ug/Kg	01/12/23	15:02	LA	471877
Toxaphene	SW8081B	10	220	500	ND		ug/Kg	01/12/23	15:02	LA	471877

Acceptance Limits

Tetrachloro-M-Xylene (S)	SW8081B		48 - 125	55.6		%	01/12/23	15:02	LA	471877
Decachlorobiphenyl (S)	SW8081B		38 - 135	66.1		%	01/12/23	15:02	LA	471877

NOTE: Sample diluted due to the nature of the sample matrix (dark colored extract)



SAMPLE RESULTS

Report prepared for: Kate Lamb
AEI Consultants

Date/Time Received: 01/11/23, 2:40 pm
Date Reported: 01/16/23

Client Sample ID:	COMP-2	Lab Sample ID:	2301087-020A
Project Name/Location:		Sample Matrix:	Soil
Project Number:	473272		
Date/Time Sampled:	01/11/23 /		
SDG:			

Prep Method:	3546_OCP	Prep Batch Date/Time:	1/11/23 9:51:00AM
Prep Batch ID:	1147867	Prep Analyst:	AKIZ

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
<i>The results shown below are reported using their MDL.</i>											
alpha-BHC	SW8081B	10	2.5	20	ND		ug/Kg	01/12/23	15:16	LA	471877
gamma-BHC (Lindane)	SW8081B	10	7.1	20	ND		ug/Kg	01/12/23	15:16	LA	471877
beta-BHC	SW8081B	10	4.4	20	ND		ug/Kg	01/12/23	15:16	LA	471877
delta-BHC	SW8081B	10	6.5	20	ND		ug/Kg	01/12/23	15:16	LA	471877
Heptachlor	SW8081B	10	2.7	20	ND		ug/Kg	01/12/23	15:16	LA	471877
Aldrin	SW8081B	10	2.9	20	ND		ug/Kg	01/12/23	15:16	LA	471877
Heptachlor Epoxide	SW8081B	10	3.1	20	ND		ug/Kg	01/12/23	15:16	LA	471877
gamma-Chlordane	SW8081B	10	15	30	ND		ug/Kg	01/12/23	15:16	LA	471877
alpha-Chlordane	SW8081B	10	3.6	20	ND		ug/Kg	01/12/23	15:16	LA	471877
4,4'-DDE	SW8081B	10	6.1	20	ND		ug/Kg	01/12/23	15:16	LA	471877
Endosulfan I	SW8081B	10	2.9	20	ND		ug/Kg	01/12/23	15:16	LA	471877
Dieldrin	SW8081B	10	2.5	20	ND		ug/Kg	01/12/23	15:16	LA	471877
Endrin	SW8081B	10	7.9	20	ND		ug/Kg	01/12/23	15:16	LA	471877
4,4'-DDD	SW8081B	10	6.4	20	ND		ug/Kg	01/12/23	15:16	LA	471877
Endosulfan II	SW8081B	10	3.4	20	ND		ug/Kg	01/12/23	15:16	LA	471877
4,4'-DDT	SW8081B	10	7.4	20	ND		ug/Kg	01/12/23	15:16	LA	471877
Endrin Aldehyde	SW8081B	10	5.1	20	ND		ug/Kg	01/12/23	15:16	LA	471877
Methoxychlor	SW8081B	10	26	60	ND		ug/Kg	01/12/23	15:16	LA	471877
Endosulfan Sulfate	SW8081B	10	5.1	20	ND		ug/Kg	01/12/23	15:16	LA	471877
Endrin Ketone	SW8081B	10	4.3	20	ND		ug/Kg	01/12/23	15:16	LA	471877
Chlordane, Technical	SW8081B	10	27	200	ND		ug/Kg	01/12/23	15:16	LA	471877
Toxaphene	SW8081B	10	220	500	ND		ug/Kg	01/12/23	15:16	LA	471877

Acceptance Limits

Tetrachloro-M-Xylene (S)	SW8081B	48 - 125	61.3	%	01/12/23	15:16	LA	471877
Decachlorobiphenyl (S)	SW8081B	38 - 135	70.3	%	01/12/23	15:16	LA	471877

NOTE: Sample diluted due to the nature of the sample matrix (dark colored extract)



SAMPLE RESULTS

Report prepared for: Kate Lamb
AEI Consultants

Date/Time Received: 01/11/23, 2:40 pm
Date Reported: 01/16/23

Client Sample ID:	COMP-3	Lab Sample ID:	2301087-021A
Project Name/Location:		Sample Matrix:	Soil
Project Number:	473272		
Date/Time Sampled:	01/11/23 /		
SDG:			

Prep Method: 3546_OCP	Prep Batch Date/Time: 1/11/23 9:51:00AM
Prep Batch ID: 1147867	Prep Analyst: AKIZ

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
alpha-BHC	SW8081B	1	0.25	2.0	ND		ug/Kg	01/12/23	15:29	LA	471877
gamma-BHC (Lindane)	SW8081B	1	0.71	2.0	ND		ug/Kg	01/12/23	15:29	LA	471877
beta-BHC	SW8081B	1	0.44	2.0	ND		ug/Kg	01/12/23	15:29	LA	471877
delta-BHC	SW8081B	1	0.65	2.0	ND		ug/Kg	01/12/23	15:29	LA	471877
Heptachlor	SW8081B	1	0.27	2.0	ND		ug/Kg	01/12/23	15:29	LA	471877
Aldrin	SW8081B	1	0.29	2.0	ND		ug/Kg	01/12/23	15:29	LA	471877
Heptachlor Epoxide	SW8081B	1	0.31	2.0	ND		ug/Kg	01/12/23	15:29	LA	471877
gamma-Chlordane	SW8081B	1	1.5	3.0	ND		ug/Kg	01/12/23	15:29	LA	471877
alpha-Chlordane	SW8081B	1	0.36	2.0	ND		ug/Kg	01/12/23	15:29	LA	471877
4,4'-DDE	SW8081B	1	0.61	2.0	ND		ug/Kg	01/12/23	15:29	LA	471877
Endosulfan I	SW8081B	1	0.29	2.0	ND		ug/Kg	01/12/23	15:29	LA	471877
Dieldrin	SW8081B	1	0.25	2.0	ND		ug/Kg	01/12/23	15:29	LA	471877
Endrin	SW8081B	1	0.79	2.0	ND		ug/Kg	01/12/23	15:29	LA	471877
4,4'-DDD	SW8081B	1	0.64	2.0	ND		ug/Kg	01/12/23	15:29	LA	471877
Endosulfan II	SW8081B	1	0.34	2.0	ND		ug/Kg	01/12/23	15:29	LA	471877
4,4'-DDT	SW8081B	1	0.74	2.0	ND		ug/Kg	01/12/23	15:29	LA	471877
Endrin Aldehyde	SW8081B	1	0.51	2.0	ND		ug/Kg	01/12/23	15:29	LA	471877
Methoxychlor	SW8081B	1	2.6	6.0	ND		ug/Kg	01/12/23	15:29	LA	471877
Endosulfan Sulfate	SW8081B	1	0.51	2.0	ND		ug/Kg	01/12/23	15:29	LA	471877
Endrin Ketone	SW8081B	1	0.43	2.0	ND		ug/Kg	01/12/23	15:29	LA	471877
Chlordane, Technical	SW8081B	1	2.7	20	ND		ug/Kg	01/12/23	15:29	LA	471877
Toxaphene	SW8081B	1	22	50	ND		ug/Kg	01/12/23	15:29	LA	471877
Acceptance Limits											
Tetrachloro-M-Xylene (S)	SW8081B		48 - 125		59.7		%	01/12/23	15:29	LA	471877
Decachlorobiphenyl (S)	SW8081B		38 - 135		65.4		%	01/12/23	15:29	LA	471877



SAMPLE RESULTS

Report prepared for: Kate Lamb
AEI Consultants

Date/Time Received: 01/11/23, 2:40 pm
Date Reported: 01/16/23

Client Sample ID:	COMP-4	Lab Sample ID:	2301087-022A
Project Name/Location:		Sample Matrix:	Soil
Project Number:	473272		
Date/Time Sampled:	01/11/23 /		
SDG:			

Prep Method:	3546_OCP	Prep Batch Date/Time:	1/11/23 9:51:00AM
Prep Batch ID:	1147867	Prep Analyst:	AKIZ

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
<i>The results shown below are reported using their MDL.</i>											
alpha-BHC	SW8081B	10	2.5	20	ND		ug/Kg	01/12/23	15:41	LA	471877
gamma-BHC (Lindane)	SW8081B	10	7.1	20	ND		ug/Kg	01/12/23	15:41	LA	471877
beta-BHC	SW8081B	10	4.4	20	ND		ug/Kg	01/12/23	15:41	LA	471877
delta-BHC	SW8081B	10	6.5	20	ND		ug/Kg	01/12/23	15:41	LA	471877
Heptachlor	SW8081B	10	2.7	20	ND		ug/Kg	01/12/23	15:41	LA	471877
Aldrin	SW8081B	10	2.9	20	ND		ug/Kg	01/12/23	15:41	LA	471877
Heptachlor Epoxide	SW8081B	10	3.1	20	ND		ug/Kg	01/12/23	15:41	LA	471877
gamma-Chlordane	SW8081B	10	15	30	15.2	J	ug/Kg	01/12/23	15:41	LA	471877
alpha-Chlordane	SW8081B	10	3.6	20	16.8	J	ug/Kg	01/12/23	15:41	LA	471877
4,4'-DDE	SW8081B	10	6.1	20	7.08	J	ug/Kg	01/12/23	15:41	LA	471877
Endosulfan I	SW8081B	10	2.9	20	ND		ug/Kg	01/12/23	15:41	LA	471877
Dieldrin	SW8081B	10	2.5	20	ND		ug/Kg	01/12/23	15:41	LA	471877
Endrin	SW8081B	10	7.9	20	ND		ug/Kg	01/12/23	15:41	LA	471877
4,4'-DDD	SW8081B	10	6.4	20	ND		ug/Kg	01/12/23	15:41	LA	471877
Endosulfan II	SW8081B	10	3.4	20	ND		ug/Kg	01/12/23	15:41	LA	471877
4,4'-DDT	SW8081B	10	7.4	20	14.3	J	ug/Kg	01/12/23	15:41	LA	471877
Endrin Aldehyde	SW8081B	10	5.1	20	ND		ug/Kg	01/12/23	15:41	LA	471877
Methoxychlor	SW8081B	10	26	60	ND		ug/Kg	01/12/23	15:41	LA	471877
Endosulfan Sulfate	SW8081B	10	5.1	20	ND		ug/Kg	01/12/23	15:41	LA	471877
Endrin Ketone	SW8081B	10	4.3	20	ND		ug/Kg	01/12/23	15:41	LA	471877
Chlordane, Technical	SW8081B	10	27	200	ND		ug/Kg	01/12/23	15:41	LA	471877
Toxaphene	SW8081B	10	220	500	ND		ug/Kg	01/12/23	15:41	LA	471877

Acceptance Limits

Tetrachloro-M-Xylene (S)	SW8081B		48 - 125	74.9	%	01/12/23	15:41	LA	471877
Decachlorobiphenyl (S)	SW8081B		38 - 135	81.2	%	01/12/23	15:41	LA	471877

NOTE: Sample diluted due to the nature of the sample matrix (dark colored extract)



SAMPLE RESULTS

Report prepared for: Kate Lamb
AEI Consultants

Date/Time Received: 01/11/23, 2:40 pm
Date Reported: 01/16/23

Client Sample ID:	COMP-5	Lab Sample ID:	2301087-023A
Project Name/Location:		Sample Matrix:	Soil
Project Number:	473272		
Date/Time Sampled:	01/11/23 /		
SDG:			

Prep Method:	3546_OCP	Prep Batch Date/Time:	1/11/23 9:51:00AM
Prep Batch ID:	1147867	Prep Analyst:	AKIZ

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
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The results shown below are reported using their MDL.

alpha-BHC	SW8081B	10	2.5	20	ND		ug/Kg	01/12/23	15:56	LA	471877
gamma-BHC (Lindane)	SW8081B	10	7.1	20	ND		ug/Kg	01/12/23	15:56	LA	471877
beta-BHC	SW8081B	10	4.4	20	ND		ug/Kg	01/12/23	15:56	LA	471877
delta-BHC	SW8081B	10	6.5	20	ND		ug/Kg	01/12/23	15:56	LA	471877
Heptachlor	SW8081B	10	2.7	20	ND		ug/Kg	01/12/23	15:56	LA	471877
Aldrin	SW8081B	10	2.9	20	ND		ug/Kg	01/12/23	15:56	LA	471877
Heptachlor Epoxide	SW8081B	10	3.1	20	ND		ug/Kg	01/12/23	15:56	LA	471877
gamma-Chlordane	SW8081B	10	15	30	ND		ug/Kg	01/12/23	15:56	LA	471877
alpha-Chlordane	SW8081B	10	3.6	20	ND		ug/Kg	01/12/23	15:56	LA	471877
4,4'-DDE	SW8081B	10	6.1	20	ND		ug/Kg	01/12/23	15:56	LA	471877
Endosulfan I	SW8081B	10	2.9	20	ND		ug/Kg	01/12/23	15:56	LA	471877
Dieldrin	SW8081B	10	2.5	20	ND		ug/Kg	01/12/23	15:56	LA	471877
Endrin	SW8081B	10	7.9	20	ND		ug/Kg	01/12/23	15:56	LA	471877
4,4'-DDD	SW8081B	10	6.4	20	ND		ug/Kg	01/12/23	15:56	LA	471877
Endosulfan II	SW8081B	10	3.4	20	ND		ug/Kg	01/12/23	15:56	LA	471877
4,4'-DDT	SW8081B	10	7.4	20	ND		ug/Kg	01/12/23	15:56	LA	471877
Endrin Aldehyde	SW8081B	10	5.1	20	ND		ug/Kg	01/12/23	15:56	LA	471877
Methoxychlor	SW8081B	10	26	60	ND		ug/Kg	01/12/23	15:56	LA	471877
Endosulfan Sulfate	SW8081B	10	5.1	20	ND		ug/Kg	01/12/23	15:56	LA	471877
Endrin Ketone	SW8081B	10	4.3	20	ND		ug/Kg	01/12/23	15:56	LA	471877
Chlordane, Technical	SW8081B	10	27	200	ND		ug/Kg	01/12/23	15:56	LA	471877
Toxaphene	SW8081B	10	220	500	ND		ug/Kg	01/12/23	15:56	LA	471877

Acceptance Limits

Tetrachloro-M-Xylene (S)	SW8081B		48 - 125	66.8	%	01/12/23	15:56	LA	471877
Decachlorobiphenyl (S)	SW8081B		38 - 135	69.9	%	01/12/23	15:56	LA	471877

NOTE: Sample diluted due to the nature of the sample matrix (dark colored extract)



MB Summary Report

Work Order:	2301087	Prep Method:	3546_OCP	Prep Date:	01/11/23	Prep Batch:	1147867
Matrix:	Soil	Analytical Method:	SW8081B	Analyzed Date:	1/11/2023	Analytical Batch:	471847
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
alpha-BHC	0.25	2.0	ND	
gamma-BHC (Lindane)	0.71	2.0	ND	
beta-BHC	0.44	2.0	ND	
delta-BHC	0.65	2.0	ND	
Heptachlor	0.27	2.0	ND	
Aldrin	0.29	2.0	ND	
Heptachlor Epoxide	0.31	2.0	ND	
gamma-Chlordane	1.5	3.0	ND	
alpha-Chlordane	0.36	2.0	ND	
4,4'-DDE	0.61	2.0	ND	
Endosulfan I	0.29	2.0	ND	
Dieldrin	0.25	2.0	ND	
Endrin	0.79	2.0	ND	
4,4'-DDD	0.64	2.0	ND	
Endosulfan II	0.34	2.0	ND	
4,4'-DDT	0.74	2.0	ND	
Endrin Aldehyde	0.51	2.0	ND	
Methoxychlor	2.6	6.0	ND	
Endosulfan Sulfate	0.51	2.0	ND	
Endrin Ketone	0.43	2.0	ND	
Chlordane, Technical	2.7	20	ND	
Toxaphene	22	50	ND	
Tetrachloro-M-Xylene (S)			87.2	
Decachlorobiphenyl (S)			103	

Work Order:	2301087	Prep Method:	3050B	Prep Date:	01/11/23	Prep Batch:	1147893
Matrix:	Soil	Analytical Method:	SW6010B	Analyzed Date:	1/12/2023	Analytical Batch:	471873
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Arsenic	0.15	1.30	ND	
Lead	0.10	3.00	ND	



LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2301087	Prep Method:	3546_OCP	Prep Date:	01/11/23	Prep Batch:	1147867
Matrix:	Soil	Analytical Method:	SW8081B	Analyzed Date:	1/11/2023	Analytical Batch:	471847
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
gamma-BHC (Lindane)	0.16	2.0	ND	40	97.9	92.1	6.32	25 - 135	30	
Heptachlor	0.11	2.0	ND	40	104	96.7	6.98	40 - 130	30	
Aldrin	0.20	2.0	ND	40	99.7	93.2	6.74	25 - 140	30	
delta-BHC	0.15	2.0	ND	40	100	94.4	6.42	60 - 130	30	
Heptachlor	0.19	2.0	ND	40	98.1	88.3	10.5	55 - 135	30	
4,4'-DDT	0.13	2.0	ND	40	103	96.9	5.76	45 - 140	30	
Tetrachloro-M-Xylene (S)				100	89.8	85.9		48 - 125		
Decachlorobiphenyl (S)				100	106	101		38 - 135		

Work Order:	2301087	Prep Method:	3050B	Prep Date:	01/11/23	Prep Batch:	1147893
Matrix:	Soil	Analytical Method:	SW6010B	Analyzed Date:	1/12/2023	Analytical Batch:	471873
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Arsenic	0.15	1.30	ND	50	99.4	99.6	0.201	80 - 120	30	
Lead	0.10	3.00	ND	50	103	102	0.976	80 - 120	30	



MS/MSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2301087	Prep Method:	3050B	Prep Date:	01/11/23	Prep Batch:	1147893
Matrix:	Soil	Analytical Method:	SW6010B	Analyzed Date:	1/12/2023	Analytical Batch:	471873
Spiked Sample:	2301087-001A						
Units:	mg/Kg						

Parameters	MDL	PQL	Sample Conc.	Spike Conc.	MS % Recovery	MSD % Recovery	MS/MSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Arsenic	0.15	5.00	ND	50	86.5	86.0	0.443	71.0 - 121	30	
Lead	0.10	5.00	ND	50	90.0	88.7	1.26	67.9 - 118	30	



Laboratory Qualifiers and Definitions

DEFINITIONS:

Accuracy/Bias (% Recovery) - The closeness of agreement between an observed value and an accepted reference value.
Blank (Method/Preparation Blank) -MB/PB - An analyte-free matrix to which all reagents are added in the same volumes/proportions as used in sample processing. The method blank is used to document contamination resulting from the analytical process.
Duplicate - a field sample and/or laboratory QC sample prepared in duplicate following all of the same processes and procedures used on the original sample (sample duplicate, LCSD, MSD)
Laboratory Control Sample (LCS ad LCSD) - A known matrix spiked with compounds representative of the target analyte(s). This is used to document laboratory performance.
Matrix - the component or substrate that contains the analyte of interest (e.g., - groundwater, sediment, soil, waste water, etc)
Matrix Spike (MS/MSD) - Client sample spiked with identical concentrations of target analyte (s). The spiking occurs prior to the sample preparation and analysis. They are used to document the precision and bias of a method in a given sample matrix.
Method Detection Limit (MDL) - the minimum concentration of a substance that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero
Practical Quantitation Limit/Reporting Limit/Limit of Quantitation (PQL/RL/LOQ) - a laboratory determined value at 2 to 5 times above the MDL that can be reproduced in a manner that results in a 99% confidence level that the result is both accurate and precise. PQLs/RLs/LODs reflect all preparation factors and/or dilution factors that have been applied to the sample during the preparation and/or analytical processes.
Precision (%RPD) - The agreement among a set of replicate/duplicate measurements without regard to known value of the replicates
Surrogate (S) or (Surr) - An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. Surrogates are used in most organic analysis to demonstrate matrix compatibility with the chosen method of analysis
Tentatively Identified Compound (TIC) - A compound not contained within the analytical calibration standards but present in the GCMS library of defined compounds. When the library is searched for an unknown compound, it can frequently give a tentative identification to the compound based on retention time and primary and secondary ion match. TICs are reported as estimates and are candidates for further investigation.
Units: the unit of measure used to express the reported result - mg/L and mg/Kg (equivalent to PPM - parts per million in liquid and solid), ug/L and ug/Kg (equivalent to PPB - parts per billion in liquid and solid), ug/m3 , mg/m3 , ppbv and ppmv (all units of measure for reporting concentrations in air), % (equivalent to 10000 ppm or 1,000,000 ppb), ug/Wipe (concentration found on the surface of a single Wipe usually taken over a 100cm2 surface)

LABORATORY QUALIFIERS

B - Indicates when the analyte is found in the associated method or preparation blank
D - Surrogate is not recoverable due to the necessary dilution of the sample
E - Indicates the reportable value is outside of the calibration range of the instrument but within the linear range of the instrument (unless otherwise noted) Values reported with an E qualifier should be considered as estimated.
H - Indicates that the recommended holding time for the analyte or compound has been exceeded
J - Indicates a value between the method MDL and PQL and that the reported concentration should be considered as estimated rather the quantitative
NA - Not Analyzed
N/A - Not Applicable
ND - Not Detected at a concentration greater than the PQL/RL or, if reported to the MDL, at greater than the MDL.
NR - Not recoverable - a matrix spike concentration is not recoverable due to a concentration within the original sample that is greater than four times the spike concentration added
R - The % RPD between a duplicate set of samples is outside of the absolute values established by laboratory control charts
S - Spike recovery is outside of established method and/or laboratory control limits. Further explanation of the use of this qualifier should be included within a case narrative
X -Used to indicate that a value based on pattern identification is within the pattern range but not typical of the pattern found in standards. Further explanation may or may not be provided within the sample footnote and/or the case narrative.



Sample Receipt Checklist

Client Name: AEI Consultants

Date and Time Received: 1/11/2023 2:40:00PM

Project Name:

Received By: Lorna Imbat

Work Order No.: 2301087

Physically Logged By: Lorna Imbat

Checklist Completed By: Lorna Imbat

Carrier Name: Client Drop Off

Chain of Custody (COC) Information

Chain of custody present?	<u>Yes</u>
Chain of custody signed when relinquished and received?	<u>Yes</u>
Chain of custody agrees with sample labels?	<u>Yes</u>
Custody seals intact on sample bottles?	<u>Not Present</u>

Sample Receipt Information

Custody seals intact on shipping container/cooler?	<u>Not Present</u>
Shipping Container/Cooler In Good Condition?	<u>Yes</u>
Samples in proper container/bottle?	<u>Yes</u>
Samples containers intact?	<u>Yes</u>
Sufficient sample volume for indicated test?	<u>Yes</u>

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	<u>Yes</u>	
Container/Temp Blank temperature in compliance?	<u>Yes</u>	Temperature: 3.0 °C
Water-VOA vials have zero headspace?	<u>No VOA vials submitted</u>	
Water-pH acceptable upon receipt?	<u>N/A</u>	
pH Checked by: N/A	pH Adjusted by: N/A	

Comments:



Login Summary Report

Client ID: TL5781 AEI Consultants

QC Level: II

Project Name:

TAT Requested: 2 Day Rush:2

Project # : 473272

Date Received: 1/11/2023

Report Due Date: 1/16/2023

Time Received: 2:40 pm

Comments:

Work Order # : 2301087

<u>WO Sample ID</u>	<u>Client Sample ID</u>	<u>Collection Date/Time</u>	<u>Matrix</u>	<u>Scheduled Disposal</u>	<u>Sample On Hold</u>	<u>Test On Hold</u>	<u>Requested Tests</u>	<u>Subbed</u>
2301087-001A	S-1	01/11/23 9:24	Soil	07/10/23			Met_S_As Pb Composite	
2301087-002A	S-2	01/11/23 9:26	Soil	07/10/23			Composite	
2301087-003A	S-3	01/11/23 9:18	Soil	07/10/23			Composite	
2301087-004A	S-4	01/11/23 9:39	Soil	07/10/23			Composite	
2301087-005A	S-5	01/11/23 9:34	Soil	07/10/23			Composite	
2301087-006A	S-6	01/11/23 9:32	Soil	07/10/23			Met_S_As Pb Composite	
2301087-007A	S-7	01/11/23 9:44	Soil	07/10/23			Composite	
2301087-008A	S-8	01/11/23 9:51	Soil	07/10/23			Met_S_As Pb Composite	
2301087-009A	S-9	01/11/23 9:40	Soil	07/10/23			Composite	
2301087-010A	S-10	01/11/23 9:45	Soil	07/10/23			Composite	
2301087-011A	S-11	01/11/23 9:58	Soil	07/10/23			Composite	
2301087-012A	S-12	01/11/23 10:01	Soil	07/10/23			Composite	
2301087-013A	S-13	01/11/23 9:48	Soil	07/10/23			Composite	
2301087-014A	S-14	01/11/23 9:53	Soil	07/10/23			Met_S_As Pb Composite	
2301087-015A	S-15	01/11/23 10:05	Soil	07/10/23			Composite	
2301087-016A	S-16	01/11/23 10:10	Soil	07/10/23			Met_S_As Pb Composite	
2301087-017A	S-17	01/11/23 10:04	Soil	07/10/23				



Login Summary Report

Client ID: TL5781 AEI Consultants

QC Level: II

Project Name:

TAT Requested: 2 Day Rush:2

Project # : 473272

Date Received: 1/11/2023

Report Due Date: 1/16/2023

Time Received: 2:40 pm

Comments:

Work Order # : **2301087**

<u>WO Sample ID</u>	<u>Client Sample ID</u>	<u>Collection Date/Time</u>	<u>Matrix</u>	<u>Scheduled Disposal</u>	<u>Sample On Hold</u>	<u>Test On Hold</u>	<u>Requested Tests</u>	<u>Subbed</u>
2301087-018A	S-18	01/11/23 10:09	Soil	07/10/23			Composite	
2301087-019A	COMP-1	01/11/23	Soil	07/10/23			Composite	
2301087-020A	COMP-2	01/11/23	Soil	07/10/23			Pest_S_8081OCP	
2301087-021A	COMP-3	01/11/23	Soil	07/10/23			Pest_S_8081OCP	
2301087-022A	COMP-4	01/11/23	Soil	07/10/23			Pest_S_8081OCP	
2301087-023A	COMP-5	01/11/23	Soil	07/10/23			Pest_S_8081OCP	



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Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO

2301087

Company Name: AEI Consultants			☐ Env. ☐ Special	Project #: 473272	PO#: 327407
Address: 2500 Camino Diablo				Project Name:	
City: Walnut Creek	State: CA	Zip Code: 94597		Comments:	
Telephone: (925) 746-6000		Cell: (949) 939-5523		SAMPLER: Jeff Stromberg	
REPORT TO: Kate Lamb		BILL TO: AEI Consultants		EMAIL: klamb@aeiconsultants.com	

TURNAROUND TIME:

- ☐ 10 Work Days ☐ 4 Work Days ☐ 1 Work Day
☐ 7 Work Days ☐ 3 Work Days ☐ Noon - Nxt Day
☒ 5 Work Days ☒ 2 Work Days ☐ 2 - 8 Hours

SAMPLE TYPE:

- ☐ Storm Water ☐ Air
☐ Waste Water ☐ Wipe
☐ Ground Water ☐ Other
☒ Soil ☐ Product / Bulk

REPORT FORMAT:

- ☒ Level II - Std.
☐ Excel - EDD
☐ EDF ☐ Std.-EDD
☐ QC Level III
☐ QC Level IV

OC's 8081A

Lead & Arsenic 6010B

Hold

ANALYSIS
REQUESTED

LAB ID	CANISTER I.D.	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	OC's 8081A	Lead & Arsenic 6010B	Hold	REMARKS
-001A		S-1	11/11/23 / 0924	Soil	1	8oz. glass		X		
-002A		S-2	/ 0926		1					Comp-1
-003A		S-3	/ 0918		1					
-004A		S-4	/ 0939		1					
-005A		S-5	/ 0934		1					Comp-2
-006A		S-6	/ 0932		1			X		
-007A		S-7	/ 0944		1					
-008A		S-8	/ 0951		1			X		Comp-3
-009A		S-9	/ 0940		1					
-010A		S-10	/ 0945		1					

1 Relinquished By:	Print: Jeff Stromberg	Date: 11/11/23	Time: 1440	Received By:	Print: L.D. Imbert	Date: 1-11-23	Time: 1440
2 Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:

Were Samples Received in Good Condition? ☒ Yes ☐ NO Samples on Ice? ☒ Yes ☐ NO Method of Shipment D/O Sample seals intact? ☐ Yes ☐ NO ☐ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Log In By: _____ Date: _____ Labeled By: _____ Date: _____

Temp 2.8#3 °C

Page 1 of 3 Rev. 3



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FAX: 408.263.8293
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CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO

2301087

Company Name: AEI Consultants			☐ Env. ☐ Special	Project #: 473272	PO#: 327407
Address: 2500 Camino Diablo				Project Name:	
City: Walnut Creek	State: CA	Zip Code: 94597	Comments:		
Telephone: (925) 746-6000	Cell: (949) 939-5523	SAMPLER: Jeff Stromberg			
REPORT TO: Kate Lamb	BILL TO: AEI Consultants	EMAIL: klamb@aeiconsultants.com			

TURNAROUND TIME:

☐ 10 Work Days ☐ 4 Work Days ☐ 1 Work Day
☐ 7 Work Days ☐ 3 Work Days ☐ Noon - Nxt Day
☒ 5 Work Days ☒ 2 Work Days ☐ 2 - 8 Hours

SAMPLE TYPE:

☐ Storm Water ☐ Air
☐ Waste Water ☐ Wipe
☐ Ground Water ☐ Other
☒ Soil ☐ Product / Bulk

REPORT FORMAT:

☒ Level II - Std.
☐ Excel - EDD
☐ EDF ☐ Std.-EDD
☐ QC Level III
☐ QC Level IV

ANALYSIS
REQUESTED

LAB ID	CANISTER I.D.	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	OCPS 8081A	Lead & Arsenic 6010B	Hold	REMARKS
-011A		S-11	11/11/23 / 0958	Soil	1	802 gbs				
-017A		S-12	/ 1001		1					Comp-4
-013A		S-13	/ 0948		1					
-014A		S-14	/ 0953		1			X		
-015A		S-15	/ 1005		1					
-016A		S-16	/ 1010		1			X		Comp-5
-017A		S-17	/ 1004		1					
-018A		S-18	/ 1009		1					
-019A		Comp-1						X		
-020A		Comp-2						X		

1 Relinquished By: <u>Jeff Stromberg</u>	Print: <u>Jeff Stromberg</u>	Date: <u>11/11/23</u>	Time: <u>1440</u>	Received By: <u>L-D. Imbert</u>	Print: <u>L-D. Imbert</u>	Date: <u>11-11-23</u>	Time: <u>1440</u>
2 Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:

Were Samples Received in Good Condition? ☒ Yes ☐ NO Samples on Ice? ☒ Yes ☐ NO Method of Shipment D/D Sample seals intact? ☐ Yes ☐ NO ☐ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Log In By: _____ Date: _____ Labeled By: _____ Date: _____

Temp 2.8#3 °C Page 2 of 3 Rev. 3



CHAIN OF CUSTODY

LAB WORK ORDER NO

230108

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

Company Name: AEI Consultants			☐ Env. ☐ Special	Project #: 473272	PO#: 327407
Address: 2500 Camino Diablo				Project Name:	
City: Walnut Creek	State: CA	Zip Code: 94597		Comments:	
Telephone: (925) 746-6000		Cell: (949) 939-5523		SAMPLER: Jeff Stromberg	
REPORT TO: Kate Lamb		BILL TO: AEI Consultants		EMAIL: klamb@aeiconsultants.com	

[illegible]

1	Relinquished By: 	Print: Jeff Stronberg	Date: 1/11/23	Time: 1440	Received By: 	Print: L-D. Imboet	Date: 1-11-23	Time: 1440
2	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Log In By: _____ Date: _____ Labeled By: _____ Date: _____

Temp 2.87 °CPage 5 of 3 Rev. 3

ATTACHMENT 8

NOISE ASSESSMENT STUDY



EDWARD L. PACK ASSOCIATES. INC.

1975 HAMILTON AVENUE
SUITE 26
SAN JOSE, CA 95125

Acoustical Consultants

TEL: 408-371-1195
MOB: 408-921-4886
www.packassociates.com

January 30, 2023
Project No. 55-005

Ms. Viji Mani
Serene Hills, LLC
22561 Poppy Drive
Cupertino, CA 95014

Subject: Noise Assessment Study for the Planned “Serene Hills” Single-Family Subdivision, Sorrel Way, Morgan Hill

Dear Ms. Mani:

This report presents the results of a noise assessment study for the planned “Serene Hills” single-family subdivision along Sorrel Way in Morgan Hill, as shown on the Site Development Plan, Ref. (a). The noise exposures at the site were evaluated against the standards of the City of Morgan Hill General Plan Noise Element, Ref. (b). An analysis of noise level measurements made for the nearby Dunne Hill Meadow residential development indicates that the noise environment at the site is created primarily by traffic sources on East Dunne Avenue. The results of the analysis reveal that exterior and interior noise exposures will be within the limits of the City of Morgan Hill Noise Element standards. As the exterior noise exposures are within the limits of the standards, the interior maximum noise level limits are not in effect. Noise mitigation measures for the project will not be required.

Sections I and II of this report contain a summary of our findings and recommendations, respectively. Subsequent sections contain site, traffic and project descriptions, analyses and evaluations. Appendices A, B and C, attached, contain the list of references, descriptions of the standards, definitions of the terminology, descriptions of the instrumentation used for the field survey, and the noise measurement data and calculation tables.

I. Summary of the Findings

A. Noise Standards

City of Morgan Hill Noise Element

The noise exposures presented herein were evaluated against the standards of the City of Morgan Hill Noise Element, which utilizes the Day-Night Level (DNL) 24-hour descriptor to define acceptable noise exposures for various land uses. The standards specify a limit of 60 decibels (dB) DNL at single-family exterior living areas.

A limit of 45 dB DNL is specified for interior living spaces. In addition, the Noise Element specifies that when the exterior noise exposure is greater than 60 dB DNL, the *maximum instantaneous* noise levels shall not exceed 50 dBA in bedrooms and 55 dBA in other living spaces.

B. Exterior Noise Exposures

The noise exposures shown below are without the application of mitigation measures and represent the noise environment for project conditions.

- The existing exterior noise exposure at the most impacted planned lot line closet to East Dunne Avenue, 233 ft. from the centerline of the road, is 56 dB DNL. This noise exposure includes a 2 decibel downward adjustment factor to account for the acoustical shielding provided by the existing interposed structures. Under future traffic conditions, the noise exposure is expected to increase to 57 dB DNL. Thus, the noise exposures will be within the limits of the City of Morgan Hill Noise Element standards.

- The existing exterior noise exposure at the most impacted planned building setback from East Dunne Avenue, 417 ft. from the centerline of the road, is 52 dB DNL. Under future traffic conditions, the noise exposure is expected to increase to 53 dB DNL. As the exterior noise exposures are below 60 dB DNL, the interior maximum noise limits are not applicable.

C. Interior Noise Exposures

- The interior noise exposures in the most impacted living spaces closest to East Dunne Avenue will be up to 27 and 28 dB DNL under existing and future traffic conditions, respectively. Thus, the noise exposures will be within the 45 dB DNL limit of the City of Morgan Hill Noise Element standards. Noise mitigation measures for the interior spaces will not be required.

II. Site, Traffic and Project Descriptions

The planned project site is a vacant and slightly sloping parcel located north of East Dunne Avenue between Sorrel Way and Magnolia Way in Morgan Hill. The site is setback 233 ft. to 590 ft. from the centerline of East Dunne Avenue. Surrounding land uses include vacant land adjacent to the west, large parcel rural residential adjacent to the north, vacant land adjacent to the east and single-family residential adjacent to the south.

The on-site noise environment is controlled primarily by traffic sources on East Dunne Avenue which carries an existing (2015) Average Daily Traffic (ADT) volume of 10,414 vehicles, as reported by the City of Morgan Hill, Ref. (c).

The planned project includes the construction of 7 single-family homes. Ingress and egress to the project will be by way of Sorrel Way and Saddleback Drive to the south. The Site Development Plan is shown on Figure 2 on page 4.

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III. Analysis of the Noise Levels

A. Existing Noise Levels

To determine the existing noise environment at the planned project site, continuous recordings of the sound levels were made at a location 65 ft. from the centerline of East Dunne Avenue at the Dunne Hill Meadow residential development site on August 3-4, 2015, Ref. (d). Due to time constraints and inclement weather conditions, current noise measurements on site were not feasible. The noise measurements were made using a Larson-Davis LDL 812 Precision Integrating Sound Level Meter. The meter yielded, by direct readout, a series of descriptors of the sound levels versus time, as described in Appendix B. The measured descriptors included the L_1 , L_{10} , L_{50} , and L_{90} , i.e., those levels that are exceeded 1%, 10%, 50%, and 90% of the time. Also measured were the maximum and minimum levels, and the continuous equivalent-energy levels (L_{eq}), which are used to calculate the DNL. The measurement location and its relationship to the project site are shown on Figure 3 on page 6

The measurements were made for a total period of 24 hours and included recordings of the noise levels during representative hours of the daytime and nighttime periods of the DNL index. The results of the measurements are shown in data table in Appendix C.

As shown in the table, the L_{eq} 's at the measurement location 65 ft. from the centerline of East Dunne Avenue ranged from 56.5 to 63.4 dBA during the daytime and from 45.4 to 58.6 dBA at night.

B. Future Noise Levels

Future traffic volume data for East Dunne Avenue along the site are not available. However, the Condit-Evergreen General Plan Amendment Traffic Impact Analysis, Ref. (e), indicates that the 2014 traffic volume for East Dunne Avenue east of Murphy Avenue was 15,020 vehicles ADT, with a projected 2030 ADT of 19,000 vehicles. This is a 26.5% increase in the traffic volume. Applying this growth rate to the 2015 traffic volume along the site of 10,414 vehicles ADT, the future 2031 traffic volume is predicted to be 13,174 vehicles ADT. This increase in traffic volume yields a 1 dB increase in the traffic noise levels.



FIGURE 3 – Noise Measurement Location

Traffic noise dissipates at the rate of 3 to 6 dB for each doubling of the distance from the source to the receiver. Therefore, other locations on the site at greater distances from the roadway will have lower noise levels. Additional noise reduction is provided by interposed structures of the Heritage Greens of Morgan Hill residential development.

IV. Evaluation of the Noise Exposures

A. Exterior Noise Exposures

The DNL for the survey location was calculated by decibel averaging of the L_{eq} 's as they apply to the daily time periods of the DNL index. The DNL is a 24-hour noise descriptor that uses the measured L_{eq} values to calculate a 24-hour time-weighted average noise exposure. The formula used to calculate the DNL is described in Appendix B. Adjustments were applied to the measured noise levels to account for the various setback distances from the measurement location using methods established by the Highway Research Board, Ref. (f).

The results of the calculations reveal that the existing noise exposure at the measurement location 65 ft. from the centerline of East Dunne Avenue was calculated to be 66 dB DNL. At the lot line of the project nearest to East Dunne Avenue and with a line-of-sight down Sorrel Way at a distance of 233 ft. from the centerline, the traffic noise exposure reduces to 56 dB DNL, which includes a 2 decibel reduction factor for the partial acoustical shielding provided by the interposed residential structures. Under future traffic conditions, the noise exposure is predicted to increase to 57 dB DNL. Thus, the noise exposures will be within the 60 dB DNL limit of the City of Morgan Hill Noise Element standards.

At the minimum planned building setback of the project from East Dunne Avenue, 417 ft. from the centerline, the noise exposures reduce to 52 and 53 dB DNL under existing and future traffic conditions, respectively. As the noise exposures at the building setbacks will be within the 60 dB DNL limit of the City of Morgan Hill Noise Element standard, the interior maximum noise level limits are not in effect.

As the exterior noise exposures are within the limits of the standards, noise mitigation measures will not be required.

B. Interior Noise Exposures

To determine the interior noise exposures and noise levels in project living spaces, a 25 dB reduction was applied to the exterior noise exposures at the building setbacks to represent the attenuation provided by a typical building shell under a closed window condition. The closed window condition is used in this study as full-time ventilation will be provided that will allow the residents to keep their windows closed for noise control at all times without further specification. This condition also assumes the installation of standard dual-pane thermal insulating windows.

The interior noise exposures in the living spaces closest to East Dunne Avenue will be 27 and 28 dB DNL under existing and future traffic conditions, respectively. Thus, the noise exposures will be within the 45 dB DNL limit of the City of Morgan Hill Noise Element standards. Mitigation measures for the project interiors will not be required.

The above report presents a noise assessment study for the planned “Serene Hills” single-family development along Sorrel Way in Morgan Hill. The study findings for current present conditions are based on field measurements and other data and are correct to the best of our knowledge. Future noise exposures were based on information provided by the City of Morgan Hill. Significant deviations in the future traffic volumes or changes in motor vehicle technology, speed limits, noise regulations, or other future changes beyond our control may produce long-range noise results different from our estimates. If you need any additional information or would like an elaboration on this report, please call me.

Sincerely,

EDWARD L. PACK ASSOC., INC.

A handwritten signature in blue ink, reading "Jeffrey K. Pack", is written over a horizontal line.

Jeffrey K. Pack
President

Attachment: Appendices A, B and C

APPENDIX A

References:

- (a) Site Development Plan, Serene Hills, by MH Engineering, December 5, 2022
- (b) City of Morgan Hill 2035 General Plan, Safety, Services and Infrastructure Element – Noise Chapter, Adopted July 27, 2016
- (c) City of Morgan Hill Public Works Department, Average Daily Traffic Volumes, Exhibit 1, Prepared by Hatch, Mott, McDonald, August 21, 2015
- (d) “Noise Assessment Study for the Planned ‘Dunne Hill Meadow’ Single-Family Subdivision, East Dunne Avenue, Morgan Hill”, by Edward L. Pack Associates, Inc., Project No. 47-058, August 7, 2015
- (e) “Condit-Evergreen General Plan Amendment Traffic Impact Analysis”, by Hexagon Transportation Consultants, June 27, 2014
- (f) Highway Research Board, “Highway Noise - A Design Guide for Highway Engineers”, Report 117, 1971

APPENDIX B

Noise Standards, Terminology and Instrumentation

1. Noise Standards

A. City of Morgan Hill Safety, Services and Infrastructure Element

The City of Morgan Hill General Plan 2035, adopted July 27, 2016, Safety, Services and Infrastructure Element contains a noise chapter that identifies goals and policies for noise limits with the City of Morgan Hill.

GOAL SSI-8 Prevention of noise from interfering with human activities or causing health problems.

Policy SSI-8.1

Exterior Noise Level Standards. Require new development projects to be designed and constructed to meet acceptable exterior noise level standards (see Table SSI-1), as follows:

Apply a maximum exterior noise level of 60dBA L_{dn} in residential areas where outdoor use is a major consideration (e.g., backyards in single-family housing developments and recreation areas in multi-family housing projects). Where the City determines that providing an L_{dn} of 60 dBA or lower cannot be achieved after the application of reasonable and feasible mitigation, an L_{dn} of 65 dBA may be permitted.

Indoor noise levels should not exceed an L_{dn} of 45 dBA in new residential housing units.

Noise levels in new residential development exposed to an exterior L_{dn} 60 dBA or greater should be limited to a maximum instantaneous noise level (e.g., trucks on busy streets, train warning whistles) in bedrooms of 50 dBA. Maximum instantaneous noise levels in all other habitable rooms should not exceed 55dBA. The maximum outdoor noise level for new residences near the railroad shall be 70 dBA L_{dn} , recognizing that train noise is characterized by relatively few loud events.

Policy SSI-8.2

Impact Evaluation. The impact of a proposed development project on existing land uses should be evaluated in terms of the potential for adverse community response based on significant increase in existing noise levels, regardless of compatibility guidelines.

Policy SSI-8.3

Commercial and Industrial Noise Level Standards. Evaluate interior noise levels in commercial and industrial structures on a case by case basis based on the use of the space.

Policy SSI-8.4

Office Noise Level Standards. Interior noise levels in office buildings should be maintained at 45 dBA L_{eq} (hourly average) or less, rather than 45 dBA L_{dn} (daily average).

Policy SSI-8.5

Traffic Noise Level Standards. Consider noise level increases resulting from traffic associated with new projects significant if: a) the noise level increase is 5 dBA L_{dn} or greater, with a future noise level of less than 60 dBA L_{dn} , or b) the noise level increase is 3 dBA L_{dn} or greater, with a future noise level of 60 dBA L_{dn} or greater.

Policy SSI-8.6

Stationary Noise Level Standards. Consider noise levels produced by stationary noise sources associated with new projects significant if they substantially exceed existing ambient noise levels.

Policy SSI-8.7

Other Noise Sources. Consider noise levels produced by other noise sources (such as ballfields) significant if an acoustical study demonstrates they would substantially exceed ambient noise levels.

Policy SSI-8.8

Screening. Use the Noise Contour map to screen projects to determine if acoustical studies shall be required.

Policy SSI-8.9

Site Planning and Design. Require attention to site planning and design techniques other than sound walls to reduce noise impacts, including: a) installing earth berms; b) increasing the distance between the noise source and the receiver; c) using non-sensitive structures such as parking lots, utility areas, and garages to shield noise sensitive areas; d) orienting buildings to shield outdoor spaces from the noise source; and e) minimizing the noise at its source.

Action SSI-8.A

Noise Contour Map Updates. Assess and track noise levels when specific projects are proposed to determine the continued accuracy of the Noise Contour map. If necessary, based on these assessments, update the future Noise Contour map to reflect changed conditions.

Action SSI-8.B

Zoning Ordinance. Amend the Zoning Ordinance to reflect noise limits intended to protect noise sensitive land uses from intrusion by stationary noise sources.

GOAL SSI-9

Protection from noise associated with motor vehicles and railroad activity.

Policy SSI-9.1

Techniques to Reduce Traffic Noise. Use roadway design, traffic signalization, and other traffic planning techniques (such as limiting truck traffic in residential areas) to reduce noise caused by speed or acceleration of vehicles.

Policy SSI-9.2

Noise Barrier Dimensions. If noise barriers are deemed the only effective mitigation for development along major transportation corridors, require an acoustical analysis to determine necessary dimensions.

Policy SSI-9.3

Sound Wall Design. The maximum height of sound walls shall be eight feet. Residential projects adjacent to the freeway shall be designed to minimize sound wall height through location of a frontage road, use of two sound walls or other applicable measures. Sound wall design and location shall be coordinated for an entire project area and shall meet Caltrans noise attenuation criteria for a projected eight-lane freeway condition. If two sound walls are used, the first shall be located immediately adjacent to the freeway right-of-way and the second shall be located as necessary to meet Caltrans noise requirements for primary outdoor areas. The minimum rear yard setback to the second wall shall be 20 feet.

Policy SSI-9.4

Sound Barrier Vandalism. Ensure that sound barriers do not become targets for vandalism and prioritize clean-up if sound walls are vandalized.

Policy SSI-9.5

Noise Studies for Private Development. In order to prevent significant noise impacts on neighborhood residents which are related to roadway extensions or construction of new roadways, require completion of a detailed noise study during project-level design to quantify noise levels generated by projects such as the Murphy Avenue extension to Mission View Drive and the Walnut Grove Extension to Diana Avenue. The study limits should include noise sensitive land uses adjacent to the project alignment as well as those along existing segments that would be connected to new segments. A significant impact would be identified where traffic noise levels would exceed the “normally acceptable” noise level standard for residential land uses and/or where ambient noise levels would be substantially increased with the project. Project specific mitigation measures could include, but not be limited to, considering the location of the planned roadway alignment relative to existing receivers in the vicinity, evaluating the use of noise barriers to attenuate project-generated traffic noise, and/or evaluating the use of “quiet pavement” to minimize traffic noise levels at the source. Mitigation should be designed to reduce noise levels into compliance with “normally acceptable” levels for residential noise and land use compatibility.

Policy SSI-9.6

Earth Berms. Allow and encourage earth berms in new development projects as an alternative to sound walls if adequate space is available.

Policy SSI-9.7

Sound Barrier Design. Require non-earthen sound barriers to be landscaped, vegetated, or otherwise designed and/or obscured to improve aesthetics and discourage graffiti and other vandalism.

Action SSI-9.A

UPRR Madrone Parkway Crossing Noise Study. In order to prevent significant noise impacts on sensitive receptors and neighborhood residents which are related to an at-grade Madrone Parkway Crossing of the UPRR tracks, during project-level design, conduct a detailed noise study to calculate noise levels expected as a result of train warning whistles and warning bells that would be sounded, and to calculate the increase in ambient noise levels resulting from the project. The study limits should include noise sensitive land uses north and south of the at grade crossing as warning whistles would be expected up to one-quarter mile in each direction. A significant impact would be identified where (it is likely that these receivers are already exposed to noise levels above 60 dBA L_{dn}) where ambient noise levels would be substantially increased with the project. Project specific mitigation measures should include, but not be limited to, evaluating the use of noise barriers to attenuate the warning whistle/bell noise, residential sound insulation, utilizing wayside horns, and/or establishing a train whistle quiet zone per the Federal Railroad Administration's Final Rule on the Use of Locomotive Horns at Highway-Rail Grade Crossings. Mitigation should be designed to avoid a substantial permanent increase in noise.

2. Terminology

A. Statistical Noise Levels

Due to the fluctuating character of urban traffic noise, statistical procedures are needed to provide an adequate description of the environment. A series of statistical descriptors have been developed which represent the noise levels exceeded a given percentage of the time. These descriptors are obtained by direct readout of the Sound Level Meters. Some of the statistical levels used to describe community noise are defined as follows:

- L_1 - A noise level exceeded for 1% of the time.
- L_{10} - A noise level exceeded for 10% of the time, considered to be an "intrusive" level.
- L_{50} - The noise level exceeded 50% of the time representing the "mean" sound level.
- L_{90} - The noise level exceeded 90 % of the time, designated as a "background" noise level.
- L_{eq} - The continuous equivalent-energy level is that level of a steady-state noise having the same sound energy as a given time-varying noise. The L_{eq} represents the decibel level of the time-averaged value of sound energy or sound pressure squared and is used to calculate the DNL and CNEL.

B. Day-Night Level (DNL)

Noise levels utilized in the standards are described in terms of the Day-Night Level (DNL). The DNL rating is determined by the cumulative noise exposures occurring over a 24-hour day in terms of A-Weighted sound energy. The 24-hour day is divided into two subperiods for the DNL index, i.e., the daytime period from 7:00 a.m. to 10:00 p.m., and the nighttime period from 10:00 p.m. to 7:00 a.m. A 10 dBA weighting factor is applied (added) to the noise levels occurring during the nighttime period to account for the greater sensitivity of people to noise during these hours. The DNL is calculated from the measured L_{eq} in accordance with the following mathematical formula:

$$DNL = \left[\left[(10 \log_{10}(10^{\Sigma L_{eq}(7-10)})) \times 15 \right] + \left[((10 \log_{10}(10^{\Sigma L_{eq}(10-7)})) + 10) \times 9 \right] \right] / 24$$

C. A-Weighted Sound Level

The decibel measure of the sound level utilizing the "A" weighted network of a sound level meter is referred to as "dBA". The "A" weighting is the accepted standard weighting system used when noise is measured and recorded for the purpose of determining total noise levels and conducting statistical analyses of the environment so that the output correlates well with the response of the human ear.

3. Instrumentation

The on-site field measurement data were acquired by the use of one or more of the precision acoustical instruments shown below. The acoustical instrumentation provides a direct readout of the L exceedance statistical levels including the equivalent-energy level (L_{eq}). Input to the meters was provided by a microphone extended to a height of 5 ft. above the ground. The meter conforms to ANSI S1.4 for Type 1 instruments and IEC 61672-1:2002 for Class 1 instruments. The "A" weighting network and the "Fast" response setting of the meter were used in conformance with the applicable ISO and IEC standards. All instrumentation was acoustically calibrated before and after field tests to assure accuracy.

Larson-Davis Model 812 Integrating Sound Level Meter

Larson-Davis LxT Precision Integrating Sound Level Meter

Larson-Davis Model 831 Integrating Sound Level Meter

APPENDIX C

On-Site Noise Measurement Data and Calculation Tables

DNL CALCULATIONS

CLIENT: INTERO REAL ESTATE
 FILE: 47-058
 PROJECT: HILL MEADOW SINGLE-FAMILY
 DATE: 8/3-4/2015
 SOURCE: E. DUNNE AVE./HILL RD.

LOCATION 1		E. Dunne Ave.	
Dist. To Source		65 ft.	
TIME	Leq	10 ^{Leq} /10	
7:00 AM	64.8	3019951.7	
8:00 AM	65.0	3162277.7	
9:00 AM	64.9	3090295.4	
10:00 AM	63.9	2454708.9	
11:00 AM	63.5	2238721.1	
12:00 PM	62.8	1905460.7	
1:00 PM	62.8	1905460.7	
2:00 PM	63.1	2041737.9	
3:00 PM	63.1	2041737.9	
4:00 PM	61.6	1445439.8	
5:00 PM	62.3	1698243.7	
6:00 PM	64.1	2570395.8	
7:00 PM	62.5	1778279.4	
8:00 PM	61.4	1380384.3	
9:00 PM	60.3	1071519.3	SUM= 31804614.4
10:00 PM	58.2	660693.4	Ld= 75.0
11:00 PM	57.5	562341.3	
12:00 AM	54.9	309029.5	
1:00 AM	54.1	257039.6	
2:00 AM	50.9	123026.9	
3:00 AM	52.3	169824.4	
4:00 AM	57.6	575439.9	
5:00 AM	62.2	1659586.9	
6:00 AM	63.3	2137962.1	SUM= 6454944.1
			Ln= 68.1
Daytime Level=		75.0	
Nighttime Level=		78.1	
DNL=		66	
24-Hour Leq=		62.0	

MITIGATION MONITORING AND REPORTING PROGRAM

2275 East Dunne Avenue Residential Project Subdivision & Design Permit

File Nos. SR2023-0019/EA2023-0008/SD2023-0003



July 2024

P R E F A C E

Section 21081.6 of the California Environmental Quality Act (CEQA) requires a Lead Agency to adopt a Mitigation Monitoring and Reporting Program whenever it approves a project for which measures have been required to mitigate or avoid significant effects on the environment. The purpose of the monitoring and reporting program is to ensure compliance with the mitigation measures during project implementation.

On _____, the City Council adopted the Mitigated Negative Declaration for the 2275 East Dunne Residential Project (File Nos. SR2023-0019, EA2023-0008, SD2023-0003). The Initial Study concluded that the implementation of the project could result in significant impacts on the environment and mitigation measures will be incorporated into the proposed project at the time of future development. This Mitigation Monitoring and Reporting Program addresses those measures in terms of how and when they will be implemented.

This document does *not* discuss those subjects for which the Initial Study concluded that the impacts from implementation of the project would be less than significant.

MITIGATION MONITORING AND REPORTING PROGRAM 2275 EAST DUNNE AVENUE RESIDENTIAL PROJECT – SUBDIVISION & DESIGN PERMIT				
Impact	Mitigation and Avoidance Measures	Responsibility for Monitoring Compliance	Method of Compliance	Timing of Compliance
Hazardous Materials				
Impact HAZ-1: The surficial soil onsite may contain elevated levels of organochlorine pesticide.	MM HAZ – 1.1: As required by General Plan Policy SSI-4.16, a Phase I Environmental Site Assessment (ESA) has been prepared for the site in order to determine whether there are potential hazards associated with the historic agricultural use of the site. If the Phase I ESA recommends soil testing in order to define contamination, Phase II soil investigations shall be completed to document the concentrations of any hazardous contaminants in the soil. Recommendations of the Phase II for any required soil remediation shall be implemented by the project.	Community Development Director	Review and approval of Phase I Environmental Site Assessment and Phase II Soil Investigation by City staff.	Prior to issuance of a tentative map.

MITIGATION MEASURES 2275 EAST DUNNE AVENUE RESIDENTIAL PROJECT – SUBDIVISION & DESIGN PERMIT			
MITIGATION Measures	Responsibility for Monitoring Compliance	Method of Compliance	Timing of Compliance
Air Quality			
MM AIR-1: The following <i>Basic Construction Mitigation Measures</i> listed in Table 8-2 of the <i>BAAQMD CEQA Air Quality Guidelines</i> will be implemented during construction to reduce dust and other particulate matter impacts: • During any construction period ground disturbance, the project contractor shall implement the following Best Management Practices (BMPs): ○ Exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day. ○ Haul trucks transporting soil, sand, or other loose material off-site shall be covered. ○ Visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited. ○ Vehicle speeds on unpaved roads shall be limited to 15 mph. ○ Roadways, driveways, and sidewalks to be paved shall be completed as soon as possible after grading to minimize dirt and soil exposure. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used. ○ Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points. ○ Construction equipment shall be maintained and properly tuned in accordance with manufacturer’s specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper	Community Development Director	Incorporation of required measures on all project construction documents, contracts, and plans.	To be implemented during construction.

MITIGATION MEASURES 2275 EAST DUNNE AVENUE RESIDENTIAL PROJECT – SUBDIVISION & DESIGN PERMIT			
MITIGATION Measures	Responsibility for Monitoring Compliance	Method of Compliance	Timing of Compliance
condition prior to operation. ○ Post a publicly visible sign with the telephone numbers and contact information for the project construction manager and the Lead Agency regarding dust complaints. This construction manager shall respond and take corrective action within 48 hours. ○ The BAAQMD phone number shall also be visible to ensure compliance with applicable regulations.			
Biological Resources			
MM BIO-1: If project staging and construction is anticipated to take place during the avian nesting season (February 1st – August 31st), a nesting bird preconstruction survey shall be conducted by a qualified biologist to ensure that nesting birds are not located within or adjacent to the project site. Specifically, the survey for nesting migratory birds shall cover the project site and off-site improvement areas, and the survey for nesting raptors shall encompass the site, off-site improvements areas, and surrounding lands within 250 feet, where accessible. The preconstruction survey shall be completed within 7 days prior to the onset of any staging or construction activity. If nesting activity is observed during the preconstruction survey, the qualified biologist shall establish appropriate buffers, monitoring, and/or construction phasing measures to avoid any impacts to nesting birds. The buffers shall consist of a minimum width of 100 feet for passerines and 500 feet for raptors. After nesting is completed, as determined by the biologist, the buffer shall no longer be required. The results of the preconstruction survey should be valid for 14 days and shall be submitted to the City of Morgan Hill Development Services Department.	Community Development Director	Incorporation of required measures on all project construction documents, contracts, and plans. If project construction activities, including tree removal, start during the nesting season, then a report prepared by a qualified biologist and summarizing the findings of the nesting bird survey(s) shall be submitted to the Community Development Director for review and approval.	Prior to issuance of a Grading Permit.

MITIGATION MEASURES 2275 EAST DUNNE AVENUE RESIDENTIAL PROJECT – SUBDIVISION & DESIGN PERMIT			
MITIGATION Measures	Responsibility for Monitoring Compliance	Method of Compliance	Timing of Compliance
MM BIO-2: Future development onsite shall submit a SCVHP application form and retain a qualified biologist to field verify the project site’s land cover type and potential watercourses or drainage features using the <i>Criteria to Verify or Identify a Watercourse as a Stream</i> method as outlined in the Habitat Plan.	Santa Clara Valley Habitat Agency, and Community Development Director	Review and approval of SCVHP application form by Santa Clara Valley Habitat Agency and City staff.	Prior to issuance of a Grading Permit.
MM BIO-3: As required by the City’s Tree Removal Controls, a tree removal permit is required from the Community Development Director, which includes the description of the tree replacement program and identification of any conditions imposed by the City. For the Ordinance Sized Trees to be preserved as part of the project, the project applicant shall implement Tree Preservation Recommendations included in the Arborist Report prepared for the project by Smith Tree Specialists, including, but not limited to, avoidance of tree driplines, construction of temporary fencing around protected trees, fertilization of trees after construction, and periodic inspection of the trees’ condition. The above measures shall be included in the notes on construction drawings, subject to review and approval by the City of Morgan Hill Development Services, prior to initiation of construction.	Community Development Director	Review and approval of a tree survey by City staff. Incorporation of required measures on all project construction documents, contracts, and plans.	Prior to issuance of a Grading Permit.
MM BIO-4: Prior to construction activities, a minimum of two surveys shall be conducted by a qualified biologist to ascertain whether or not burrowing owls occupy burrows on or adjacent to the project site and/or off-site improvement areas, with the first survey conducted within 14 days to initial construction activities (i.e. vegetation removal, grading, excavation, etc.) and the second survey conducted within two days prior to initial construction activities. Results of the surveys shall be submitted to the City of Morgan Hill Development Services Department. If burrowing owls or fresh sign of burrowing owls are not observed during preconstruction surveys, construction may proceed. If burrowing owls or recent signs of burrowing owls are observed during the	Community Development Director	Review and approval of a survey by City staff.	Prior to issuance of a Grading Permit.

MITIGATION MEASURES 2275 EAST DUNNE AVENUE RESIDENTIAL PROJECT – SUBDIVISION & DESIGN PERMIT			
MITIGATION Measures	Responsibility for Monitoring Compliance	Method of Compliance	Timing of Compliance
surveys, occupied burrows shall be identified by the monitoring biologist and appropriate buffers, as described below, shall be established. • A 250-foot non-disturbance buffer shall be established around all active burrowing owl burrows or nest sites as identified and defined by a qualified biologist. If the biologist determines that a nest is vacant, the nondisturbance buffer zone around that nest may be removed. The SCVHP specifies that a vacation from the site for a week or more by a burrowing owl, as determined by a qualified biologist, would constitute a voluntary relocation by the owl, and the qualified biologist could then take measures to collapse suitable burrows of the site to discourage reoccupation. The biologist shall supervise hand excavation of the burrow to prevent reoccupation only after receiving approval from the wildlife agencies. For permission to encroach within 250 feet of such burrows during the nesting season (February 1 through August 31), an Avoidance, Minimization, and Monitoring Plan shall be prepared and approved by the City of Morgan Hill and the Wildlife Agencies prior to such encroachment (see Chapter 6, pages 6-64 & 6-65 of the SCVHP for further detail). • Should a burrowing owl be located on-site in the non-breeding season (September through January), construction activities shall not be allowed within the 250-foot buffer of the active burrow(s) used by any burrowing owl unless the following avoidance measures are adhered to: - o A qualified biologist monitors the owls for at least three days prior to construction to determine baseline foraging behavior (i.e., behavior without construction). - o The same qualified biologist monitors the owls during construction does not find a			

MITIGATION MEASURES 2275 EAST DUNNE AVENUE RESIDENTIAL PROJECT – SUBDIVISION & DESIGN PERMIT			
MITIGATION Measures	Responsibility for Monitoring Compliance	Method of Compliance	Timing of Compliance
change in owl foraging behavior in response to construction activities. o If any change in owl nesting and foraging behavior as a result of construction activities occurs, such activities shall cease within the 250-foot buffer. o If the owls are gone for at least one week, the project proponent may request approval from the City of Morgan Hill that a qualified biologist excavate usable burrows to prevent owls from reoccupying the site. After all usable burrows are excavated, the buffer zone shall be removed, and construction may continue. The SCVHP stipulates that passive relocation or exclusion of burrowing owls shall not be allowed until a positive regional growth trend is achieved as defined in Section 5.4.6 of the SCVHP; however, a project may qualify for an exception to this prohibition. Permission to engage in passive relocation during the non-breeding season would need to be requested through the standard application process (see Section 6.8 of the SCVHP). Application for an exception would require additional information, including a relocation plan/schedule and documentation by a qualified biologist that owls have occupied the site for the full year without vacating the site for 10 or more consecutive days. The application would need to be submitted to the City of Morgan Hill, and the Wildlife Agencies would then evaluate the application and make a determination for granting the exception. If passive relocation is granted, additional measures may be required by the City.			
MM BIO-5: During the course of the preconstruction surveys for other species, a qualified biologist shall also determine the presence or absence of badgers prior to the start of construction. The results of the preconstruction survey shall be submitted to the City of Morgan Hill Development Services Department. If badgers are found to be absent, other mitigations for the protection of badgers shall not be warranted.	Community Development Director	Review and approval of a survey by City staff.	Prior to issuance of a Grading Permit.

MITIGATION MEASURES 2275 EAST DUNNE AVENUE RESIDENTIAL PROJECT – SUBDIVISION & DESIGN PERMIT			
MITIGATION Measures	Responsibility for Monitoring Compliance	Method of Compliance	Timing of Compliance
If an active badger den is identified during preconstruction surveys within or immediately adjacent to an area subject to construction, a construction-free buffer of up to 300 feet shall be established around the den. Once the biologist has determined that badger has vacated the burrow, the burrow can be collapsed or excavated, and ground disturbance can proceed. Should the burrow be determined to be a natal or reproductive den, and because badgers are known to use multiple burrows in a breeding burrow complex, a biological monitor shall be present onsite during construction activities in the vicinity of the burrows to ensure the buffer is adequate to avoid direct impact to individuals or natal/reproductive den abandonment. The monitor shall be required to be present until the young are determined to be of an independent age and construction activities would not harm individual badgers.			
MM BIO-6: Prior to initiation of any ground disturbance, a formal wetland delineation shall be conducted on the site to ascertain whether any waters of the U.S. or state occur on-site; the report shall be submitted to the USACE for verification to determine the extent of all hydrological features as it relates to Waters of the U.S. The report shall also provide a foundation to determine if waters of the State occur on-site and whether CDFW and/or RWQCB have jurisdiction over any of the areas. Once the extent of waters of the U.S. and State are known, the potential for and extent to which any of the features could be impacted can be determined. If waters of the U.S. and/or State would be impacted by the proposed project, the following mitigations shall be implemented: • The project shall avoid all waters of the U.S. and/or State. Avoiding impacts to any jurisdictional wetland swales may include re-designing the project to avoid the wetlands to the extent possible. If a redesign is not feasible, then	Community Development Director	Review and approval of a wetland delineation by City staff.	Prior to issuance of a Grading Permit.

MITIGATION MEASURES 2275 EAST DUNNE AVENUE RESIDENTIAL PROJECT – SUBDIVISION & DESIGN PERMIT			
MITIGATION Measures	Responsibility for Monitoring Compliance	Method of Compliance	Timing of Compliance
the following mitigations would need to be implemented to reduce impacts to a less than significant level. • If full avoidance of wetland swale habitat is not possible under the currently proposed project, actions shall be taken to minimize impacts to such habitats. Measures taken during construction activities shall include placing construction fencing around any preserved wetland features to ensure that construction activities do not inadvertently impact such areas. • To compensate for the permanent loss of any wetland swale habitat, three options are available: 1) Credits through an approved mitigation bank; 2) On- or off-site creation/restoration with accompanying mitigation and monitoring plan; and 3) Payment of Seasonal Wetland Fees to the SCVHP. The USACE and CDFW are participants in the SCVHP; although the Habitat Agency (with the SCVHP) is currently in talks with the RWQCB, the RWQCB is currently not a participant in the SCVHP. Therefore, mitigation for any impacts to wetland swales on-site shall include either #1 and #3, or #2 and #3, as mitigation per the RWQCB would likely be a separate mitigation consisting of on- or off-site restoration with an appropriate Habitat Monitoring Plan or payment for mitigation credits to a mitigation bank (#1 or #2 below). The RWQCB may also require a Waste Discharge Permit under the Porter-Cologne Water Quality Act. Should the RWQCB become a participant in the SCVHP, only #3 would be required. The foregoing mitigations are outlined below. 1. Several mitigation banks exist for wetlands and payment for wetland credits at an approved mitigation bank shall be a minimum of 1:1 creation:loss ratio. The applicant would not be required to			

MITIGATION MEASURES 2275 EAST DUNNE AVENUE RESIDENTIAL PROJECT – SUBDIVISION & DESIGN PERMIT			
MITIGATION Measures	Responsibility for Monitoring Compliance	Method of Compliance	Timing of Compliance
conduct follow-up monitoring once fees are paid. 2. If on- or off-site mitigation is preferred, a mitigation and monitoring plan (MMP) shall be prepared. The plan shall identify on-site and/or off-site preserve areas having a sufficient water budget (as determined by a hydrologist) for the creation of wetland habitat that is of equal or greater quality to the habitats being impacted at a minimum 1:1 creation:loss ratio. Any off-site creation would preferably occur within the same watershed. At a minimum, the MMP shall: • Define the location of all created wetlands; • Provide evidence of a suitable water budget to support any created wetland and channel habitats, as determined by a qualified hydrologist; • Identify the species, size, number and location of plants to be installed; • Identify the time of year for planting and any methods for supplemental watering during the establishment period; • Identify the monitoring period which shall be no less than 5 years; • Identify measures that shall be monitored, and define incremental and final success criteria that shall be required for the wetland mitigation to be deemed a success;			

MITIGATION MEASURES 2275 EAST DUNNE AVENUE RESIDENTIAL PROJECT – SUBDIVISION & DESIGN PERMIT			
MITIGATION Measures	Responsibility for Monitoring Compliance	Method of Compliance	Timing of Compliance
• Identify adaptive management procedures that accommodate the uncertainty that comes with wetland creation projects. These include (but are not limited to) measures to address colonization by invasive species, unexpected lack of water, excessive foraging of installed wetland plants by wildlife, erosion of channel banks, etc.; • Define management and maintenance activities (weeding, repair of water delivery systems and browsing protection, etc.); and • Provide for surety in funding for MMP and for in-perpetuity preservation and management of created wetland and channel habitats. 3. Wetland swales shall be mitigated for under the SCVHP, which would consist of a fee for “seasonal wetlands” of \$503,724 per acre, paid prior to initiation of any ground disturbance. In addition, the applicant shall implement Condition 12 of the SCVHP to the satisfaction of the City of Morgan Hill.			
Cultural Resources			
MM CUL-1: The following standard permit condition would apply to future development of the project site to reduce and avoid impacts to unknown subsurface	Community Development	Incorporation of required measures on all project	Prior to issuance of a Grading

MITIGATION MEASURES 2275 EAST DUNNE AVENUE RESIDENTIAL PROJECT – SUBDIVISION & DESIGN PERMIT			
MITIGATION Measures	Responsibility for Monitoring Compliance	Method of Compliance	Timing of Compliance
cultural resources. - In the event any prehistoric or significant historic era cultural materials¹ are encountered during subsurface construction, all construction within a radius of 50 feet of the find shall be halted, the Director of the Community Development Department would be notified, and an archaeologist shall be retained to examine the find to make appropriate recommendations. - If human remains are discovered, the Santa Clara County Coroner shall be notified. The Coroner shall determine whether or not the remains were Native American. If the Coroner determines that the remains are not subject to his authority, he shall notify the Native American Heritage Commission, who shall identify the Most Likely Descendant (MLD) of the deceased Native American. - If the Director of the Community Development Department finds that the cultural resource find is not a significant resource, work shall resume only after the submittal of a preliminary report and after provisions for reburial and ongoing monitoring are accepted. Provisions for identifying descendants of a deceased Native American and for reburial shall follow the protocol set forth in the CEQA Guidelines. If the site is found to be a significant archaeological site, a mitigation program shall be prepared and submitted to the Director of the Community Development Department for consideration and approval, in conformance with the protocol set forth in the CEQA Guidelines.	Director	construction documents, contracts, and plans.	Permit.
Geology and Soils			
MM GEO-1: As required pursuant to General Plan Policy SSI-1.1, SSI-1.2, and SSI-2.1, future residential development shall prepare a design-level geotechnical investigation which shall include trenching in order to locate the fault zone and establish a “no build” zone. The study shall be completed and submitted to the City for review as part of the tentative subdivision map review process. All recommendations in the design-level geotechnical investigation shall be implemented by the project, which shall	Public Works Director	Review and approval of design-level geotechnical investigation by City staff. Incorporation of required	Prior to issuance of a tentative map.

¹ Significant cultural materials includes but are not limited to: aboriginal human remains, chipped stone; ground stone; shell and bone artifacts; concentrations of fire-cracked rock; ash and charcoal; shell; bone; and historic features such as privies or building foundations.

MITIGATION MEASURES 2275 EAST DUNNE AVENUE RESIDENTIAL PROJECT – SUBDIVISION & DESIGN PERMIT			
MITIGATION Measures	Responsibility for Monitoring Compliance	Method of Compliance	Timing of Compliance
include standard engineering and seismic safety design techniques. Future development shall also meet the requirements of applicable Building and Fire Code.		measures on all project construction documents, contracts, and plans.	
MMGEO-2: As part of the design-level geotechnical investigation required for future development onsite, the investigation shall include a debris flow analysis to evaluate the potential for debris flow. In the event debris flow hazard is identified, engineering measures would be implemented to reduce the hazard. Examples of engineering measures could include a combination of walls (deflection wall or catchment wall) and/or catchment basin and debris grate/catch basin.	Public Works Director	Review and approval of design-level geotechnical investigation by City staff. Incorporation of required measures on all project construction documents, contracts, and plans.	Prior to issuance of a tentative map.
MM GEO-3: Future development shall implement recommendations in the design-level geotechnical report prepared for the project, which shall include design and engineering measures to avoid and reduce adverse effects of expansive soils to future development onsite. Recommendations to address the undocumented fills shall also be implemented, which shall include removing all fills identified within the building areas and to a lateral distance of at least five feet beyond the building footprint or to a lateral distance equal to fill depth below the perimeter footing, whichever is greater.	Public Works Director	Review and approval of design-level geotechnical investigation by City staff. Incorporation of required measures on all project construction documents, contracts, and plans.	Prior to issuance of a Grading Permit.
Hydrology and Water Quality			
MM HYD-1: In accordance with the City of Morgan Hill Standard Conditions of Approval and the General National Pollutant Discharge Elimination System (NPDES) Storm Water Permit for Construction Activities, future development projects will prepare a SWPPP and an ECP. The plans will be submitted to the Director of Public Works and Central Coast Regional Water Quality Control Board (RWQCB) for review and approval, prior to issuance of a building permit. The ECP and SWPPP will demonstrate how the project will eliminate or reduce non-stormwater discharges into the	Community Development Director	Incorporation of required measures on all project construction documents, contracts, and plans.	Prior to issuance of a Grading Permit or a building permit.

MITIGATION MEASURES 2275 EAST DUNNE AVENUE RESIDENTIAL PROJECT – SUBDIVISION & DESIGN PERMIT			
MITIGATION Measures	Responsibility for Monitoring Compliance	Method of Compliance	Timing of Compliance
stormwater system, how discharges into the stormwater system will be monitored, and what BMPs will be implemented by the project to avoid water quality impacts during construction (e.g., street sweeping, fiber rolls, temporary cover and/or permanent cover) and post-construction periods. In conformance with existing policies, programs, and with implementation of BMPs, the project will not result in significant impacts to water quality or water discharge requirements.			
Noise and Vibration			
MM NOI-1: The following standard construction noise suppression measures would be implemented during the construction activities to reduce noise levels: - Construction activities shall be limited to the hours between 7:00 a.m. and 8:00 p.m., Monday through Friday, and between the hours of 9:00 a.m. and 6:00 p.m. on Saturdays. No construction activities should occur on Sundays or federal holidays (Consistent with Section 8.28.040 of the Morgan Hill Municipal Code). - Equip all internal combustion engine driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment. - Locate stationary noise generating equipment (e.g. rock crushers, compressors) as far as possible from adjacent residential receptors. - Acoustically shield stationary equipment located near residential receptors with temporary noise barriers or recycled demolition materials. - Utilize "quiet" air compressors and other stationary noise sources where technology exists. - The contractor shall prepare a detailed construction plan identifying the schedule for major noise-generating construction activities. The construction plan shall identify a procedure for coordination with adjacent residential land uses so that	Community Development Director	Incorporation of required measures on all project construction documents, contracts, and plans.	To be implemented during the construction activities.

MITIGATION MEASURES 2275 EAST DUNNE AVENUE RESIDENTIAL PROJECT – SUBDIVISION & DESIGN PERMIT			
MITIGATION Measures	Responsibility for Monitoring Compliance	Method of Compliance	Timing of Compliance
construction activities can be scheduled to minimize noise disturbance. Designate a "disturbance coordinator" who would be responsible for responding to any complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g., bad muffler, etc.) and will require that reasonable measures be implemented to correct the problem.			

SOURCE: City of Morgan Hill. *2275 East Dunne Avenue Residential Project*. July 2024.

From: [REDACTED]
To: [Roshni Saxena](#)
Subject: [EXTERNAL] Serene Hills-Dunne Residential Project Public Comment
Date: Friday, August 9, 2024 10:06:40 AM

Public comment regarding draft Initial Study/Mitigated Negative Declaration may be addressed to: City of Morgan Hill, Development Services Department, 17575 Peak Avenue, Morgan Hill, CA 95037

Dear City of Morgan Hill,

You cannot build any more residential homes including the Serene Hills-Dunne ones because there is insufficient capacity for our city's youth in our public school system. There is no more space at the public schools. My child was waitlisted for all schools except one that is dual-immersion, which is not my choice. Jackson is FULL. Thank you.

Regards,

[REDACTED]

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